

Impact of Internal Factors on Financial Performance of Indian Life Insurance Sector

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Abstract

Life Insurance sector is one of the important pillars of risk management mechanism which provides help and support to individuals and group of people to manage their risk. Life insurance provides financial security to the family; it also helps in growth of the economy. The efficient risk management system requires sound financial performance of insurance sector. The financial performance of insurance sector depends on many internal factors therefore, finding out internal factors affecting the profitability is essential. The aim of the present research work is to explore and analyze the impact of internal factors on the profitability of Indian life insurance sector. The study period for the study is from financial year 2009-2010 to 2014-2015. This study has considered 23 life insurance companies for the present research work. Correlation and Multiple Regression Analysis are used to analyze the impact of independent variables on the dependent variable i.e., profitability of Indian life insurance sector. Return on Equity which is one of the financial performance indicators is considered to be dependent variable and Age, Capital, Foreign Holdings, Growth Rate, Reinsurance and Yield on Investments are considered as independent variables. Results revealed that Age, Capital has significant impact and Foreign Holdings, Growth Rate, Reinsurance and Yield on Investment has insignificant impact on the profitability measure i.e., Return on Equity (ROE).

Keywords: Indian Life Insurance Sector, Internal Factors, Return on Equity (ROE), Profitability, Financial Performance

1. Introduction

Financial services are one of the important pillars of financial system. Financial services are provided by various financial institutions through different types of instruments. Life insurance is one of the financial services. In India, total 24 life insurance companies were operating as on 31/03/2015, out of which 23 belongs to private sector and 1 company belongs to public sector. (http://www.policyholder.gov.in/registered_insurers_life.aspx). Life insurance sector is the backbone of risk management mechanism for individuals and group of people. Insurance products provide risk cover, tax advantage and more over peace of mind to the policy holder because

if some unfortunate event occurs than financial assistance will be available to the beneficiaries of the policy. The life insurance business has a long gestation period and it may take more than a decade to break even-so all players should be ready for the same. (<https://www.myinsuranceclub.com/articles/insurance-industry-in-india-e28093-an-overview>). Life insurance contracts are also long-term commitment for both the counterparties and to fulfill these objectives, sound financial health of insurance companies is top most priority for any financial system.

Indian life insurance sector has undergone many structural changes. Regulatory reforms has also been modified such as; allowing entry of private players, setup

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of Insurance Regulatory and Development Authority of India, 26% Foreign Direct Investment allowed by government of India and later on cap increased to 49% and introduction of various innovative products such as Unit Linked Insurance Plans (ULIP) etc. Entry of private and foreign players has changed the scenario of the insurance sector. Today, Indian life insurance sector is observing cut throat competition. Due to this many company's financial performance has affected.

Financial performance of Indian life insurance sector is affected by various sector specific factors and macro-economic factors. Present research work aims to explore and analyze the sector specific variables affecting the financial performance of Indian life insurance sector.

2. Literature Review

A study by Shami and Ali investigated the determinants of the profitability in insurance companies in UAE. Period of the study under consideration was 2004-2007. Independent variables were age of company, company size and volume of capital, leverage ratio and loss ratio whereas return on assets which is a measure of financial performance was taken as dependent variable. Results obtained from the study indicate that there is no relationship between profitability and age of company whereas there is significant positive association observe between profitability and size. Volume of capital was also positively significantly affecting profitability (Shami and Ali, 2008).

A study conducted to investigate the impact of variables on capital structure of insurance companies in Bahrain. All the listed publicly traded insurance companies listed on Bahrain Stock Exchange were considered and period of the study was 2005-2009 as sample. Multiple Linear Regression model was employed for data analysis purpose. Debt Ratio was considered as dependent variable. Tangibility of Assets, Profitability Ratio, Firm Size, Revenue Growth and Liquidity were considered as independent variables. The results revealed there was a strong relationship between firm characteristics, such as; Tangibility of Assets, Profitability, Firm Size, Revenue Growth, and Liquidity, and observed capital structure, as represented by the Debt Ratio, although Profitability and Revenue Growth are not statistically significant (Najjar and Petrov, 2011).

A study by Curak and Pepurexplored and analyzed the determinants of financial performance of composite

insurance companies in Croatia and their impact on the profitability during the period 2004 to 2009. Internal and external factors were considered to analyze the impact on the financial performance of insurance companies in Croatia. Panel Data Technique was employed for data analysis. Return on Assets (ROA) which is a measure of profitability was taken as dependent variable. Study revealed that Size, Underwriting Risk, Inflation and Equity Returns have significant impact on ROA (Ćurak, and Pepur, 2011).

A study conducted to explore and analyze the impact of factors affecting the financial performance of Jordanian insurance companies listed at Amman Stock Exchange. All the twenty five listed insurance companies were taken as sample and period of the study was 2002 to 2007. T-test and Multiple-regression tools were considered for data analysis. The results revealed that Leverage, liquidity, Size, Management competence index have a positive significant impact on the financial performance of Jordanian Insurance Companies. Company age has no significant impact on financial performance (Almajali, Alamaro and Al-Soub, 2012).

Another study conducted to examine the impact of firm's characteristics on choice of capital structure of Pakistan's insurance companies. 31 insurance companies were considered and period of the study was taken 2004 to 2009 as sample. Two econometric panel data techniques, fixed effects and random effects were employed for data analysis. Leverage was considered as dependent variable. Profitability, Growth Opportunities, Size of the Firm, Tangibility of Assets, Liquidity of Firm, Age of Firm and Earnings Volatility variables were considered as independent variables. The results found that Profitability, Age and Earnings Volatility had negative relationship with leverage and were significant. Liquidity also had negative relationship with debt ratio but it was not significant. In addition to that Size and Growth Opportunities had positive relationship with leverage but only Size was significant (Sharif, Naeem and Khan, 2012).

A study conducted to examine the impact of corporate characteristics on solvency of Indian life insurance companies. 2001-2002 and 2012-2013 years were considered as period of the study. Static and dynamic panel regression tools were employed for data analysis purpose. Solvency Ratio was used as dependent variable. Tangibility, Liquidity, Growth, Firm Size, Profitability and Age were considered

as independent variables. Overall the results found that positive relationship of Liquidity, Growth, Profitability and Age with Solvency Ratio, whereas Tangibility and Firm Size are negatively associated with Solvency Ratio.

As per GMM model Tangibility, Liquidity, and Growth were negatively associated with Solvency Ratio, whereas Profitability, Firm Size, and Age were positively associated with Solvency Ratio (Verma, 2014).

Another study investigated to analyze the economic performance of Non-life insurance companies. 198 companies (26 listed and 172 unlisted) from nine countries (Austria, Denmark, France, Germany, Ireland, Italy, Netherland, Spain and United Kingdom) were considered and period of the study was 2004 to 2012 taken as sample. Return on Equity and Return of Assets ratios were considered as dependent variable. Leverage, Asset Size, Premium Size, Reserve dimension, Combine Ratio, Financial Contribution, Investment Yield, Premium to Assets Ratio, Reinsurance Ratio, Status, Internationalization, Diversification were considered as Independent Variables. Country characteristics were considered such as: Financial Market Indicator, Insurance Market Relative Dimension and Insurance Growth Market. ROA negatively affected by Underwriting Activity, Combine Ratio, Internationalization and Diversification. Firm specific variables shared same kind of relationship with ROE (Moro and Anderloni, 2014).

3. Research Objectives

- To explore the internal factors affecting the financial performance of Indian life insurance sector.
- To evaluate the impact of internal factors on the financial performance of Indian life insurance sector.

4. Research Methodology

4.1 Nature of Study

Study is exploratory and empirical in nature. This study relates to explore and analyze the impact of internal factors on profitability of Indian life insurance sector.

4.2 Study Sample

In India, 24 life insurance companies were present as on 31/03/2015 out of which 23 life insurance companies belongs to private sector and 1 belong to public sector.

Sample size of the present study consists of all the life insurance companies except one company i.e., Edelweiss Tokio Life Insurance Co. Limited. This company is not considered in study due to lack of data. Therefore, 23 life insurance companies were considered for study purpose out of which 22 were private sector companies and 1 was Public Sector Company.

4.3 Data Collection and Period of the Study

Secondary Data were gathered from annual report of the Indian life insurance companies. Data is extracted for a period of six financial years that is from 2009-2010 to 2014-2015.

4.4 Statistical Tools

Correlation and multiple linear regression analysis were applied to analyze the relationship and to determine the impact of selected internal factors on financial performance of Indian life insurance sector.

4.5 Model Specification

Following model of multiple regressions was used to analyze the impact of Age, Capital, Foreign Holdings, Growth, Reinsurance and Reinsurance on the ROE. Proxy measure of the independent variables is given below:

These proxy measures are determined from the review of related literature.

Model 1

$$ROE = \beta_0 + \beta_1 AGE + \beta_2 CAPITAL + \beta_3 FH + \beta_4 GROWTH + \beta_5 REINS + \beta_6 YOI + ut$$

AGE	=	Numbers of Years since the Insurer Operates till 2015
CAPITAL	=	Natural Logarithm of Shareholder's Capital
FH (Foreign Holdings)	=	Percentage of Foreign Share Holders
GROWTH	=	Annual Growth Rate of Premium Earned
REINS (Reinsurance)	=	100 - Net Retention Ratio
YOI (Yield on Investment)	=	$r(t) = \frac{MV(T) - MV(0) - \text{Sum}[C(t)]}{\{MV(0) + \text{Sum}[W(t) * C(t)]\}}$

(ii) Numerator: $MV(T) - MV(0) - C(t)$
 -- Ending market value; $MV(0)$
 -- Beginning market value; $C(t)$
 -- Net contribution occurring on day 't'
 (iii) Denominator: $MV(0) - W(t)$
 -- Beginning market value; $W(t)$
 is the weight of the net contribution on day t, calculated as $\frac{T-t}{T}$. where T is the total no. of days and t is the day the net contribution occurs

Hypothesis

The respective Null and Alternative Hypotheses are as follows:

H01.1: There exists an insignificant impact of Age (AGE) on Return on Equity (ROE)

H11.1: There exists a significant impact of Age (AGE) on Return on Equity (ROE)

H01.2: There exists a significant impact of Capital (CAP) on Return on Equity (ROE)

H11.2: There exists an insignificant impact of Capital (CAP) on Return on Equity (ROE)

H01.3: There exists an insignificant impact of Foreign Holding (FH) on Return on Equity (ROE)

H11.3: There exists a significant impact of Foreign Holding (FH) on Return on Equity (ROE)

H01.4: There exists a significant impact of Growth Rate (GR) on Return on Equity (ROE)

H11.4: There exists an insignificant impact of Growth Rate (GR) on Return on Equity (ROE)

H01.5: There exists an insignificant impact of Reinsurance (REINS) on Return on Equity (ROE)

H11.5: There exists a significant impact of Reinsurance (REINS) on Return on Equity (ROE)

H01.6: There exists a significant impact of Yield on Investment (YOI) on Return on Equity (ROE)

H11.6: There exists an insignificant impact of Yield on Investment (YOI) on Return on Equity (ROE)

5. Results and Interpretation

5.1 Correlation Matrix

Referring to the Table 1 of Correlation Matrix Regarding Model 1, ROE, it was found that there was a significant positive correlation (0.964 at 1% level of significance) between: Age (AGE) and ROA. It reveals that if Age (The Numbers of Years since the Insurer Operates till 2015) increases then ROE will also increase and, vice versa. It shows that older companies have better understanding regarding risk underwriting and risk management decision as compare to newly established companies.

Capital (CAP) had insignificant positive correlation (-0.549 at 1% level of significance) with ROE. It shows that if Capital (Natural Logarithm of Shareholder's Capital) increases then ROE will decrease and, vice versa. Higher level of capital creates sense of security among the stakeholders, but it is one of the costly sources of funds and creates negative impact on profitability of life insurance companies in India. Here result reveals the same.

Foreign Holding (FH) had significant negative correlation (-0.456 at 1% level of significance) with ROE. It reveals that if Foreign Holding (Percentage of Foreign Share Holders) increases then ROE will decrease and vice versa. Life insurance sector was open up by government for foreign players in India to provide expertise in risk management area and deploying capital at low cost. Here relationship revealed the negative impact of foreign holdings on financial performance of life insurance companies.

Growth Ratio (GROWTH) had an insignificant negative correlation (-0.124 at 5% level of significance) with ROE. It shows that if Growth Ratio (Annual Growth Rate of Premium Earned) increases then ROE will decrease and vice versa. Growth in premium earned by life insurance companies comes from standard underwriting which should have positive impact on profitability of companies and vice versa. Here results revealed negative correlation, but relationship was insignificant.

There was an insignificant negative correlation (-0.162 at 5% level of significance) between: Reinsurance (REINS) with ROE. It shows that if Reinsurance (100-Net Retention Ratio) increases then ROE will decrease, and vice versa. Reinsurance companies provide technical expertise, but simultaneously charges premium from life

Table 1. Correlations matrix of internal factors

		ROE	AGE	CAPITAL	FH	GROWTH	REINS	YOI
ROE	Pearson Correlation	1	.964**	-.549**	-.514**	-.124	-.162	-.037
	Sig. (2-tailed)		.000	.000	.000	.149	.058	.671
	N	138	138	138	138	138	138	138
AGE	Pearson Correlation	.964**	1	-.435**	-.455**	-.178*	-.077	-.015
	Sig. (2-tailed)	.000		.000	.000	.037	.368	.864
	N	138	138	138	138	138	138	138
CAPITAL	Pearson Correlation	-.549**	-.435**	1	.475**	-.127	.402**	.139
	Sig. (2-tailed)	.000	.000		.000	.139	.000	.105
	N	138	138	138	138	138	138	138
FH	Pearson Correlation	-.514**	-.455**	.475**	1	.104	.304**	-.024
	Sig. (2-tailed)	.000	.000	.000		.226	.000	.782
	N	138	138	138	138	138	138	138
GROWTH	Pearson Correlation	-.124	-.178*	-.127	.104	1	-.139	.004
	Sig. (2-tailed)	.149	.037	.139	.226		.103	.964
	N	138	138	138	138	138	138	138
REINS	Pearson Correlation	-.162	-.077	.402**	.304**	-.139	1	.132
	Sig. (2-tailed)	.058	.368	.000	.000	.103		.121
	N	138	138	138	138	138	138	138
YOI	Pearson Correlation	-.037	-.015	.139	-.024	.004	.132	1
	Sig. (2-tailed)	.671	.864	.105	.782	.964	.121	
	N	138	138	138	138	138	138	138

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

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

insurance companies for that part, which is reinsured by Reinsurance companies, which ultimately decreases ROE. Here result supports the same, but relationship was insignificant.

There was an insignificant negative relationship (-0.037 at 5% level of significance) between: Yield on Investment (YOI) and ROE. It reveals that if Yield on Investment (YOI) $[r(t) = \{MV(T) - MV(0) - \text{Sum}[C(t)]\} / \{MV(0) + \text{Sum}[W(t) * C(t)]\}]$ increases than ROE will decrease and vice versa. Investment income is one of the major sources of earning of life insurance companies. Here result is contradictory, but relationship is insignificant.

5.2 Regression Model

As per Table 2 of Coefficients (Multiple Regression) Model 1, ROE, analysis shows that Age (AGE) (5.146, at 5% level of significance with p-value .000) is significantly and positively affecting ROE. It implies that if Age (AGE) (The Numbers of Years since the Insurer Operates till 2015)

increases than ROE will also positively affected. Results reveal that old established insurance companies had better understand of the dynamics of Indian market and sound underwriting procedure or risk management decisions as compared to newly established companies; here result revealed the same. So null hypotheses **H01.1**: There exists an insignificant impact of Age (AGE) on Return on Equity (ROE) was rejected and alternative hypotheses **H11.1**: There exists a significant impact of Age (AGE) on Return on Equity (ROE) was accepted.

Capital (CAP) (-7.137, at 5% level of significance with p-value .608) had insignificant and negatively affecting ROE. Results reveal that if Capital (Natural Logarithm of Shareholder's Capital) increases than ROE will deteriorate. Higher Capital ultimately enhances the safety and faith of stakeholders, but it is also one of the costly sources of finance (according to pecking order theory), due to which cost of funds increases and negatively impact the profitability of companies. Here relationship was negative,

Table 2. Coefficients^a

Model B		Unstandardized Coefficients		Standardized Coefficients	t	Sig. Tolerance	Collinearity Statistics	
		Std. Error	Beta				VIF	
1	(Constant)	82.946	21.139		3.924	.000		
	AGE	5.146	.133	.891	38.825	.000	.681	1.468
	CAPITAL	-7.137	1.375	-.128	-5.190	.000	.591	1.692
	FH	-.279	.158	-.041	-1.764	.080	.653	1.532
	GROWTH	.012	.012	.019	.961	.338	.894	1.119
	REINS	-1.606	1.321	-.026	-1.216	.226	.782	1.279
	YOI	-.059	.347	-.003	-.170	.865	.957	1.044

a. Dependent Variable: ROE

but insignificant. So null hypotheses **H01.2**: There exists a significant impact of Capital (CAP) on Return on Equity (ROE) was rejected and alternative hypotheses **H11.2**: There exists an insignificant impact of Capital (CAP) on Return on Equity (ROE) was accepted.

Foreign Holdings (FH) (-.279, at 5% level of significance with p-value 0.080) had insignificant and negatively affecting ROE. Results show that if Foreign Holdings (Percentage of Foreign Share Holders) increases then ROE will decrease. Results reveal that foreign players had not fully understood the Indian life insurance market which is negatively affecting the financial measure i.e., ROE of life insurance companies, but here relationship was insignificant. Here to result supports the same. So null hypotheses **H01.3**: There exists an insignificant impact of Foreign Holding (FH) on Return on Equity (ROE) was accepted and alternative hypotheses **H11.3**: There exists a significant impact of Foreign Holding (FH) on Return on Equity (ROE) was rejected.

Growth Rate (GROWTHRATE) (0.012, at 5% level of significance with p-value 0.338) had insignificant positive affect on ROE. Results reveal that if Growth Rate (Annual Growth Rate of Premium Earned) increases then ROE will also increase. Premium earned by life insurance companies is major source of income. Higher premium earned by companies means higher business underwritten by life insurance companies, which ultimately enhance higher market share and creates positive impact on profitability. Here results reveal the same, but relationship was insignificant. So null hypotheses **H01.4**: There exists a significant impact of Growth Rate (GR) on Return on Equity (ROE) was rejected and alternative hypotheses **H11.4**: There exists an insignificant impact of Growth Rate (GR) on Return on Equity (ROE) was accepted.

Reinsurance (REINS) (-1.606, at 5% level of significance with p-value .226) had insignificant and negative affect on ROE. Results reveal that if Reinsurance (100-Net Retention Ratio) increases then ROE will decrease. Reinsurance is a kind of arrangement in which life insurance companies transfer their risk and rewards related to particular business proportion to other companies due some statutory requirement, Life insurance companies can transfer risk above the statutory requirement also and they also get the expert advice from the reinsurance companies on underwriting decisions. By transferring the business had negative impact on financial performance of life insurance companies. Here results depict the same, but relationship was insignificant. So null hypotheses **H01.5**: There exists an insignificant impact of Reinsurance (REINS) on Return on Equity (ROE) was accepted and alternative hypotheses **H11.5**: There exists a significant impact of Reinsurance (REINS) on Return on Equity (ROE) was rejected.

Yield on Investment (YOI) (-0.059, at 5% level of significance with p-value 0.865) had insignificant and negative affect on ROE. Results reveal that if Investment yield ($r(t) = \frac{MV(T) - MV(0) - \sum [C(t)]}{MV(0) + \sum [W(t) * C(t)]}$) increases then ROE will deteriorate. Life insurance companies majorly invest in fixed income instruments and predominantly in government securities which provides lower yield on investments as compared to other instruments. Investment yield positively contributes to the total earning of the life insurance companies. Here result was contradictory but relationship was insignificant. So null hypotheses **H01.6**: There exists a significant impact of Yield on Investment (YOI) on Return on Equity (ROE) was rejected and alternative hypotheses **H11.6**: There exists an insignificant impact of

Yield on Investment (YOI) on Return on Equity (ROE) was accepted.

The Regression Model (1) as follows:

$$ROE = 82.946 + 5.146 AGE - 7.137 CAPITAL - 0.279 FH + 0.012 GROWTH - 1.606 REINS - 0.059 YOI + ut$$

As per Table 3 Regression Model Summary of Model 1, ROE the adjusted R-square (.951 or 95.10%), so 95.10% of the variation in the dependent variable (ROE) was explained by the independent variables i.e., Age (AGE), Capital (CAPITAL), Foreign Holdings (FH), Growth Rate (GROWTH), Reinsurance (REINS) and Yield on Investment (YOI). This implies that the model so applied is good fit.

As per Table 4 of Analysis of Variance (ANOVA) for Model 1, calculated Probability Value was .000 (at 5% level of significance) is lower than .05; so, it is implying that at least some of the independent variables have significant impact on dependent variable i.e.; Return on Equity (ROE).

6. Conclusion

ROE had positive Correlation with Age. At the same time ROE had negative Correlation with Capital, Foreign Holding, Growth Rate, Reinsurance and Yield on Investment.

From the results of regression model which was applied to predict ROE, it can be concluded that Age (AGE) had significant positive impact on ROE.

Capital (CAPITAL) had significant negative impact on ROE. Growth Rate (GROWTH RATE) had insignificant positive impact on ROA. Foreign Holdings (FH), Reinsurance (REINS) and Yield on Investment (YOI) have insignificant negative impact on ROE. The applied model of Regression was good fit to evaluate the impact of internal factors on return on equity which were considered as a proxy measure of profitability of insurance companies.

7. Suggestions

Experience of the life insurance business had positive impact on the profitability which states that experience come with time. Newly established companies should hire experience professionals for pricing their products and also take help from the consultancy companies to avoid the disadvantage of lack of experience.

Growth rate had positive impact on the profitability of life insurance companies. Companies should explore the new markets and come up with innovative products to continue the momentum of growth. To enhance the market size, companies should develop customized solution for the customers while maintaining trust among the policyholders and potential customer. The regulators should focus on good governance, effective distribution and customer centric policy making and innovation.

Reinsurance also had negative impact on the profitability. Life insurance companies should only reinsure the business as per the statutory limit, because reinsurance

Table 3. Summary of regression model

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics					Durbin-Watson
					R Square Change	F Change	df1	df2	Sig. F Change	
1	.976 ^a	.953	.951	13.703986929613643	.953	442.553	6	131	.000	.925

a. Predictors: (Constant), YOI, GROWTH, FH, REINS, AGE, CAPITAL

b. Dependent Variable: ROE

Table 4. ANOVA^a

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	498666.539	6	83111.090	442.553	.000 ^b
	Residual	24601.703	131	187.799		
	Total	523268.242	137			

a. Dependent Variable: ROE

b. Predictors: (Constant), YOI, GROWTH, FH, REINS, AGE, CAPITAL

requires higher transfer cost and loading fees than actuarial pricing of the risk.

8. Limitation of the Study

Six years (2009-2010 to 2014-2015) data were considered for the study. Also six internal factors were considered as sample for the study and external factors were kept out of purview.

9. Future Scope of the Study

Larger time period and General Insurance companies may be considered as sample in further studies for more comprehensive results. Other internal factors and macroeconomic factors may also be considered for the future study which may improve the result of model. These models may also be useful to study the life insurance companies of different countries. The validation may be checked by applying the model for another period and by including categories of insurance companies.

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