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CAPITAL STRUCTURE OF LIFE INSURANCE COMPANIES IN INDIA-AN ANALYTICAL STUDY

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ABSTRACT

Life insurance industry has been liberalized after more than fifty years of monopoly with Life Insurance Corporation of India. This industry is liberalized in the year 2000 and at present there are twenty four (24) life insurance companies operating in India (IRDA Annual Report, 2012-13). It is true that fourteen (14) years after liberalization, private life insurers have undergone many changes in the industry and it is at this juncture it has become imperative to study the solvency performance of these companies. Ten life insurance companies including Life Insurance Corporation of India have been selected from the Annual Report of IRDA, 2012-13 for the purpose of study which have an age of seven years or more from 2006-07 to 2012-13. The study finds that Indian life insurance companies are dependent on debt capital instead of their own capital which is a very risky business practices and the policyholders' money will not be safe in case of liquidation due to financial market failure.

KEYWORDS:*Capital Structure, Insurance Solvency, Insurance Risks, Capital Structure Ratios, Insurance Regulations.*

INTRODUCTION

Before the setting up of IRDA (Insurance Regulatory and Development Authority), the life insurance business in India is controlled exclusively by Life Insurance Corporation of India. After the IRDA has been set up, the monopoly business right of LICI (Life Insurance Corporation of India) in life insurance is abolished. There has been co-existence of both the public company and the private companies side by side and the nationalized life insurance company in India is now facing

competition from Private Life Insurance Companies. The entry of private life insurers in India has made a rapid growth in the life insurance sector and IRDA has made strict regulation of solvency margin and investment rules protecting the interest of the policyholders and shareholders imposed by IRDA (Annual Report 2008-09).Under the circumstances, it has become imperative to have a detailed study of the impact of supervisory interference on the solvency position of life insurance companies in India.

CONCEPTUAL FRAMEWORK AND REVIEW OF LITERATURE

Solvency is having enough money to meet all pecuniary liabilities. The long term solvency of a firm can be examined by using leverage or capital structure ratios. The leverage or capital structure ratios may be defined as financial ratios which throw light on the long term solvency of a firm reflected in its ability to assure the long term creditors with regard to i) periodic payment of interest during the period of the loan and ii) repayment of principal on maturity or in predetermined installments at due date(Khan and Jain,1993) In an insurance context, this definition gives rise to two concepts. These two relates to two extreme possibilities; liabilities paid on an immediate liquidation of the company (break-up or run-off approach) and at the other end, to pay all its debts as they mature (going-concern approach).This means that a company is solvent when its solvency margin is positive. Solvency margin is the difference between total value of assets on a specified date and the amount of liabilities on that date as per actuarial experts from the point of view of supervisory authority. In India, IRDA has prescribed the solvency ratio (available solvency margin / required solvency margin) of 150% to all insurance companies (IRDA Annual Report 2006-07). The calculation of both ASM (available solvency margin) and RSM (required solvency margin) depends on IRDA (Acturial Report and Abstract) regulation, 2000 and it requires specific information relating to the insurance business. These specific business information are neither available from Annual Report, nor does IRDA make public its Acturial Report and Abstract (Darzi,2011).. The solvency ratio is most often defined as: net assets to net premium written. Different countries use different methodologies to calculate the solvency ratio, and have different requirements.

Ansari and Fola (2014) have analysed the degree of solvency position of life insurance companies in India by using three ratios namely the ratio of net assets to net premium written, the ratio of capital to total assets and the ratio of capital to reserve and Mann Whitney-U test has been used to find out the difference in the solvency position between public sector and private sector life insurance companies in India.

Jain (2013) conducted a study with respect to overall performance of life insurance industry in India after 2008 world economic crisis from 2007-08 to 2011-12. Analysis of data (secondary), relating to total premium, policies issued, operating expense ratio, market share of life insurers in terms of first year premium, market share of life insurers' total premium, no. of officers of life insurers was made with the help of simple tabulation. Findings revealed that total life insurance companies in India have increased from twenty one to twenty four but the growth was very slow. It was interpreted that after economic slowdown, new companies were taking less interest in the Indian life insurance market and many life insurance offices were closed down.

Das et.al (2003) made a study on the indicators of financial soundness of the life insurance companies for analysis of profitability, solvency and liquidity. These financial soundness indicators had been presented within the CARAMELS framework, which adds the Acturial and Reinsurance issues to the CAMELS methodology routinely used for Banks, in the form of Core-set and Encouraged set(indicator related to stock market and group exposures) by various ratios such as loss ratio, expenses ratio, ratio of investment income to investment assets, return on equity, return on assets, earnings per employee, capital to total assets ratio, capital to technical reserve ratio, cover of solvency margin, ratio of actual capital to the minimum capital required by the regulator, liquid assets to total assets ratio, liquid liabilities to total liabilities ratio etc. They have proposed that the above key financial soundness indicators may be compiled and used for surveillance of financial soundness of the insurance sector.

Chen and Wong (2004) made a study on the solvency of general and life insurance companies in Asia using firm data and macro data .They found that the factors affecting significantly general insurers' financial health in Asian economies were firm size, investment performance, liquidity ratio, surplus growth, combined ratio, operating margin. The factors that significantly affect life insurers' financial health were firm size, change in Asset mix, investment performance and change in product mix.

Since there is no internationally accepted standards for adequate capitalization and solvency, there are other way of looking into solvency from the point of view of management of the company for which various leverage/capital structure ratios such as, debt/equity ratio, debt/asset ratio, equity /asset ratio and so on may be analyzed and compared with industry average for securing the continuation of the function and existence of the company

However, the researcher has selected the ratio of Total assets to Total Liabilities, Shareholders' Fund to Technical Reserve, and Shareholders' Fund to Total Assets and Fixed Assets to Total Assets to judge the degree of solvency from different points of view. These ratios have been tested statistically whether the differences in solvency position of selected life insurance companies are significant or not

OBJECTIVE OF THE STUDY

The objective of the study is to measure and test the solvency position of selected life insurance companies in India.

HYPOTHESES OF THE STUDY

1) There is no significant difference in the ratio of total assets to total liabilities of select life insurance companies in India during the study period.
2) There is no significant difference in the ratio of shareholders' fund to technical reserve of select life insurance companies in India during the study period.
3) There is no significant difference in the ratio of shareholders' funds to total assets of select life insurance companies in India during the study period.
4) There is no significant difference in the ratio of fixed assets to total assets of select life insurance companies in India during the study period.

PERIOD OF THE STUDY

The study period of seven years from 2006-07 to 2012-13 have been selected in order to have validity of statistical tests.

METHODOLOGY

The study in completely based on secondary data and the required data for the study is collected from the annual reports of IRDA. For the analysis ofdata , various selected solvency/capital structure ratios have been calculated and the statistical tools of average and ANOVA have been used to arrive at the findings of the study. Besides, a ranking analysis has been made to rank the selected companies for overall solvency performance during the study period.

SELECTION OF COMPANIES FOR THE STUDY

The universe of the study is all life insurance companies in India. Ten life insurance companies-nine private life insurance companies namely BAJAJ ALLIANZ, BIRLA SUNLIFE, HDFC STANDARD, ICICI PRUDENTIAL, ING VYSYA, KOTAK MAHINDRA, LIC, SBI LIFE, TATA AIA, MAX N Y LIFE in order of their date of registration, and one and only nationalized life insurance company have been selected purposively for the study out of twenty four (24) life insurance companies from the database of IRDA Annual Report, 2012-13 and these companies are selected on the basis of their age for a period more than seven years of existence up to the end of study period..Other life insurance companies are not included in our study since the data being available for other life insurance companies are of unequal size i.e., less than 7 years.

DATA ANALYSIS AND DISCUSSION

The Ratio of Total Assets to Total Liabilities (TA/TL)

The ratio of total assets to total liabilities represents cover for liabilities. This ratio indicates whether the total assets of the companies are increasing or decreasing compared to total liabilities (Modi, 2011)

Table-1: Company-wise Average Ratio of Total Assets to Total Liabilities (2006-07 to 2012-13)

NAME OF THE COMPANY	AVERAGE RATIO OF TA/TL (2006-07 TO 2012-13)	RANKING
ICICI PRUDENTIAL	2.964689221	1
INDUSTRY AVERAGE	1.335255436	
ING VYSYA	1.321272129	2
MAX NEW YORK	1.24572058	3
TATA AIG	1.227375003	4
BIRLA SUNLIFE	1.164801484	5
KOTAK MAHINDRA	1.137462905	6
HDFC STANDARD	1.12369653	7
BAJAJ ALLIANZ	1.099273052	8
SBI LIFE	1.067896226	9
LIC	1.000367228	10

Table- indicates that the average ratio of total assets to total liabilities from 2006-07 to 2012-13 of ICICI PRUDENTIAL is 2 .964 which is in a very strong solvency position compared to all other companies under the study except ING VYSYA, MX N Y and TATA AIA which are moderately good so far as the solvency position is concerned. The table -1 also reveals that the solvency positions of rest of the companies under the study are below industry average.

Table-2: One Way ANOVA of the ratio of Total Assets to Total Liabilities

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	21.190	9	2.354	43.240	.000
Within Groups	3.267	60	.054		
Total	24.457	69			

The above table indicates that the differences in the ratio of total assets to total liabilities are significant as the p-value is 0.000. Since the value is less than 0.05, so we conclude that there are significant differences in the ratio of total assets to total liabilities of select life insurance companies under the study at 5% significance level and the reasons for differences are due to the performance of ICICI PRUDENTIAL and rest of the companies under the study.

2) The Ratio of Shareholders' Fund to Technical Reserve (SF/TR)

For life business, the ratio of capital to technical reserve can be taken as the indicator of financial soundness and solvency life insurance Company because reliance is placed on the fact that technical (actuarial) reserve which properly reflects the ultimate liabilities of life insurers. Due to the absence of internationally accepted standards and with the need of simplicity in mind, the word capital may be taken as net asset value minus all intangible assets (Das et.al, 2003)

Table-3: Company-wise Average Ratio of Shareholders Fund to Technical Reserve (2006-07 to 2012-13)

NAME OF THE COMPANY	AVERAGE RATIO OF SF/TR (2006-07 TO 2012-13)	RANKING
ING VYSYA	0.355483064	1
MAX NEW YORK	0.260675684	2
TATA AIG	0.219026993	3
BIRLA SUNLIFE	0.163022672	4
INDUSTRY AVERAGE	0.151616943	
KOTAK MAHINDRA	0.126544608	5
HDFC STANDARD	0.121384338	6
ICICI PRUDENTIAL	0.106569326	7
BAJAJ ALLIANZ	0.091642114	8
SBI LIFE	0.071444943	9
LIC	0.000375685	10

The study of the table-3 reveals that the average ratio of shareholders' fund to technical reserve of life insurance companies under the study are very poor except ING VYSYA and MAX NEW YORK whose performances are comparatively good and as a result of which these companies will not be in a position meet all the liabilities in case of demand from the creditors.

Table-4: One Way ANOVA of the ratio of Shareholders' Fund to Technical Reserve

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	.662	9	.074	12.861	.000
Within Groups	.343	60	.006		
Total	1.005	69			

The above table indicates that the differences in the ratio of shareholders' fund to technical reserve are significant as the p-value is 0.000. Since the value is more than 0.05, so we conclude that there are significant differences in the ratio of shareholders' fund to technical reserve of select life insurance companies under the study at 5% level of significance.

3) The Ratio of Shareholders' Fund to Total Assets (SF/TA)

The ratio of shareholders' fund to total assets is an important ratio for determining long term solvency of a firm. This ratio represents the relationship of owners' fund to total assets. Higher the ratio or the share of the shareholders in the total capital of the company better is the long term solvency position of the company. This ratio indicates the extent to which the assets of the company can be lost without affecting the interest of the creditors of the company (Gupta and Sharma, 2008).

Table-5: Company-wise Average Ratio of Shareholders Fund to Total Assets (2006-07 to 2012-13)

NAME OF THE COMPANY	AVERAGE RATIO OF SF/TA (2006-07 TO 2012-13)	RANKING
ING VYSYA	0.236347181	1
MAX NEW YORK	0.181196693	2
TATA AIG	0.161739425	3
BIRLA SUNLIFE	0.13001086	4
INDUSTRY AVERAGE	0.114147194	
KOTAK MAHINDRA	0.101935654	5
HDFC STANDARD	0.0993885	6
ICICI PRUDENTIAL	0.090467949	7
BAJAJ ALLIANZ	0.077505893	8
SBI LIFE	0.0625127	9
LIC	0.000367086	10

The table-5 shows that Indian life insurance companies are required to increase their ratios of shareholders' fund to total assets to more than 0.50 so that they can repay their full liabilities in case of liquidation. These ratios are very low and require early interference by the regulator to save the policyholders' money.

Table-6: One Way ANOVA of the ratio of Shareholders' Fund to Total Assets

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	.279	9	.031	18.174	.000
Within Groups	.102	60	.002		
Total	.381	69			

The table-6 indicates that the differences in the ratio of shareholders' fund to total assets are significant as the p-value is 0.000. Since the value is less than 0.05, so we conclude that there are significant differences in the ratio of shareholders' fund to total assets of select life insurance companies under the study at 5% significance level. It is evident from table-5 that the differences have arisen due to very poor performances of LIC, SBI LIFE, BAJAJ ALLIANZ and ICICI PRUDENTIAL compared to rest of the companies under the study.

4) The Ratio of Fixed Assets to Total Assets (FA/TA) Tangibility of assets is measured by the ratio of fixed assets to total assets. Tangibility of assets is considered to have an impact on borrowing decisions because they have greater value in case of bankruptcy or solvency. A firm with large portion of fixed assets can easily raise loan at nominal rate (Ahmed et.al, 2010,).

Table-7: Company-wise Average Ratio of Fixed Assets to Total Assets (2006-07 to 2012-13)

NAME OF THE COMPANY	AVERAGE RATIO OF FA/TA (2006-07 TO 2012-13)	RANKING
MAX NEW YORK	0.0222438	1
TATA AIG	0.010687728	2
HDFC STANDARD	0.00931244	3
KOTAK MAHINDRA	0.007736758	4
INDUSTRY AVERAGE	0.007644622	
ING VYSYA	0.006091859	5
ICICI PRUDENTIAL	0.006044058	6
BIRLA SUNLIFE	0.005178746	7
SBI LIFE	0.004798839	8
LIC	0.002451402	9
BAJAJ ALLIANZ	0.001900588	10

The table-7 indicates that only MAX N Y LIFE's tangibility ratio is higher compared to rest of the companies under the study and all other companies are not interested in investing in fixed assets. It appears from the above table that four companies namely MAX N Y, HDFC STANDARD, TATA AIG AND KOTAK MAHINDRA have maintained the tangibility ratios above industry average.

Table-8: One Way ANOVA of the ratio of Fixed Assets to Total Assets

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	.002	9	.000	5.397	.000
Within Groups	.003	60	.000		
Total	.005	69			

The above table indicates that the differences in the ratio of fixed assets to total assets are significant as the p-value is 0.000. Since the value is less than 0.05, so we conclude that there are significant differences in the ratio of fixed assets to total assets of select life insurance companies under the study at 5% significance level. A close look of table-7 indicates that the differences have arisen due to poor performances of BAJAJ ALLIANZ, LIC, and SBI LIFE and comparatively much higher performance of MAX N Y.

ANALYSIS OF ASSIGNMENT OF RANKS TO SELECTED COMPANIES ON THE BASIS OF THEIR SOLVENCY PERFORMANCE

On the basis of average performance (2006-07 to 2012-2013) of selected life insurance companies under the study, the researcher has found out the rank the companies for each ratio performance and thereafter total ranks of different ratios have been added to find out rank of ranks for overall solvency performance. This is evident from the table below.

Table-9: Ranking of Overall Solvency Performance

Name of the Company	RANK of TA/TL	RANK of SF/TR	RANK of SF/TA	RANK of FA/TA	TOTAL of Four RATIO RANKS	RANK OF OVERALL SOLVENCY PERFORMANCE
BAJAJ ALLIANZ	1	1	1	1	4	1
BIRLA SUNLIFE	6	5	5	8	24	5
HDFC STANDARD	8	7	7	4	26	8
ICICI PRUDENTIAL	2	8	8	7	25	7
ING VYSYA	3	2	2	6	13	3
KOTAK MAHINDRA	7	6	6	5	24	6
LIC	10	10	10	10	40	10
SBI LIFE	9	9	9	9	36	9
TATA AIG	5	4	4	3	16	4
MAX NEW YORK	4	3	3	2	12	2

The table-9 as depicted above indicates that the overall solvency performance of LIC, SBI LIFE. HDFC STANDARD and ICICI PRUDENTIAL is very poor and their business depend too much on outsiders' fund instead of their own capital which is a very risky business practice. Under the circumstances, the policyholders' money is at risk in case of liquidation due to investment market failure. So , the regulator should not give too much emphasis on investment regulations rather than adequate capitalization.

FINDINGS OF THE STUDY

The following are the major findings of the study-:

1) The average ratio of total assets to total liabilities from 2006-07 to 2012-13 indicates that ICICI PRUDENTIAL is in a very strong solvency position compared to all other companies under the study except ING VYSYA, MX N Y and TATA AIA which are moderately good .The one-way ANOVA test reveals that there are significant differences in the ratio of total assets to total liabilities of select life insurance companies under the study at 5% level of significance.
2) The study has found that the average ratio (2006-07 to 2012-13) of shareholders' fund to technical reserve of life insurance companies under the study shows very poor performance except ING VYSYA and MAX NEW YORK which are comparatively good. Companies whose performance are very poor will not be in a position meet all the liabilities in case of demand from the creditors On the basis of ANOVA test we can conclude that there are significant differences in the ratio of shareholders' fund to technical reserve of select life insurance companies under the study at 5% significance level.
3) The ratio of Shareholders' fund to total assets shows that Indian life insurance companies should increase this ratio to more than 0.50 so that they can repay their full liabilities in case of liquidation. These ratios are very low for the selected companies under the study and require early interference by the regulator to save the policyholders' money. The ANOVA test finds that there are significant differences in the ratio of shareholders' fund to total assets of select life insurance companies under the study at 5% level of significance.
4) The analysis finds that the tangibility ratio is higher for MAX N Y LIFE compared to rest of the companies under the study. The study indicates that other companies under the study are not interested in investing their funds in fixed assets.. The ANOVA test finds reveals that there are significant differences in the ratio of fixed assets to total assets of select life insurance companies under the study at 5% significance level.
5) It is found that the overall solvency performance of LIC, SBI LIFE. HDFC STANDARD and ICICI PRUDENTIAL are very poor compared to other moderately good selected companies and their business depends too much on outsiders' fund instead of their own capital. This is a very risky business practice. Under the circumstances, the policyholders' money is not safe in case of liquidation which may arise due to investment market failure. So,

the regulator should not give too much emphasis on investment regulations and there should be stringent regulations for adequate capitalization.

CONCLUSION

The capital structure approach to life insurers' solvency establishes direct relationship between capital and risks. It provides up to date information on the financial solvency of a life insurance company. Thus, financial solvency is the effect of surplus of total assets over the total liabilities and it means positive value of capital/net worth. The findings show that the life insurance companies in India under the study are depending on outsiders' fund for their business which is a very risky business practices so far as long term solvency is concerned. Here, policyholders'' money is not safe if the financial markets are not behaving properly.

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