

An Empirical Analysis on Investment Management of Insurance Company: A Case Study of Life Insurance Corporation LIC

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Abstract

Investment management is the process of managing money, including investment, budgeting, banking and taxes. It is the professional asset management of various securities in order to meet specified investment goals for the benefit of the investors. Indian insurance industry is flourishing with several national and international players competing and growing at rapid rates. This paper endeavoured to link insurance investment decisions with underwriting activities of insurance companies. Life insurance Corporation of India (LIC) has invested their funds in various sectors like infrastructure, other securities, other investment and other approved securities. Both the policyholder's money and shareholder's money has been invested in these sectors by long term and short term basis. The result of the study suggests that policyholder's and shareholders money is significantly influenced the investment of insurance sector. In this study it also revealed that the total long-term investment of the policyholders account in Life insurance Corporation of India (LIC) with profit indicates significant. In the aftermath of expanding liberalisation in the insurance industry together with the worldwide financial crisis and posed a great deal of challenges for the insurance regulatory authorities in monitoring investment of insurance companies.

KEYWORDS: Insurance, Investment, long term and short term

INTRODUCTION:

In India, the Insurance has evolved over time heavily drawing from other countries, England particularly. Life Insurance in its modern form came to India from England in the year 1818. Oriental Life Insurance Company started by Europeans in Calcutta was the first life insurance company on Indian Soil. All the insurance companies established during that period were brought up with the purpose of looking after the needs of European community. The huge and ever rising population levels in our country provide an attractive opportunity but still nearly 70% of Indian lives are un-insured. Bombay Mutual Life Assurance Society heralded the birth of first Indian life insurance company in the year 1870, and covered Indian lives at normal rates. Starting as Indian enterprise with highly patriotic motives, insurance companies came into existence to carry the message of insurance and social security through insurance to various sectors of society. Bharat Insurance Company (1896) was also one of such companies inspired by nationalism. Indian Insurance Industry is flourishing with several national and international players competing and growing at rapid rates. The success comes usually from the easing of policy regulations, and India has become more familiar with different insurance products, and the period from 2010 to 2015 is projected to be the 'Golden Age' for the Indian insurance industry. Indian Insurance companies today offer a comprehensive range of insurance plans, a range which is growing as the economy matures and the wealth of the middle classes increases. The most common types of insurance includes: term life policies, endowment policies, joint life policies, whole life policies, loan cover term assurance policies, unit linked insurance plans, group policies, pension plans, and annuities. Those like the General

insurance plans are also available to cover motor insurance, home insurance, travel insurance and health insurance.

INDIA INSURANCE INDUSTRY COMPOSITION

As per IRDA, the composition of the Indian insurance industry by March 2017 could be mentioned as such:

Table-1: Composition of the Indian insurance industry

| Category: Life insurance | Number of organizations |
|--|-------------------------|
| Publicly owned life insurers | 1 |
| Private insurers' JV with international insurers | 21 |
| Private insurers completely owned by an Indian business organization | 2 |

(*Source: IRDA Report-2017)

India insurance industry - market share of leading companies
The following table shows the market share of top insurers in India in the period till April 2016:

Table-2: Showing the share of insurance market of major companies

| Company | Approximate market share |
|--------------|--------------------------|
| LIC | 70.5% |
| ICICI | 4.9% |
| SBI Life | 5.1% |
| Bajaj | 2.1% |
| Reliance | 1.1% |
| HDFC | 4.7% |
| Birla | 1.6% |
| Max New York | 2.1% |
| Tata | 0.5% |
| PNB Met Life | 0.7% |
| Kotak | 1.6% |
| Others | 5.1% |

(Source: IRDA report-2016)

OBJECTIVES OF THE STUDY:

The objectives of this present study have been outlined as:

- To measure the trend of systematic investments.
- To analyze the pattern of investment in relation to long-term and short term investments.
- To measure the dimensions of investment of shareholder and policyholders' money in relation to change of profit

RESEARCH METHODOLOGY:

Research design of the study is both descriptive and analytical. It has been based on data collected from secondary sources. The secondary sources of data have been collected from the various Annual reports of the IRDA, LIC of India and reports of other life insurers in the market, internet pages, various newspapers, journals,

magazines from various published or unpublished reports and dissertations available at different institutions.

Data analysis tools

The data collected from the insurance companies have been analyzed with the help of different statistical tools like Regression analysis and Bivariate correlation analysis.

INVESTMENT FOCUS AND RETURNS OF LIC OF INDIA

All in all LIC of India investment portfolio worth is approx. Rs 8lakh crore. There is a plan to add stocks worth Rs 60,000 Crore in 2013 in LIC of India investment portfolio. LIC of India is committed to invest almost 20% of its portfolio in stock market. It is point worth noting that in May'2011, LIC of India invested nearly Rs 5 thousand crore in Indian stock market. So LIC of India invested portfolio is starting to weight more in equity. Earlier, LIC of India used to invest majorly in risk-free investment options only. But this change of stand of LIC of India, to increase their exposure of stock market, will prove to be a win-win situation for all. Currently the rules stipulated that LIC invests minimum 50% of their investment portfolio in Government securities. But now few unit linked plans of LIC of India are allowed to invest in equity with limit extending till 80%. This remarkable change in policy by LIC of India, to invest more in stock market is very good. Day by day LIC of India investment portfolio is increasing its doors for stock market. LIC of India invests in stock market under its Unit Linked Plans (ULIP's). In year 2011-12, LIC of India increased its holdings in government Life Insurers like Allahabad Life Insurer, Union Life Insurer of India, UCO Life Insurer, and Syndicate Life Insurer. LIC of India also increased its holdings in some private Life Insurers as well, like Axis Life Insurer and Yes Life Insurer. LIC of India has also increased its stake heavily in ONGC, which is again a very big public sector undertaking. These are explained below:

| SL | PORTFOLIO COMPOSITION | FUND ALLOCATION |
|----|---|-----------------|
| 1 | Government Securities or Corporate Debt | > 60% |
| 2 | Money Market | < 40% |
| 3 | Stock Market | 0% |

Secured Funds > Medium Risk (Steady Income)

| SL | PORTFOLIO COMPOSITION | FUND ALLOCATION |
|----|---|-----------------|
| 1 | Government Securities or Corporate Debt | > 45% |
| 2 | Money Market | < 40% |
| 3 | Stock Market | 15%-55% |

Balanced Funds > Medium Risk (balanced growth)

| SL | PORTFOLIO COMPOSITION | FUND ALLOCATION |
|----|---|-----------------|
| 1 | Government Securities or Corporate Debt | > 30% |
| 2 | Money Market | < 40% |
| 3 | Stock Market | 30%-70% |

Growth Funds > Higher Risk (Long term growth)

| SL | PORTFOLIO COMPOSITION | FUND ALLOCATION |
|----|---|-----------------|
| 1 | Government Securities or Corporate Debt | > 20% |
| 2 | Money Market | < 40% |
| 3 | Stock Market | 40%-80% |

Investment portfolio of Unit Linked Plans > Flexi Plan

There is a unique product of LIC i.e. Flexi Plus scheme which is a type of Unit Linked Plan.

Debt Funds > Low Risk

| SL | PORTFOLIO COMPOSITION | FUND ALLOCATION |
|----|---|-----------------|
| 1 | Government Securities or Corporate Debt | > 60% |
| 2 | Money Market | < 40% |
| 3 | Stock Market | 0% |

Mixed Funds >Medium Risk (steady Income)

| SL | PORTFOLIO COMPOSITION | FUND ALLOCATION |
|----|---|-----------------|
| 1 | Government Securities or Corporate Debt | > 45% |
| 2 | Money Market | < 40% |
| 3 | Stock Market | 15%-25% |

Products are approved in a very short time. Though products have to be refilled, both our proactive steps and IRDA's initiatives for quick approvals will ease the anticipated process and I am hopeful the second half of the current financial year will also go well."

Source: LIC of India Report from 2009-10 to 2014-15

Vision 2020

LIC has devised Vision 2020 to give an insurance policy to every Indian by 2020. Mathew explained that LIC was progressing well in this area and hopes to cover every insurable person in the next seven years. He further said that it would need to do about 600 million more policies in the next seven to eight years to achieve this target. "With an increase in number of agents and opening up offices in tier-4 towns, we would be able to achieve it," he said.

Table-3: Sector wise and instrument wise investments made by LIC (Rs in billion)

| Year (End- March) | Sector-wise | | | | Instrument-wise | | Total |
|-------------------------|-------------|---------|-------|------------------|---------------------------------|--------|----------|
| | Public | Private | Joint | Co- operative | Stock Exchange Securities | | |
| 2007 | 4338.10 | 842.94 | 0.75 | 35.55 | 4804.27 | 413.08 | 5217.35 |
| 2008 | 5033.88 | 1284.68 | 0.74 | 38.18 | 5904.67 | 452.81 | 6357.48 |
| 2009 | 5720.50 | 1871.41 | 0.72 | 36.29 | 7157.10 | 471.81 | 7628.92 |
| 2010 | 6783.75 | 2361.35 | 0.71 | 33.37 | 8720.62 | 458.55 | 9179.17 |
| 2011 | 7759.93 | 2657.98 | 0.82 | 36.67 | 10017.55 | 437.84 | 10455.39 |
| 2012 | 8650.57 | 2848.81 | 0.86 | 35.67 | 11121.61 | 414.30 | 11535.90 |
| 2013 | 10187.81 | 3293.08 | 0.86 | 8.22 | 13073.33 | 416.64 | 13489.96 |
| 2014 | 11942.61 | 3160.24 | 0.94 | 7.54 | 14688.86 | 422.47 | 15111.33 |
| 2015 | 13697.13 | 3379.97 | 0.94 | 6.85 | 16680.47 | 404.42 | 17084.89 |

Source: Life Insurance Corporation of India.

Table-3 revealed the investment of LIC in sector wise, which has been mentioned as Public, Private, Joint and Cooperative sector during the year from 2007 to 2015. Here maximum amount was invested in public sector followed by private sector and cooperative sector. So to minimise the risk, LIC have been investing the amount in public most preferably.

Table-4: LIC's Investments during Five Year Plan Periods

| Plan Year | Gross Investments (Rs. cr) |
|--------------|----------------------------|
| II 1956-61 | 184 |
| III 1961-66 | 285 |
| IV 1969-74 | 1530 |
| V 1974-79 | 2942 |
| VI 1980-85 | 7140 |
| VII 1985-90 | 12969 |
| VIII 1992-97 | 56097 |
| IX 1997-02 | 170929 |
| X 2002-07 | 394779 |
| XI 2007-12 | 704151 |

Source: Life Insurance Corporation of India

Table- 4 reported the data of investment during the plan period .During the ninth and tenth plan period; maximum amount was invested by LIC in different sector. But, latter on during the eleventh study period, it was marked declined, which is not encouraging than the previous periods.

INVESTMENT PATTERN

The investment pattern of policy holder money along with the shareholder money in long term and short term investment has been depicted below in both the sector.

Type of Investment

01. Central Government Securities
02. State Government & Other Govt.
03. Housing & Infrastructure Investment:
 - (a) Housing
 - (b) Power
 - (c) Irrigation/ Water Supply & Sewerage
 - (d) Road, Port & Bridges, Railways
 - (e) Others (Incl. Telecom.)

During the years from 2009-10 to 2014-15, the money of LIC of India was invested in these sectors.

ANALYSIS AND INTERPRETATION:

Investment in Long term investment of shareholder's fund:

1. Government Securities

Table – 5 Autocorrelations of investment in Government Securities (Shareholder-Long term)

| Lag | | | Box-Ljung Statistic | | |
|-----|-----------------|-------------------------|---------------------|----|-------------------|
| | Autocorrelation | Std. Error ^a | Value | Df | Sig. ^b |
| 1 | .127 | .338 | .141 | 1 | .708 |
| 2 | -.412 | .293 | 2.119 | 2 | .347 |
| 3 | -.191 | .239 | 2.760 | 3 | .430 |

a. The underlying process assumed is independence (white noise).

b. Based on the asymptotic chi-square approximation.

The Autocorrelation table-5 indicates the lag relationship of “Investment in Long term investment of shareholder fund” during the year 2009-10 to 2014-15. The

Auto correlation effect gradually increases as it indicate positive in the first part and gradually it crosses 2nd lag with negative of 0.412 correlation value to 0.191 at the end, which indicate an aggressive increase in the total investment of Public sector Life Insurance company. So, the overall investment is increasing over the years up to the end period of the study. Similarly Box Ljung statistics interprets the similar trend in making investment during the period and at the end part, the significance value indicate 0.430, which means the trend is increasing and indicate better during the period.

2. Other Investments

Table – 6 Autocorrelations of investment in other investments

| Lag | | | Box-Ljung Statistic | | |
|-----|-----------------|-------------------------|---------------------|----|-------------------|
| | Autocorrelation | Std. Error ^a | Value | Df | Sig. ^b |
| 1 | .110 | .338 | .106 | 1 | .745 |
| 2 | .002 | .293 | .106 | 2 | .948 |
| 3 | -.255 | .239 | 1.242 | 3 | .743 |

a. The underlying process assumed is independence (white noise).

b. Based on the asymptotic chi-square approximation.

The Autocorrelation table - 6 indicates the lag relationship of “Investment in Other Investments during the year 2009-10 to 2014-15. The Auto correlation effect gradually increases as it indicate positive in the first part and gradually it crosses 2nd lag with negative of 0.002 correlation value to 0.255 at the end, which indicate an aggressive increase in the total investment of Public sector Life Insurance company . So, the overall investment is increasing over the years up to the end period of the study. Similarly Box Ljung statistics interprets the similar trend in making investment during the period and at the end part, the significance value indicate 0.743, which means the trend is increasing and indicate better during the period.

3. Other Securities

Table – 7 Autocorrelations of investment in other securities

| Lag | | | Box-Ljung Statistic | | |
|-----|-----------------|-------------------------|---------------------|----|-------------------|
| | Autocorrelation | Std. Error ^a | Value | df | Sig. ^b |
| 1 | -.603 | .338 | 3.178 | 1 | .075 |
| 2 | .112 | .293 | 3.324 | 2 | .190 |
| 3 | .002 | .239 | 3.324 | 3 | .344 |

a. The underlying process assumed is independence (white noise).

b. Based on the asymptotic chi-square approximation.

The Autocorrelation table-7 indicates the lag relationship of “Investment in Other Securities” during the year 2009-10 to 2014-15. The Auto correlation effect gradually increases as it indicate positive in the first part and gradually it crosses 2nd lag with negative of 0.112 correlation value to 0.002 at the end, which indicate an aggressive increase in the total investment of Public sector Life Insurance company . So, the overall investment is increasing over the years up to the end period of the study. Similarly Box Ljung statistics interprets the similar trend in making investment during the period and at the end part, the significance value indicate 0.344, which means the trend is increasing and indicate better during the period.

Investment on Subsidiaries Associate

Table – 8 Autocorrelations of investment in subsidiaries

| Lag | | | Box-Ljung Statistic | | |
|-----|-----------------|-------------------------|---------------------|----|-------------------|
| | Autocorrelation | Std. Error ^a | Value | df | Sig. ^b |
| 1 | .375 | .338 | 1.233 | 1 | .267 |
| 2 | -.272 | .293 | 2.094 | 2 | .351 |
| 3 | -.402 | .239 | 4.917 | 3 | .178 |

a. The underlying process assumed is independence (white noise).

b. Based on the asymptotic chi-square approximation.

The Autocorrelation table -8 indicates the lag relationship of “Investment in Subsidiaries Associate” during the year 2009-10 to 2014-15. The Auto correlation effect gradually increases as it indicate positive in the first part and gradually it crosses 2nd lag with negative of 0.272 correlation value to 0.402 at the end, which indicate an aggressive increase in the total investment of Life Insurance company . So, the overall investment is increasing over the years up to the end period of the study. Similarly Box Ljung statistics interprets the similar trend in making investment during the period and at the end part, the significance value indicate 0.178, which means the trend is increasing and indicate better during the period.

Table-9:Correlations of total long term investment: LIC of India(Share Holder Account)

| LIC of India | | | | | | |
|------------------------|---------|-----------------------|-------------------|------------------|------------------------|-----------------|
| Long investment | term | Government securities | Other Investments | Other Securities | Subsidiaries Associate | Total Long term |
| Government securities | R | 1 | | | | |
| | P-Value | | | | | |
| Other Investments | R | -.397 | 1 | | | |
| | P-Value | .508 | | | | |
| Other Securities | R | -.495 | -.039 | 1 | | |
| | P-Value | .397 | .950 | | | |
| Subsidiaries Associate | R | -.575 | .733 | -.023 | 1 | |
| | P-Value | .311 | .159 | .970 | | |
| Total Long Term | R | -.298 | .798 | -.208 | .943* | 1 |
| | P-Value | .626 | .106 | .737 | .016 | |

Table – 9: indicate the results of r- coefficient value of cross correlation matrix with P-Value for five years i.e. 2009-10 to 2014-15 of LIC of India in Long term investment (Share Holder Account). The variables of investment of LIC of India are as: Government securities, Other Investments, Other Securities and investment in Subsidiaries Associates. Here, the value of r-coefficient has been measured in 95 percent significance value but no r-value indicates significant to the total long term investment during these five years of study except investment in Subsidiaries Associates, which indicated 0.943* at 95 percent significance level and revealed negative to Government securities and Other Securities, which is not in the similar trend.

SHORT TERM INVESTMENT SHAREHOLDER

No amount of investment has been made during these five years from 2009-10 to 2014-15 by LIC of India. So, no calculation has been made in this part.

Investment in Long term investment of Policy holder's fund:

1. Government Securities

Table - 10 Autocorrelations of investment in Government Securities(long term-Policy Holder)

| Lag | | | Box-Ljung Statistic | | |
|-----|-----------------|-------------------------|---------------------|----|-------------------|
| | Autocorrelation | Std. Error ^a | Value | df | Sig. ^b |
| 1 | .341 | .338 | 1.016 | 1 | .314 |
| 2 | -.071 | .293 | 1.075 | 2 | .584 |
| 3 | -.349 | .239 | 3.207 | 3 | .361 |

a. The underlying process assumed is independence (white noise).

b. Based on the asymptotic chi-square approximation.

The Autocorrelation table - 10 indicates the lag relationship of "Investment in Long term Government Securities" during the year 2009-10 to 2014-15. The Auto correlation effect gradually increases as it indicate positive in the first part and gradually it crosses 2nd lag with negative of 0.071 correlation value to 0.349 at the end, which indicate an aggressive increase in the total investment of Public sector Life Insurance company . So, the overall investment is increasing over the years up to the end period of the study. Similarly Box Ljung statistics interprets the similar trend in making investment during the period and at the end part, the significance value indicate 0.361, which means the trend is increasing and indicate better during the period.

2. Other Investments

Table – 11 Autocorrelations of investment in other investments

| Lag | | | Box-Ljung Statistic | | |
|-----|-----------------|-------------------------|---------------------|----|-------------------|
| | Autocorrelation | Std. Error ^a | Value | Df | Sig. ^b |
| 1 | .027 | .338 | .007 | 1 | .935 |
| 2 | -.665 | .293 | 5.165 | 2 | .076 |
| 3 | -.031 | .239 | 5.183 | 3 | .159 |

a. The underlying process assumed is independence (white noise).

b. Based on the asymptotic chi-square approximation.

The Autocorrelation table-11 indicates the lag relationship of "Investment in Other Investments" during the year 2009-10 to 2014-15. The Auto correlation effect gradually increases as it indicate positive in the first part and gradually it crosses 2nd lag with negative of 0.665 correlation value to 0.31 at the end, which indicate an aggressive increase in the total investment of Public sector Life Insurance company. So, the overall investment is increasing over the years up to the end period of the study. Similarly Box Ljung statistics interprets the similar trend in making investment during the period and at the end part, the significance value indicate 0.159, which means the trend is increasing and indicate better during the period.

3. Other Securities

Table – 12 Autocorrelations of investment in other securities

| Lag | | | Box-Ljung Statistic | | |
|-----|-----------------|-------------------------|---------------------|----|-------------------|
| | Autocorrelation | Std. Error ^a | Value | df | Sig. ^b |
| 1 | -.030 | .338 | .008 | 1 | .929 |
| 2 | -.403 | .293 | 1.900 | 2 | .387 |
| 3 | -.013 | .239 | 1.902 | 3 | .593 |

a. The underlying process assumed is independence (white noise).

b. Based on the asymptotic chi-square approximation.

The Autocorrelation table-12 indicates the lag relationship of “Investment in Other Securities” during the year 2009-10 to 2014-15. The Auto correlation effect gradually increases as it indicate positive in the first part and gradually it crosses 2nd lag with negative of 0.403 correlation value to 0.013 at the end, which indicate an aggressive increase in the total investment of Public Life Insurance company . So, the overall investment is increasing over the years up to the end period of the study. Similarly Box Ljung statistics interprets the similar trend in making investment during the period and at the end part, the significance value indicate 0.593, which means the trend is increasing and indicate better during the period.

4. OTHERS SUBSIDIARY

Table – 13 Autocorrelations of investment in other subsidiaries

| Lag | | | Box-Ljung Statistic | | |
|-----|-----------------|-------------------------|---------------------|----|-------------------|
| | Autocorrelation | Std. Error ^a | Value | df | Sig. ^b |
| 1 | .103 | .338 | .093 | 1 | .760 |
| 2 | -.242 | .293 | .776 | 2 | .679 |
| 3 | -.267 | .239 | 2.022 | 3 | .568 |

a. The underlying process assumed is independence (white noise).

b. Based on the asymptotic chi-square approximation.

The Autocorrelation table-13 indicates the lag relationship of “Investment in Other Subsidiaries” during the year 2009-10 to 2014-15. The Auto correlation effect gradually increases as it indicate positive in the first part and gradually it crosses 2nd lag with negative of 0.242 correlation value to 0.267 at the end, which indicate an aggressive increase in the total investment of Public sector Life Insurance company. So, the overall investment is increasing over the years up to the end period of the study. Similarly Box Ljung statistics interprets the similar trend in making investment during the period and at the end part, the significance value indicate 0.568, which means the trend is increasing and indicate better during the period.

5. INFRASTRUCTURE

Table – 14 Autocorrelations of investment in infrastructure

| Lag | | | Box-Ljung Statistic | | |
|-----|-----------------|-------------------------|---------------------|----|-------------------|
| | Autocorrelation | Std. Error ^a | Value | df | Sig. ^b |
| 1 | .340 | .338 | 1.009 | 1 | .315 |
| 2 | -.068 | .293 | 1.063 | 2 | .588 |
| 3 | -.344 | .239 | 3.140 | 3 | .371 |

a. The underlying process assumed is independence (white noise).

Table – 14 Autocorrelations of investment in infrastructure

| Lag | | | Box-Ljung Statistic | | |
|-----|-----------------|-------------------------|---------------------|----|-------------------|
| | Autocorrelation | Std. Error ^a | Value | df | Sig. ^b |
| 1 | .340 | .338 | 1.009 | 1 | .315 |
| 2 | -.068 | .293 | 1.063 | 2 | .588 |
| 3 | -.344 | .239 | 3.140 | 3 | .371 |

a. The underlying process assumed is independence (white noise).

b. Based on the asymptotic chi-square approximation.

The Autocorrelation table-14 indicates the lag relationship of “Investment in Infrastructure” during the year **2009-10 to 2014-15**. The Auto correlation effect gradually increases as it indicate positive in the first part and gradually it crosses 2nd lag with negative of 0.068 correlation value to 0.344 at the end, which indicate an aggressive increase in the total investment of Public sector Life Insurance company. So, the overall investment is increasing over the years up to the end period of the study. Similarly Box Ljung statistics interprets the similar trend in making investment during the period and at the end part, the significance value indicate 0.371, which means the trend is increasing and indicate better during the period.

Table – 15: Correlation of Long term investment: Policy Holder Account (LIC of India)

| | | Government securities | Other Approved investment | Other Securities | Investment in subsidiary | Investment in Infrastructure | Total |
|------------------------------|---------|-----------------------|---------------------------|------------------|--------------------------|------------------------------|-------|
| Government Securities | R | 1 | -.202 | -.648 | -.202 | .989** | .657 |
| | P-Value | | .744 | .237 | .744 | .001 | .229 |
| Other Approved Investment | R | -.202 | 1 | -.243 | 1.000** | -.176 | -.774 |
| | P-Value | .744 | | .694 | .000 | .777 | .125 |
| Other Securities | R | -.648 | -.243 | 1 | -.243 | -.604 | .058 |
| | P-Value | .237 | .694 | | .694 | .281 | .926 |
| Investment in subsidiary | R | -.202 | 1.000** | -.243 | 1 | -.176 | -.774 |
| | P-Value | .744 | .000 | .694 | | .777 | .125 |
| Investment In Infrastructure | R | .989** | -.176 | -.604 | -.176 | 1 | .674 |
| | P-Value | .001 | .777 | .281 | .777 | | .213 |
| Total | R | .657 | -.774 | .058 | -.774 | .674 | 1 |
| | P-Value | .229 | .125 | .926 | .125 | .213 | |

** . Correlation is significant at the 0.01 level (2-tailed). N= 5 years

Table – 15: indicate the correlation matrix of long term investment with other long term investment dimensions of Policy holder account in LIC of India from 2009-10 to 2014-15. During the five years of the study, it is revealed that, infrastructure and government securities are most significant in the investment plans which revealed 0.989** at 99 percent significance level, where as other investment and investment in subsidiary stands 1.00**, which is most significant in the investment. But to correlate the investments with the total investment during these five years, it revealed that these

two investment i.e. Investment in subsidiaries and investment in other approved investment revealed negative and insignificant. So these two investments must be strategically evaluated as it affects the total long term investments of the policy holder account in LIC of India. Otherwise, in total it seems manageable.

Table – 16 Correlations of Short term Investment (Policy Holder Account): LIC of India

| | | Government Securities | Other than Approved investment | Other Securities | Approved securities | Investments In Infrastructure | Total |
|--------------------------------|---------|-----------------------|--------------------------------|------------------|---------------------|-------------------------------|-------|
| Government Securities | R | 1 | .063 | .991** | -.666 | .885 | .995* |
| | P-Value | | .920 | .001 | .220 | .046 | .000 |
| Other than Approved Investment | R | .063 | 1 | .090 | -.145 | .123 | .136 |
| | P-Value | .920 | | .885 | .816 | .844 | .828 |
| Other Securities | R | .991** | .090 | 1 | -.602 | .820 | .979* |
| | P-Value | .001 | .885 | | .282 | .089 | .004 |
| Approved Securities | R | -.666 | -.145 | -.602 | 1 | -.872 | -.713 |
| | P-Value | .220 | .816 | .282 | | .053 | .177 |
| Investments In Infrastructure | R | .885* | .123 | .820 | -.873 | 1 | .917* |
| | P-Value | .046 | .844 | .089 | .053 | | .028 |
| Total | R | .995** | .136 | .979** | -.713 | .916 | 1 |
| | P-Value | .000 | .828 | .004 | .177 | .028 | |

** . Correlation is significant at the 0.01 level (2-tailed).

* . Correlation is significant at the 0.05 level (2-tailed).

Table - 16 indicate the results of r- coefficient value of cross correlation matrix with p-value of total investment for five years i.e. 2009-10 to 2014-15 of LIC of India in Short term Investment (Policy Holder Account). The variables in investment of LIC of India are measured on r-coefficient in 95 percent significance with Government Securities , Other than Approved investment, Other Securities Approved securities, Investments In Infrastructure during these five years of study except investment in Government Securities and Other Securities of total Policy holder money , which indicates 0.995* and 0.979* respectively at 95 percent significance level and reveals highly significant and positively correlated with other variables, where as it indicates negative to approved securities that means the total investment falls lower because of this investment . Other approved investment also have not significant in the total investment plans of LIC.

Table –17: Correlation matrix of Total investment of LIC of India

| | | Policy Holder Account: Total long term | Policy Holder Account: total short term | Profit | Share holder Account : Total long Term |
|---|---------|--|---|--------|--|
| Policy Holder Account: Total long term | R | 1 | .218 | .635 | .934* |
| | P-Value | | .725 | .250 | .020 |
| Policy Holder Account: total short term | R | .218 | 1 | .676 | .508 |
| | P-Value | .725 | | .210 | .382 |
| Profit | R | .635 | .676 | 1 | .855 |
| | P-Value | .250 | .210 | | .065 |
| Share holder Account : Total long Term | R | .934* | .508 | .855 | 1 |
| | P-Value | .020 | .382 | .065 | |

*. Correlation is significant at the 0.05 level (2-tailed).

N=5 Years

Table -17 indicate the results of r- coefficient value of cross correlation matrix with p-value of profit for five years i.e. 2009-10 to 2014-15of LIC of India in policy holder account for total long term, total short term, Profit and total long term share holder money investments. The variables in investment of LIC of India are measured on r-coefficient in 95 percent significance value but no r-value indicates significant to the profit during these five years of study except long term investment of total shareholder money , which indicates 0.934* at 95 percent significance level and reveals highly significant and positively correlated with other variables .

Regression

Share holder money in total long term, policy holder money in total short term, policy holder money in total long term investment of LIC Of India have been taken as independent variable with profit during the five years .

Table – 18: OUTPUT-1

| Model | R | R ² | Adjusted R ² | Std. Error of the Estimate |
|-------|-------------------|----------------|-------------------------|----------------------------|
| 1 | .984 ^a | .968 | .871 | 8310.24 |

a. Predictors: (Constant), Share Holder Total Long term, Policy Total Short Term, Policy Total Long Term

Here in the table -18 shows the r, the correlation coefficient of the changes in the variables i.e. investment of LIC of India with dependent factors mentioned above during the study for factors responsible for productivity is high i.e. 0.984, which indicates a strong relationship with the mentioned variables in Output-I. Further, r Square, the coefficient of determination shows about 95 percent of 0.968, which explains variation of profit with investment efficiency. As a further measure of the strength of the model fit, it has been comparing the Adjusted R² of the estimate in the output table-I and reported that the profit can be changed with the independent variables in total at 0.871 i.e. 87 percent change can be possible in change of profit

with the value of standard error i.e. 0.228,(table-5.70) which is much higher with the change in scale of investment in both long term and short term investment in relation to the profit acquisition.

CONCLUSION:

During the period of the study, it is revealed that, infrastructure and government securities are most significant in the investment plans, similarly other investment and investment in subsidiary are also reported significant in the investment. But, when it is correlated the investments with the total investment, it revealed that these two investments i.e. investment in subsidiaries and investment in other approved investment reported negative and insignificant. So these two investments have not strategically evaluated as it reflected the total long term investments of the policy holder account in LIC of India. Otherwise, in total, it seems manageable. Profit indicates significant to the total long term investment during these five years of study.

In analysing the trend of long term investment it is found that, infrastructure and government securities are significant in the investment plans, where as other investment and investment in subsidiary stands are most significant in the investment. Further, it is revealed that in two types of investment i.e. investment in subsidiaries and investment in other approved investment are negative and insignificant to generate profit in the company. Finally, it is concluded that, the total investment of the shareholder money in public sector life insurance company is much lower amount as compared to the private insurer, where as in policy holder money investment it is marked vice versa and indicate a better option in both the type of companies, even though some deviations are marked in investment of policy holder money in both the companies. Overall investment scenario of both the type companies basically more alluring on short-term than long-term and indicates more flexibility with profit.

SUGGESTIONS:

This suggestion includes comment on the matching of the insurer's assets in relation to the insurer's liabilities. The researcher suggests that this advice can be summarised as follows:-

1. Communicate the capital implications of investment decisions arising from the insurer's Regulatory Capital requirements;
2. Communicate the investment-related implications of the insurer's liability profile, including articulation of the minimum risk asset portfolio;
3. Develop appropriate trigger points, including the actions which need to occur at those points;
4. Communicate any cash flow patterns and liquidity constraints which have implications for investments (including taxes, dividends, transfers, etc.) be modulated.

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