Impact of Financial Indicators on the Growth of Life Insurance Business in India

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Abstract

The insurance sector plays a significant role in a country’s economy as well as trade and development. The insurance sector facilitates financial intermediation, enables business and individuals manage their risk and channelizes savings into capital formation for the economy. The present paper is an attempt to ascertain the relation between a set of financial indicators with the performance of life insurance business in India. The life insurance premium to GDP has been used as a measure for the performance of insurance industry. While parameters such as mutual fund mobilisation as a ratio to GDP, volatility of the stock market, yield premium measured as the difference between yield on long term bonds and short term bonds, and market capitalisation as a ratio to GDP have been employed as financial indicators in this study. The study covers the period between 1990-91 and 2016-17. The results reveal that insurance premium is positively related to market capitalization to GDP (financial depth), volatility in the stock market and is inversely related to other investment avenues like mutual funds and interest rate.

Introduction

Insurance has served as an important tool in mitigating risk of loss to life and property. The industry has also been instrumental in contributing to capital formation and investment. The insurance sector plays an important role as a financial intermediary by contributing to the economic growth of an economy (King and Levine, 1993; Hussels, Ward and Zurbruegg, 2005; Sadhak, 2006; Mall 2018). Life insurance industry in India has witnessed several changes in its structure, organisation and functioning in India. Beginning in 1956, the government undertook the drive to nationalise around 256 companies into one company called the Life Insurance Corporation of India (LIC) in order to improve penetration and protect the interest of policyholders. After a span of more than four decades of LIC’s monopoly in the market, the government decided to bring about a huge transformation by allowing the entry of private life insurers into the market along with allowing the entry of foreign participation in the industry (Viswanathan, 2000; Nath 2001). These changes were implemented on the basis of the recommendations of the Malhotra Committee constituted in 1993 under the chairmanship of Shri R. N. Malhotra, former Governor of RBI. The Malhotra Committee submitted its report in 1994. Following this, the Insurance Regulatory Development Authority (IRDA) was established (under IRDA Act, 1999), and new regulator immediately began to open the insurance sector to the private players from 2000. Factors such as improvement in the Indian economy and market reforms (initiated in 1990) created a conducive environment for the growth of life insurance (Nayak and Mishra, 2014).

After liberalisation the insurance sector had seen the advent of a large number of new private life insurance companies, innovations in product offerings and distribution channels...
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(Gupta, Rana and Anand, 2017). India has witnessed a series of new developments in the insurance sector, private and foreign participation was allowed since 2000 onwards including introduction of new product regulations in 2010, increase in FDI limits from 26% to 49% and in certain sectors such as health up to 100% foreign ownership, issuance of policies in electronic form in 2016, and most recently the public listing of insurance companies in 2017.

As of March, 2017, the sector currently comprises of 62 insurance companies, of which 24 in life insurance, 23 in general insurance, 6 standalone health insurance, and 9 reinsurance companies which include foreign reinsurer branches and Lloyd’s India.

**Growth of Life Insurance Sector in India post-IRDA**

One of the objectives of allowing private and foreign insurers in India’s markets was to increase the breadth and depth of insurance in the country. India witnessed a substantially higher rate of growth in life insurance premium and total insurance premium income. In any case, India currently enjoys a much higher growth in insurance industry compared to the rest of the world. While global growth in life insurance premium and total insurance premium were 2.5% and 3.1%, the figures stood at 8% and 9.1% respectively for India (Figure – 1). This clearly indicates that there is an immense potential for the Indian insurance market to grow.

**Figure-1: Premium Growth Rate: India vs. World**

![Figure-1: Premium Growth Rate: India vs. World](image)

**Source: IRDA Annual Report 2016**

In terms of global share and ranking of Indian insurance market, according to a survey conducted by Swiss Re in 2016 in 88 countries, India ranks 10 in life insurance business and has a share of 2.36% in the global market. (Sigma, 2016)

**India’s Insurance Density and Penetration (2001-17)**

Insurance density, defined as the ratio of total premium income to total population (i.e., per capita insurance premium), is a widely accepted measure of relative size of insurance industry in a country. Insurance penetration, on the other hand, is measured as a ratio of premium to GDP, which captures contribution of the insurance to a country’s overall economy. Both these measures are useful in determining a country’s progress and expansion of the insurance sector. Figure 2 depicts the trend in India’s insurance density and penetration between 2001 and 17.

**Figure-2: Insurance Penetration in India (2001-17)**

![Figure-2: Insurance Penetration in India (2001-17)](image)

**Source: IRDA Annual Report 2016**
Figure 3 shows that when it comes to insurance density with respect to life insurance the per capita contribution for 2016-17 was 46.5 US$, while penetration is 2.72%. The total insurance industry (life and non-life) has a density of 59.70 US$ and penetration of 3.49%. This shows that life insurance business has a larger proportionate share in terms of density and penetration when compared to non-life.

It may be noted that insurance penetration peaked in 2008-09 and insurance density in 2009-10, after which both declined.

Source: IRDA Annual Report 2016

This is because of the private insurance companies (especially the foreign partners) getting affected by the US financial crisis.

India vs. Select Emerging and Advanced Countries

When compared to the insurance penetration and density of some of the advanced countries, India’s share is very insignificant and with respect to emerging markets India has a very low contribution (figure – 4).

Source: Swiss Re, Sigma Report 2016

South Africa leads in the emerging market as well as other countries with 11.52% penetration in life insurance and overall industry penetration of 14.27%. In case of advanced countries Denmark leads the group with 6.95% in life and 9.58% with respect to the overall industry.
As can be seen from figure 5 (Sigma, 2016), with respect to life insurance density, South Africa with USD 615.8 continues to lead in emerging market segment, while Denmark with USD 3742.4 leads in the advanced countries segment. Nevertheless, when it comes to India, the share (2.72%) and contribution (46.5 USD) is extremely low, which suggests that there is immense scope for improving the growth in the insurance sector given the large population that India’s insurance companies can cater to.

Review of Literature

Several studies have been undertaken to analyse the determinants that influence the demand for life insurance and its impact on economic growth. Browne and Kihong (1993) reveal that national income, government spending on social security, inflation and the price of insurance affect the demand for life insurance. Chen, Chien and Lee (2012) suggest that degree of financial development, interest rates, life expectancy and geographic region are also factors that affect life insurance demand. They also confirm that there is a positive impact of life insurance on economic growth which is observed to be greater in low income countries when compared to middle income countries. Gupta et al. (1971), Kotlikoff and Summers (1981), Hammer (1986), Outreville (1996) and Sadhak (2006) suggest that insurance purchase is not only influenced by macro-economic factors such as GDP, household savings and disposable income but demographic and social factors such as growth of population, social security, social practices and risks.

Country and region specific studies to analyse the factors influencing the growth/demand for life insurance have been examined. Ouedrago et al. (2016), using a sample of eighty six developing countries over the period 1996-2011, reveal that a country’s structural characteristics can affect the influence life insurance may exert on economic growth. Outreville (2013) examined various studies done across emerging market economies to understand the impact of insurance and economic development. His study classifies the macro-economic factors that affect the demand for life insurance into economic, demographic, social, cultural, structural and legal factors. Miroslav (2012) considers the impact of insurance on Croatia’s economic growth for the period 1999-2010. The paper uses data on macro-economic variables such as GDP, stock market capitalization, economic openness and insurance premiums. The results reveal that total premiums, economic openness and inflation have a positive correlation with GDP. It accords with the expectations based on theoretical assumptions. The results generally confirm expectations but there is a possibility of joint effects with other factors. Sliwinski et al. (2013) examined causes for the demand for life insurance in Poland are economic and financial factors, education and social benefits and life expectancy. While Mitchell et al. (2015) examined development and growth of the insurance sector in two emerging economies, namely, China and India. The prominent factors influencing the growth of the insurance sector in China and India were observed to be supervision and protection, national investing culture, household support and structures and emphasis laid on development of individual talent. Hass and Šumegi (2004) analysed the relationship between insurance sector and economic growth. The emphasis of this paper was to find out whether there is a finance-growth nexus by considering the effect of the insurance sector with links to the banks and capital markets’ contribution. The study undertook a cross country analysis of 29 OECD countries for the period 1992-2004 using panel data analysis. The results show a positive influence of life insurance on GDP for mature financial markets and positive impact of non-life insurance when it comes to less developed financial markets. Devarakonda, (2016) examines the insurance penetration and density in India and compares the

Source: Swiss Re, Sigma Report 2016
same with certain leading countries in the world for the period 2001-2013. The study made use of insurance penetration and insurance density as proxies in order to establish a linkage between insurance and economic growth in India. The study shows that insurance penetration and economic growth show a strong linear relationship. Sarawade, Tandale and Bhagyashri (2017) explored factors that influence the growth of insurance based on inter-regional differences in India.

Various tools to measure the influence of the insurance sector on the economic growth for developed as well as emerging countries have been employed. Panel data analysis was used by Ul Din et al. (2017) which attempted to explore the relationship between insurance and economic growth for a sample of twenty countries from 2006 to 2015. The variables used are insurance penetration, insurance density and net premiums written. The countries were divided into two distinct groups, namely developed and developing. It was found that insurance density and net premiums contribute to the growth of life insurance sector and has a positive impact on economic growth in developed countries, while the non-life insurance sector plays an important role in developing countries. A similar study by Han et al., (2010), by using dynamic panel data set and employing GMM (generalised method of moments) models across seventy seven economies for the period 1994–2005, confirms that economic growth and insurance sector development are positively correlated. The findings also reveal that life and non-life insurance sector contribute to economic growth in developed economies but when compared with developing economies the role of non-life insurance sector is more profound. Using a static panel data model, Zouhaier (2014) has attempted to establish the link between the insurance business and the economic growth across twenty three OECD countries over the period 1990-2011. The study reveals that non-life insurance penetration has positive impact on economic growth while the total insurance and non-life insurance density had a negative impact on economic growth.

India presents a unique situation where the insurance is viewed both as a risk mitigation and savings avenue. It is promoted by the industry and its agents in this manner for long in India. After liberalization of the insurance sector has started offering pure term policies in India. However, LIC, the dominant life insurance company in India, was late to introduce the pure term policy. It traditionally emphasized endowment policies that are primarily savings instruments. Ezhilarasi, Kumar and Vijaya (2016) have analysed the role technology played in changing customer attitudes towards purchase of insurance in India. Therefore, Indian situation is different compared to other countries and the factors that determine the life insurance premium are likely to be more financial in nature.

Objectives of the Study

1. To study the impact of various financial indicators on the growth of life insurance business in India
2. To suggest suitable measures to improve India’s insurance business

Scope of the Study

The study tries to analyse the impact of various financial indicators on India’s growth in insurance premium for the period between 1990-91 and 2016-17.

Data and Sources

Data were collected from secondary sources. Insurance data were collected from the website of IRDA. All other data have been collected from the Reserve Bank of India. The data are for 27 years starting from financial year 1990-91 to 2016-17.

Methodology

The business of insurance has been viewed as a tool for risk mitigation and risk transfer from unpleasant events and disasters Orheian (2015). In addition, Fields, Gupta and Prakash (2012) suggest that regulations and governance structures influence risk taking and performance of insurers. However, when it comes to the Indian context insurance has always been viewed as a saving and investment product rather than as a measure to counter uncertainty and risk as insurance products enjoy a number of tax incentives. Therefore, the primary factors that influence the demand for insurance in India can be very distinct and different when compared to other emerging or developed economies. The selection of the variables in the model reflects the above fact. We have included macro and financial variables having influence on the insurance premium.

Model

\[
\text{LIP}_t = \text{C} + \beta_1 \text{VOL}_t + \beta_2 \text{YLDPRE}_t + \beta_3 \text{MC}_t + \beta_4 \text{MFMG}_t + \beta_5 \text{Dummy}_t + \epsilon_t
\]

Where:

- \(\text{LIP}_t\) = Life Insurance Premium/GDP in year \(t\)
- \(\text{VOL}_t\) = Volatility of stock market
- \(\text{YLDPRE}_t\) = Yield on Long term Government Bonds – Yield on Treasury Bills (It indicates)
- \(\text{MC}_t\) = Market Capitalization/GDP in year \(t\)
- \(\text{MFMG}_t\) = Mutual Fund Mobilization/GDP in year \(t\)
- Dummy = 0 for 1990-91 to 1999-00 and 1 for 2000-01 to 2016-17
- \(\text{C}\) = Constant

Insurance premium is expected to respond positively to stock market volatility as increased volatility in the stock market is expected to push risk averse investors towards safer investments. This is because insurance demand in India is driven more by saving need of individuals rather than demand for risk protection. Similarly, higher long-term yield compared to short-term yield (on risk-free government securities) is expected to induce the investors to go for longer term investment products like bank fixed deposits, life insurance, etc.

Market Capitalization divided by GDP, total value of all publicly traded stocks in a market divided by that economy's
Gross Domestic Product (GDP), is expected to measure the extent of depth of equity markets in India. The higher the depth of equity markets, more people are expected to go for life insurance. Therefore, we expect this variable to have positive impact on life insurance premium. It is apparent that higher financial savings by households in the economy will encourage investors to go for higher insurance premiums. As the insurance premium is part of the financial savings the same has been removed from the financial savings. Therefore, the variable \((\text{financial savings} – \text{life insurance} – \text{mutual fund mobilization})/\text{GDP}\) is expected to have positive impact on the life insurance premium. Mutual fund is an alternative form of savings available to investors instead of saving in the life insurance policies. Therefore, it is expected to have negative impact on the life insurance premium. After the life insurance sector was opened to private players, number of players and extent of competition in the market increased, and better and varied products were launched. Therefore, we expect this dummy variable to have positive impact on the life insurance premium.

The expected signs of the explanatory variables are summarised in the table below:

### Table-1: Expected Signs of Explanatory Variables

<table>
<thead>
<tr>
<th>Variable</th>
<th>Description</th>
<th>Expected Sign</th>
</tr>
</thead>
<tbody>
<tr>
<td>VOLM</td>
<td>Volatility of stock market. It is calculated standard deviation of monthly returns.</td>
<td>+</td>
</tr>
<tr>
<td>YLDPRE</td>
<td>Yield on Long term Government Bonds – Yield on Treasury Bills</td>
<td>-</td>
</tr>
<tr>
<td>MCG</td>
<td>Market Capitalization/GDP</td>
<td>+</td>
</tr>
<tr>
<td>MFMG</td>
<td>Mutual Fund Mobilization/GDP</td>
<td>-</td>
</tr>
<tr>
<td>Dummy.</td>
<td>0 for 1990-91 to 1999-00 and 1 for 2000-01 to 2016-17</td>
<td>+</td>
</tr>
</tbody>
</table>

**Source:** Authors calculations

### Results and Findings

The summary descriptive statistics of the variables used (Table 2) show the mean, maximum and minimum value, standard deviation and number of observations of the data.

**Table-2: Descriptive Statistics of Variables Used in the Study**

<table>
<thead>
<tr>
<th></th>
<th>LIPG</th>
<th>VOLM</th>
<th>YLDPRE</th>
<th>MCG</th>
<th>MFMG</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mean</td>
<td>2.279</td>
<td>0.258</td>
<td>0.022</td>
<td>54.198</td>
<td>0.008</td>
</tr>
<tr>
<td>Maximum</td>
<td>4.098</td>
<td>0.508</td>
<td>0.072</td>
<td>103.026</td>
<td>0.032</td>
</tr>
<tr>
<td>Minimum</td>
<td>0.955</td>
<td>0.094</td>
<td>-0.005</td>
<td>15.495</td>
<td>-0.006</td>
</tr>
<tr>
<td>Std. Dev.</td>
<td>1.063</td>
<td>0.099</td>
<td>0.019</td>
<td>24.780</td>
<td>0.009</td>
</tr>
<tr>
<td>Observations</td>
<td>27</td>
<td>27</td>
<td>27</td>
<td>27</td>
<td>27</td>
</tr>
</tbody>
</table>

**Source:** Authors calculations

We have used OLS regression method for estimation of the proposed model. Results of the model are given below in Table 3, results of residual diagnostic statistics are given in Table 4 as follows: Panel A: (Jarque-Bera Normality Test), Panel B: (Breusch-Godfrey Serial Correlation LM Test), Panel C: (Heteroskedasticity Test- Breusch-Pagan-Godfrey).

**Table-3: OLS Regression**

<table>
<thead>
<tr>
<th>Variable</th>
<th>Coefficient</th>
<th>Std. Error</th>
<th>Prob.</th>
<th>Standardized Coefficient</th>
<th>Elasticity at Means</th>
</tr>
</thead>
<tbody>
<tr>
<td>Constant</td>
<td>-0.004</td>
<td>0.003</td>
<td>0.17</td>
<td>NA</td>
<td>-0.19</td>
</tr>
<tr>
<td>MCG</td>
<td>0.024</td>
<td>0.004</td>
<td>0.00</td>
<td>0.565</td>
<td>0.58</td>
</tr>
<tr>
<td>MFMG</td>
<td>-0.142</td>
<td>0.077</td>
<td>0.08</td>
<td>-0.126</td>
<td>-0.05</td>
</tr>
<tr>
<td>VOLM</td>
<td>0.035</td>
<td>0.011</td>
<td>0.00</td>
<td>0.329</td>
<td>0.40</td>
</tr>
<tr>
<td>YLDPRE</td>
<td>-0.085</td>
<td>0.063</td>
<td>0.19</td>
<td>-0.157</td>
<td>-0.08</td>
</tr>
<tr>
<td>DUMMY</td>
<td>0.012</td>
<td>0.002</td>
<td>0.00</td>
<td>0.584</td>
<td>0.35</td>
</tr>
</tbody>
</table>

**Summary Statistics**

<table>
<thead>
<tr>
<th>Number of Observations</th>
<th>27</th>
</tr>
</thead>
<tbody>
<tr>
<td>R-squared</td>
<td>0.92</td>
</tr>
<tr>
<td>Adjusted R-squared</td>
<td>0.90</td>
</tr>
<tr>
<td>F-statistic</td>
<td>41.125</td>
</tr>
<tr>
<td>Prob(F-statistic)</td>
<td>0.000</td>
</tr>
<tr>
<td>Durbin-Watson stat</td>
<td>1.884</td>
</tr>
</tbody>
</table>

**Source:** Authors calculations
Table 4: Diagnostic tests

| Panel A: Jarque-Bera Normality Test |  |
| Jarque-Bera Test Statistic | 1.705 |
| Probability | 0.426 |

Null hypothesis of normality is not rejected for both the equations as P-value is high, therefore the residuals are normally distributed.

| Panel B: Breusch-Godfrey Serial Correlation LM Test |  |
| F-statistic | 0.187 |
| Obs*R-squared | 0.520 |
| Prob. F(2,19) | 0.83 |
| Prob. Chi-Square(2) | 0.77 |

Null hypothesis of no serial correlation is not rejected for both the equations as P-value is high, therefore the residuals are not serially correlated.

| Panel C: Heteroskedasticity Test: Breusch-Pagan-Godfrey |  |
| F-statistic | 0.761 |
| Obs*R-squared | 4.143 |
| Scaled explained SS | 1.955 |
| Prob. F(5,21) | 0.59 |
| Prob. Chi-Square(5) | 0.53 |
| Prob. F(5,21) | 0.86 |

Null hypothesis of Homoscedasticity is not rejected for both the equations, as P-value is high, therefore the residuals are Homoscedastic. The coefficient estimates of the OLS regression model are efficient.

**Source:** Authors calculations

Table 3 presents the OLS regression results and the results are robust and stable and have expected signs. Except the volatility variable all the other explanatory variables are statistically significant. We have also used FSMG variable in the regression, however, same has been dropped as it was highly insignificant. Table 4 presents the residual diagnostic statistics like serial correlation, Normality and Heteroscedasticity are in order.

The results indicate that life insurance premium is positively impacted by Volatility in the stock market, Stock Market capitalization. Opening up of the insurance sector for private players has a positive impact on insurance premium. The mutual fund mobilizations have negative impact on the life insurance premiums. Though Yield premium exhibit expected negative sign however statistically it is not significant.

The results indicate higher financial depth has positive impact on the life insurance premiums as people are more aware of diverse financial products and the need for the risk cover. Results also indicate that if there is more volatility in the stock market they turn to life insurance products for investment. Similarly, if mutual fund mobilization is more than the life insurance premiums will get negatively impacted and vice versa.

**Limitations of the Study**

The value of the intercept dummy used in OLS regression clearly indicates that the life insurance sector in India changed in structure after 2000-01 relative to the period between 1991 and 2001. However, we could not include slope dummies as we had less degrees of freedom; had these been included we could have got different values for coefficients after 2000-01. IRDA does provide total life insurance premium which also include premium collected towards investments, however the amount of risk covered is not provided, which is a more accurate measure. We have not used advanced time series techniques like co-integration as it is not the focus of the study and we have only 27 observations which do not provide sufficient degrees of freedom to allow for lagged variables in the system.

**Findings and Conclusions**

The results are not surprising as insurance policies in India have historically been promoted by LIC primarily as saving instruments rather than risk cover. This is not a desirable scenario since the primary function of the life insurance business is to cover the risk of personal lives and not to provide saving instruments. One may argue that the life insurance policies do cover life risk apart from the investment objective. But, the responsiveness of life insurance premium to investment related variables (according to evidence reported in this paper) indicate that risk mitigation function of life insurance is not adequately discharged. IRDA should take note of this and encourage pure term policies rather than dual purpose policies.

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