

**AN ANALYTICAL STUDY ON SECTOR WISE INVESTMENT OF LIC  
DURING PRE AND POST-REFORMS PERIOD**

**Shib Pada Patra**

Assistant Professor, Department of Commerce,  
Chittaranjan College, Kolkata, West Bengal, India.

Email id: shibpadapatra@gmail.com

**Abstract**

Currently, there are 24 life insurance companies (both public as well as private) operating in India. The most significant life insurance company among 24 life insurance companies is Life Insurance Corporation of India (LIC). In India, both public as well as private life insurance companies have made their investment portfolio in a significant magnitude as per IRDA (Insurance Regulatory and Development Authority) regulations. Thus, with a view to safeguarding the interests of the policyholders as well as the national interest, the investible funds are invested in different sectors in Indian economy. As per IRDA regulations, enormous amount of premium collected and other incomes after meeting various expenses by life insurance companies are invested in financial markets through their investment portfolio in various sectors. However, the present paper is based on secondary data to analyze the growth of sector-wise investment of LIC during pre and post-reforms period using log-linear model. This paper also focuses on significant differences among public sector, private sector, joint sector and co-operative sector investments of LIC during pre and post-reforms period using Independent samples t test.

**Keywords:** Log-Linear Model, Sector Wise Investments, IRDA, LIC, Independent Samples t Test.

**I Introduction**

Life insurance industry plays a significant role in Indian financial system in order to develop the Indian economy in meeting demand for the creation of appropriate funding possibility. Life Insurance companies engage to convert the savings of people into investments to develop economy<sup>1</sup>. Nationalization of life insurance sector was a further step for effective mobilization of the people's savings in Indian economy<sup>2</sup>. Life Insurance protects an individual and /or its family at the premature death or at the old age by

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1 I. Ege and T. Bahadir, *The Relationship between Insurance Sector and Economic Growth: An Econometric Analysis*, IJER, 2011, pp. 1-19.

2 D. Kumar, *Tryst with Trust: The LIC Story*, Mumbai, LIC of India, 1991, p. 31.

providing an adequate return to insured people<sup>3</sup>. Investment in life insurance products is historically an important investment method through which individuals with relatively low incomes have been able to save and invest effectively for the long term<sup>4</sup>. Currently, there are 24 life insurance companies (both public as well as private) operating in India. The most significant life insurance company among 24 life insurance companies is Life Insurance Corporation of India (LICI). In India, both public as well as private life insurance companies have made their investment portfolio in a significant magnitude as per IRDA (Insurance Regulatory and Development Authority) regulations. Thus, with a view to safeguarding the interests of the policyholders as well as the national interest, the investible funds are invested in different sectors in Indian economy<sup>5</sup>. As per IRDA regulations, enormous amount of premium collected and other incomes after meeting various expenses by life insurance companies are invested in financial markets through their investment portfolio in various sectors. However, the present paper is based on secondary data to analyze the growth of sector wise investment of LICI during pre and post-reforms period using log-linear model. This paper also focuses on significant differences among public sector, private sector, joint sector and co-operative sector investments of LICI during pre and post-reforms period using independent samples t test.

## II Past Studies

Adigal and Mehta (2014) in their book, “Changing Finance and Economic Perspectives” explained investment portfolio, savings mobilization into Indian economy, growth of LICI. Bhole (2004) in his book, “Financial Institution and Markets” explained insurance funds, investments pattern of LIC fund, and growth of life business and fund, valuation of life policies, structure of insurance plans, and aggregative view of Indian insurance. Gupta (2003) in his book, “Insurance: A General Text Book” explained real facts of life insurance, future prospectus of life insurance. Khan (2006) in his book, “Indian Financial System” discussed insurance Act 1938, registration, power of IRDA to make regulations, rural/social sector obligations, investments norms, maintenance of books of accounts and records, and distribution of surplus regulations. Kumar (1994) in his book, “Tryst with Trust: The LIC Story” compiled the insurance Act 1938, nationalization of insurance, Act 1968, investments policy business

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<sup>3</sup> S. S. Saha, (2013), *Indian Financial System and Markets*, McGraw Hill Education Private Limited, New Delhi, 2013, p. 152.

<sup>4</sup> G. Dickinson., *Encouraging a Dynamic Life Insurance Industry: Economic Benefits and Policy Issues*, City University Business School, London, pp. 1-9.

<sup>5</sup> Notification, IRDA/Reg./8/2000

performance, policy bonuses, LIC mutual fund, and LIC growth statistics. Kumar and Kumari (2012) in their article, “A Comparative Study on Public vs. Private Sector in Life Insurance in India” stated insurance density and penetration, gross direct premium, total insurance premium, market share of different private players. Noronh (2012) in his article, “A Comparative Study of Cost Efficiency Score of Life Insurance Companies in India” discussed life insurance sector in India, international comparison of life insurance, cost efficiency score. Palande, Shah and Lunawat (2003) in their book, “Insurance in India Changing Policies and Emerging Opportunities” discussed the special position of insurance in the Indian economy, influence of global markets, growth and development of Indian insurance industry. Pathak (2006) in his book, “The Indian Financial System” explained indicated the pattern of investments, fund wise life insurance investments, and market share of life insurance players. Rajendran and Natarajan (2009) in his article “The Impact of LPG on Life Insurance Corporation of India (LICI)” revealed pre-independence scenario, post-nationalization trend of life insurance, growth of life insurance, analysis and interpretation of LIC, trend analysis of life business. Saha (2013) in his book, “Indian Financial System and Markets” explained principles of insurance, origin of insurance sector, reforms of insurance sector in India, different product of life insurance, regulatory framework of insurance, investment pattern of insurance. Singh and Singh (2011) in his article “An Empirical Analysis of Life Insurance Industry in India” discussed position of Indian life insurance industry in the pre-LPG era, Progress of Indian life insurance industry in the post-LPG era total life insurance premium, two ways ANOVA.

### **Research Gap**

Studying the past studies, the research gaps are identified as below:

- ◆ Rational researches in this field are insignificant;
- ◆ Literatures studied mainly focus on overall LICI and life insurance sector in India;
- ◆ Literature reviewed so far; do not study significant differences in sector wise investment of LICI during pre and post-reforms period.

### **III Objectives of Study**

The major objectives of the study are given as follows:

- ◆ To make growth analysis of sector wise investments of LICI during pre and post-reforms stage;
- ◆ To analyse significant difference among sector wise investments of LICI during pre and post-reforms period;

### **IV Research Methodology**

The present study is exploratory in nature. The methodology adopted in pursuing the study, has been organized in the following paragraphs:

◆ *Searching the Underlying Concept*

To explore the area under the study, an attempt has been made to study the available books and journals on life insurance activities in India. These have been studied to acquire a general knowledge on the conceptual issues on life insurance activities, its problem areas and related matters.

◆ *Sample Design*

At present, 24 life insurance companies including public and private life insurance companies are operating in India. The research study is being restricted to Life Insurance Corporation of India (LICI), because only one public life insurance company is present in India and LICI is life insurance business leader in Indian life insurance sector. Sector wise investments of LICI are analyzed during the pre-reforms period 1986-1987 to 1999-2000 and post-reforms period 2000-2001 to 2013-2014 for its long service in India.

◆ *Collection of Data*

Secondary data are collected from books, journals, magazines, internet based materials and online database of libraries during the pre-reforms period 1986-1987 to 1999-2000 and post-reforms period 2000-2001 to 2013-2014.

◆ *Statistical Tools for Interpretation*

Empirical Analysis in this study is made with the help of SPSS 20 version. Log-Linear Model is used to find the trend analysis during pre and post-reforms period and independent samples t test is applied to study the comparative performance in sector wise investment during pre and post-reforms period.

## V Analysis and Discussion

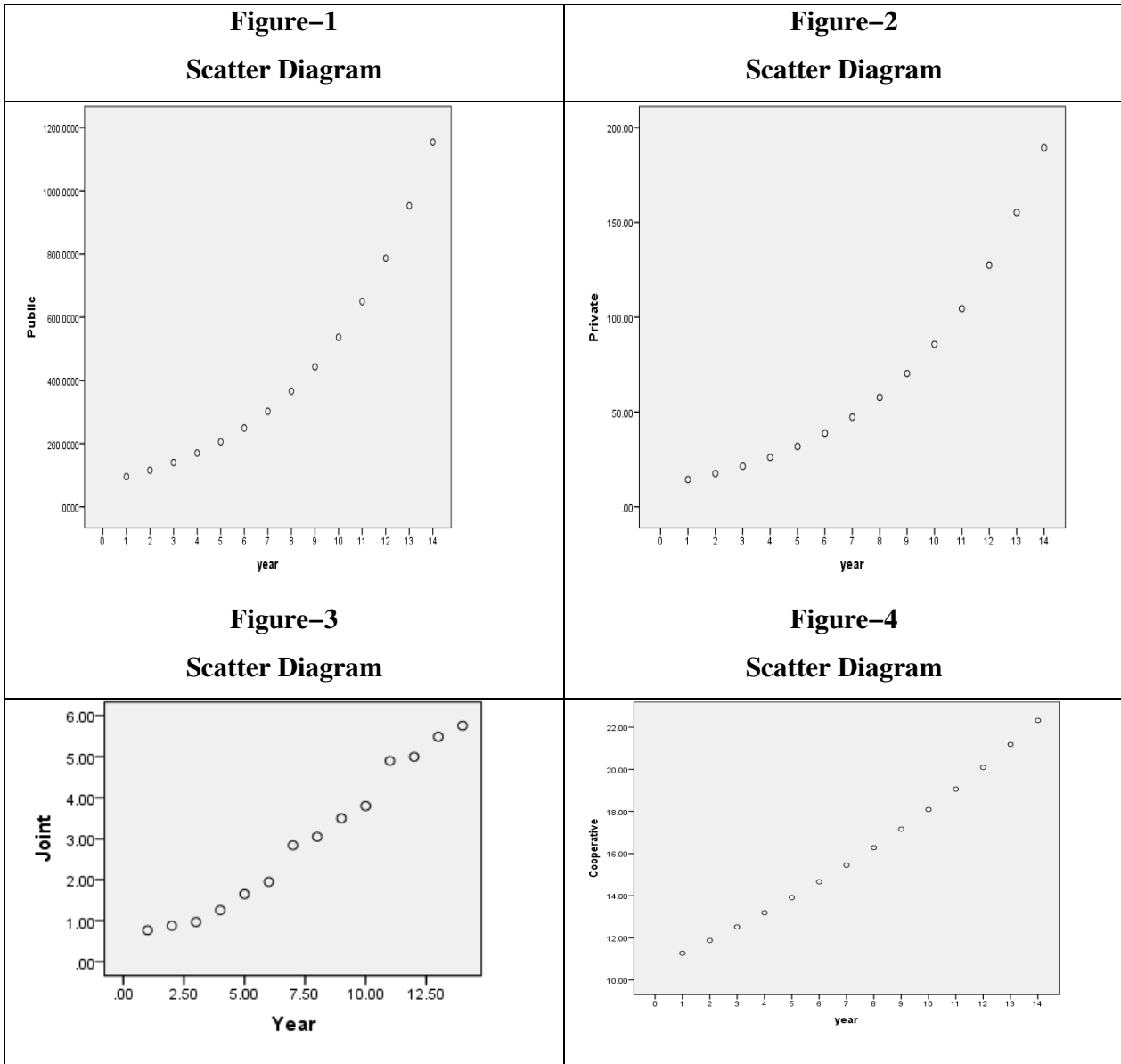
In this section, sector wise investments are analysed using log-linear model and independent samples t test.

(a) *Exploring Trend Analysis of Sector Wise Investments during Pre-reforms Period using Log-linear Model*

In this section, the trend values of sector wise investment are studied during pre-reforms period to identify the character of trends of different investments of LICI. For this purpose, the equation of data sets are linear or non-linear which is justified in the following way.

**Scatter Diagram**

Now, public sector, private sector, joint sector and co-operative sector investments are plotted in scatter diagram on the basis of actual data to analyse the functions in the parameters in the following subsequent Figures.



[Source: Compilation of secondary data using SPSS 20.0 Version]

**Findings**

Figures shown above explain sector wise investments during pre-reforms period in the scatter diagram. These are the exponential form of equations,  $Y_t = ab^t$ . The diagrams show the non-linear in parameters in the above Figures.

Here, sector wise investment is the Dependent Variable (DV) and time represented by year is the Independent Variable (IV). Now, this relationship is established based on the following equations:

$$\Rightarrow Y_t = Y_1 \times (1+g)^t \dots\dots\dots(i)$$

Where,

- ◆  $Y_t = \text{Total Investment at time } t$
- ◆  $Y_1 = \text{Total Investment in the beginning year and}$
- ◆  $g = \text{Compound Annual Growth Rate (CAGR)}$

If, term  $Y_1 = a$ , and  $(1+g) = b$ , the above equation in exponential trend is written in the following way:

$$\Rightarrow Y_t = ab^t \dots\dots\dots(ii)$$

Therefore, a non-linear relationship exists between sector wise investment and time period. It is statistically known as exponential relationship. In order to get the trend of  $Y_t$  during study period, the values of a and b are estimated. For this purpose, the above non-linear equation is transformed into a linear equation by taking log at the both sides. Now, the equation is shown as under:

$$\Rightarrow \text{Log } Y_t = \text{Log } a + t \text{ Log } b \dots\dots\dots (iii)$$

Then, the observed values are log transformed by SPSS 20.0 Version for calculation of the values of log a, and log b. Now, the values of log a, and log b is estimated using the following formulae:

$$\Rightarrow \text{Log } b = (N \sum \text{Log } Y_t \times t - (\sum \text{Log } Y_t) (\sum t)) \div (N \sum t^2 - (\sum t)^2)$$

$$\Rightarrow \text{Log } a = (\sum \text{Log } Y_t - \text{Log } b (\sum t)) \div N$$

Where,

- ◆  $N$  stands for number of observations = 14
- ◆  $t$  is the time period [1986–1987 to 1999–2000]

After measuring the values of log a, and log b, the values of a and b are measured taking antilog. Putting these values of a and b in Equation (ii), estimated trend values of  $Y_t$  are found. From this equation, it is forecasted the values of  $Y_t$  in the forthcoming periods. In equation (ii), b is represented by  $(1+g)$ ; where, g is compound annual growth rate (CAGR) for the study period. From the estimated value of b, the value of CAGR for sector wise investment is calculated using the following equation:

$$\Rightarrow \text{CAGR } (\%) = (b-1) \times 100$$

Based on the observed values, the estimated trends of sector wise investment are found using aforesaid formulae. Estimated values of log a, log b, a, b, and trend values of sector wise investment during study period are presented in Table-I.

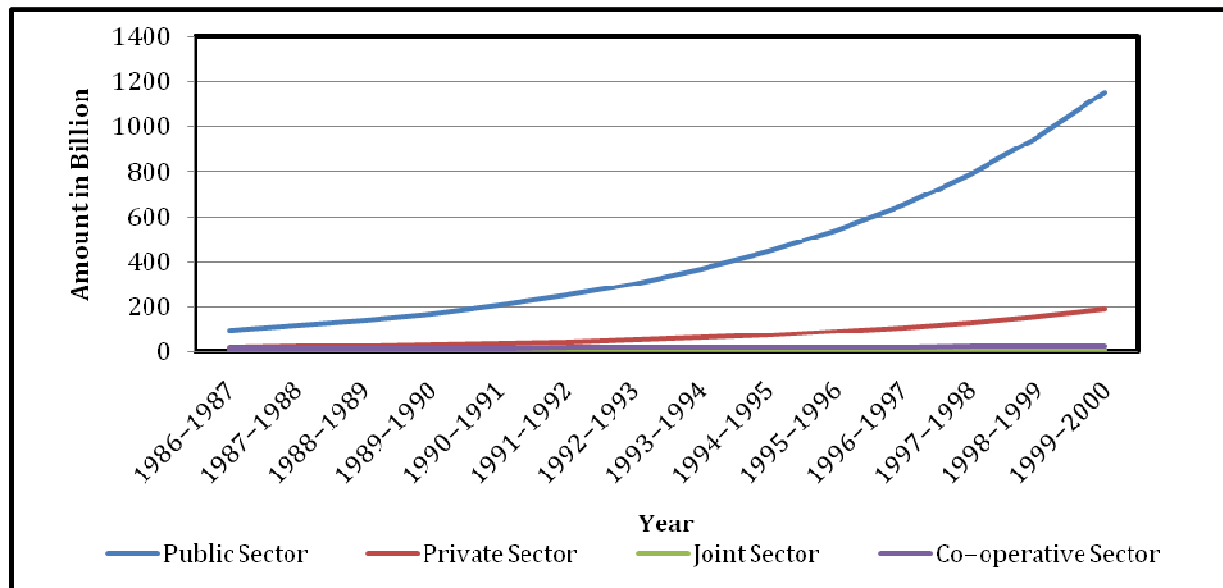
**Table-I: Actual &Trend Values in Sector Wise Investments**

Year (As on 31st March)	Public Sector (Rs. in Billion)		Private Sector (Rs. in Billion)		Joint Sector (Rs. in Billion)		Co-operative Sector (Rs. in Billion)	
	Actual value	Trend value	Actual value	Trend value	Actual value	Trend value	Actual value	Trend value
1986-1987	102.59	95.75	14.08	14.42	0.77	0.82	10.59	11.27
1987-1988	118.37	115.95	16.25	17.58	0.88	0.97	11.62	11.88
1988-1989	140.32	140.42	19.73	21.43	0.97	1.15	12.40	12.52
1989-1990	164.04	170.05	26.41	26.12	1.26	1.36	13.33	13.19
1990-1991	199.80	205.93	33.10	31.84	1.65	1.60	14.44	13.91
1991-1992	244.25	249.38	42.40	38.82	1.95	1.89	15.63	14.66
1992-1993	289.83	302.00	53.97	47.32	2.84	2.23	16.58	15.45
1993-1994	362.47	365.72	58.94	57.68	3.05	2.63	17.16	16.28
1994-1995	443.19	442.89	70.17	70.31	3.50	3.10	17.93	17.16
1995-1996	540.03	536.34	88.14	85.71	3.80	3.66	18.59	18.09
1996-1997	659.17	649.51	95.89	104.48	4.90	4.32	19.42	19.06
1997-1998	792.36	786.56	118.34	127.36	5.00	5.09	20.30	20.09
1998-1999	964.11	952.52	150.48	155.25	5.49	6.01	20.95	21.18
1999-2000	1170.59	1153.50	192.68	189.25	5.76	7.09	21.29	22.32
log a	-	1.898	-	1.073	-	-0.156	-	1.029
log b	-	0.083	-	0.086	-	0.072	-	0.023
a	-	79.068	-	11.830	-	0.699	-	10.690
b	-	1.211	-	1.219	-	1.180	-	1.054
CAGR	-	21.10	-	21.90	-	18.00	-	5.40

Source: Compilation on the basis of actual data using MS Excel 2007

Trend values and expected values during pre-reforms period are projected in the following Figure-5:

**Figure-5: Trend Lines in Sector Wise Investments**



Source: Compilation on the basis of Table-I using MS Excel 2007

### Findings

- ◆ CAGRs of public sector, private sector, joint sector and co-operative sector investment are 21.10%, 21.90%, 18.00% and 5.40% respectively. CAGRs of private sector are more than public sector, joint sector and co-operative sector but CAGR of co-operative is not very well.
- ◆ CAGRs are different for the different returns on sectoral investments as well as favourable investment portfolio during pre-reforms period.
- ◆ Figure-5 shows the trends of investments in public sector is increasing mostly, it is growing moderately in private sector but this is very small in joint sector and co-operative sector.
- ◆ As per investment portfolio during pre-reforms period, large investments are made in public and private sector but these are small in joint sector and co-operative sector.

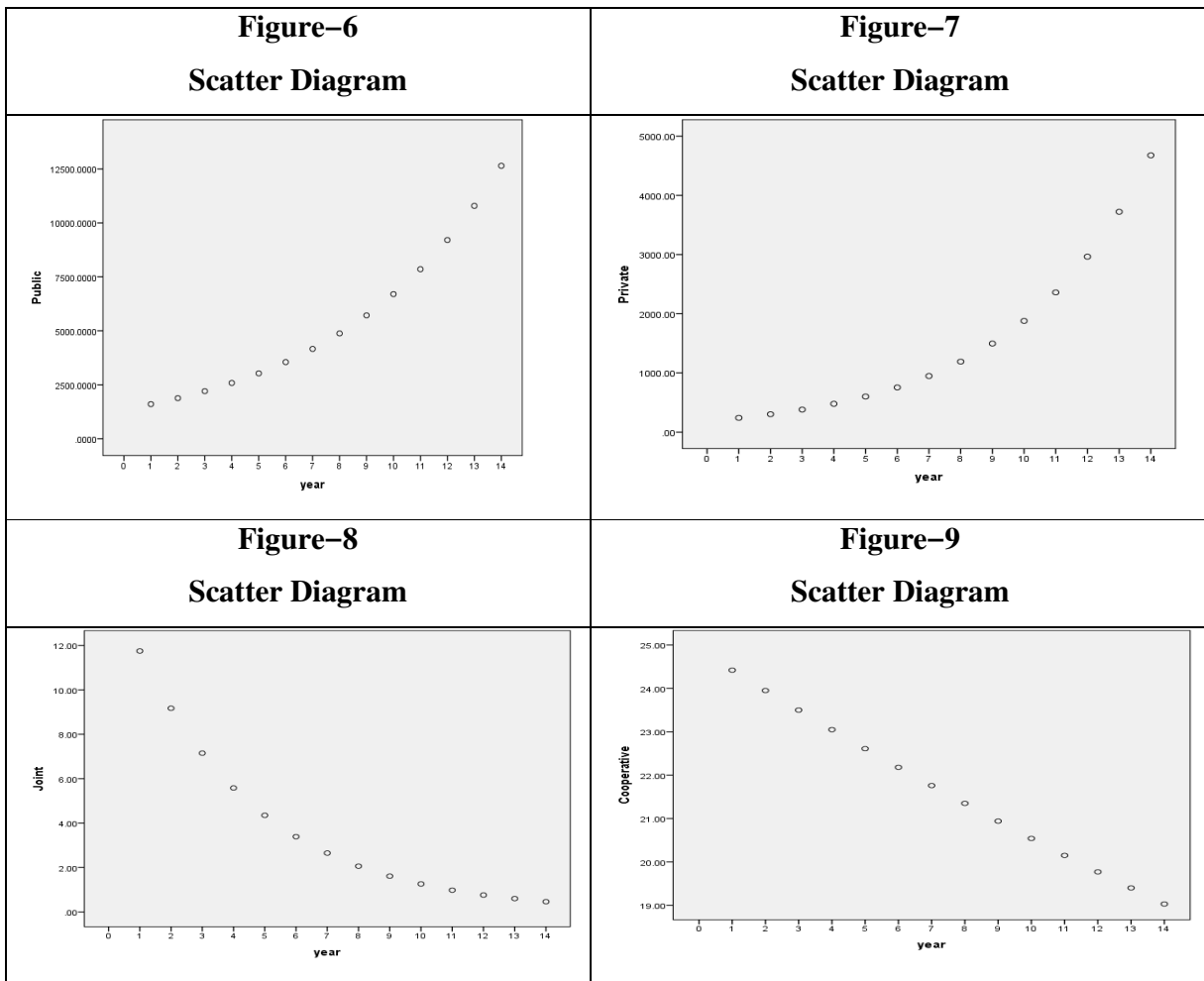
### (b) Exploring Trend Analysis of Sector Wise Investments during Post-reforms Period using Log-linear Model

In present segment, trend of sector wise investment during post-reforms period are studied to find the nature of trend in investment of LIC. At this time, the equations are verified for data sets for linear or non-linear in the following way:

#### Scatter Diagram

Currently, scatter diagram is set as made previously. The Figures on the basis of real data are shown as under:





[Source: Compilation of secondary data using MS Excel 2007]

**Findings**

Figure-6, Figure-7, Figure-8 and Figure-9 explain the sector wise investment during post-reforms period in the scatter diagram. The diagrams explain the non-linear in parameters in the above Figures.

These are the exponential form of equation  $Y_t = ab^t$ .

Trend values of public sector, private sector, joint sector and co-operative sector investments for the period 2000-2001 to 2013-2014 and expected trend values for the period 2014-2015, 2015-2016 and 2016-2017 are measured. These values for sector wise investments during post-reforms stage are stated in the Table-II:

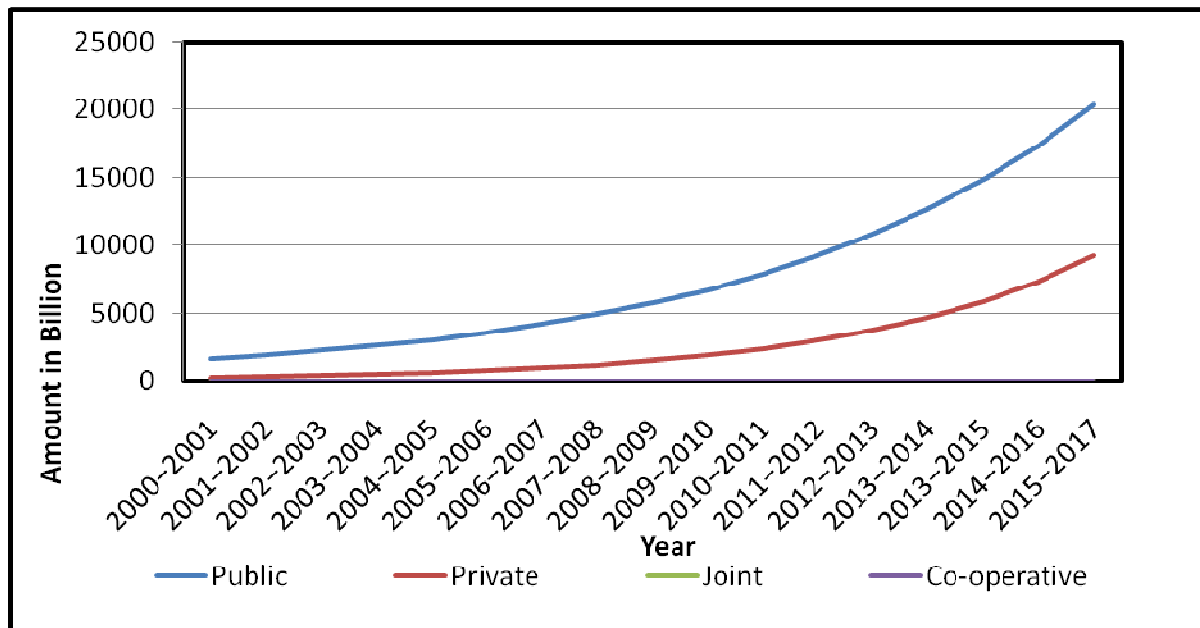
**Table-II: Actual & Trend Values in Sector Wise Investments**

Year (As on 31st March)	Public Sector (Rs. in Billion)		Private Sector (Rs. in Billion)		Joint Sector (Rs. in Billion)		Co-operative Sector (Rs. in Billion)	
	Actual Value	Trend Value	Actual Value	Trend Value	Actual Value	Trend Value	Actual Value	Trend Value
2000-2001	1412.56	1606.67	227.80	241.54	8.00	11.75	21.68	24.42
2001-2002	1805.74	1883.02	237.08	303.37	7.93	9.17	21.29	23.95
2002-2003	2195.97	2206.90	294.07	381.04	6.85	7.15	20.82	23.50
2003-2004	2717.79	2586.49	519.24	478.58	9.60	5.58	10.80	23.05
2004-2005	3220.22	3031.36	684.85	601.10	12.70	4.35	14.08	22.61
2005-2006	3788.07	3552.76	1051.48	754.98	19.15	3.39	13.56	22.18
2006-2007	4338.10	4163.83	842.94	948.26	0.75	2.65	35.55	21.76
2007-2008	5033.88	4880.01	1284.68	1191.01	0.74	2.06	38.18	21.35
2008-2009	5720.50	5719.38	1871.41	1495.91	0.72	1.61	36.29	20.94
2009-2010	6783.74	6703.11	2361.35	1878.87	0.71	1.26	36.67	20.54
2010-2011	7990.09	7856.04	2675.18	2359.86	0.82	0.98	36.68	20.15
2011-2012	8996.55	9207.28	3005.10	2963.98	0.85	0.76	35.67	19.77
2012-2013	10187.81	10790.93	3293.08	3722.76	0.86	0.60	8.22	19.40
2013-2014	11942.61	12646.97	3160.24	4675.79	0.94	0.46	7.54	19.03
2013-2015	-	14822.25	-	5872.79	-	0.36	-	18.67
2014-2016	-	17371.68	-	7376.22	-	0.28	-	18.31
2015-2017	-	20359.61	-	9264.53	-	0.22	-	17.96
log a	-	3.137	-	2.284	-	1.178	-	1.396
log b	-	0.069	-	0.099	-	-0.108	-	-0.008
a	-	1370.882	-	192.309	-	15.066	-	24.889
b	-	1.172	-	1.256	-	0.78	-	0.981
CAGR	-	17.20	-	25.60	-	-22.00	-	-1.90

[Source: Compilation on the basis actual data using MS Excel 2007]

During post-reforms period, trend lines are shown in the following Figure-10.

**Figure-10: Trend Lines in Sector Wise Investments**



Source: Compilation on the basis of Table-II using MS Excel 2007

### Findings

- ◆ Future-10 shows the trend of public sector, private sector are increasing to a great extent but joint sector and co-operative sector are increasing bit by bit during the study period 2000-2001 to 2013-2014. Expected trends are also increasing during the period 2014-2015 to 2016-2017.
- ◆ CAGRs of public sector, private sector, joint sector and co-operative sector of LIC are 17.20 %, 25.60 %, -22.00 % and -1.90 % respectively.
- ◆ During post-reforms period, returns on joint and co-operative sector investment are decreasing more than returns on these sectors during pre-reforms period. IRDA is also not giving more investment and proper investment strategies in joint and co-operative sector during post-reforms period.

### (c) Exploring Significant Difference among Sector Wise Investments during Pre and Post-reforms Period using Independent Samples t Test

In this segment, significant difference among public sector, private sector, joint sector and co-operative sector investments of LIC during pre and post-reforms period has been made using independent samples t test on the basis of actual data of Table-I and Table-II.

### Independent Samples t Test

*Assumptions<sup>6</sup> for Independent Samples t Test*

- ◆ *Assumption-1: Independent variable is two categorical independent groups:* In this recent study, sector wise investments during pre and post-reforms era are related two categorical independent groups. Therefore, first assumption of independent samples t test is fulfilled
- ◆ *Assumption-2: Populations are normally distributed:* Shapiro-Wilk test is used to verify normally distributed data for each group of independent variable. The method is described as below:

<i>Hypothesis</i>	<ul style="list-style-type: none"> <li>◆ <i>Null Hypothesis (H<sub>0</sub>): Investments in public, private, joint and co-operative sector are normally distributed during pre and post-reforms period.</i></li> <li>◆ <i>Alternate Hypothesis (H<sub>1</sub>): Investments in public, private, joint and co-operative sector are not normally distributed during pre and post-reforms period.</i></li> </ul>
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Test Statistic	Shapiro-Wilk Test
Significance Level	5 %
Decision Rule	If P-Value is less than 0.05, H <sub>0</sub> is not accepted.

The results of this test are stated as under:

**Table-III: Results of Shapiro-Wilk Tests**

Parameter		Statistic	DF	P-Value	Decision Rule	Decision on H <sub>0</sub>
Public sector	Pre-Reforms Period	0.935	14	0.356	P-Value>0.05	Accepted
	Post- Reforms Period	0.890	14	0.081	P-Value>0.05	Accepted
Private sector	Pre-Reforms Period	0.882	14	0.062	P-Value>0.05	Accepted
	Post- Reforms Period	0.886	14	0.070	P-Value>0.05	Accepted
Joint sector	Pre-Reforms Period	0.770	14	0.002	P-Value<0.05	Rejected
	Post- Reforms Period	0.907	14	0.142	P-Value>0.05	Accepted
Co-operative sector	Pre-Reforms Period	0.859	14	0.029	P-Value<0.05	Rejected
	Post- Reforms Period	0.958	14	0.691	P-Value>0.05	Accepted

*Source: Compiled and based on secondary data<sup>7</sup> using SPSS 20 Version*

<sup>6</sup> <https://statistics.laerd.com/spss-tutorials/independent-t-test-using-spss-statistics.php>

**Findings**

At 5 % level of significance, Table-III states that p-values is greater than 0.05 for public sector and private sector during pre and post-reforms period, hence population of public sector and private sector investments data during pre and post-reforms period are only normally distributed.

**Remedial Measure**

Original data sets of joint sector and co-operative sector investments during pre and post-reforms period are log transformed and then, Shapiro–Wilk test is used. The test results are shown as below:

**Table–IV: Results of Shapiro–Wilk Tests**

Parameter		Statistic	DF	P–Value	Decision Rule	Decision on H <sub>0</sub>
Joint Sector	Pre–Reforms Period	0.909	14	0.153	P–Value>0.05	Accepted
	Post– Reforms Period	0.764	14	0.002	P–Value<0.05	Rejected
Co–operative Sector	Pre–Reforms Period	0.937	14	0.382	P–Value>0.05	Accepted
	Post– Reforms Period	0.861	14	0.031	P–Value<0.05	Rejected

Source: Compilation of Secondary Data using SPSS 20 Version

**Findings**

Table-IV shows that joint sector during post-reforms period and co-operative sector during post-reforms period are not normally distributed. Joint sector and co-operative sector are not taken for independent samples t test.

◆ *Assumption-3: Variances are homogeneous:* The homogeneity of variances for public sector and private sector during pre and post-reforms period is verified using Levene’s test. The following method is adopted for this test:

<i>Hypothesis</i>	<ul style="list-style-type: none"> <li>◆ <i>H<sub>0</sub>: Variances of public and private sector during pre and post-reforms period are homogeneous.</i></li> <li>◆ <i>H<sub>1</sub>: Variances of public and private sector during pre and post-reforms period are not homogeneous.</i></li> </ul>
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Test Statistic	Levene’s Test
Significant Level	5 %

<sup>7</sup> [http://planningcommission.nic.in/data/datatable/1612/table\\_3.pDF](http://planningcommission.nic.in/data/datatable/1612/table_3.pDF)

Decision Rule	If P-Value is less than 0.05, Ho is not accepted.
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The results are mentioned as below:

**Table-V: Results of Levene’s Test**

Parameter		Statistic	P-Value	Decision Rule	Decision on H <sub>0</sub>
Public Sector	Pre-Reforms Period	27.319	0.000	P-Value<0.05	Rejected
	Post-Reforms Period				
Private Sector	Pre-Reforms Period	60.874	0.000	P-Value<0.05	Rejected
	Post-Reforms Period				

[Source: Compiled and based on secondary data<sup>8</sup> using SPSS 20 Version]

**Findings**

Here, in Table-V, p-values are less than 0.05; hence, variances of public sector, private sector investments during pre and post-reforms era are not homogeneous. The data sets are log transformed to meet the homogeneity of variances in following way:

**Remedial Measure**

Original data sets of public sector and private sector during pre and post-reforms period are log transformed and Levene’s test is applied. The test results are given as below:

**Table-VI: Results of Levene’s Test**

Parameter		Statistic	P-Value	Decision Rule	Decision on H <sub>0</sub>
Public Sector	Pre-Reforms Period	0.869	0.360	P-Value>0.05	Accepted
	Post-Reforms Period				
Private Sector	Pre-Reforms Period	0.607	0.443	P-Value>0.05	Accepted
	Post-Reforms Period				

Source: Compilation of Secondary Data using SPSS 20 Version

**Findings**

In Table-VI, variances between public sectors investments during pre and post-reforms era and private sectors investment during pre and post-reforms era are homogeneous.

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<sup>8</sup> Ibid.

**Independent Samples t Tests**

Based on the above assumptions, the independent samples t tests under equal variances are executed for public sector and private sector investments during pre and post-reforms period. In this case, the Methodology of test statistic of independent samples t test is shown as below:

<i>Hypothesis</i>	<ul style="list-style-type: none"> <li>◆ <i>H<sub>0</sub>: Sector wise investments during pre and post-reforms period are equal.</i></li> <li>◆ <i>H<sub>1</sub>: Sector wise investments during pre and post-reforms period are not equal.</i></li> </ul>
Period of Test	<ul style="list-style-type: none"> <li>◆ Pre-reforms period: 1986-1987 to 1999-2000</li> <li>◆ Post-reforms period: 2000-2001 to 2013-2014</li> </ul>
Test Statistic	Independent Samples t Tests
Significance Level	5 %
Number of Observation	28
Decision Rule	If P-value is less than 0.05, H <sub>0</sub> is rejected.

The test results are given as under:

**Table-VII: Results of Independent Samples t Tests**

Parameter		Test Statistic	DF	P-Value	Decision Rule	Decision on H <sub>0</sub>
Public Sector	Pre-Reforms Period	-5.621	13.274	0.000	P-Values < 0.05	Rejected
	Post-Reforms Period					
Private Sector	Pre-Reforms Period	-4.730	13.056	0.000	P-Values < 0.05	Rejected
	Post-Reforms Period					

Source: Compiled and based on secondary data<sup>9</sup> using SPSS 20 Version

**Findings**

Public sector and private sector investments of LIC during pre and post-reforms era are significantly different at 5 % level of significance. Reforms in life insurance sector and its modified investment

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<sup>9</sup> Ibid.

portfolio have changed the investments in public sector and private sector during the pre and post-reforms period.

## VI Conclusion

From the study, it is concluded that during pre-reforms period, total investments of public sector, private sector, joint sector and co-operative sector are Rs. 6161.12 Billion, Rs. 980.58 Billion, Rs. 41.71 Billion and Rs. 230.23 Billion respectively during the study period. During post-reforms stage, this total investment is Rs. 76133.63 Billion for public sector, Rs. 21508.50 Billion for private sector, Rs. 70.62 Billion for joint sector, and Rs. 347.03 Billion for co-operative sector. The average growths are 20.62 %, 22.51 %, 16.69 % and 5.54 % for public sector, private sector, joint sector and co-operative sector respectively during pre-reform stage. These growths are 17.92 % for public sector, 25.05 % for private sector, 2.84 % for joint sector and 2.89 % for co-operative sector during post-reforms stage. Average growths are different for different investment strategies followed as per investment portfolio of IRDA during pre and post-reforms period. Public sector and private sector investments of LIC during pre and post-reforms era are significantly different because of reforms in life insurance sector and modified investment portfolios in public sector and private sector during the study period.

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