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### **RESEARCH ARTICLE**

### Demand Analysis for Life Insurance in India: Some Empirical Observations

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### Manuscript Info

### Abstract

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Life Insurance business has grown significantly in last ten years, particularly in the emerging markets. It has become an increasingly important part of the financial sector over the years, providing a range of financial services for consumers and becoming a major source of investment as well as financial solutions in the capital market. After reforms, India's life insurance industry grew at more than tenfold in terms of business, number of new policies etc. The life insurance penetration has increased to 4.4 per cent in 2010 as against 2.71 per cent in 2001 and also life insurance density has increased substantially to \$55.7 in 2010 from \$9.1 in 2001. But the life insurance density in India is very low in the comparison of developed nations. It has also been observed that the Indian insurance market is not matured till now, and it is in the developmental phase of product life cycle. This trend of increasing the demand of life insurance reveals a lot of scope for insurance business in India. In this paper, an attempt is made to determine the macroeconomic factors leading to the demand for life insurance, using the annual aggregate data series from 1970-71 to 2009-10. The demand model estimated using the OLS regression techniques yield result that highlights Personal disposable Income (PDI), Financial Development (FD) and Gross Domestic Savings (GDS) as the most significant and positive factors in driving the life insurance demand but inflation (WPI) bears a negative relation. This study will be beneficial for the formulation of insurance policy in India.

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## **INTRODUCTION**

Life Insurance has become an increasingly important part of the financial sector over the years, providing a range of financial services for consumers and becoming a major source of investment in the capital market. It provides individuals and the economy with several important financial solutions. First, life insurance products encourage long-term saving and reinvestment of substantial sum in public and private sector projects. By leveraging their role as financial intermediaries, life insurers have become a key source of long-term finance, encouraging development of capital markets (Beck and Webb; 2003). Secondly, in the phase of growing urbanization, population mobility, and formalization of economic relationships between individuals, families, and communities, life insurance has taken on increasing importance as a way for individuals and families to manage risk.

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The global insurance industry returned to a positive growth path in 2010, after a continuous declining trend in business growth in the last two years (2008: - 0.4% and 2009: -0.3%). The decline was mainly due to the global financial crisis of 2008 and its spillover effects to developed markets. The capital base of the industry continued to strengthen in 2010; non-life segment restored to the pre-crisis level, while life segment has continued to recover. However, the overall profitability of the industry was adversely affected due to historically low interest rates and

weak investment returns (Swiss Re; Sigma 3/2011). In 2010, the global insurance premium registered a real growth of 2.7 per cent to \$4,339 billion from \$4,109 billion in the previous calendar year. Out of the total business, life insurance segment's business stood at \$2,520 billion as premium, which is around 58 per cent of the total premium collection, while non-life business was \$1819 billion. India's insurance business grew at 4.61 per cent to \$78.4 billion in 2010 from \$64.3 billion in the previous year, which accounts 1.81 per cent business of the global insurance market and ranked 11 out of the 156 countries (Sigma -3/2011). Out of the total premium business in India, life segment contributes \$67.8 billion and non-life accounts \$10.6 billion in 2010.

The Indian insurance market opened up to the private players in August 2000 and cap for foreign investment was fixed at 26 per cent, which is now a policy issue both for the government and regulator to increase the cap limit for attracting more foreign funds into the country. During 1999 to 2010, the Indian insurance market showed a robust growth in all most all parameters like total premium collection, no of new policies etc. In 2010-11, the total insurance business in India constitutes around 12 per cent of the Gross Domestic Savings (GDS) of the country and life fund represents around 34 per cent of the financial savings of the household sector. Due to this robustness growth nature, it motivates to determine the factors/determinants, which directly or indirectly give rise to a vibrant life insurance market in India. In Indian context, there are a very few studies available so far, to determine the factors affecting life insurance consumption. But, the relatively limited data samples used in these studies have limited their scope and made it difficult to generalize from their conclusions.

# 2. Theoretical Underpinnings

Theoretical models of the demand for life insurance have been derived by Yaari (1965), Fischer (1973), Pissarides (1980), Campbell (1980), Karni and Zilcha (1985, 1986), Lewis (1989), and Bernheim (1991). The models view life insurance as the means by which uncertainty in the household's income stream, related to the possible premature death of a household's primary wage earner, are reduced.

Yaari (1965) and Hakansson (1969) were the first to develop a theoretical framework to explain the demand for life insurance. In this framework, the demands for life insurance is attributed to a person's desire to bequest funds to dependents and provide income for retirement. The consumer maximizes lifetime utility subject to a vector of interest rates and a vector of prices, including insurance premium rates. This framework posits that the demand for life insurance is a function of wealth, expected income over a person's life time, interest rates, the cost of life insurance policies (administrative costs), and the assumed subjective discount rate for current over future consumption.

**Campbell R. A. (1980)** analyzed household's optimal reactions to labor income (human capital) uncertainty that is derived from the possibility of their wage earners' non-survival. By introducing a risk resolution mechanism - an insurance market-and allowing for the possibility that future tastes may be state-dependent, simple demand-for-insurance equations are mathematically derived to explicitly describe household's optimal responses to human capital uncertainty.

Later K. and Zilcha (1986) implemented the measure of risk aversion in the model. They followed Fisherian model, which was used by Yaari (1965) in his derivations, because it does not account for bequests, so the individual is free in accumulating debt, which helps to properly model the improvement in borrowing conditions, which in chain leads to higher consumption of life insurance.

**Lewis (1989)** extends this framework by explicitly incorporating the preferences of dependents and beneficiaries into the model. Specifically, he derives the demand for life insurance as a maximization problem of the beneficiaries, the spouse, and offspring of the policy holder. Deriving utility maximization by the spouse and offspring separately and assuming no bequest by the policy holder and an iso-elastic utility function, Lewis shows that total life insurance demand can be written as:

## (1-Lp) F = max {[1-Lp / L (1-p)] $1/\delta$ TC - W, 0}

Where, L is the policy loading factor (the ratio of the cost of the insurance to its actuarial value), p is the probability of the primary wage earner's death, F the face value of all life insurance written on the primary wage earner's life,  $\delta$  a measure of the beneficiaries' relative risk aversion, TC the present value of consumption of each offspring until he

or she leaves the household and of the spouse over his or her predicted remaining life span, and W the household's net wealth.

Thus, the demand for life insurance increases with the probability of the primary wage earner's death, the present value of the beneficiaries' consumption, and the degree of risk aversion. It decreases with the policy loading factor and the household's wealth. But life insurance consumption is not driven only by consumer demand. Important supply side factors affect the availability and price of life insurance. Insurance companies need human and information resources to effectively measure the pricing and reserve requirements for products as well as adequate investment opportunities in financial markets. Adequate protection of property rights and effective enforcement of contracts also facilitate the investment function of life insurers. These supply factors are expected to affect the costs of life insurance products and might therefore be presented by the policy loading factor in the Lewis model.

## 3. Objective of the Study

The major objective of the study is to find the determinants, which affect the demand for life insurance consumption in India. In the present study, we improve on existing literature in several ways; first, new data series with base year 2004-05 are considered for the economic variables like GDP, WPI etc and second, a long sample series included.

## 4. Data and Methodology

### Sample Size

The present study has been conducted with a large sample size of annual data series from 1970-71 to 2009-10. All the economic variables used in this study are with the new base year of 2004-05.

### Data Source

All the data series are annual aggregate data for the period starting from 1971-72 to 2010-11 and are secondary in nature. The annual data are collected from different reports of RBI - such as Handbook of Statistics on Indian Economy 2010-11, Annual Report for the year 2010-11 - IRDA Hand Book of Insurance Statistics 2009-10 & Annual Report of IRDA for the year 2010-11 and various issues and reports of Swiss Re. All economic variables such as GDP, WPI, etc are collected from RBI, while Insurance Penetration and Density is being calculated from the data of 'Life Fund' has taken from RBI Annual Report 2010-11.

The analysis of the present study has been taken with the following manner:

- Transformation of Variables: In our analysis, the level value variables were transformed by taking its natural logarithmic; on the other hand, variables of rate value and ratios were not transferred as they are already in preferred form. Accordingly, the variables like, Financial development indicators (M3/GDP and Bank Credit/GDP), Insurance Density (DEN) and Insurance Penetration (PEN) are not transformed as they are in the required form. But, the variables in level form like Personal disposable Income (PDI), Life insurance Fund (LIF), wholesale Price Index (WPI) and Gross Domestic Savings (GDS) were transformed by taking natural logarithm of their level values.
- **Testing Unit Root:** All the time series variables, whether transformed or not, are subject to a statistical test to see their univariate properties. In this study, KPSS test is used to check the stationary properties of the variables.
- OLS Estimation and Stability Test: Most of the earlier studies used OLS (Ordinary Least Squares) techniques to determine the factors affecting the life insurance demand. In this study, we also used multivariate OLS techniques to measure the determinants of insurance demand. To examine the model stability, we used CUSUM square plots developed by Brown, Durbin and Evans (1975).

### **5.** The Demand for Life Insurance

The issue of life insurance demand is not new for the western researchers. There are many eminent authors like Yaari (1965), Lewis (1989), Cargill and Troxel (1979) Babbel (1985), Browne and Kim (1993), Outréville (1996), Rubayah and Zaidi (2000), Damian Ward and Ralf Zurbruegg (2000), who have examined the determinants of insurance demand and the inter-relations between the macro-economic parameters on different countries and also on cross country analysis.

Beyond the scope of this study are factors that affect the supply of insurance in different countries, including differences in production costs, governmental regulation, tax policy, and trade barriers. It is reasonable to assume that when less insurance is supplied the price of insurance will be higher and the amount consumed will be lower.

### a) Life Insurance Demand

It has been seen that there are very few variables, which were used to measure the life insurance demand or consumption in an economy by different researchers, such as life insurance penetration, life insurance density, life insurance in force, life insurance premium volume, life insurance in savings etc. Out of these, life insurance density and penetration is being used internationally by IMF, World Bank etc to measure the global insurance consumption.

• **Total Premium Volume:** represents the total life insurance premium written in a year in an economy. This variable has been used as a measure of insurance demand by Babbel (1985), Goldsmith (1983), Browne and Kim (1993), Lim and Haberman (2004).

In this study, we used 'Life Fund' as a proxy to the total life insurance premium in India. Life Fund includes life insurance fund of Life Insurance Corporation of India (LIC), postal insurance fund of central government and state governments' insurance fund.

Life Insurance Penetration (LIP): defined as 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's contribution to the total economy. Many researcher like Outerville (1996), Beck and Web (2003), Hwang and Greenford (2005) used it as a measure of life insurance consumption (demand). Since, penetration is the product of price and quantity, it sometimes mislead in understanding the demand or consumption pattern due to higher premium rates, competitiveness of insurance market (due to lack of players), high cost of writing of insurance policies due to governmental regulations and differences in the price of different policies sold by different insurers.

In the present study, insurance penetration is being calculated by taking into account the life fund as the total premium and Gross Domestic Product factor cost (GDP fc) at current prices with base 2004-05.

◆ Life Insurance Density (LID): is defined as premiums per capita. It is the ratio of gross premium volume to total population in a country. This measure shows how much each inhabitant of a country spends on insurance on average, expressed in currency/Rupee terms. Although, both life insurance penetration and life insurance density use gross premiums, important differences remain between the two measures: life insurance 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. It is being used by researcher like Truett and Truett (1990), Browne and Kim (1993), Outerville (1996), Beck and Web (2003) to represent the consumption of life insurance in an economy.

In this paper, we did not take it for the empirical analysis purposes due to its insignificant nature of test statistics.

- ◆ Life Insurance in Force (LIF): is equals the sum total of the face amounts of life policies plus dividends. It measures the mortality risk along with savings. Thus, life insurance in force measures the cash value of policies along with risk. It is being used as dependent variable by Beck and Web (2002), Browne and Kim (1993) in their studies.
- Life Insurance in Savings (LIS): Since, Life insurance policies are financial products that offer two main services: income replacement for premature death and a long-term saving instrument. So, the proportion of life fund in the total savings would be an important measure of insure demand in an economy.

In the present study, we used Life Fund and Life Insurance Penetration (LIP) as dependent variables for the empirical analysis. Due to time constrain and scope of the study, we unable to extend it to all the variables, discussed above.

### b) Factors Affecting Insurance Demand

The determinants of demand for insurance, used by different researcher are as under:

• Income: Most of the research studies showed that there is a positive relationship between the demand for insurance and income of the consumer. As income increases, the need for life insurance also increases to protect the principal wage earner for the income flow in future and also to protect the dependants against the loss of

premature death. The studies of Yaari (1965), Browne and Kim (1993), Outreville (1996) and Beck and Webb (2003) confirmed the same. But, Ward and Zurbruegg (2002) found in their study of OECD and emerging Asian Economies that life insurance consumption become less sensitive to income growth in the countries with higher per capita income. This result was in line with the S-curve hypothesis by Enz (2000), which states that with higher per capita income, the insurance consumption becomes less sensitive as consumers become wealthy that they can afford to retain risk with their current financial portfolios.

In the earlier studies of life insurance consumption have used Gross National Product (GNP) and Gross Domestic Product (GDP) to proxy income. But, both GDP and GNP not accurately reflect the actual disposable personal income. To measure the real effect of income on life insurance consumption, we use Personal Disposable Income (PDI) at current prices with base 2004-05 as proxy to income.

• Inflation: Since, inflation works like a tax on the individual's income and reduced the real value of money. So, it has a significant negative impact on demand for life insurance product. The studies of Babbel (1981), Browne and Kim (1993) and Outerville (1996) have shown the inflation and inflationary expectations have a negative impact on the demand for life insurance. But, the findings of Cargil and Troxel (1979) and Rubayah and Zaidi (2000) showed an insignificant positive relationship between inflation rate and life insurance consumption.

In India, inflation plays a vital role in day-to-day life of the individuals as it directly affects them and reduces the saving behavior of common people. So, this may have a negative effect on the demand for life insurance in India. But, the study by Debabrata and Amlan (2010) showed a significant positive relationship of inflation with the insurance consumption.

Thus, some of the earlier studies used inflation rate as independent variables but here we use Wholesale Price Index (WPI) with base 2004-05 as the independent variable to see the impact on insurance demand.

• Interest Rates: The findings on the relationship between the interest rate and the demand for life insurance are indecisive. Cargil and Troxel (1979) examined two kinds of interest rates, the computing yield on savings products and return yield by life insurance products. They found that computing yields tend to negatively related to life insurance and returned by the insurers are mixed. Outreville (1996), in his study found that the interest rates are not the determining factor affecting the insurance demand. He used real interest rate and lending rate to study the impact of those interest rates on demand for life insurance.

Since, the insurance market in India is not developed properly, so it may have a meager effect for determining insurance demand. But in India, people are very much interest sensitive and they don't have much expertise to park their surplus fund in other high return avenues. On the other hand, it is true that most of the people are purchasing insurance, only for saving purpose and get benefits from tax deductions. If we will consider, interest rate as the opportunity cost of insurance demand, then it may have a significant negative relation with the demand for life insurance, which is in line with the result of Debabrata and Amlan (2010).

Since, the life insurance products are long-term in nature and interest rate is an opportunity cost for demanding insurance, we used long term deposit rate (more than five years), dividend rates (UTI, IDBI) and govt. bond rates (medium and long term bond) to assess the impact of interest rates on life insurance demand.

• Financial Development: Measuring financial development is a very stiff task, as countries differ in their institutional structure and the level of development of each country's financial sector. Outreville (1996) found a significant and positive relationship between financial development and life insurance development in developing countries. He used two proxies to measure financial development: ratio of quasi money to broad money and ratio between broader definitions of money to GDP. On the other hand, Beck and Webb (2003) found banking sector developments have positive correlation with life insurance consumption.

In Indian context, the study by Debabrata and Amlan (2010) used household access to banking system and found a significant positive relationship with insurance demand

Since, India's financial system is dominated by the size and spread of Banks, so in the present study we use two proxies for financial development, i.e., M3 to GDP ratio and total Bank credit to GDP ratio.

♦ Gross Domestic Savings (GDS): Since, India's saving is around 34 per cent of GDP and also the peoples are more saving oriented. In the total savings of the country, a major share is hold by the household sectors. So, it is considered that savings habit of the people have a major impact on the demand for life insurance. Sadhak (2006) found GDS significantly influenced the growth of life insurance business in India.

Though, Household has a major share in total savings of the country, we use Gross Domestic Savings (GDS) to see the impact on insurance demand. This is because; in our study we took total life fund as a proxy to the total insurance premium in the country. Thus, we can present the whole demand for the life insurance in the market as the average unit price of insurance policy multiplied by the quantity of life

insurance policies purchased in the country for the period. The following reduced-form model is presented as:

Demand = f {Personal Disposable Income (+), Whole Sale Price Index (-), M3/GDP Ratio (+/-), Total Bank Credit/GDP (+/-), Interest Rate (-), Gross Domestic Savings (+)}

### 6. Estimation of the Life Insurance Demand Model

To test our hypothesis, Ordinary Least Squares(OLS) is being used to estimate the following log linear demand equation:

 $ln (D_{li}) = \alpha_0 + \beta_1 ln (PDI) + \beta_2 ln (WPI) + \beta_3 ln (GDS) + \beta_4 M3GDP + \beta_5 BCGDP + e Where,$ 

 $\begin{array}{l} D_{ii} = \text{Demand for Life Insurance (LIF and LIP)} \\ \text{PDI} = \text{Personal Disposable Income at Current Prices (Rs in Crore)} \\ \text{GDP} = \text{GDP fc at Current Prices (Rs in Crore)} \\ \text{M3} = \text{Money Supply} \\ \text{MSGDP} = \text{M3/GDP} \\ \text{BCGDP} = \text{Bank Credit/GDP} \\ \text{GDS} = \text{Gross Domestic Savings} \\ \text{WPI} = \text{Wholesale Price Index (All Commodities)} \\ \alpha_0\beta_i = \text{Constants, } i = 1, 2, 3, 4 \\ e_1 = \text{the random error term.} \\ \text{Two versions of the model were estimated. The model was estimated first with 'life fund' as the measure} \\ \hline \end{array}$ 

of insurance consumption using data from 1970-71 to 2009-10. The second version of the model also uses data from 1970-71 to 2009-10 but with life insurance penetration as the measure of insurance consumption.

### 7. Empirical Findings

Before estimating the above demand function, the first step is to log-transform of the variables, where-ever required. In the second step, we have to check the stationary of the variables using KPSS unit root test. The KPSS unit root test results can be seen from the following table:From the Table-3, it is observed that all the variables are stationary at 1% level of significance with both trend and intercept. Thus, all the variables don't have any unit root problem and the series are stationary.

#### **Estimation for 'Life Fund':**

The estimated results of the said demand function having life fund as dependent variable are reported in the Model-1 of Table-4.

 $Ln(LIF) = \alpha_1 + \beta_{11} Ln(PDI) + \beta_{12}ln(WPI) + \beta_{13}ln(GDS) + \beta_{14} M3GDP + \beta_{15} BCGDP + e_1$ 

The estimated result of the above equation is as follows: LIF = -11.12+ 1.32 \* PDI -0.75 \* WPI + 0.35 \* GDS + 5.55 \* M3GDP + 0.57 \* BCGDP

It is observed from the Table- 4, that the independent variables (PDI, WPI, GDS, M3GDP and BCGDP) collectively explain about 99.8 per cent of the variance in the demand for life insurance in India. The variables like PDI, GDS, M3GDP and BCGDP are significant and positively related with LIF, as theoretically expected. On the other hand, WPI is significant and negatively related with LIF, as expected. There is no autocorrelation in the model as D-W statistic (1.85) is close to two.

The model stability is examined through CUSUM square plots developed by Brown, Durbin and Evans (1975). In the CUSUM square test, the test statistic, viz. CUSUM square ( $S_t$ ) is plotted against time and the plot is examined in terms of 95 per cent confidence interval around its mean  $E(S_t)$ . If the cumulative sum (St) plots strays outside the confidence bounds, the null hypothesis of no parametric instability is rejected. That is, a structural shift in the

parameters is said to have occurred at the corresponding break points. The CUSUM square plot of LIF is given in figure -1 and it is observed that, there is no instability in the demand equation of LIF.**Estimation for 'LIP'**: We have estimated the demand function for 'LIP' of the following form and the results are reported in Model-2 of Table – 4:

 $LIP = \alpha_2 + \beta_{21} Ln (PDI) + \beta_{22} ln (WPI) + \beta_{23} ln (GDS) + \beta_{24} M3GDP + \beta_{25} BCGDP + e_2$ LIP = -8.85 + 0.94 \* PDI - 1.43 \* WPI + 0.05 \* GDS + 9.66 \* M3GDP + 3.63\* BCGDP

It is observed from the table-4 (Model-2) that, the dependent variable (LIP) is explained 96 per cent by the independent variables, i.e., PDI, WPI, GDS, M3GDP and BCGDP. Except WPI, all the variables are significant and positively related with LIP, while WPI is significant but negatively related with LIP. The D-W statistic is 2.21, which signifies there no autocorrelation problem in the error terms. CUSUM square plot of LIP is plotted in figure -2 and signifies that there is no instability in the LIP demand function.**8.** Concluding Observations

The main objective of this paper was to determine the determinants of insurance demand in India, using annual data series starting from 1970-71 to 2009-10. The result highlights that the Personal Disposable Income (PDI), Financial Development (FD) and Gross Domestic Savings (GDS) as the most significant and positive factors in driving the life insurance demand but inflation (WPI) bears a negative relation.

Future research is warranted in several different areas. First, a study of the cost of producing life insurance would be valuable. Weiss (1991) has done similar work focusing on property-liability insurance. Although the current study has focused only on the demand for life insurance, a variety of factors affect the supply of insurance, which would be expected to affect national consumption. These include, but are not limited to, governmental regulations regarding solvency, trade barriers, the availability of capital, technical expertise, and an infrastructure that allows for the marketing and servicing of life insurance policies. As more data become available, an analysis of insurance consumption in a wider sample would likely lead to a greater understanding of insurance demand.

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Table: 1 - A Summary of Existing Life Insurance Consumption Studies			
Life Insurance Determinants	Relationship	Existing Research Studies	

Income	+ ve	Yaari (1965), Fisher (1973), Beenstock, Dickinson and Khajuria (1986), Truett and Truett 91990), Browne and Kim (1993), Outerville (1996), Enz(2000), ward and Zurbruegg (2000, 2002), Beck and Webb (2003), Zhuo (1999), Hwang and Gao (2003), Hwang and Greenford (2005), Debabrata and Amlan (2010), Sadhak (2006)	
	+ ve	Cargil and Troxel (1979), Rubayah and Zaidi (2000), Lim an Heberman (2005), Debabrata and Amlan (2010)	
Inflation	- ve	Green (1954), Fortune (1973), Babble (1981), Browne and Kim(1993), Outerville (1996), Ward and Zurbruegg (2000, 2002), Beck and Webb (2003), Sadhak (2006)	
	+/- ve	Cargil and Troxel (1979), Rubayah and Zaidi (2000)	
Interest Rates	Ι	Outerville (1996),	
	- ve	Debabrata and Amlan (2010)	
Financial Development	+ ve	Outerville (1996), Beck and Webb (2003) and Debabrata and Amlan (2010)	
Savings	+ ve	Sadhak (2006)	

I = Insignificant relationship, - ve = Negative Relationship, + ve = Positive Relationship

Table - 3				
KPSS Unit root Test Results				
Variables	H0: Variable is Stationary	H0: Variable is Stationary		
	<b>KPSS Test With Intercept</b>	KPSS Test With Trend & Intercept		
	Level	Level		
LIF	0.78	0.19		
LIP	0.58*	0.21		
LPDI	0.78	0.21		
LWPI	0.78	0.09		
LGDS	0.78	0.09		
M3GDP	0.78	0.09		
BCGDP	0.78	0.08		

• Critical values for KPSS with intercept are 0.74, 0.46 and 0.35 at 1%, 5% and 10% respectively. So, LIP and LID are stationary at level with 1% level of significance.

• Critical values for KPSS with trend and intercept are 0.22, 0.15 and 0.12 at %, 5% and 10% respectively. From, the table it is cleared that all the variables are stationary at 1% level of significance level with trend and intercept.



Figure - 1: CUSUM Square Plot of Life Insurance Fund

	Table-4:	OLS	results	for	LIF	and LIP	
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<u>Model-1</u> (Dependent Variable-Life Fund)		<u>Model-2</u> (Dependent Variable-LIP)			
Regressor	Coefficient		Regressor	Coefficient	
	-11.12			-8.85	
С	(-13.49)		С	(-4.62)	
	[0.00]	$\overline{R}^{2} = 0.99$		[0.00]	$\overline{R}^2 =$
	1.32			0.94	0.96
PDI	(7.32)		PDI	(2.25)	
	[0.00]	D-W		[0.03]	
	-0.75	Stat. = 1.85		-1.43	D-W
WPI	(-3.37)		WPI	(-2.77)	Stat =
	[0.00]	F-stat		[0.01]	2.21
	0.35	= 6349.62		0.05	
GDS	(2.18)	[0.00]	GDS	(0.12)	F-stat
	[0.04]			[0.01]	=
	5.55			9.66	198.69
M3GDP	(3.24)		M3GDP	(2.43)	[0.00]
	[0.01]			[0.02]	
	0.57			3.63	
BCGDP	(1.87)		BCGDP	(5.11)	
	[0.07]			[0.00]	

Note: Figures in (#), [#] implies t-statistics and P-values respectively



# Figure - 2: CUSUM Square Plot of Life Insurance Penetration

Table - 2: Summery of the Predicted Sign of the Regression Coefficients				
Variable Hypothesized Sign				
Personal Disposable Income	+			
Wholesale Price Index	-			
Financial Development	+			
Gross Domestic Savings	+			