"A Comparative Study of Capital Adequacy of Selected Public and Private General Insurance Companies in India"

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Abstract:

The Insurance is the risk protection factor which provides coverage for life component and non life component. Generally life component is under the Life Insurance and non life components include General Insurance. Generally CARAMEL Analysis is used to analyse companies working under Insurance sector. For the present study only one factor of CARAMEL has been taken as an analytical tool which is Capital Adequacy. The present study covers the period of 10 years for making the conclusion for the hypothesis testing. Here t-test has been applied for hypothesis testing. This study compares the capital adequacy between the selected samples of public sector general insurance companies and private sector general insurance companies.

Key Words: Capital Adequacy, IRDA, CARAMEL, Mathematical Reserves

1. Introduction to Insurance Sector

Insurance is a cooperative device to spread the losses caused by the particular risk over a number of persons who are exposed to it and who agree to ensure themselves against that particular risk. In simple words insurance provides financial protection against a loss arising out of happening of a certain event. For that a person has to pay a sum amount monthly, annually or half yearly which is called as Premium. In India Insurance Sector is regulated by Insurance

Regulatory and Development Authority of India (IRDA). There are mainly two types of Insurance:

1. Life Insurance which covers the risk for life of person.
2. Non-Life Insurance which covers the aspects other than life. It includes Marine Insurance, Flood Insurance, Fire Insurance, Property Insurance etc.

Concept of Capital Adequacy

Capital Adequacy is one of the core parts of CARAMEL Analysis of Insurance Sector. Broadly Caramel Analysis is-

C – Capital Adequacy Analysis

A – Assets Quality Analysis

R – Reinsurance and Actuarial Issue Analysis

M – Management Efficiency Analysis

E – Earnings and Profitability Analysis

L – Liquidity Analysis

Capital Adequacy means the ability of company to meet its requirement of long term funds to invest in the fixed assets. It calculated the long term viability of insurance companies. Capital adequacy helps an organization to indentify that they have adequate capital so that it may be financially sound to make their payment on time. Capital Adequacy can be analysed with the help of following three ratios

1. Solvency Ratio
2. Capital to Total Assets Ratio
3. Capital to Mathematical Reserves Ratio

3. Research Methodology

Title of the Problem

"A Comparative Study of Capital Adequacy of Selected Public and Private General Insurance Companies in India"

Objectives of the Study

1. To know about the non life insurance sector in India
2. To analyse the Capital Adequacy of the Selected Public and Private Insurance Companies.
3. To compare the long term performance of Selected Public and Private Insurance companies in India.

Study Period

With the changing scenario of the present economic, political and competitive environment of India and the Present Outlook of Indian Economy, this study covers the period of 10 Accounting years commenced from 2009-10 to 2018-19. The data for the present study has been collected from the annual report of all the selected samples of insurance sector.

Universe of the Study

Universe of the study is all the leading companies working under the Insurance sector in India. Here, Researcher has decides to select total of 8 samples which consists 4 private general insurance companies and 4 public general insurance companies:

Public Sector General Insurance Companies:

1. General Insurance Corporation of India
2. The New India Assurance Company Ltd.
3. United India Insurance Company Ltd.
4. The Oriental Insurance Company Ltd.

Private Sector General Insurance Companies:

1. Bajaj Allianz General Insurance Co.
2. Reliance General Insurance Company Ltd.
3. TATA AIG General Insurance Company Ltd.
4. IFFCO TOKIO General Insurance Company Ltd.

Variables for the study

For the present study researcher has used financial ratios of Capital Adequacy as a tool for making the analysis and conclusion. Following three ratios are taken for the present study:

1. Solvency Ratio
2. Capital to Total Assets Ratio
3. Capital to Mathematical Reserves Ratio
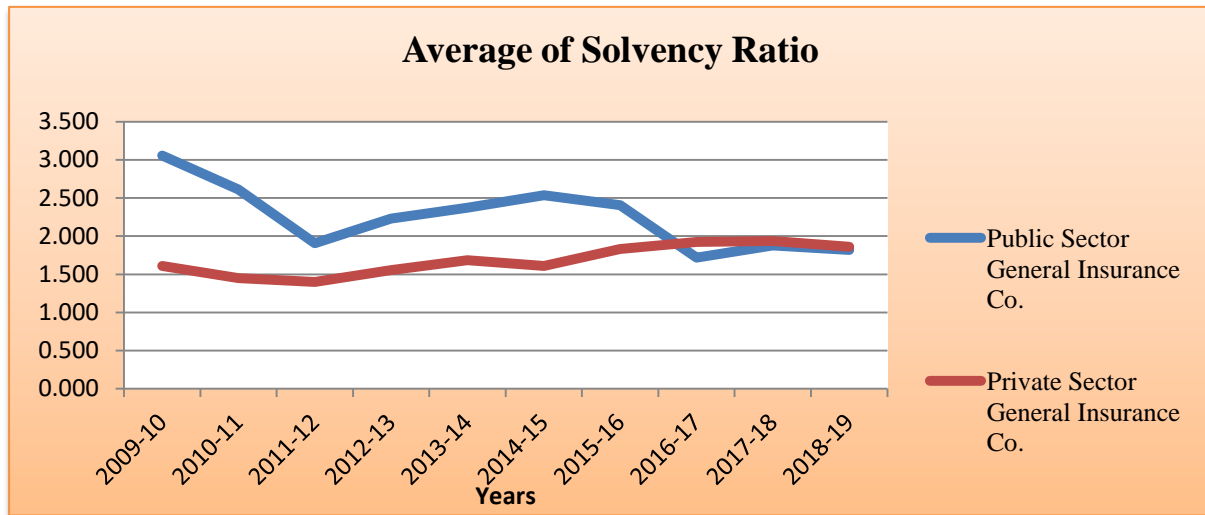
4. Data Analysis and Interpretation

1. Solvency Ratio

H_0=There is no significant difference in the Solvency Ratio between Public and Private Sector Non-life Insurance Company.

H_1= There is significant difference in the Solvency Ratio between Public and Private Sector Non-life Insurance Company.

	Table: 1 - AVERAGE OF SOLVENCY RATIO					
	PUBLIC SECTOR			PRIVATE SECTOR		
YEAR	GENERAL INSURANCE CO.			GENERAL INSURANCE CO.		
	(Mean) $\overline{X}$	$(\overline{X} - \overline{\overline{X}})$	$(\overline{X} - \overline{\overline{X}})^2$	(Mean) $\overline{Y}$	$(\overline{Y} - \overline{\overline{Y}})$	$(\overline{Y} - \overline{\overline{Y}})^2$
2009-10	3.058	0.803	0.645	1.610	-0.075	0.006
2010-11	2.613	0.358	0.128	1.448	-0.238	0.056
2011-12	1.908	-0.347	0.120	1.398	-0.288	0.083
2012-13	2.230	-0.025	0.001	1.553	-0.133	0.018
2013-14	2.375	0.120	0.014	1.683	-0.002	0.000
2014-15	2.538	0.283	0.080	1.610	-0.075	0.006
2015-16	2.408	0.153	0.024	1.830	0.145	0.021
2016-17	1.718	-0.537	0.288	1.925	0.240	0.057
2017-18	1.878	-0.377	0.142	1.938	0.253	0.064
2018-19	1.820	-0.435	0.189	1.860	0.175	0.030

TOTAL	22.546		1.631	16.855		0.340

The above Table and Chart shows the Average of Solvency Ratios of Selected Samples of Private and Public general Insurance Companies. The Average of Solvency Ratios for Public General Insurance Companies is 2.2546 and that of Private General Insurance Companies is 1.6855. During the study period the Solvency ratios of the Public sector general insurance is higher than the Private General Insurance companies.

Table: 2 - t-test for Solvency Ratio

Name of Sector	Mean	SD	DF	't' Cal. Value	't' Table Value
Public Sector Non Life Insurance Companies	2.2546	0.3311	18	3.8419	2.1009
Private Sector Non Life Insurance Companies	1.6855				

The above table shows the T-statistics for the Solvency ratios for the hypothesis testing. From the table we can see that the Calculate value is 3.8419 and the Table value for T-statistics is 2.1009. Here Calculate Value is higher than the Table value which means that there is existence of significant difference in the Solvency Ratios between the selected public and private general insurance companies. Here Null Hypothesis is not accepted.
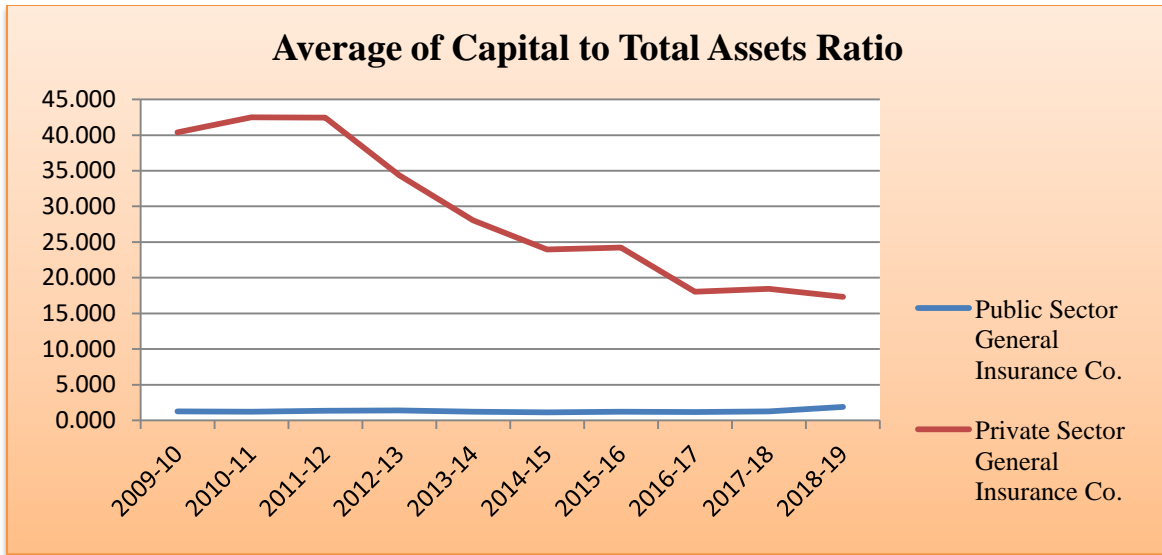
2. Capital to Total Assets Ratio

H_0= There is no significant difference in the Capital to Total Assets Ratio between Public and Private Sector Non-life Insurance Company.

H_1= There is significant difference in the Capital to Total Assets Ratio between Public and Private Sector Non-life Insurance Company.

Table: 3 - AVERAGE OF CAPITAL TO TOTAL ASSETS RATIO						
YEAR	PUBLIC SECTOR			PRIVATE SECTOR		
	GENERAL INSURANCE CO.			GENERAL INSURANCE CO.		
	(Mean) $\overline{X}$	$(\overline{X} - \overline{\overline{X}})$	$(\overline{X} - \overline{\overline{X}})^2$	(Mean) $\overline{Y}$	$(\overline{Y} - \overline{\overline{Y}})$	$(\overline{Y} - \overline{\overline{Y}})^2$
2009-10	1.295	-0.027	0.001	40.393	11.423	130.474
2010-11	1.248	-0.074	0.005	42.475	13.505	182.372
2011-12	1.348	0.026	0.001	42.425	13.455	181.024
2012-13	1.390	0.068	0.005	34.378	5.408	29.241
2013-14	1.230	-0.092	0.008	28.065	-0.905	0.820
2014-15	1.123	-0.199	0.040	23.978	-4.993	24.925
2015-16	1.243	-0.079	0.006	24.218	-4.753	22.586
2016-17	1.175	-0.147	0.022	18.028	-10.943	119.738
2017-18	1.278	-0.044	0.002	18.430	-10.541	111.102
2018-19	1.888	0.566	0.320	17.315	-11.656	135.851
TOTAL	**13.218**		**0.410**	**289.705**		**938.132**

The above Table and Chart shows the Average of Capital to Total Assets Ratio of Selected Samples of Private and Public general Insurance Companies. The Average of Capital to Total Assets Ratios for Public General Insurance Companies is 1.3218 and that of Private General Insurance Companies is 28.9705. During the study period the Capital to Total Assets ratios of the Public sector general insurance is much lower than the Private General Insurance companies.

Table: 4 - t-Statistics for Capital to Total Assets Ratio

Name of Sector	Mean	SD	DF	't' Cal. Value	't' Table Value
Public Sector Non Life Insurance Companies	1.3218	7.2208	18	8.5618	2.1009
Private Sector Non Life Insurance Companies	28.9705				

The above table shows the T-statistics for the Capital to Total Assets ratios for the hypothesis testing. From the table we can see that the Calculate value is 8.5618 and the Table value for T-statistics is 2.1009. Here Calculate Value is higher than the Table value which means that there is existence of significant difference in the Capital to Total Assets Ratios between the selected public and private general insurance companies. Here Null Hypothesis is not accepted.
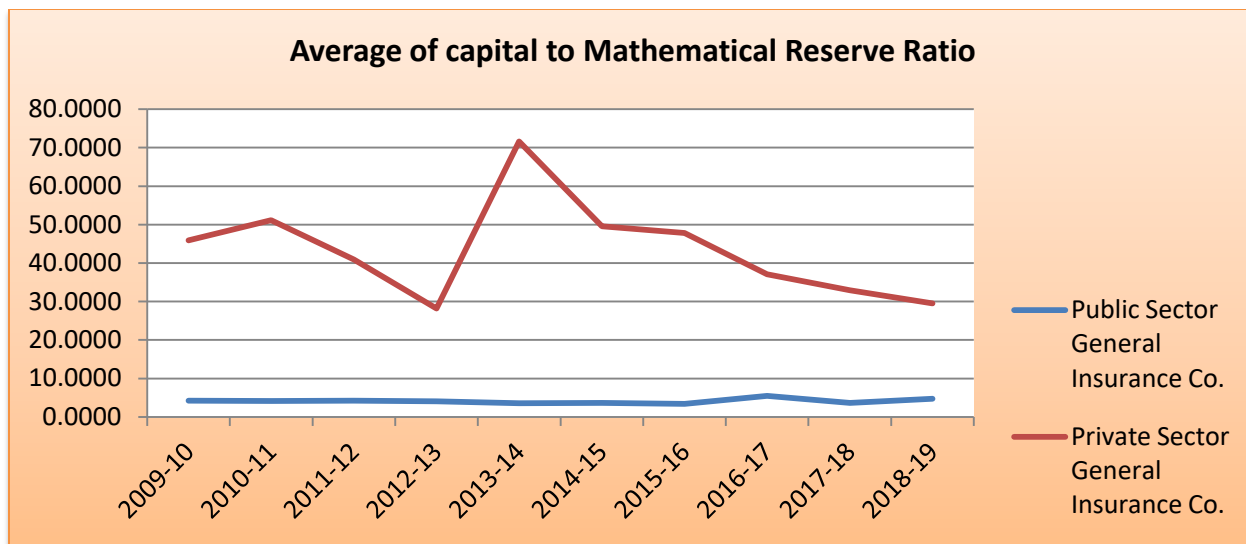
3. **Capital to Mathematical Reserve Ratio**

H_0= There is no significant difference in the Capital to Mathematical Reserve Ratio between Public and Private Sector Non-life Insurance Company.

H_1= There is significant difference in the Capital to Mathematical Reserve Ratio between Public and Private Sector Non-life Insurance Company

	PUBLIC SECTOR			PRIVATE SECTOR		
YEAR	GENERAL INSURANCE CO.			GENERAL INSURANCE CO.		
	(Mean) $\overline{X}$	$(\overline{X} - \overline{\overline{X}})$	$(\overline{X} - \overline{\overline{X}})^2$	(Mean) $\overline{Y}$	$(\overline{Y} - \overline{\overline{Y}})$	$(\overline{Y} - \overline{\overline{Y}})^2$
2009-10	4.2530	0.1392	0.0194	45.9100	2.4490	5.9976
2010-11	4.1100	-0.0038	0.0000	51.1300	7.6690	58.8136
2011-12	4.2000	0.0862	0.0074	40.8770	-2.5840	6.6771
2012-13	4.0830	-0.0308	0.0009	28.1430	-15.3180	234.6411
2013-14	3.5380	-0.5758	0.3315	71.6300	28.1690	793.4926
2014-15	3.6500	-0.4638	0.2151	49.6000	6.1390	37.6873
2015-16	3.4100	-0.7038	0.4953	47.8050	4.3440	18.8703
2016-17	5.4930	1.3792	1.9022	37.0800	-6.3810	40.7172
2017-18	3.6650	-0.4488	0.2014	32.9600	-10.5010	110.2710
2018-19	4.7350	0.6212	0.3859	29.4750	-13.9860	195.6082
TOTAL	41.1370		3.5593	434.6100		1502.7759

Table: 5 - AVERAGE OF CAPITAL TO MATHAMATICAL RESERVE RATIO

The above Table and Chart shows the Average of Capital to Mathematical Reserves Ratio of Selected Samples of Private and Public general Insurance Companies. The Average of Capital to Mathematical Reserve Ratios for Public General Insurance Companies is 4.1137 and that of Private General Insurance Companies is 43.4610. During the study period the Capital to Mathematical Reserve ratios of the Public sector general insurance is much lower than the Private General Insurance companies.

Table: 6 - t-Statistics of Capital to Mathematical Reserves Ratio

Name of Sector	Mean	SD	DF	't' Cal. Value	't' Table Value
Public Sector Non Life Insurance Companies	4.1137	9.1479	18	9.6178	2.1009
Private Sector Non Life Insurance Companies	43.4610				

The above table shows the T-statistics for the Capital to Mathematical Reserves ratios for the hypothesis testing. From the table we can see that the Calculate value is 9.6178 and the Table value for T-statistics is 2.1009. Here Calculate Value is higher than the Table value which means that there is existence of significant difference in the Solvency Ratios between the selected public and private general insurance companies. Here Null Hypothesis is not accepted.

5. Findings and Conclusion

The above study was for the period of 10 years for the analysis of difference of the Capital Adequacy between public general insurance companies and private general insurance companies. Following are some of the conclusions arrived from the research study:

1. During the study period there is difference shown in the solvency ratios between the selected private and public general insurance companies.
2. During the study period there is existence of significant difference in the Capital to Total Assets Ratio between the selected Public and Private General Insurance companies.
3. During the study period there is difference in the Capital to Mathematical Reserves between the selected samples of Private and Public General Insurance Companies.

From the above research study it can be said that the management for the long term resources is different in case of Private and Public non life insurance companies. The final conclusion is that, there is significant difference exists in the Capital Adequacy between the selected samples of Private and Public Non life insurance companies working in India.

5. Suggestions

1. The average solvency ratio of Public General Insurance companies is higher than the ideal level. So they have to take some precautionary steps to maintain it up to an ideal level of 1.5.
2. There is vast difference in the management of capital to total assets between public and private general insurance companies. The average of Capital to total assets in the Private General Insurance companies is almost 10 times than that of the public general insurance companies. So they have to take some corrective actions to maintain proper capital to total assets ratio.
3. The difference in the management of capital to mathematical reserve is remarkable during the study period. Private General insurance companies are using more and more reserve during their working as compared to the public general insurance companies. So they have to take some corrective actions towards using other long term source which yield maximum returns to them.

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