ADDIS ABABA UNIVERSITY
COLLEGE OF BUSINESS AND ECONOMICS
DEPARTMENT OF ACCOUNTING AND FINANCE

Determinants of Life Insurance Demand in Ethiopia

By:
Girma Awoke

Advisor:
SEWALE ABATE (PHD)

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This is to certify that the thesis prepared by Girma Awoke Wibetie, entitled: The Determinants of life insurance demand in Ethiopia and submitted to partial fulfillment of the requirements for the Masters degree of Science in Accounting and Finance complies with the regulations of the university and meets the accepted standards with respect to originality and quality.

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I declare that the thesis for the M.Sc. degree in accounting and finance at the University of Addis Ababa, herby submitted by me, is my original work and have not previously been submitted for a degree at this or any other University, and that all references materials contained therein have been duly acknowledged.

Name Girma Awoke

Signature----------

Date ----------

Advisor's Name Sewale Abate (PhD)

Signature----------

Date ----------

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ACRONYMS and Abbreviations

ANOVA: Analysis of Variance

EIC: Ethiopian Insurance Corporation

CLRM: Classical Linear regression Model

CPI: Consumer Price Index

CSA: Central Statistics Agency

INC: GDP per capita income

DF: Degree of Freedom

DER: Dependency Ratio

GDP: Gross Domestic Product

LIXP: Life Expectancy

LID: Life Insurance Demand

NBE: National Bank of Ethiopia

OLS: Ordinary Least Square

RIR: Real Interest Rate

VIF: Variance Inflation Factor

Abstract

Insurance is the most widely used risk management technique for both individuals and businesses. The purpose of insurance is to compensate for financial loss, not to provide an opportunity for financial gain. This research was aimed to examine the determinant of life insurance consumption in Ethiopia. It attempts to identify how GDP per capital income, inflation, real interest rate, life expectancy and dependency ratio for the demand of life insurance in Ethiopia. In order to satisfy the objective of the study the researcher used quantitative research approach by adopting purposive sampling technique and explanatory type of research design. The samples used for this study were secondary data for a period of 39 years starting from 1980 through 2018 for a time series data that collected from annual life insurance premium national bank of Ethiopia. The study tested for the assumptions of CLRM. The study used Stata11 econometric software package to aid in data analysis. An econometric model was used to examine the relationship between GDP per capital income, inflation, real interest rate, life expectancy and dependency ratio and the determinants of life insurance demand in Ethiopia as indicators of life insurance consumption. Outcomes of the study revealed that the existence of a positive and significant relationship between INC/GDP per capital income and the demand of life insurance in Ethiopia, a positive and significant relationship between life expectancy and the demand of life insurance, there is a negative and significant relationship between inflation and demand of life insurance in the case of Ethiopia. The study concluded that there was insignificant relationship among real interest rate with the demand of life insurance in Ethiopia. The study recommends that the government tries to give much emphasis in increasing INC per capita (real income) of society through more investment, and job creation. So that INC per capita (income,) increases life expectancy and decreases dependency ratio which in turn promotes demand for life insurance in Ethiopia.

Key; determinant,life insurance, demand and Ethiopia

Chapter One

1. Introduction

1.1 Background of the Study

In modern society, financial industry is growing rapidly and gaining importance in the global financial development. According to Mishkin & Eakins (2013), financial markets and institutions not only affect our everyday life but also involve huge flows of funds, which in turn affect business profits, the production of goods and services, and even the economic well-being of countries. So as the life insurance have a saving element/motive in addition to managing the future uncertainty.

According to Jones and Silver (2011), Whole life insurance is a type of cash value life insurance that provides lifetime insurance coverage usually at a level premium rate that does not increase as the insured ages. The size of whole life insurance policy's cash value at any given time depends on a number of factors, such as the face amount of the policy, the length of time the policy has been in force, and the length of the policy's premium payment period.

Life insurance is a contract between the policy owner and the insurer, whereby the insurer agrees to pay to a designated beneficiary a sum of money upon the occurrence of certain events, such as death, terminal illness, or critical illness or maturity benefit depending on the form of the contract (Birritu, 2011). A life insurance is a contract whereby the insurer undertakes against the payment of one or more premiums to pay to the subscriber or to the beneficiary a specified sum on certain conditions dependent upon the life or death of the subscriber or third party insured (Commercial Code of Ethiopia, 1960).

According to Madura (2010) on his book of financial markets and institutions stated that life insurance companies compensate the beneficiary of a policy upon the policyholder‘s death. They charge policyholders a premium that should reflect the probability of making a payment to the beneficiary as well as the size and timing of the payment. Life insurance companies also commonly offer employees of a corporation a group life policy. In addition to the specific risk coverage, the insurance premium includes all costs related to the acquisition and administration of the agreement (known as loadings). The parties involved in the agreement are: the insurance

company, the insured party, the policyholder who pays the premium and the beneficiary who receives the payment from the insurance company. The insured party, policyholder and beneficiary may be the same person. This type of agreement can be divided into two conceptually distinct categories: policies with pure-risk cover and purely investment policies. Pension funds, on the other hand, are a specific category of insurance policies dedicated to welfare purposes, therefore ruled from case to case by the Pension and Welfare national rules and typically investing on a long-term basis.

Life is full of uncertainties. Unexpected events can lower people ‘s well-being; an important mechanism that protects against risk is purchasing insurance to guarantee the benefit in the event of certain loss. Beck and Webb, (2002) on their study on determinants of life insurance consumption described that life insurance products are important vehicle that encourage long-term savings that could be channeled to investment in both private and public sector projects. Because life insurance products offer a means of disciplined contractual saving, they have become effective as instrument for encouraging substantial amounts of savings, competing with other forms of saving (like bank deposits, securities, and other contractual savings) in the market in many countries around the world.

According to Munir and Khan (2012), Life insurance provides individuals and the economy as a whole with a number of important financial services. In the face of increasing urbanization, mobility of the population, and formalization of economic relationships between individuals, families, and communities, life insurance has taken increasing importance as a way for individuals and families to manage income risk. Also, life insurance products encourage long-term savings and the re-investment of substantial sums in private and public sector projects. Because life instrument for encouraging substantial amounts of savings in many countries around the world. Leveraging their role as financial intermediaries, life insurers have become a key source of long-term finance.

Different studies suggest that several factors such income, inflation, real interest rate, banking sector development, savings, unemployment, pension, price of insurance, urbanization, religion education, life expectance, dependency ratio and age are considered important factors that determine life insurance demand.

1.2 History of Insurance Company in Ethiopia

The Ethiopian insurance industry does not have a long history of development despite the country's long history of civilization. Modern forms of insurance service which were introduced in Ethiopia by Europeans, trace their origin as far back as 1905 when the bank of Abyssinia began to transact fire and marine insurance as an agent of a foreign insurance company. Subsequently the number of insurance companies increased significantly and reached 33 in 1960. According to Hailu, (2007) the first domestic insurance company in Ethiopia was called Imperial Insurance Company which was established in 1951.Starting from 1974 to late 1991 only one insurance company that was Ethiopian Insurance Corporation was allowed to operate in the country. After 1991 there have been 16 domestic private insurance companies which are locally owned share companies because this sector is not opened to be owned by foreign investors.

The emergence of insurance business in Ethiopia was closely linked to expatriates and foreign insurance companies. Those foreign insurance companies were operating in the country through their agents. In addition, expatriates and foreign companies operating in Ethiopia participated actively in the establishment of the first domestic insurance company (Hailu Zeleke, 2007).

At that time insurance business like any business undertaking was classified as trade and was administered by the provisions of the commercial code. This was the only legislation in force in respect of insurance except the maritime code of Ethiopia that was issued to govern the operations of maritime business and the related marine insurance. The law required an insurer to be a domestic company whose share capital (fully subscribed) to be not less than Birr 400,000 for a general insurance business and Birr 600,000 in the case of long-term insurance business and Birr one million to do both long-term & general insurance business. Non-Ethiopian nationals were not barred from participating in insurance business. However, the proclamation defined domestic company as a share company having its head office in Ethiopia and in the case of a company transacting a general insurance business at least 51% and in the case of a company transacting life insurance business, at least 30% of the paid-up capital must be held by Ethiopian national companies.

Four years after the enactment of the proclamation, the military government that came to power in 1974 put an end to all private entrepreneurship. Then all insurance companies operating were nationalized and from January 1, 1975 onwards the government took over the ownership and control of these companies & merged them into a single unit called Ethiopian Insurance

Corporation. The insurance sector during the command economic system was characterized by monopoly of the sector by the government, lack of dynamism and innovation, volatile premium growth rates and reliance on a couple of classes of insurance business (motor and marine) for much of gross premium income. The nationalization of private insurance companies, the restrictions imposed on private business ventures, and management of the insurance sector had significant adverse impact on the development and growth of Ethiopian insurance industry (Hailu, 2007). However, following the change in the political environment in 1991, the proclamation for the licensing and supervision of insurance business No. 86/1994 heralded the beginning of a new era. Immediately after the enactment of the proclamation private insurance companies began to flourish. According to the directive of ISB/34/2014, any insurance company required to be a domestic company whose share capital (fully subscribed) to be not less than Ethiopian Birr 60m for a general insurance business and Ethiopian Birr 15m in the case of long term (life) insurance business and Ethiopian Birr 75m to do both long term & general insurance business.

Today the total number of insurance companies, their capital increased significantly, according to the National bank of Ethiopia at third Quarter 2018/19 the number of insurance companies stood at 17, of which 16 were private owned. Their branches increased to 558 from 524 a year ago. Of the total branches, about 54 percent were located in Addis Ababa. Similarly, Third Quarter 2018/19 their total capital reached Birr 6.8 billion, of which about 76.7 percent was that of private insurance companies.

As per Roman (2011) in Ethiopia, the insurance market is undeveloped, uncompetitive and there exist lack of information on the kind of life insurance that is currently present. The current practice of bulk of insurance coverage and business in Ethiopia is target the corporate market and focuses mainly on general insurance with a very limited coverage in life insurance. The life insurance sector is small in many developing countries, due to the fact existence life insurance may additionally be viewed beside the point then inappropriate because ideological, cultural, and religious reasons, then because economic security is supplied by the family.

Table 1: The Share of Life Insurance Premium to the Insurance Industry

Year	Development of gross premium in Ethiopia from 2000 to 2018(in '000 birr)						
	Non-life in ETB	Life in ETB	Total in ETB	% Growth in Non - life insurance	% Growth in Life insurance	% Growth in Total	Share of life insurance Premium to the Total Premium in %
2018	8,113,225	460,775	8,574,000	13.73	27.96	-	5.4
2017	7,133,478	360,093	7,493,571	17.06	8.13	14.42	4.8
2016	6,093,677	333.008	6,426,685	16.24	5.7	47.72	5.18
2015	5,242,085	315,044	5,557,129	11.83	15.03	15.65	5.67
2014	4,687,657	273,871	4,961,528	4.22	(8.56)	12	5.52
2013	4,497,666	299,514	4,797,180	20.75	10	3.43	6.24
2012	3,724,760	271,395	3,996,155	53.76	68.99	20	6.79
2011	2,422,415	160,596	2,583,011	32.74	39.97	54.71	6.22
2010	1,824,893	114,739	1,939,632	32.30	14.74	33.17	5.92
2009	1,379,321	99,993	1,479,314	16.20	34.92	31.11	6.59
2008	1.187,030	74,112	1,261,142	22.18	20.12	17.30	5.88
2007	971,513	61,697	1,033,210	21.92	34.38	22.06	5.97
2006	796,867	45,911	842,778	24.47	27.22	22.59	5.45
2005	640,228	36,088	676,316	12.67	23.28	24.61	5.33
2004	568,226	29,273	597,499	2.28	14.32	13.19	4.90
2003	555,574	25,605	581,179	0.22	10.24	28.08	4.40
2002	554,331	23,226	577,557	23.11	19.85	0..063	4.02
2001	450,272	19,379	469,651	7.18	35.11	22.97	4.13
2000	420,101	14,343	434,444	13.23	37.20	8.10	3.30

Source: National Bank of Ethiopia (2018)

The above table 1.1 shows the total gross written premium trend from insurance business from 2005 to 2016 according to the above table life insurance gross written premium in 2017 is 360,093,000.00 and it has a 8.13% growth from year 2016 which was 333.008,000. Even though life insurance business premium growing, still the share of life insurance business is remain 5.4% and it has been experienced low level of development in Ethiopia.

Despite the fact that the number of insurance companies gradually increasing and also the efforts made by the insurance companies, the demand for life insurance is very low. Thus, this study seeks to find out and analyze those factors that contribute behind the low demand for life insurance in Ethiopia and forward recommendations.

1.3 Statement of the Problem

The concept of insurance originates from a simple yet complex idea: managing uncertainty about the future by protecting against risks**,** perhaps remote but nonetheless predictable, and by sharing the costs among individuals with the same needs. The idea accompanied the rise of mercantile economies and strongly contributed to the development of modern societies by facilitating free enterprise and individual progress, allowing people to build a more secure future with the peace of mind to make choices and plan their future.

Life insurance is a contract under which the insurance company undertakes to pay either a lump sum or an annuity if an event occurs involving human life, in exchange for the payment of a premium as remuneration from the policyholder for the risk taken on.

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

Developed countries view insurance companies as an important provider of financial services. Many developing economies are experiencing very low levels of life insurance penetration (Beck and Webb, 2003). An investigation of the factors that motivate life insurance purchase will provide new insights into developing, marketing, and the formulation of policy relating to insurance products and insurance business. Through new initiatives, numerous benefits of insurance are expected to reach a larger segment of the population. The Ethiopian insurance business has been persistently expanding ever since the sector was opened for private investment. This is testified by the fact that the number of insurers reached more than 17 at present compared to a single state-owned insurance company back in 1994. Change has also been witnessed in terms of diversity of insurance products.

Previous research works in Ethiopia concerning the demand for life insurance are presented as follows Mekonnen (2010) on “buyers’ attitude towards life insurance purchase” which did not intend to analyze the determinants of demand for life insurance, As stated by Roman (2011), In Ethiopia, the life insurance market is undeveloped, uncompetitive and there exist lack of information on the kind of life insurance that is currently provided. The current practice of insurance coverage in Ethiopia focuses mainly on general insurance with a very limited coverage

to life insurance. Gebreyes (2011), who identified only general economic factors that determine demand for life insurance. Since there are also socio-demographic factors that determine demand for life insurance, this study would fill this gap by including other demographic variables omitted by the researcher. This Study was extending the time period to the present time. Gashayie (2013) examined the determinants of life insurance using time series data for the period 1991-2010. This work was focused on the relationship of life insurance on only some selected independent variables (income, real interest rate, dependency ratios and life expectancy for males). Generally, this research work would fill existing gap of previous studies by including omitted variables (like socio demographic variables) and by using more recent data.

Therefore, the main purpose of this research was analyzing the most significant determinants of demand for life insurance in Ethiopian context.

1.4 Objectives of The Study

1.4.1 General objective

The general objective of the study is to examine the determinant of life insurance demand in Ethiopia.

1.4.2 Specific objective

Based on the above general objective, the study has the following specific objectives

1. To examine the GDP per capital income on the demand of life insurance.
2. To find the effect of inflation on the demand of life insurance.
3. To examine the effect real interest rate on the demand of life insurance in Ethiopia.
4. To test the effect of life expectancy on the demand of life insurance.
5. To examine the effect dependence rate on the demand of life insurance in Ethiopia.

1.5 Hypothesis of The Study

Hypotheses of the study stands on the theories related to insure ‟the demand of life insurance that have been developed over the years by insurance industry and researchers‟ past empirical studies related to the consumption of life insurance. The results from the literature review were used to establish expectations for the relationship of the different variables. Hence, based on the objective, the present study seeks to test the following five hypotheses:

Income: As stated on the work of Beck and Webb (2003), Nesterova (2008),Li et.al(2007) Çelik and Kayali (2009), Redzuan (2011), Loke and Goh(2012), Aderaw (2013) income is the key determinant in the consumption of life insurance both in the long- and short-run Life insurance consumption should rise with the level of income, for several reasons and income has a significant influence on family takaful consumption in the long-run, but its effect is less obvious in the short-run.

Dickinson, Khajuria (1986), Truett and Truett (1990), Browne and Kim (1993), and Outreville (1996), Çelik and Kayali (2009), Aderaw (2013) have all shown that the use of life insurance is positively related to income, using both aggregate national account data and individual household data.

Hence, based on the above theoretical literature the following hypothesis was formulated

H1: *The level of INC per capital income has positive and significant effect on demand for life insurance.*

Inflation: Beck and Webb (2003), Li et.al (2007), Nesterova (2008), Çelik and Kayali (2009), Ibiwoye et.al (2010) have all shown that inflation reduce the demand for life insurance. Inflation and its volatility have a negative relationship with life insurance consumption. As life insurance savings products typically provide monetary benefits over the long term, monetary uncertainty has a substantial negative impact on these products 'expected returns. Inflation can also have a disruptive effect on the life insurance industry when interest rate cycles spur disintermediation. These dynamics make inflation an additional encumbrance to the product pricing decisions of life insurers, thus possibly reducing supply in times of high inflation. The above stated articles have all shown that the use of life insurance is negatively related to inflation.

H2: *Inflation has negative and significant effect on demand for life insurance.*

Real interest rate: A real interest rate is an interest rate that has been adjusted to remove the effect of inflation to reflect the real cost of funds to the borrower and the real yield to the lender or to an investor. Beck and Webb (2003), Aderaw (2013) life insurance demand is positively influenced by real interest rate. In addition to the inflation rate and its standard deviation, relationship between life insurance consumption and the real interest rate, defined as the difference between the nominal interest rate and inflation. Theory predicts a positive relation; a higher real interest rate increases life insurer's investment returns and so profitability, in turn offering improved profitability of financial relative to real investments for potential purchasers of

life insurance policies. The rise in interest rates might reduce the purchase of life insurance as higher returns on alternative assets may switch consumers from savings in life insurance to another type of money accumulation (Lenten and Rulli, 2006).

H3*: Real interest rate has positive relationship and life insurance consumption.*

Life Expectancies: life expectancy refers to an estimate or an average number of years a person can expect to live on the surface of earth. Nesterova (2008), Redzuan (2011), Aderaw (2013) identified that life expectance have a significant impact on the demand for life insurance. And previous authors Beenstock, Dickinson, Khajuria (1986) and Outreville (1996) have also found life expectancy to be positively related to Life Insurance Penetration. Societies with longer life expectancies should have higher savings through life insurance vehicles and more demand for annuities. This would imply life expectance have a positive correlation with the demand for life insurance products. Therefore, the relation between life expectance and life insurance is positive based on the above literature. Hence the hypothesis formulated as follows.

H4: *Life expectance has positive and significant effect on demand for life insurance.*

Dependency Ratio: The dependency ratio is described as the demographic structure of the average household in terms of the number of family members dependent on the main source of income (Lenten & Rulli, 2006).

In line with this, findings of past studies have indicated that young dependency ratio is negatively related to life insurance demand (Beck & Webb, 2003; Sen & Madheswaran, 2007).It is expected that a young dependency ratio will increase the demand for mortality coverage and decrease the demand for savings through life insurance and annuities (Beck & Webb, 2003).Whereas, an old dependency ratio is found to be positively related to the demand for life insurance (Beck & Webb, 2003; Sen, 2008). This can be explained as the older population grows, there will be a higher demand for savings (Nesterova 2008 Beck & Webb, 2003).

Hence, the consumption of life insurance is formulated as follows based on the above theoretical literatures.

H5: *Number of dependence ratio has negative effect on the demand of life insurance*

1.6 Scope of study

The scope of the research were be cover thirty nine years' time series data on the demand of life insurance were assess the major economic and socio-demographic factors that determine the

consumption of life insurance. The study was focus on the factors determining the life insurance demand and the relationship of life insurance on five selected independent variables (income, inflation, real interest rate, dependency ratio and life expectance,). The study uses a time series data from 1980-2018.

1.7 Limitation of the Study

One of the limitations of this research is small number of insurance data set. The life insurance data prior to 1980 were not available, thus, restricting the annual sample size to 39 (from 1980-2018). Because the time is not substantially long, the question of whether the results suffer from small sample bias may arise. Another main problem in this study has been inconsistent of data from different institutions. Even data arises from the annual reports of the National bank of Ethiopia shows different figures for the same year. Moreover, Lack of previously conducted studies on similar topic and accessibility of sufficient current literature on the subject of life insurance in the Ethiopian context makes this study difficult.

1.8.Operational definition

The operational definition is presented as follows.

Actuary: - An expert in financial risk management and the mathematics and modeling of insurance, annuities, and financial instruments.

Beneficiaries: - The person or party the policy owner names to receive the life insurance Policy benefit.

Insurance Policy: - A written document that contains the terms of the agreement between the insurer and the owner of the policy.

Insured: - The person whose life, health, or property is insured under the policy.

Insurer: - A company that accepts risk and makes a promise to pay a policy benefit if a Loss does occur- insurance company.

Life Insurance: - Insurance that pays a benefit upon the death of a named person.

Mortality Rate: - The rate at which death occurs among a specified group of people during a specified period, typically one year.

Personal Risk: - The risk of economic loss associated with death, poor health, injury, and outliving one's economic resources.

Policy Benefit: - A specific amount of money an insurer agrees to pay under an Insurance policy when a specific loss occurs.

Premium: - A specified amount of money an insurer charges in exchange for agreeing to pay a policy benefit when a specified loss occurs.

Premium Rate: - The amount an insurer charges per unit of insurance coverage.

Life insurance penetration - the ratio of premium volume to GDP- measures insurance activity relative to the size of the economy. It is a relative measure of life insurance sector contribution to the total economy.

Life insurance density - is the ratio of gross premium volume to total population in a country. This measure shows how much each citizen of a country penetration measures life insurance consumption relative to the size of the economy, whereas life insurance density compares life insurance consumption across countries without adjusting for income.

1.9. Significant of the Study

This study is of immense value to insurance companies, academics and other concerned stakeholders. The study importance emerges from the fact that insurance sector plays a significant role in enhancing the country economy, and providing critical services for people in Ethiopia, the current study was empirically implemented a comprehensive analytical framework of the demand for life insurance in the case Ethiopia.

This study, was attempted to assess the determinants of life insurance in Ethiopia, provides evidence on the macroeconomic and socio-demographic factors that have on the consumption of life insurance. Analyzing and understanding the impact of different factor on the demand of life insurance in the case of Ethiopia. The researches have been investigated on determinants of life insurance demand in Ethiopian. The life insurance business is emerging in this country despite the long history and civilization of a country so, the current study is a base for other studies in the same field, and it was help in adding value to this subject. The current study was also providing a comprehensive framework and literature about the consumption of life insurance, and the core factors that would influence the demand of life insurance in Ethiopia.

The findings were be also benefit to insurance companies, regulatory authorities, managers and others interested in the area the opportunity to gain deep knowledge about the economic and socio-demographic determinants of life insurance. This in turn helps them knowing factors affecting demand of life insurance and thereby takes appropriate actions to increase consumption of life insurance and wellbeing of the society, in addition financial mobilization for the insurance

industry. The researcher hopes that the outcome of this study also provides an insight of the insurance industry to other researchers on the demand of life insurance and also understanding of the factors that determine demand for life insurance in Ethiopia is important for the participants in the industry to exert more effort on working on these factors to expand their knowledge and experience for the wellbeing of the industry and mobilize the resource to this financial sector that in turn contribute the national economy. Finally, it helps at large for the society to overcome uncertainty and maintains families together from disintegration due unforeseen financial loss.

1.10. Organization of paper

The research paper was organized in to five chapters. Chapter one is introduction where overview of the insurance industry in Ethiopia, statement of the problem, objectives of the study, scope of the study, and significance of the study were present. Chapter two is review of literature in which theories, empirical evidence and conceptual frame work were categorized. Chapter three was research methodology. Chapter four was results and discussion in which the finding results are interpreted. Finally, Chapter five brings to an end the research with conclusion and possible recommendation were present.

Chapter Two

2. Literature Review

2.1. Introduction

In this section, first the researcher presents a review of selected theoretical studies and highlights the most relevant findings in the field of demand for life insurance. The theoretical frameworks usually are followed by the empirical investigation of the developed models. Finally, conceptual framework of the study is the last for the chapter. So, in the first part of related literature review, the researcher will highlight both the models and the empirical findings where they are present. Then the researcher will proceed to the empirical studies which for the most part evaluates factors influence on demand for life insurance in particular countries.

Several factors influence demand of life insurance, recognizing and understanding the underlying concepts and definitions of the insurance sector is essential in order to vouch results and analyses. Hence, chapter two serves as background for this study by describing concepts of that determines the consumption of life insurance which are the macroeconomics variables. Subsequent chapters will build on concepts and definitions described here. In light of the above, the purpose of this chapter is to review the literature in the area of determinants of life insurance. This chapter therefore covers four broad topics that are related to determinants/demand of life insurance. Section 2.1 about definition & role of insurance, concept of its life insurance and theory about demand of life insurance. This is followed by a review of relevant empirical studies on determinants life of insurance in section 2.2. Section 2.3 is about research hypothesis. Finally, summary and conceptual frame work on the literature review presented in section 2.4.

Life insurance density/pet capital income

Insurance density rates measure the premium volume in relation to the country ‘s population i.e. how much money per capita is annually spent on insurance products. It shows how important is insurance spending for the citizen of a country and how this spending has been changed during a certain period of time. Sharku &Bajrami(2006). It indicates how much each inhabitant of the country spends on average on insurance in real international dollars. To calculate these ratios, we first convert the premium volume into international dollars. We then divide the premium volume in international dollars by the population size. Beck and Web (2003)

2.2 Theoretical review

According to Jones and Silver (2011), life insurance provides for the payment of a benefit following the death of the insured. That benefit can be used for a range of purpose, including meeting some needs that do not arise until a person's death. Both individuals and businesses have needs life insurance can meet. All life insurance policies provide for the payment of a benefit upon the death of the insured while the policy is in force.

2.2.1 Definition of insurance

Insurance is the most widely used risk management technique for both individuals and businesses. Insurance is a method for transferring from an individual or entity to an insurer the risk of financial loss from events such as accident, illness, or death, and the loss of property. The purpose of insurance is to compensate for financial loss, not to provide an opportunity for financial gain. Pure risk is the only kind of risk that can be insured; speculative risk cannot be insured (Jones and Silver, 2011). In general, individuals and businesses can purchase insurance policies to cover three types of risk: personal risk, property damage risk, and liability risk. Personal risk is the risk of economic loss associated with death, poor health, injury, and outliving one's economic resources**.** Life and health insurance companies' issue and sell products that insure against financial losses that result from personal risks such as death, disability, illness, accident, and outliving one's savings.

2.2.2 Life insurance

Life insurance is a contract between the policy owner and the insurer, whereby the insurer agrees to pay to a designated beneficiary a sum of money upon the occurrence of certain events, such as death, terminal illness, or critical illness or maturity benefit depending on the form of the contract (Birritu, 2011). A life insurance is a contract whereby the insurer undertakes against the payment of one or more premiums to pay to the subscriber or to the beneficiary a specified sum on certain conditions dependent upon the life or death of the subscriber or third party insured (Commercial Code of Ethiopia, 1960).

Jones and Silver, (2011) declared that many products - including life insurance – can meet different needs for different people. People buy life insurance to meet a variety of financial needs, and several types of life insurance products are available to meet these various financial needs.

Madura (2010) on his book of financial markets and institutions stated that life insurance companies compensate the beneficiary of a policy upon the policyholder‘s death. They charge policyholders a premium that should reflect the probability of making a payment to the beneficiary as well as the size and timing of the payment. Life insurance companies also commonly offer employees of a corporation a group life policy.

2.3Types of life insurance

From a traditional or historical perspective, life insurance can be classified into three categories: Term life insurance, Whole life, and Endowment life insurance policy. However, today numerous variations and combinations of these basic types of life insurance are available (Jones and Silver 2011).

2.3.1 Term life insurance

Jones and Silver (2011) wrote term life insurance is life insurance that provides a death benefit only if the insured dies during the period specified in the policy; that specified period is known as the policy term. The policy benefit is payable only if (1) the insured dies during the policy term and (2) the policy is in force when the insured dies. If the insured lives until the end of the specified term, the policy may give the policy-owner the right to continue some form of life insurance coverage. If the policy-owner does not continue the coverage, then the coverage expires and the insurer has no obligation to provide further insurance coverage.

2.3.2 Whole life insurance

According to Jones and Silver (2011), Whole life insurance is a type of cash value life insurance that provides lifetime insurance coverage usually at a level premium rate that does not increase as the insured ages. The size of whole life insurance policy’s cash value at any given time depends on a number of factors, such as the face amount of the policy, the length of time the policy has been in force, and the length of the policy’s premium payment period.

2.3.3 Endowment insurance

According to Jones and Silver (2011) endowment insurance provides a policy benefit payable either when the insured dies or on a stated date if the insured is still alive on that date. Each endowment policy specifies a maturity date, which is the date on which the insurer will pay the policy’s face among to the policy-owner if the insured is still living. The maturity date is reached either (1) at the end of a stated term, such as 20 years, 30 years, and the like, or (2) when the

insured reaches a specified age. If the insured dies before the maturity date, then the insurer pays the policy's face amount to the designated beneficiary. Thus, an endowment insurance policy pays a fixed benefit whether the insured survives to the policy's maturity date or dies before that maturity date.

Insurance is a contract in which the insured transfers risk of potential loss to the insurer who promises to compensate the former upon suffering loss. The insured then pays an agreed fee called a premium in consideration for this promise. The promisor is called the insurer and the promisee is called the insured (Lowe, 1999). Insurance premium is the monetary consideration paid by the insured to the insurer for the cover granted by the insurance policy. The Insurer takes on a number of clients (Insured) who pay small premiums that form an aggregate fund called the premium fund (Norman, 2000). The likelihood of an event or loss may be mathematically calculated or it may be based on the statistical results of past experience in order to determine the amount of premiums that would be required to accumulate a common fund or pool, to meet the losses upon their arising (Grose, 1992).

The term insurance defined by referring two important schools of thoughts: i) transfer school and ii) pooling school. According to transfer school, "insurance is a device for the reduction of uncertainty of one party, called the insured, through the transfer of particular risks to another party; called the insured, who offers a restoration, at least in part of economic losses suffered by the insured" Irving, (1956). On the other hand, according to pooling school "the essence of insurance lies in the elimination of uncertainty or risk of loss for the individual through the combination of large number of similarly exposed individuals" Alfred, (1935), cited in Tanveer (2010). Insurance operates on the principle of pooling risks where the people contribute to a common fund in form of premiums and where the lucky ones who do not suffer loss help the unlucky ones who suffer loss during a defined insurance period Irukwu (1994).

It seems Insurance not only facilitates economic transactions through risk transfer and indemnification but it also promotes financial intermediation Ward and Zurbruegg, (2000). More specifically, insurance can have effects such as promote financial stability, mobilize savings, facilitate trade and commerce, enable risk to be managed more efficiently, encourage loss mitigation, foster efficient capital allocation and also can be a substitute for and complement government security programs Skipper, (2001). Insurance provides economic protection from identified risks occurring or discovered within a specified period. Insurance is a unique product

in that the ultimate cost is often unknown until long after the coverage period, while the revenue premium payments by policyholders are received before or during the coverage period.

Theoretical models for the life insurance demand have been established by Yaari (1965), Fischer (1973), Pissarides (1980), Campbell (1980), Karni and Zilcha (1985, 1986), Lewis (1989), and Bernheim (1991) were of the view that life insurance was the way by which risk in the household's income, linked to the expected premature death of a household's primary wage earner, was decreased.

The issue of life insurance demand is not new for researchers and was brought to light beginning from Yaari (1965) was the first to develop a theoretical framework to explain the demand for life insurance. Within Yaari (1965) framework, the demand for life insurance is attributed to a person's desire to bequeath funds to dependents and provide income for retirement. This framework posits the demand for life insurance to be a function of wealth, expected income over an individual's lifetime, the level of interest rates, the cost of life insurance policies (administrative costs), and the assumed subjective discount rate for current over future consumption.

Simple models of insurance demand were proposed by Mossin (1968) and Smith (1968) considering a risk averse decision maker endowed with an initial wealth level. The results indicate that demand for life insurance varies inversely with the amount of wealth an individual possesses. Hakansson (1969) examined bequest motive in considerable detail using a discrete-time model of demand for financial assets in general and life insurance purchase in particular. Pissarides (1980) extended Yaari‘s work to prove that life insurance was theoretically capable of absorbing all fluctuations in lifetime income.

Karni and Zilcha (1985) developed a methodology towards measuring individuals ‘risk perceptions (risk averse or otherwise) and how such perceptions affect insurance demand. An important observation made by Mossin (1968) was regarding insurance coverage as an inferior good. However, Hoy and Robson (1981) presented a theoretical explanation and later Briys etal. (1989) generalized the results showing insurance to be a _Giffen ‘good. Lewis (1989**)** extends this framework by explicitly incorporating the preferences of the dependents and beneficiaries into the model. Specifically, he derives the demand for life insurance as a maximization problem

of the beneficiaries, the spouse and the offspring of the life insurance policyholder. Deriving utility maximization by both spouse and offspring separately and assuming no bequest by the policyholder and an viscoelastic utility function.

Fortune (1973) analyzed the empirical implications of expected utility hypothesis of choice under uncertainty for demand for life insurance and concluded that demand depends on income, non-human wealth and the rate of discount. Jeff Madura (2010) on his book on financial markets and institutions stated that Life insurance companies compensate the beneficiary of a policy up on the policyholder‘s death. They charge policyholders a premium that should reflect the probability of making a payment to the beneficiary as well as the size and timing of the payment. Life insurance companies also commonly offer employees of a corporation a group life policy.

Urbanization: A higher level of urbanization is likely to boost life insurance consumption in two ways. First, Outreville (1996) argues that the concentration of consumers in a geographic area facilitates life insurance distribution by reducing the costs of marketing, writing, premiums collection and claim handling. Second, Beck and Webb (2003) claim that a higher share of urban population is generally associated with less reliance on informal insurance agreements, which may lead to a higher demand for formal insurance.

Financial development: The development of the financial sector is associated with the securitization of cash flows that enables people to secure future income through the ownership of financial assets (Li et al., 2007). Hence, countries with a high level of financial development are expected to have more life insurance demand. Moreover, Beck and Webb (2003) argue that a well-functioning banking system increases people’s confidence in other financial institutions, such as insurance companies. A sound financial system may also help insurers invest more efficiently (Ellyne and Cheng, 2014). This will result in a better price offered to consumers for their life insurance. Following Li et al. (2007), Odhiambo (2009) and Geda and Yimer (2016), we measure the level of financial development using the ratio of the board definition of money M2 to GDP.

Friedman develops the hypothesis of permanent income. It states that people’s consumption and saving choices are not determined by their current income, but rather by their expectation of long-term income. According to this theory, permanent income is determined not only by the present value of non-human wealth (assets, bonds, real estate, etc.) but also by the return on

human capital in the form of future income resulting from education and experience. Thus, people have an incentive to buy life insurance to safeguard their potential income, to keep a stable level of consumption during retirement years and to protect dependents against financial hardship in the event of premature death.

In short, the theoretical review yields variables like income, rate of interest, current consumption and accumulated savings in wealth form as variables influencing insurance consumption. Demographic and social variables were also incorporated in theoretical models and their potential impact on an individual‘s life insurance consumption decision was investigated. Life insurance consumption increases with the breadwinner‘s probability of death, the present level of family ‘s consumption and the degree of risk aversion. In the next section, I explore selected empirical studies to highlight those variables which were significant in affecting life insurance demand.

2.4 Empirical Literature of Life Insurance Demand

In this section we present a brief sublimate of empirical literature concerning the relationship between insurance sector and economic growth. Empirical studies on the determinants of life insurance demand have followed two main directions. One, based on a microeconomic perspective, uses micro data or surveys on households to test empirically the theoretical conclusions derived from the life cycle and permanent income hypotheses. The other, based on a macroeconomic perspective, uses aggregate data, whether for one country, cross-sections or panels of countries, to test the effect of a set of variables. Since this paper finds itself in the second framework, we present a brief review of some studies based on aggregate data.

Mouna Zerriaa, Mohamed Marouen Amiri, Hedi Noubbigh and Kamel Naou (2017) were made the following analysis on the determinants of life insurance. Empirical results show that life insurance demand increases with income and financial development. However, other economic variables such as inflation and interest rate do not seem to influence life insurance consumption in Tunisia. Socio-demographic variables such as dependency, life expectancy at birth and the country’s level of urbanization stimulate life insurance demand, while the level of education dampens it. Finally, pension expenditures have a negative effect on life insurance consumption confirming the substitution by social security system for private insurance.

Mouna Zerriaa and Hedi Noubbigh (2016) made the following empirical analysis on the determinants of life insurance demand in 17 countries in the period of 200-2012 using time series data. The paper investigates the determinants of life insurance consumption in the Middle East and North Africa (MENA) region using a sample of 17 countries over the period 2000–2012. We use two measures of life insurance demand: insurance density and insurance penetration. The research results suggest that consumption increases with income, inflation and interest rates. The country's level of financial development also enhances life insurance sales, whereas social security expenditures dampen them. Moreover, life expectancy and educational attainment appear to stimulate life insurance demand, whereas young dependency tends to decrease consumption. Urbanization does not appear to influence life insurance demand. We also find evidence that life insurance demand is lower in predominantly Islamic countries.

Jordan Kjosevski (2012), came up the following empirical findings. The research uses two measures as a demand for life insurance: life insurance penetration and life insurance density. The research results show that higher, GDP per capita, inflation, health expenditure, level of education and rule of law are the most robust predictors of the use of life insurance. Real interest rates, ratio of quasi-money, young dependency ratio, and old dependency ratio control of corruption and government effectiveness do not appear to be robustly associated with life insurance demand.

Fortune (1973) was first to focus on the sensitivity relationship between life insurance purchase and financial variables, and linked his implications with the monetary policy and capital markets. He analyzed the US insurance market for 1964-1971 and found a high degree of sensitivity between the optimal amount of life insurance, wealth and the real interest rate.

The study by Kjosevski et al. (2012) discussed the growth pattern of life insurance consumption in Mexico and United States in a comparative framework, during the period 1964 to 1984. They assumed that at an abstract level demand depends upon the price of insurance, income level of individual, availability of substitute and other individual and environment specific characteristics. Further, they experimented with demographic variables like age of individual insured and size of population within the age group 25 to 64 and also considered education level to have some bearing on insurance consumption decision. Their results show the existence of higher income inelasticity of demand for life insurance in Mexico at low income levels. Age,

level of education and income were significant factors affecting the demand for life insurance in both the countries.

Thorsten Beck and Ian Webb (2002), were made this empirical evidence on the demand of life insurance. The findings were present as it is. What drives the large variance in life insurance consumption across countries, however, is still unclear. Using a panel with data aggregated at different frequencies for 68 countries over the period 1961-2000, this study finds that economic variables, such as income per capita, inflation and banking sector development, as well as religious and institutional indicators are the most robust predictors of the use of life insurance. Education, young dependency ratio, life expectancy, and size of social security do not appear to be robustly associated with life insurance consumption. Our results highlight the role that price stability and banking sector development may have if the savings and investment functions of life insurance are to be fully realized in an economy.

Mahdzan & Victorian (2013), this article also indicates the determinants of life insurance demand among life insurance policyholders of five major life insurance companies in Kuala Lumpur, Malaysia. From a sample of 259 individuals, the study analyzed the influence of demographic variables, saving motives and financial literacy, on life insurance demand. To determine the relationship between the demographic factors and life insurance demand one-way ANOVA tests were conducted. The relationship between financial literacy and saving motives (precautionary, bequest, life cycle and wealth accumulation motives) with life insurance demand was then analyzed using a multiple regression. Results revealed that demographic variables and saving motives were significantly related to life insurance demand. Financial literacy, however, was found to be insignificant in determining life insurance demand.

Hwang and Greenford (2005) were arrive these final empirical analyses on the demand of life insurance consumption in mainland China, Hong Kong, and Taiwan. It also attempts to gain an understanding of the different characteristics of the market in life insurance in each territory. Income and life insurance consumption are found to be strongly correlated, which is consistent with previous studies. Education is a significant factor. Price is found to be insignificant, largely conflicting with previous studies. Levels of social security are not significantly related. The one-child policy in mainland China has a negative effect on life insurance consumption. Differences in the level of economic development reveal a variation in life insurance consumption.

Generally, the more advanced the economy, the greater the life insurance consumption. However, mainland China, which is a low-income country, shows the greatest potential.

2.4.1 Economic Determinants

The significant positive impact of level of income in the economy - GDP was found by all the researchers in the field (e.g Fortune (1973), Campbell (1980), Beenstock, Dickinson, Khajuria (1986), Lewis (1989), Outreville (1996), Beck and Webb (2002), Ward and Zurbruegg (2000) The larger is level of income, the more of life insurance consumer can afford to purchase for several reasons Beck and Webb (2002). First, an individual's consumption and human capital typically increase along with income. This can create a greater demand for insurance (mortality coverage) to safeguard the income potential of the insured and the expected consumption of his/her dependents. Second, life insurance may be a superior good, inasmuch as increasing income may explain an increasing ability to direct a higher share of income towards retirement and investment-related life insurance products. Finally, the overhead costs associated with administrating and marketing insurance make larger size policies less expensive per dollar of insurance in force, which lowers the price of life insurance policies. To measure the income level of countries, we employ real GDP per capita, and we expect to have a positive relationship with life insurance consumption.

Real interest rates: are taken in order to reflect the real return of invested money of insurance company. A higher real interest rate increases life insurers' investment returns and thus their profitability, in turn offering greater profitability of financial relative to real investment for potential purchasers of life insurance policies. This is particularly accurate for life savings instruments. Moreover, higher real interest rates increase the supply of capital and therefore the ability of life insurance companies to answer to potential demand. On the other, higher interest

Rates may induce consumers to reduce their life insurance purchases given the anticipation of higher returns. Indeed, the rise in interest rates might reduce the purchase of life insurance as higher returns on alternative assets may switch consumers from savings in life insurance to another type of money accumulation (Lenten and Rulli, 2006).

Real interest rates have not been systematically included in all studies. For example, Browne and Kim (1993) neglect the influence of this variable on life insurance demand. Outreville (1996) finds the correlation of real interest rates with life insurance demand to be almost insignificant.

Beck and Webb (2002) appear to detect a positive relationship using average lending rates. However, it can be noted that lending rates contain a credit risk premium that varies from one country to another, depending on its credit default experience. Therefore, we expect real interest rates to be ambiguous related to life insurance demand.

Financial development: is associated with the widespread securitization of cash flows, which enables households to secure future income through the ownership of financial assets. By offering similar benefits, life insurance is expected to generate higher sales in countries with a high level of financial development. The measurement of financial development is very controversial (Jung, 1986), but two alternative proxies are usually employed. One is the ratio of quasi-money (M2-M1) to the broad definition of money (M2). – shows the complexity of the financial structure (higher ratio indicates higher level of financial development), another is the ratio of M2 to the nominal

GDP – financial deepening (demand for money per unit of output). Broad money M2 is often taken as an adequate measure of the financial sector in developing countries in view of the predominance of the banking sector, as well as owing to the lack of data on other financial assets (Hemming and Manson, 1988, and Liu and Woo, 1994). Following mentioned previous studies, we use the ratio of quasi-money (M2-M1) as a measure of financial development. The researcher hypothesizes positive correlation with life insurance demand.

Banking Sector Development: As identified by Outreville (1996), Beck and Webb (2003) life insurance demand is significantly influenced by the banking sector development. It is expected that banking sector development to be positively correlated with life insurance consumption. Well-functioning banks may increase the confidence consumers have in other financial institutions, e.g. life insurers. They also provide life insurers with an efficient payment system. The efficient development of the entire financial system - as might be reflected in the absence of interest rate ceilings and other distortionary policies – is thought to help life insurers invest more efficiently. However, a vibrant insurance sector might also foster the development of the banking sector, so that a positive relation between the two variables cannot necessarily be interpreted as evidence for causality. Outreville (1996) finds a significantly positive relationship between financial sector development and life insurance penetration. The total claims of deposit money banks on domestic nonfinancial sectors as share of GDP as indicator of banking sector development.

Price of Insurance: The relationship between price of insurance and life insurance demand has been studied in the past by (Depamphills, 1975; Outreville, 1996, Ward & Zurbruegg, (2002), Hwang & Greenford, (2005); Sen & Madheswaran,(2007). However, the indicator of price of life insurance is not available in the most of the studies because it is difficult to determine the price of insurance with the various customised nature of policies (Outreville, 1996; Savvides, 2006). The findings of these studies indicates that price of insurance is positively related to life insurance demand (Mantis & Farmer, 1969; Depamphills, 1975; Ward & Zurbruegg, 2002); the price of insurance variable is positive and statistically insignificant in the fixed effects model and is found negatively and statistically insignificant in the pooled cross sectional model (Hwang & Greenford, 2005).This is because the longer life expectancy which is used to proxy the price of insurance has a positive effect on life insurance demand by resulting in a reduction in the price of insurance which leads the people to use life insurance (Outreville, 1996); the researcher suggested that the lower the price of insurance, it is expected to encourage more life insurance demand (Hwang & Greenford, 2005).Other empirical results showed that price of insurance are negatively related to life insurance demand (Outreville, 1990; Brown & Kim, 1993); whereas another study concluded that price situation does not affect life insurance demand at all (Sen & Madheswaran, 2007).

Savings: The impact of savings on life insurance demand has been studied in the past (Beck & Webb, 2003; Sen, 2008; Ibiwoye, Ideji, Oke, 2010). Evidence from literature suggests that savings has a negative impact on life insurance demand (Beck & Webb, 2003; Savvides, 2006; Redzuan, Abdul Rahman & S. H. Aidid, 2009). Consumers prefer to consider other alternatives of saving if the effective return within an insurance policy is lower compared to those offered by other saving instruments (Redzuan, Abdul Rahman & S. H. Aidid, 2009); there is a wealth-replacement effect which means that higher private savings displace life insurance and the higher the savings that an individual has, the less would be the motive to buy life insurance to supplement these financial resources in order to reach a targeted level of wealth for retirement or for bequeaths (Savvides, 2006). Other results show that saving variable has a positive relationship with life insurance demand (Sen & Madheswaran, 2007; Sen, 2008) and suggested that an increase in saving activity will enhance life insurance demand by increasing per capita insurance expenditure. Another result provided an ambiguous priority in the effect of personal

savings rate on life insurance sales because an individual may have other investment alternatives besides the demand for life insurance (Chang, 1995).

Unemployment: Unemployment rate is defined as an indicator of income uncertainty and is also viewed as an uncertainty variable. A few studies have been carried out to explain the relationship between the demand for life insurance and unemployment rate (Mantis & Farmer, 1968; Savvides, 2006). Results from the studies suggest that unemployment rate has a negative impact on life insurance demand (Mantis &Farmer, 1968; Lenten & Rulli, 2006 and Savvides, 2006).

Pensions: Pension is a source of financing retirement and is considered as an alternative to private provisions. The growth of pensions has contributed to the decline in labour force participation at older ages (Samwick, 1998). Having adequate old-age pensions helps to encourage workers to retire earlier (Savvides, 2006).The existence of both private pensions as well as social security appears to have a negative effect on individual savings (King &Mireaux, 1981).The estimated coefficients positive with regard to pensions variable, but in most models, they are not statistically significant (Savvides, 2006).

2.4.2 Socio- Demographic Determinants

Based on the empirical analysis what the researcher observed, the social-demographic determinants have its own impact on the demand of life insurance. This includes level of education, life expectance, urbanization, dependency ratio and age.

*Education***.** The level of education is positively related to the demand for life insurance in two respects. Truett and Truett (1990) suggest that people with higher education attainment is associated with a stronger desire and awareness to protect dependents and safeguard their standard of living. Browne and Kim (1993) explained that higher level of education results in greater awareness of life's uncertainties, therefore leading to higher life insurance coverage. In prior research, level of education by tertiary gross enrolment ratio (regardless of age) was used as a measure to determine the level of education and was found to be positively related to the demand of life insurance (Li, Moshirian, Nguyen & Wee, 2007)**.** Hence, a give country has more educate level is a positive effect on the demand of life insurance.

Life Expectancies Nesterova (2008), Redzuan (2011), Aderaw (2013) identified that life expectance has a significant impact on the demand for life insurance. And previous authors Beenstock, Dickinson, Khajuria (1986) and Outreville (1996) have also found life expectancy to

be positively related to Life Insurance Penetration. Societies with longer life expectancies should have higher savings through life insurance vehicles and more demand for annuities.

Dependency ratios together with education level of a society are key deterministic demographic variables considered in the previous researches. Dependency ratio shows the structure of the household in terms of a number of people, dependent on the main source of income. Numerically, young dependency is usually defined as the share of total number of children under the age of 15 to the working population, that is people in the range 15-64 years old, while old dependency is a share of people elder than 65 to the working population. Supporting Lewis (1989), who developed the life-time utility framework including the preferences of the dependent members of family, we also expect to find a positive relationship between life insurance demand and dependency ratio. It is worth mentioning that higher young dependency ratio is more likely to increase demand for mortality risk coverage of life insurance, while larger aged population stimulates the purchase of savings and annuities components of life insurance. Truett and Truett (1990), Browne and Kim (1993) confirm the positive impact of dependency ratio, while Beck and Webb (2002) do not find young dependency to be a robust determinant of life insurance demand.

Urbanization; Higher concentration of population simplifies the provision of life insurance products and information about them to the potential consumers, as it reduces costs for the companies. Therefore, countries with higher share of urban population are expected to have higher demand for life insurance products.

Political stability, Rule of Law, Corruption control: Political and legal stability is proved to be important by Ward and Zurbruegg (2002), indicating the evidence to include these factors in the model. As life insurance is considered to be a long-term relationships between a consumer and a company, the more stable is the legal system and, therefore, a political system in the country the higher is the willingness of contracting parties to initiate the business relationships.

Age: (Truet & Truet, 1990; Yusof, Gbadamosi & Hamadu, 2009; Liebenberg, Carson & Hoyt, 2010) identified that age is positively related to life insurance demand. This is because an increase in age indicates a higher positive attitude toward insurance and people who are owards the end of an active life are more conscious of life after retirement (Yusof, Gbadamosi & Hamadu, 2009). But, it was disclosed that when people grow up they have a greater awareness on the need of life insurance but the need of life insurance will decline as the people reach

beyond a certain age. Evidence supports that age was found to have negative impact on life insurance demand (Goldsmith, 1983; Chen, Wong & Lee, 2001; Savvides, 2006; Liebenberg, James & Randy, 2010). This can perhaps be explained as people are more likely to purchase life insurance for morbidity as well as for retirement purposes which vary with their affordability and not age (Chen, Wong & Lee, 2001); as the average age of people increased the cost of obtaining coverage also increased and this can reduce the desirability of purchasing life insurance (Goldsmith, 1983); and for older people they are less likely to become involved in long-range planning (Savvides, 2006).

2.5. Research and Knowledge Gap

According to Roman (2011) income positively related to life insurance demand and price, real interest rate and gross domestic saving are significant but inversely related to life insurance demand and her study period was (1980-2009). And the second researcher Aderaw (2013) said life insurance determined by income, life expectancy, real interest rate and inflation and his study period was (1991 – 2010). The third one Amrot (2014) she finds out that GDP per capital, real interest rate, education and life expectancy are positive and significant and inflation negative and significant in her study period was (1983 – 2012). The fourth one Luqman et.al..,2015) said young dependency negatively and old dependency positively related to life insurance consumption but income, saving, real interest rate, urbanization, premium of one unit of insurance, death rate and life expectance were insignificant variables and his study period was (1980 – 2008). The fifth one Kedir (2016) said GDP per capital income, life expectancy, and dependence ratio are significant variable for the determinant of life insurance demand however CPI/inflation and RIR/ real interest rate are insignificant for the demand of life insurance in Ethiopia.

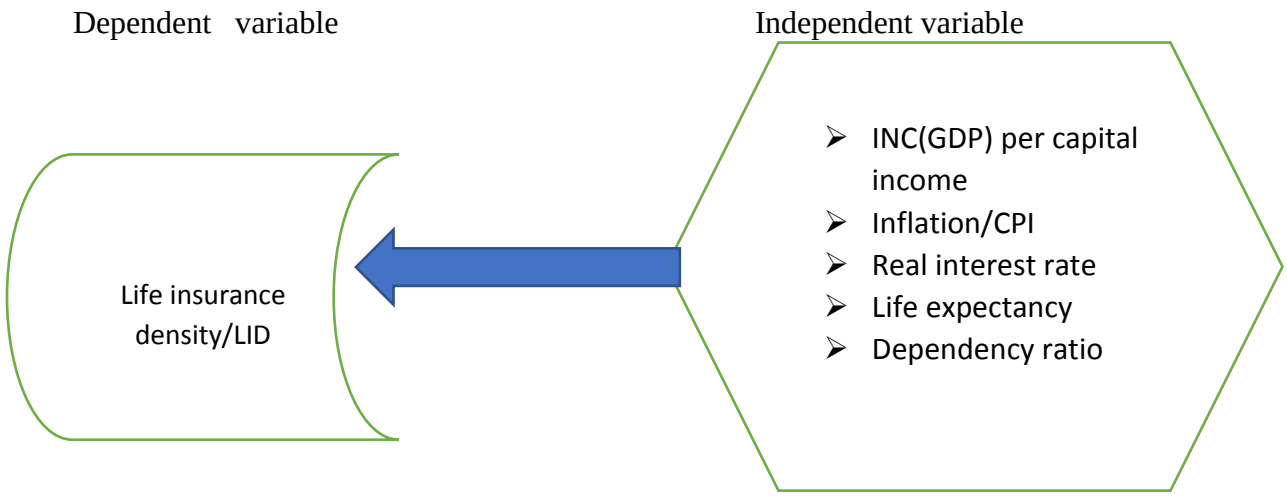
As the researcher can saw the above paragraph the significant variable of one researcher becomes insignificant variable for another researcher so this is unclear and need to additional investigation and also there is a time gap from previous studies and this time gap has an effect so this study investigate the main determinants factors by studied on the variables on income, real interest rate, life expectancy, dependence ratio, and inflation. Therefore, researcher wants to know the demand of life insurance consumption in the past thirty nine years from period 1980-2018 years. In addition to the above inconsistency according to World Bank (2015), report Ethiopia has fast economic growth in decades. World Bank, the Ethiopian economy continued its

strong expansion in fiscal year 2014 with real GDP growing by 10.3 percent. Growth is driven mainly by the services sector from the supply side and public investment from the demand side. At the same time, inflation has remained in single digits for the last two years on account of tighter monetary policy and lower international commodity prices. So as the researcher analyzed the determinants of life insurance demand in Ethiopia based on the gap indicted.

2.6. Conceptual framework

Different empirical evidences suggested that determinants of life insurance affected by many factors, these are economic variable and socio-demographic variables. This study used both economic and socio-demographic factors for demand of life insurances. This includes per capital income, inflation, real interest rate, life expectancy, and dependence ratio. The study was examined how these variables determine the life insurance in Ethiopia.

Figure 1: Conceptual framework: Relation between the demand of life insurance and determinant.



Source: Researcher constructs 2019

Chapter Three

3. Research Methodology and Design

3.1 Introduction

This chapter discusses the research design and methodology of the study; it highlights full description of the research design, the research variables and provides a broad view of the description and selection of the population. The research instruments, data collection techniques and data analysis procedure were also been pointed out

3.2. Research Design

The primary aim of this study is to examine the determinants of life insurance demand in Ethiopia. To achieve this objective explanatory research design were employed in the study. The explanatory type of research design helps to identify and evaluate the causal relationships between the different variables under consideration (Marczyk et al., 2005). If the objective is to determine which variable might be causing a certain behavior, i.e. whether there is a cause and effect relationship between variables, explanatory research must be undertaken (Shields, 2013).

3.3. Research Approaches

When conducting a research, there are different ways of approaching the problem. According to Creswell (2009), there are three approaches of research; quantitative, qualitative and mixed. The following discussions briefly presents the basic features of these research approaches. Quantitative research is a means for testing objective theories by examining the relationship among variables (Creswell, 2009). On the other hand, qualitative research approach is a means for exploring and understanding the meaning individuals or groups ascribe to a social or human problem with intent of developing a theory or pattern inductively (Creswell, 2009). Finally, mixed methods approach is an approach in which the researchers emphasize the research problem and use all approaches available to understand the problem (Creswell, 2003). Hence, based on the above discussions of the three research approaches and by considering the research problem and objective, in this study, the quantitative method is primarily used. However, to have a better insight and gain a richer understanding about the research problem, the quantitative method is supplemented by the qualitative method of inquiry. That is, to get the benefits of a

mixed methods approach and to mitigate the bias in adopting only either quantitative or qualitative approach. Therefore, employing

mixed approach is used to counterbalance the biases (limitations) of applying any of a single approach and a means to offset the weaknesses inherent within method with the strengths of the other method (Creswell, 2003). In addition, adopting mixed approach in this study is justified as it provides the best understanding of a research problem because it opens the door to multiple methods of data collection and to both generalize the findings to a population and develop a detailed view of the meaning of a phenomenon or concept for individuals (Creswell, 2003). The current study is used explanatory research design started with a quantitative survey study and identified results and then followed up these results with an in-depth interview qualitative study to best understand the research problem. If the objective is to determine which variable might be causing a certain behavior, i.e. whether there is a cause and effect relationship between variables, explanatory research must be undertaken (Shields 2013).

So as in order to achieve the objectives state in the preceding section, considering the nature of research problem and the research perspective, this study was mainly employ quantitative research approach on the determinants of life insurance demand in Ethiopia over the period of 1980-2018. The research design of this study is explanatory research design.

3.4. Population and Sampling Techniques

The target population under the review is the life insurance industry in Ethiopia over a thirty nine (39) years period spanning the time 1980 to 2018 using time series data. This means to detect the factors determine life insurance demand in Ethiopia; Life Insurance Industry in Ethiopia was the population of the study.

Currently in Ethiopia the insurance companies engaged in life insurance business is. Namely; Ethiopian Insurance Corporation (EIC), Africa insurance company. S.C, Niyala insurance company S.C, Awash Insurance Company, United Insurance Company S.C (UNIC), Nile Insurance Company S.C, Nib Insurance Company S.C, Oromiya Insurance Company S.C, Ethio Life and General Company and Abay Insurance Company S.C, lion insurance company, Lucy insurance company.

According to Kothari (2004), good sample design must be viable in the context of time and funds available for the research study. Accordingly, this study employed purposive sampling technique

(the reason the researcher choose purposive sample is the life insurance company which are subjected in this study were aggregate annual premium that are collected in national bank of Ethiopia. This why the researcher selected due to different life spanning the life insurance company selling the life insurance policy) to select the sample from the above reason were viable in line with time and funds available for this study. This sampling method is a form of non-probability sampling in which decision concerning the individual source of data included in the sample were taken by the researcher, based upon variety of criteria.

3.5. **Types of Data and Tools/Instruments of Data Collection**

This research used Secondary sources of data to investigate determinants of life insurance demand in Ethiopia. Therefore, the study had annual time series data and the data relevant for study collected from NBE (National Bank of Ethiopia), the insurance companies those are currently sells life insurance products, CSA (Central Statistics Agency), and Economic and demographic variables are obtained from the World Bank database.

Survey can be useful when a researcher wants to collect data on phenomena that cannot be directly observed. Creswell (2003) stated that the purpose of survey is to generalize description of trends, attitudes, or opinions from a sample to a population so that inferences can be made about some characteristic, attitude, or behavior of this population. Moreover, as noted in Fowler (1986) it is also reasonable to use survey designs because of its benefits such as the economy of the design and the rapid turnaround in data collection and identifying attributes of a large population from a small group of individuals. Therefore, it is logical to apply survey method for this study. The survey was being carried out by means of structure document review.

The data gathered from the secondary sources presented in tables and figures. The analytical techniques applied are regression and correlation analysis. Augmented Dickey- Fuller has used to establish correlation and regression techniques to address measurement problems often associated with estimation using time series data.

Table 2:data source

NBE	Annual life insurance premium, GDP, CPI, RIR, IFNR.
CSA	, LIEP, DER and Total number of population

3.6. Method of Data Analysis

According to William (2010), model building involves specifying relationships between two or more variables; perhaps extending to the development of descriptive and multiple linear regression analysis. In order to achieve the objectives of this research study, the time series data regression model were be used to identify the relationship between the demand of life insurance and explanatory variables. Descriptive as well as econometric methods were used employed to discuss and analyze different issues in this study. Descriptive as well as econometric methods were employed to discuss and analyze different issues in this study. Descriptive analysis was employed by using mean, maximum, minimum and standard deviation. Ordinary least square (OLS) is concocted using statistical package "STATA11" to determine the significant and influential explanatory variables affecting the demand of life insurance in Ethiopia were analyzed based on a time series data from 1980-2018.

3.7. Variable Definition/ Measurement

This section explains the variables used as dependent and independent (explanatory) variables in this study. The definitions/measurements used for these variables are described as follow;

A. Dependent Variable; life insurance demand

The dependent variable in this study is life insurance demand. The variable used in examining the determinants of the demand for life insurance is life insurance density or Premium per capita. It is measured by dividing total premium in life insurance to total population i.e. how much money per capita is annually spent on life insurance. The life insurance premium per capital is the proxy of measuring the dependent variable in the study of the research.

B. Independent Variables

This subsection describes the independent variables that are used in the econometric model to estimate the dependent variable. To measure the predictor variables, demand of life insurance in Ethiopia, eight measures are use as independent variables which are extracted from different

studies. The variables namely; per capital income, inflation rate, real interest rate, financial development, urbanization rate, educational level, and life expectancy and dependency ratio.

Income: Previous studies highlight a significant and positive correlation between income level and life insurance consumption (Browne and Kim, 1993; Outreville, 1996; Beck and Webb, 2003; Hwang and Gao, 2003; Li et al., 2007). They justify the positive relationship by the following arguments. First, as income increases, life insurance becomes more affordable. Second, higher income level results in more willingness to protect the living standards of dependents in the case of policyholder's premature death. Following Outreville (1996), we use GDP per capita expressed in US dollars to measure income level. In line with this, this study uses the ratio of GDP to the population to represent income per capita.

Inflation: High inflation tends to cause the purchasing of life insurance to be less attractive because of the rising cost of living. In the literature, it is observed that inflation affects demand for life insurance in negative way (Beck and Webb (2003), Li et.al (2007), Nesterova (2008), Çelik and Kayali (2009), Ibiwoye et.al (2010)). Inflation is measured by change in CPI.

Real interest rate: Beck and Webb (2003) note that interest rates may reflect insurance companies' investment returns. Higher interest rates make insurance firms more profitable which, in turn, positively affects people's willingness to purchase life insurance policies as they expect higher returns. Nevertheless, Lenten and Rulli (2006) argue that higher interest rates drive people toward holding alternative assets seeking for higher returns. Referring to Beck and Webb (2003), we use real interest rate calculated as the difference between nominal interest rate (lending rate) and inflation as measured by the GDP deflator

Life expectancy: The proxy of measurement life expectancy was the average years a person expects to live. Nesterova (2008), Redzuan (2011), Aderaw (2013) identified that life expectance has a significant and positive impact on the demand for life insurance. Life expectance is measured by the number of years the average individual in a country is expected to live. life expectancy to be positively related to Life Insurance Penetration. Societies with longer life expectancies should have higher savings through life insurance vehicles and more demand for annuities. This would imply life expectancy have a positive correlation with the demand for life insurance products.

Dependency Ratio: The dependency ratio is measure of the number of dependents age zero to 14 and over the age of 65, compared with the total population aged 15 to 64. This indicator gives

insight into the number of people of nonworking age, compared with the number of those of working age. The dependency ratio was described as the demographic structure of the average household in terms of the number of family members dependent on the main source of income (Lenten & Rulli, 2006). Empirical studies have shown that the dependency ratio is positively related to the demand for life insurance (Brown & Kim, 1993); (Curak & Gaspic 2011). It has been investigated that the dependency ratio has a positive impact on foreign life insurance participation (Ye et.al 2009).The increasing number of dependents shows that the person needs to buy more life insurance. Findings of past studies have indicated that young dependency ratio is negatively related to life insurance demand Beck & Webb (2003); Sen & Madheswaran (2007).It is expected that a young dependency ratio will increase the demand for mortality coverage and decrease the demand for savings through life insurance and annuities Beck & Webb (2003). Whereas, an old dependency ratio is found to be positively related to the demand for life insurance (Beck & Webb 2003); (Sen 2008). This can be explained as the older population grows, there will be a higher demand for savings (Nesterova 2008 and Beck & Webb, 2003).

Table 3 Description of the variables and their expected relationship

Variables		Definition/measurement	Expected sign
Dependent	Demand of life insurance		
independent	Income	INC/GDP per capital	+
	Inflation	CPI/consumer price index	-
	Real interest rate	Deposit interest rate minus inflation	+
	Dependence ratio	The percentage of family members dependent on the main source of income	-
	Life expectancy	The number of years the average individual in a country is expected to live	+

3.7. Model specification

According to Li et al., the most common specification in the studies of the determinants of life insurance demand is the log-linear form used by Outreville, Browne and Kim, Ward and Zurbruegg and Beck and Webb. They note that this form is indicated for demand functions specified on macroeconomic variables, which display exponential growth. Ward and Zurbruegg argue that it creates linearity in the data and provides estimations of the coefficients on the explanatory variables that can be interpreted as elasticities. In this paper, the researcher will be also use log-linear models. As in Outreville and Millo and Carmeci, only the variables of level value form which subject to logarithmic transformation so that their coefficients represent elasticities. Variables of rate values are not transformed, since they are already in the required form as a measure of change. Based on this rationale, only the variables life insurance density, income and life expectancy at birth are transformed by taking their natural logarithm. However, life insurance penetration, inflation, real interest rate and dependency ratio are not subject to any transformation.

The specification of the models is as follows;

$$LID=\beta 0+\beta 1 logINCt+\beta 2 CPIt+\beta 3 RIR+\beta 4\ LIXPt+\ \beta 5 DERt+\varepsilon t$$

where log denotes the natural logarithm, the subscript t refers to the years, LID, denotes life insurance density, INC is income per capita, CPI is the country's inflation rate, RIR is the interest rate, DER, is dependency ratio, LIXP is life expectancy, and εt is the error term.

3.8 Test of significance

The significance of the study was test through conducting an Analysis of Variance (ANOVA). ANOVA was use as it compares group means by analyzing comparisons of variance estimates; that is, whether or not the means of several groups are all equal. This enabled determining whether the model is sufficient enough measuring the relationship that exists between the demand of life insurance and the factors that determine the consumption of life insurance. The F significance value obtained was being test at both the 5% significant level and 95% confidence level.

3.9. Diagnostic test

Diagnostic tests on the assumptions of regression analysis were done to ensure that the quality of quantitative assessment is valid. This includes heteroscedasticity, multicollinearity, autocorrelation and the normality test. Heteroscedasticity occurs when the variance of error term is not constant. The presence of heteroscedasticity makes the standard errors wrong and hence any inferences made could be misleading. The study was being test by using of White's General test to check for the existence of heteroscedasticity error. Normality was be test by using degree of skewness and kurtosis. While multicollinearity tests were be conducted on the regression model so that incorrect conclusions about the relationship between dependent variable and predictor variables are to be avoid. Variance Inflation Factor (VIF) and tolerance degree was use to indicate presence of multicollinearity test. Autocorrelation test is assuming that the distribution errors are uncorrelated with one another and that the errors are linearly independent of one another. This study was used Durbin Watson test to check for the existence of autocorrelation among error terms as recommended by Brook (2008).

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

Relay on Brooks (2008), the first assumption required is that the average value of the errors is zero. In fact, if a constant term is included in the regression equation, this assumption was never being violated.

II. Heteroscedasticity

According to Brooks (2008), if the errors do not have a constant variance, they were said to be heteroscedastic. If heteroscedasticity occur, the estimators of the ordinary least square method are inefficient and hypothesis testing is no longer reliable or valid as it would be underestimate the variances and standard errors. Among several test of Heteroscedasticity in this study Breusch-Pagan-Goldfrey Test, White's Test was used to test for the presence of heteroscedasticity. The null and alternative hypothesizes are formulated as follows;The null hypothesis is H_0: There is no Heteroscedasticity problem in the model whereas the alternative hypothesis was H_1: There is Heteroscedasticity problem in the model. $\alpha = 0.05$ the decision Rule works as follows: Reject H0 if p-value is less than significance level. Otherwise, do not reject H0.

III. Autocorrelation

According to Brooks (2008), autocorrelation problem occurs when the error term for any observation is related to the error term of other observation. In the case of autocorrelation problem, the estimated parameters can still remain unbiased and consistent, but it is inefficient. The result of T-test, F-test or the confidence interval will become invalid due to the variances of estimators tend to be underestimated or overestimated. Due to the invalid hypothesis testing, it may lead to misleading results on the significance of parameters in the model. Therefore, the study test for the existence of autocorrelation by Wooldridge test, were applied. The hypothesis was formulated below. The null hypothesis is H_0: There is no autocorrelation problem in the model. While the alternative hypothesis would also H_1: There is autocorrelation problem in the model. $\alpha = 0.05$ based on the result of the hypothesis the decision Rule were: Reject H0 if p-value less than significance level. Otherwise, do not reject H0.

IV. Normality

Another assumption of classical linear regression model (CLRM) is the normal distribution of the residual. If the disturbances are independently and identically distributed with zero mean and constant variance and if the explanatory variables are constant in repeated samples, the OLS coefficient estimators are asymptotically normally distributed with means equal to the corresponding. As noted by (Gujarati, 2004), OLS estimators are BLUE regardless of whether the error terms are normally distributed or not. This study used JarqueBera Test (JB test) to find out whether the error term is normally distributed or not. In addition to JarqueBera Test (JB test) of normality the study histogram graph is used to show whether the residuals are normality distributed. The hypothesis for the normality test as null hypothesis H0: Error term is normally distributed and alternative hypothesis H_1: Error term is not normally distributed.

CHAPTER FOUR

4. RESULTS AND DISCUSSIONS

4.1. Introduction

This chapter presents the results of the analysis done using descriptive as well as multiple linear regression methods and discusses the findings on the basis of available literature. The Chapter also presents the results of the tests made on basic ordinary least square (OLS) assumptions.

4.2. CLRM assumptions and Diagnostic tests

The diagnostic tests were undertaken to ensure that the assumptions of classical linear regression model are concerned, the coefficient estimators of both β_0 (constant term) and β (independent variables) that are determined by ordinary least square (OLS) will have a number of desirable properties and usually known as Best Linear Unbiased Estimators (BLUE). The diagnostic test is made in order to make sure that the classical linear regression model assumption is violated or not. Therefore, in this study, an attempt is made to check by testing Heteroscedasticity, Autocorrelation, Normality and Multicollinearity. The result of tests applied for CLRM. Assumptions presented and discussed on the following section.

4.3. The Errors have zero mean

The first assumption of CLRM required that the average value of the error term is zero, Brooks (2008). If the constant term is included in the regression equation, the assumption will not be violated and if the regression did not include an intercept, and the average value of the errors was non-zero. Thus, since the regression model used in this study included a constant term, this assumption was not violated. Hence the errors have zero mean E(ut) = 0).

4.4. Tests for Heteroskedasticity

It has been assumed that the error terms are homoscedastic. That is, it assumed that the error terms have a constant variance; otherwise they are said to be heteroskedastic. The presence of heteroskedasticity makes the standard errors too big or too low and hence any inferences made could be misleading. The most popular method, a white,,s test has to be made, to ensure that this assumption is no longer violated. The heteroscedastic white test result is in excess of 5% then there is no hetroscedastic problem. However, if one of these three is fail then there is existence of hetroscedastic problem (Brook, 2008).

Table 4: White's test for heteroskedasticity

```
White's test for Ho: homoskedasticity
         against Ha: unrestricted heteroskedasticity

         chi2(28)     =     29.00
         Prob > chi2  =    0.4125

Cameron & Trivedi's decomposition of IM-test
```

Source	chi2	df	p
Heteroskedasticity	29.00	28	0.4125
Skewness	13.71	8	0.0897
Kurtosis	3.36	1	0.0668
Total	46.07	37	0.1458

Hence, the probability of F-statistics, is in excess of 5% and then there is no problem of hetroscedastic. This implies that the assumption of homoscedasticity or errors have a constant variance full filled its requirement. Therefore, the null hypothesis that the variance of the errors is constant (homoscedasticity) should not be rejected

4.5. Test for auto correlation

According to Gujarati (2004), autocorrelation is correlation between members of series of observations ordered in time as in time series data or space as in cross-sectional data. The classical linear regression model assumes that the disturbance term relating to any observation is not influenced by the disturbance term relating to any other observation. Which means the covariance between the disturbance terms over time is zero. In other words, it is assumed that the disturbances are uncorrelated with one another. If the disturbances are not uncorrelated with one another, it would be stated that they are "autocorrelated" or that they are "serially correlated". Usually, Durbin-Watson (DW) test is used for first order autocorrelation. It tests a relationship between an error term and its immediately previous value. As observed from table 4.2 the value of DW statistics is 1.47359

Table 5: estat dwatson

```
. estat dwatson

Durbin-Watson d-statistic(  6,    39) =   1.47359
```

Source; stata result

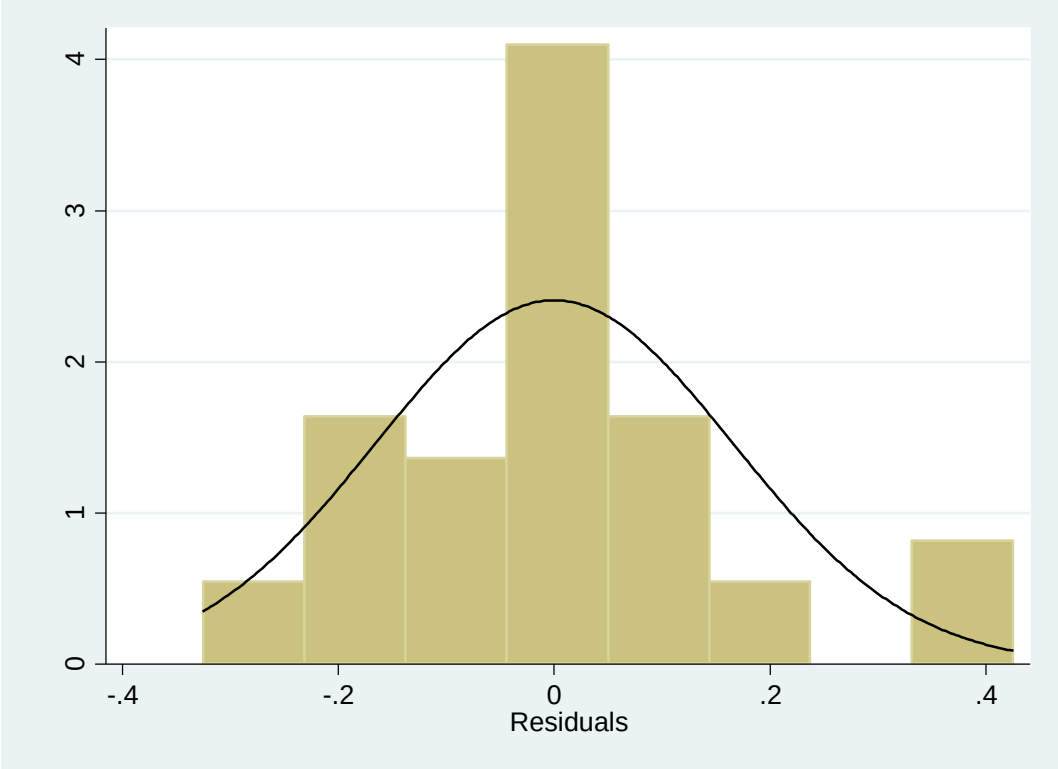
As stated on (Brook, 2008). DW has 2 critical values: an upper critical value (dU) and a lower critical value (dL), and there is also an intermediate region where the null hypothesis of no autocorrelation can neither be rejected nor not rejected. The null hypothesis is rejected and the

existence of positive autocorrelation presumed if DW is less than the lower critical value; the null hypothesis is rejected and the existence of negative autocorrelation presumed if DW is greater than 4 minus the lower critical value; the null hypothesis is not rejected and no significant residual autocorrelation is presumed if DW is between the upper and 4 minus the upper limits. The relevant critical values for the test are dL = 0.932, dU = 1.666, so 4 − dL = 3.068 and 4 − dU = 2.334. The test statistic (1.47359) clearly lies between the upper and 4 minus the upper limits and hence the null hypothesis of no autocorrelation is not rejected and it would be concluded that the residuals from the model appear to be not autocorrelated. Therefore, the analysis satisfies the assumption of independent of errors.

4.6. Test of Normality

The normality assumption is about the mean of the residuals is zero. In this study, the normality of the data was mainly checked with the popular Bera-Jarque test statistic (Brooks 2008). The Jarque-Bera statistic has a P-value of 93% implies that the p-value for the Jarque-Bera test for the model is very far greater than 5% which indicates that the errors are normally distributed. Furthermore, according to Brooks (2008) the standardized measurements of a distribution are known as its skewness and kurtosis. Skewness measures the extent to which a distribution is not symmetric about its mean value and kurtosis measures how flat the tails of the distribution area. A normal distribution is not skewed and is defined to have a coefficient of kurtosis of 3. Skewness that is normal involves a perfectly symmetric distribution. Kurtosis involves the peakedness of the distribution. Kurtosis that is normal involves a distribution that is bell-shaped and not too peaked or flat. The stata results for the tests of both Skewness and Kurtosis are presented below are fitted according to their expected conditions.

Figure 2: Histogram test for normality



Sourse: stata result

Table 6: the Jarque–Bera test for normality test

```
. jb reds
Jarque-Bera normality test:   1.85 chi(2)  .3965
Jarque-Bera test for Ho: normality:
```

Source: stata result

The result of Jarue-Bera normality test for this study as shown above table 4.5, statistic has a p value of 0.3965 which is considerably greater than 0.05, then the study failed to reject the null hypothesis of normality at the 5% significance level. This implies that the residual is normally distributed and the data is consistent with a normal distribution assumption.

4.7. Test of Multicollinearity

One problem that confronts in performing analysis is the existence of multicollinearity. Multicollinearity refers to the situation in which the independent variables are highly correlated

with dependent variable or muliticollineartiy occurs when the independent variable are not independent from dependent variable and each other. When independent variables are multicollinear, there is overlapping or sharing of predictive powers among themselves which may lead to the self-contradictory effect whereby the regression model fits the data well but none of the explanatory variables (individually) have a significant impact in predicting the dependent variable (Gujarati 2004). This is because when predictor variables are highly correlated with one another, they share essentially the same information. Thus, together they may explain a great deal of the dependent variable, but may not individually contribute significantly to the model.

Therefore, the impact of multicollinearity is to reduce any individual explanatory variable‘s predictive power by the extent to which it is associated with the other explanatory variables. That is, none of the predictor variables may contribute uniquely and significantly to the prediction model after the other independent variable is included. One of the standard statistical methods for testing data for multicollinearity is analyzing the control variables` correlation coefficients. If there is correlations among the independent variables are strong, it misleadingly inflates the standard errors. Thus, it makes some variables statistically insignificant while they should be otherwise significant. According to Hair JF, (2006) argued that correlation coefficient below 0.9 may not cause serious multicollinearity problem. Therefore, the correlations between the variables in the study models are provided in table below.

Table 7: Correlation matrix

```
. corr  inclog cpi rir LIXP der
(obs=39)
```

	inclog	cpi	rir	LIXP	der
inclog	1.0000				
cpi	0.3820	1.0000			
rir	-0.1975	-0.1651	1.0000		
LIXP	0.8398	0.4106	-0.3064	1.0000	
der	-0.8794	-0.1922	0.1673	-0.6899	1.0000

Source: stata result

Table 8: variable inflation factor result

```
. vif
```

Variable	VIF	1/VIF
inclog	7.92	0.126222
der	4.85	0.206319
LIXP	3.79	0.263604
rir	1.31	0.765611
cpi	1.28	0.782409
Mean VIF	3.83	

Source: stata 11 result

Multicollinearity can also treat using variance inflation factor (VIF). The VIF for the given variable indicates how correlated with other independent variables. For most of financial sectors VIF cutoff of is 10, each variable that has a VIF higher than 10 is considered to be multicollinear and is dropped from the model. The result of VIF in above table 4.7 indicate all independent variables has VIF which is below 10, since VIF of all variables are even below 8, we can conclude that there is no multicollinearty problem

4.9 Descriptive Statistics

The following summary of descriptive statistics of all variables give the general distribution of the data set that were used to examine the determinants of demand for life insurance in Ethiopia from 1980 to 2018. The table reports the mean, minimum, maximum, standard deviation, and the number of observations for life insurance per capita and eight explanatory variables for 39 observations. The mean is the sum of the observations divided by the total number of observations. The standard deviation is the squared root of the variance. Indicates how close the data is to the mean. Max is the largest value in the variable. Min is the lowest value in the variable.

Table 9: Summary of descriptive statistics

```
. sum lid inclog cpi rir LIXP der
```

Variable	Obs	Mean	Std. Dev.	Min	Max
lid	39	.8777769	1.199723	.0132894	4.218603
inclog	39	8.400749	.5441627	7.786822	9.921338
cpi	39	.2718738	.3169748	-1.11361	.983
rir	39	-.0368888	.1385825	-.51241	.189987
LIXP	39	53.21713	7.579964	43.675	66.26
der	39	.9484282	.0544133	.785	.991

Source: from stata regression

The dependent variable in this study is life insurance demand. The variable used in examining the determinants of the demand for life insurance is life insurance density or Premium per capita. The table above shows that the average life insurance density is birr 0.8777769. I.e. from the total population each individual on average spends birr 0.8777769, a maximum of birr 4.218603and a minimum of birr 0.0132894annually on life insurance. The standard deviation of life insurance per capita was 1.199723 percent, suggesting that LID was not highly dispersed or not far from the mean value.

INC per capita is used as a proxy for income and it is measured as the GDP at market price divided by the number of population that represents disposable personal income. The table above shows that the average per capita income for 39 years is birr 5365.076, the maximum amount of per capita income is birr 20360.22 and a minimum amount of INC per capita is birr 2408.65. The standard deviation of per capita income was 4395.666 percent, suggesting that per capita income was dispersed or far from the mean.

Inflation is measured by CPI. The table above shows that the average CPI for 39 years is 27.19%, the maximum amount of CPI is 9.83% and a minimum amount of CPI is negative 11.36%. The standard deviation of CPI was 31.69 percent, suggesting that CPI was not highly dispersed or far from the mean. Real interest rate is calculated by subtracting inflation from deposit interest rate. The table above shows that the average RIR rate for 39 years is -3.69, the maximum amount of RIR is 18.998 and a minimum amount of RIR is -51.24. The standard deviation of RIR was 13.858 percent, suggesting that RIR was not highly dispersed or not far from the mean.

Life expectance is measured by the number of years that the average individual in a country is expected to live. The table above shows that, the average LIXP was 53.21713 years, the maximum LIXP was 66.26 years and a minimum LIXP was 43.675 years. The standard deviation of LEXP was 7.579964, suggesting that LIEP was not highly dispersed or not far from the mean.

Dependence ratio is measured by the Number of family members dependent on the main source of income. The table above shows that, the average DER was 94.84282, the maximum DER was 98.79 and a minimum DER was 78.5. The standard deviation of DER was 5.44133 suggesting that DER was not highly dispersed.

4.10 Correlation Analysis

Table 4.7, shows the correlation between explanatory variable and life insurance demand. As noted in Brooks (2008), Correlation between two variables measures the degree of linear association between them. To find the association of the independent variables with life insurance demand, Correlation coefficient was used. Values of the correlation coefficient are always ranged between positive one and negative one. A correlation coefficient of positive one indicates that a perfect positive association between the two variables; while a correlation coefficient of negative one indicates that a perfect negative association between the two variables. A correlation coefficient of zero, on the other hand, indicates that there is no linear relationship between the two variables.

As it could be seen from table 4.7 INC per capita income, inflation, financial development and life expectance were positively correlated variables with life insurance demand. On the other hand, real interest rate seems to be negatively correlated with life insurance demand.

Furthermore, table 4.7 shows the degree of correlation among dependent and independent variables GDP, inflation and life expectance have positive and significant correlation with life insurance demand with the coefficient of 0.9408, 0.2627, and0.8675 respectively demand of life insurance. On the other hand, real interest rate and dependence ratio have negative correlation coefficient and the values are -0.2086 and -0.8852 respectively correlations with life insurance demand.

Table 10: Correlation matrix of dependent and independent variables

```
. corr lid inclog cpi rir LIXP der
(obs=39)
```

	lid	inclog	cpi	rir	LIXP	der
lid	1.0000					
inclog	0.9408	1.0000				
cpi	0.2627	0.3820	1.0000			
rir	-0.2086	-0.1975	-0.1651	1.0000		
LIXP	0.8675	0.8398	0.4106	-0.3064	1.0000	
der	-0.8852	-0.8661	-0.2402	0.3334	-0.7135	1.0000

Source: stata result

4.11 Regression analysis

Table 4.8 displays the results of Ordinary Least Square (OLS) estimation for the initial test equation. From the Table OLS estimation indicates that INC per capita income, inflation, life expectance appears to be important variables associated with the demand for life insurance. While financial development and real interest rate is not statistically significant variable in determining life insurance demand

Table 11: Regression Output

```
. reg lid gdplog cpi rir liep der
```

Source	SS	df	MS		
Model	42.4526852	5	8.49053703	Number of obs	= 39
Residual	7.0942087	33	.214976021	F(5, 33)	= 39.50
				Prob > F	= 0.0000
				R-squared	= 0.8568
				Adj R-squared	= 0.8351
Total	49.5468939	38	1.30386563	Root MSE	= .46366

lid	Coef.	Std. Err.	t	P>|t|	[95% Conf.	Interval]
inclog	.6505381	.2339448	2.78	0.009	.1745738	1.126502
cpi	-.296774	.1552572	-1.91	0.065	-.6126472	.0190992
rir	.1703506	.3256354	0.52	0.604	-.4921596	.8328609
LIXP	.0579035	.0109758	5.28	0.000	.0355731	.0802339
der	-9.667621	1.819522	-5.31	0.000	-13.36947	-5.965776
_cons	1.617071	3.275931	0.49	0.625	-5.04786	8.282003

Source: stata result

The adjusted R-squared for the model is 0.8351 which indicates that about 83.51 percent of demand for life insurance is explained by the selected five factors (INC per capita income, inflation, real interest rate, life expectance and dependence ratio). In other words, about 83.51 percent of the change in the life insurance demand is explained by the independent variables that are included in the model and the remaining 16.49 % change in life insurance demand is because of other factors that are not included in the model. Which shown on the above table the researcher found the following estimated regression equation.

LID= 1.617071+ .6505381*INC + -.296774*CPI + .1703506*RIR + .0579035*LIXP + -9.667621*DER

The t-statistics and sig. (p-value) show that the explanatory variables such as INC per capita income, inflation, and life expectance and dependence ratio are statistically significant at 10 percent significance level. The coefficient for INC per capita income variable is statistically

significant at 0.1 significant levels. The coefficient of LIXP variable is statistically significant at 0.1 significant levels. The coefficient of INC variable is statistically significant at 0.1 levels. Therefore statistically significant variables (INC, CPI, DER and LIXP) can determine life insurance demand of Ethiopia. Whereas RIR do not have a statistically significant relationship with life insurance demand since its p-value is greater than 10 percent.

4.11. Hypotheses Testing and Discussion of Results

I. Life Insurance and Level of Income

Research hypothesis 1 predicts a positive relationship between demand for life insurance and level of income. Similar to the hypothesis, the regression output showed positive and statistically significant relationship between demand for life insurance and level of income. So can not to reject H1 that there is positive and statistically significant relationship between income level and demand for life insurance. This positive relationship implies that as income of the society increases, life insurance becomes more affordable. This result agrees with various previous research findings like Dickinson, Khajuria (1986), Truett and Truett (1990), Browne and Kim (1993), and Outreville (1996), Beck and Webb, (2003) Celik and Kayali (2009), Aderaw (2013).etc. They all confirmed the significant positive relationship of income and demand for life insurance exists. In this situation, as income increases insurance becomes more affordable. The coefficient at 1 percent significant level for INC per capita indicated that 0.6505381. This implies that a 1% increase in INC per capita would result on 65.05 percent increase on LID. This result agree with various previous research findings like Dickinson, Khajuria (1986), Truett and Truett (1990), Browne and Kim (1993), and Outreville (1996), Beck and Webb, (2003) Celik and Kayali (2009), Aderaw (2013).etc. They confirmed the significant positive relationship of income and demand for life insurance. In this situation, as income arises, insurance become more affordable. The fourth column describes t-stat of each independent variable. This study found out that INC per capita (t-stat =2.78) is the highest value in this test. It means that INC per capita is the most important factor that influences demand for life insurance.

II. Life Insurance and Life Expectancy

Research hypothesis H3 shows a positive relationship between life insurance demand and life expectance. Similar to the hypothesis, the regression output showed positive and strongly statistically significant positive relationship between life insurance demand and life expectance. So we cannot reject H3 that there is positive and statistically significant relationship between life

expectance and demand for life insurance. This positive relationship implies that Societies with longer life expectancies should have higher savings through life insurance vehicles and more demand for income consequently it leads to higher life insurance demand. The coefficient at 1 percent significant level for life expectance indicated that 0.0579035. This implies that a 1 year increase in life expectance would result on 5.79035 percent increase on Life insurance per capita. This result agree with various previous research findings like Nesterova (2008), Redzuan (2011), Aderaw (2013).They confirmed the significant positive relationship of life expectance and demand for life insurance. In this situation, as LIEP arises, insurance become more affordable. The study found out that life expectance (t-stat = 5.28) is the second highest value in this test. It means that life expectance is the important factor that influence demand for life insurance.

III. Life Insurance and Dependence ratio

Research hypothesis H5 showed negative relationships between dependency ratio and demand for life insurance; it is also similar to the hypothesis, the regression analysis output showed negative relationship between demand for life insurance and dependency ratio. So, cannot reject H5 as there is negative relationship between dependency ratio and demand for life insurance. Empirical studies have shown that dependency ratio is negatively related to consumption of life insurance demand (Beck & Webb, 2003; Sen & Madheswaran, 2007).It is expected that a young dependency ratio will increase the demand for mortality coverage and decrease the demand for savings through life insurance and annuities (Beck & Webb, 2003).Whereas, an old dependency ratio is found to be positively related to the demand for life insurance (Beck & Webb, 2003; Sen, 2008). This can be explained as the older population grows, there will be a higher demand for savings (Nesterova 2008 Beck & Webb, 2003). Suggest that a 1% increase in dependence ratio would result on 96.676 percent decline on LID. This study found out that inflation (t-stat =-5.31) is the lowest value in this test. It means that dependence ratio is the most important factor that influence demand for life insurance.

IV. Life Insurance and Inflation

Research hypothesis 2 predicts a negative relationship between inflation and Life insurance demand. Similar to the hypothesis, the regression showed significant negative relationship between inflation and Life insurance demand. So we cannot reject H2 that there is negative and statistically significant relationship between inflation and demand for life insurance. It means that when inflation becomes more and more, it tends to discourage people from owning life

insurance policies or they do not afford to pay the cost of life insurance and the cost of life insurance protection would increase with anticipated inflation resulting in a decline in life insurance sales. The coefficient is significant at 10 percent level for inflation (0.296774). This agree with various previous research findings like Beck and Webb (2003), Li et.al (2007), Nesterova (2008), Çelik and Kayali (2009), Ibiwoye et.al (2010) suggest that a 1% increase in inflation would result on 29.6774 percent decline on LID. This study found out that inflation (t-stat = -1.91) is the lowest value in this test. It means that inflation is the important factor that influence demand for life insurance.

V. Life Insurance and Real Interest Rate

Real interest rate: The results of the multiple regression analysis show that real interest rate has a positive and insignificant influence on life insurance purchase demand in Ethiopia with a regression coefficient of 0.1703506 and p-value of 0.604. This is not consistent with the empirical studies for example; Browne and Kim (1993) neglect the influence of this variable on life insurance demand. Outreville (1996) finds the correlation of real interest rates with life insurance demand to be almost insignificant. Beck and Webb (2002) appear to detect a positive relationship using average lending rates.

CHAPTER FIVE

5. SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

The main purpose of this study is to identify and analyze the most significant determinants of demand for life insurance in Ethiopia and the basic aim of this chapter is to present the overall overview of the research by summarizing the main findings of the study, conclusions and recommendations given.

5.1.**Summary of Major Findings**

The study aims to identify and examine the relationship between demand for life insurance and its main determinants and their statistical significance. As a result of the analysis and interpretation, the following are the summary of the findings.

- Per capital income (logINC) has a positive and significant effect on life insurance demand in Ethiopia.
- Life expectancy (LIXP) has a positive and significant influence on life insurance demand in Ethiopia.
- Inflation (CPI) has a negative and significant influence on life insurance demand in Ethiopia.
- Dependence ratio (DER) has a negative and significant influence on life insurance demand in Ethiopia.
- The result revealed that there is insignificant relationship of real interest rate and life insurance demand in Ethiopia.

5.2 Conclusions

The study aims to examine the relationship between life insurance demand and its main determinants and their statistical significance.

- INC per capita (income) and demand for life insurance has a positive relationship which means as income increases, buying life insurance becomes affordable. GDP per capita (income) is an important factor that affects demand for life insurance.
- It is found out that inflation is the third important factor that influence demand for life insurance. Similar to the hypothesis, the regression showed significant negative relationship between inflation and Life insurance demand. It means that when inflation becomes more and more, it tends to discourage people from owning life insurance

policies or they do not afford to pay the cost of life insurance or the cost of life insurance protection would increase with anticipated inflation resulting in a decline in life insurance sales. The negative impact of inflation also confirms that anticipated inflation depresses the value of financial assets and therefore reduces the attractiveness of life insurance product.

- Life expectance is the least important factor that influence demand for life insurance. Similar to the hypothesis, the regression showed positive and statistically significant positive relationship between life insurance demand and life expectance. This positive relationship implies Societies with longer life expectancies should have higher savings through life insurance vehicles and more demand for income consequently it leads to higher life insurance demand. The coefficient at 1 percent significant level for life expectance indicated that 5.79035. This implies that a 1 year increase in life expectance would result on 5.79035percent increase on Life insurance per capita.
- Dependence ratio is the most important factor that influence demand for life insurance. Which is the similar to the hypothesis, the regression showed that a negative and strongly statistically significant negative relationship between life insurance demand and dependence ratio. This negative relationship implies Societies with more dependent should have lower life insurance vehicles because they spent money for their dependent other than buying life insurance instruments.

5.3 Recommendations

The study aims to identify and examine the relationship between demand for life insurance and its main determinants and their statistical significance. On the basis of the major findings of this study and on the analysis made in previous chapters on factors that determine demand for life insurance, the following recommendations were drawn.

- As can be been seen from conclusions drawn, INC per capita (income) is the determinant factor that explains demand for life insurance. Therefore, the government tries to give much emphasis in increasing INC per capita (real income) of society through more investment, and job creation. So that INC per capita (income) increases life expectancy and decreases dependency ratio which in turn promotes demand for life insurance in Ethiopia.

- In addition to the above, Government bodies, like National Bank of Ethiopia and Ethiopian Insurance Companies Association try to support the sector as a whole and life insurance in particular in providing training to domestic actuarial service provider to promote life insurance demand.
- It is true that, societies with longer life expectancies should have higher savings through life insurance vehicles and more demand for annuities. Therefore, it is better if the government will develop a nationwide structural plan that gives much emphasis for health promotion and disease prevention activities through hospitals and health centers expansion that facilitate especially preventive mechanisms by giving training and professional advice to the community at large and teaching though tena extension programs aggressively in different corner of the country, water and air born disease to alleviated , finally increasing the demand of life insurance as the source of income at retirement period . If the above action taken by government the resource diverting for buying life insurance vehicles.
- Based on the findings inflation is a significant determinants the demand of life insurance in Ethiopia. Hence, government tries to reduce the inflation by taking appropriate action and design the policy for controlling inflation as national level.
- The regression output reveals that dependency ratio a significant negative effect with the consumption of life insurance so; the government put strategy to reduce the number of dependent by advocating family planning.
- Finally, different studies suggested that several factors such as income, inflation, real interest rate, banking sector development, savings deposits rate, unemployment, pension/employee provident fund, price of insurance, level of education, life expectancy, dependency ratio, urbanization, age, religion, and marital status, corruption, rule of law are considered to be important factors that determine demand for life insurance. However, on this study the researcher selected only five determinants to test empirically in Ethiopian context. These are income/ INC per capita, inflation, real interest rate, life expectancy and dependency ratio. Therefore, the future researcher would like to recommend for those researchers who want to conduct study on the subject, they try to include other variables as possible as they can.

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Source, https://www.generali.com/what-we-do/life-insurance

Appendix

Appendix-1 regression output

```
. reg lid gdplog cpi rir liep der
```

Source	SS	df	MS
Model	42.4526852	5	8.49053703
Residual	7.0942087	33	.214976021
Total	49.5468939	38	1.30386563

Number of obs	= 39
F(5, 33)	= 39.50
Prob > F	= 0.0000
R-squared	= 0.8568
Adj R-squared	= 0.8351
Root MSE	= .46366

lid	Coef.	Std. Err.	t	P>|t|	[95% Conf.	Interval]
inclog	.6505381	.2339448	2.78	0.009	.1745738	1.126502
cpi	-.296774	.1552572	-1.91	0.065	-.6126472	.0190992
rir	.1703506	.3256354	0.52	0.604	-.4921596	.8328609
LIXP	.0579035	.0109758	5.28	0.000	.0355731	.0802339
der	-9.667621	1.819522	-5.31	0.000	-13.36947	-5.965776
_cons	1.617071	3.275931	0.49	0.625	-5.04786	8.282003

Appendix -2 correlation of dependent and independent variables

```
. corr lid inclog cpi rir LIXP der
(obs=39)
```

	lid	inclog	cpi	rir	LIXP	der
lid	1.0000					
inclog	0.9408	1.0000				
cpi	0.2627	0.3820	1.0000			
rir	-0.2086	-0.1975	-0.1651	1.0000		
LIXP	0.8675	0.8398	0.4106	-0.3064	1.0000	
der	-0.8852	-0.8661	-0.2402	0.3334	-0.7135	1.0000

Appendix-3: summary of descriptive statistics

```
. sum lid inclog cpi rir LIXP der
```

Variable	Obs	Mean	Std. Dev.	Min	Max
lid	39	.8777769	1.199723	.0132894	4.218603
inclog	39	8.400749	.5441627	7.786822	9.921338
cpi	39	.2718738	.3169748	-1.11361	.983
rir	39	-.0368888	.1385825	-.51241	.189987
LIXP	39	53.21713	7.579964	43.675	66.26
der	39	.9484282	.0544133	.785	.991

Appendix-4: correlation matrix

```
. corr  inclog cpi rir LIXP der
(obs=39)
```

	inclog	cpi	rir	LIXP	der
inclog	1.0000				
cpi	0.3820	1.0000			
rir	-0.1975	-0.1651	1.0000		
LIXP	0.8398	0.4106	-0.3064	1.0000	
der	-0.8794	-0.1922	0.1673	-0.6899	1.0000