Journal on Banking Financial Services & Insurance Research
Vol. 11, Issue 3, March 2021, Impact Factor: 6.596 ISSN: (2231-4288)
www.skirec.org Email Id: skirec.org@gmail.com

MEASURING DENSITY AND PENETRATION LEVEL OF INSURANCE BUSINESS IN INDIA: AN ANALYTICAL STUDY

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ABSTRACT-

The Indian economy has now become one of the fastest growing economies in the world. Insurance sector contributes significantly toward Indian economy. This sector offers enormous opportunities to domestic and foreign investors as it is the fifth largest insurance market among emerging economies. Indian insurance industry has seen dramatic changes in business in the post-liberalized era. The changes relate to the introduction of new businesses, innovative products, competitive premium rates, superior customer service, greater use of information technology, an improved complaint settlement process, a wider selection of products, alternative distribution channels, etc. These changes might have resulted in improved performance of the most companies; in particular, private sector companies. The present study is an attempt to analyze the growth of the insurance sector in India in terms of density and penetration level of insurance business in pre and post financial crisis. For this purpose data has been divided into pre (2001-2008) and post (2009-2018) crisis period. ANOVA has been used to see the significance difference in the level of penetration and density various companies of insurance sector. The overall insurance penetration in India reached 3.70% in 2018, compared to 2.71% in 2001. Growth rate in terms of premium received of private sector life insurance companies is 21.37 percent in the year 2018-19 as against 6.06 percent of Life Insurance Corporation in the same year, whereas the aggregate growth of life insurers is 10.75 percent. The analysis reveals clearly that both density as well as penetration level have improved significantly after the financial crisis. The performance of the majority of private insurance companies has been found to be satisfactory and they must continue at this pace in order to penetrate their market more and more. Private companies have challenged LIC's dominance in the life insurance industry.

Key Words: - Insurance penetration, Density, Liberalization, Premium, Financial Crisis

INTRODUCTION

The Indian economy has been growing fast in recent years and now it has become one of the fastest growing economies in the world. Insurance companies provide an effective risk transfer mechanism. They can group together a large portfolio of insurable risks when the incident of these losses is reasonably independent of each other, and thus reduce the overall risk through the diversification portfolio, i.e. the law of large numbers. Insurance companies play a major role in mobilizing the economy's small-scale savings as a whole, which can collectively appreciate considerably if well invested in capital market insurance companies to generate private sector savings in various ways. The opening up of the insurance sector offers numerous opportunities for existing and new players to enter untapped areas, sectors and sub-sectors and untapped segments of the population, because the density and penetration of the insurance are currently at a low level.

Insurance is a contract by which the insurer undertakes to provide a guarantee of compensation for the specified losses, damages, illnesses or deaths in exchange for the payment of a specified premium. The loss may or may not be financial, but it must be reducible on financial terms and generally involves something in which the insured has an insurable interest established by property, possession or a preexisting relationship. Insurance in India covers both public and private sector organizations. The insurance industry has gone through a number of phases, allowing private companies to seek insurance and also allowing foreign direct investment. The main insurance regulator in India is the Insurance Regulatory and Development Authority of India (IRDAI), which was established in 1999 under government legislation called the Insurance Regulatory and Development Authority Act, 1999. Insurance is generally classified as life and non-life insurance. Non-life insurance includes automobile policies, home insurance policies, coverage against fire, marine accidents, travel, theft and devastation, etc. Insurance largely affects the economic development of a country. In this paper an attempt has been made to analyze the growth of life and non-life insurance activities in India during the current period of deregulation by taking parameters namely insurance density, insurance penetration and premium. Insurance density and insurance penetration are important indicators of the extent of insurance

inclusion. Insurance density is the ratio of the total premium to the total population of a country whereas insurance penetration is the ratio of the total premium to the total GDP of a country. Thus, the density of insurance indicates to what extent insurance has reached the population of a country, which in turn presents the overall development of the insurance sector. As of March 31, 2019, there are 27 general insurance companies, including the Export Credit Guarantee Corporation of India Ltd. (ECGC) and Agriculture Insurance Co. of India Ltd., 24 life insurance companies (1 public sector and 23 private sector companies) and 7 Standalone health insurance companies operating in the country.

REVIEW OF LITERATURE

Sankaramuthukumar and Alamelu (2011), in their study entitled “Insurance Inclusion Index: A State-wise Analysis in India”, suggested that the measurement of financial services such as banking insurance microfinance institution, co-operative payment and remittance must be developed to check the financial inclusion target and achievement in the country.

Alamelu K (2011), in her paper titled “Evaluation of Financial Soundness of Life Insurance Companies in India”, highlighted that in order to sustain public confidence, insurance companies need to maintain financial creditability intact. It is also stated that strong financial background enables insurance companies to augment the business.

Dr. D. Rajasekar and T. Hymavathi Kumari (2014) in their paper entitled “Life Insurance Industry in India - An Overview” found that private players started increasing their business and they covered every nook and corner of the society to attract the customers. The level of penetration, particularly in life insurance, tends to rise as income levels increase and market share of the entire private players has sharply risen with the entry of private players in life insurance market.

Gomathy Thyagarajanand Jyothi Nair (2016), in their study titled "Financial Inclusion In India – A Review" highlighted that financial inclusion is the process of ensuring access to financial services and timely and adequate credit to less privileged sections of the society at an affordable cost. Financial Literacy and financial inclusion have been important policy aspiration of India for quite some time. Regardless of policy measures and technological

improvement adopted by RBI and banking sector, the extent and penetration of financial products and services to marginalized sections of the society, the figures are not encouraging. The policymakers have chalked at ambitious plans for financial inclusion with the hope that financial inclusion is the fulcrum of financial development.

Jyoti Prakash Rath and Dr. Maheshwar Sahu (2017), in their article entitled "A Study On Growth and Development of Health Insurance in India: In The Post Privatization Era" found that there is a significant upward trend in the growth of health insurance industry in India both at public and private sector after privatization. The size and growth of health insurance market depends on the strength of growth in the economy and concomitant in per capita income.

Bodla, Sumit et.al. (2017) paper was aimed to analyze and compare the profitability performance of life insurance companies in India (both Public and Private). The authors took a sample of 13 private sector life insurance and one public sector firm (LICI) out of a population of 24 life insurance companies. The reference period for the study was of 10 years which ranged from 2007 to 2016. For analyzing the profitability and financial performance seven variables namely Net Premium, Income from Investments, Underwriting Income, Return on assets, Combined Ratio, Solvency Ratio and Profit after tax were taken. ANOVA was used to test the significance of variance in profitability of various insurers. The study revealed that, among the private sector life insurers, the average net premium for the last 5 year was found the highest in case of ICICI prudential followed by HDFC Standard and SBI Life, whereas the lowest premium was mobilized by IDBI Federal followed by Exide life.

Susy Cheston (2018), in their paper entitled "Inclusive Insurance: Closing the Protection Gap for Emerging Customers" stated that emerging consumers present a promising market for insurance, and creative insurance companies have designed innovative products to reach these markets. Micro-insurance has become the tool of penetrating into the under insured sections of the society and new business model are evolved for serving low income people in emerging markets.

B. Vimala and Dr. K Alamelu (2018), in their paper titled "Insurance Penetration and Insurance Density in India – An Analysis" found that there is an increase in the density and

penetration of insurance industry in India. Among the three groups the industry is having high mean and standard deviation than life and non-life sector. The study reveals that there is significant difference in the mean values of insurance density and penetration among life, non-life and industry.

OBJECTIVES OF THE STUDY

The study is an attempt to attain the following objectives:

1) To analyze the growth of insurance in India;

2) To analyze the penetration and density level of insurance in India;

3) To find the variation in penetration and density of insurance business during pre and post financial crisis.

HYPOTHESES OF THE STUDY

1) To test the significance of difference in penetration level in pre and post crisis period;

2) To test the significance of difference in density level in pre and post crisis period.

DATA AND METHODOLOGY

The present study is based on the secondary data collected from IRDAI annual reports. Data so collected is complied, analyzed and presented through tables and suitable figures using excel tools and graphical analysis. ANOVA has been used to see the significance difference in the level of penetration and density of the insurance sector in the pre and post period of financial crisis. The period of the study pertains from 2001 to 2019. The period of 2001 to 2008 has been taken as pre crisis and 2009 to 2019 as post financial crisis period. Density L indicates density of life insurance business, density NL indicates density of non-life insurance business, penetration L indicates penetration of life insurance, penetration NL indicates

penetration of non-life, whereas density IND and penetration IND denotes the density and penetration of the insurance industry as a whole.

ANALYSIS AND DISCUSSION

The level of development of the insurance sector in a country is reflected in the measurement of insurance penetration and density. Insurance penetration is the ratio of the insurance premium to gross domestic product (GDP), while insurance density is measured as the ratio of the premium to the total population.

Table 1 shows that number of life insurance offices has increased to 11279 in 2019 from 11112 in 2018. Private sector offices have increased (143) considerably as compared to LIC (24). The analysis of table 2 indicates that the number of general insurance offices have increased by 270 during the year 2018-19. The table also reveals that private sector has dominated during the year, whereas the public sector general insurers offices have shrunk in the comparable period.

Table 1 Number of Life Offices*(as on 31st March)

Insurer	2018	2019
Private	6204	6347
LIC	4908	4932
Industry**	11112	11279

Source: IRDAI Annual Reports

* Offices opened after seeking approval of the Authority

**Excludes two foreign offices and one foreign representative office

Table 2 Number of Offices of General Insurance (as on 31st March)

Sector	2018	2019
Public	8296	8150
Private	2043	2459
Specialised	86	86
Total	10425	10695

Source: IRDAI Annual Reports

It is observed from table 3 that during the year 2018-19, 286.48 lakh policies have been issued as against 281.97 lakh policies in the year 2017-18, having the growth rate of 1.70 over the previous year. The table also indicates that private sector companies have more business as compared to LIC in the year 2018-19.

Table 3 Number of new policies Issued: Life Insurers (In Lakh)

Insurer	2017-18	2018-19
LIC	213.38 (5.99)	214.04 (0.31)
Private Sector	68.59 (8.47)	72.44 (5.61)
Total	281.97 (6.58)	286.48 (1.70)

Source: IRDAI Annual Reports

As per table 4 number of new policies issued by the general insurance in the year 2017-18 were 1702.3 lakhs and their number was 1832.74 lakhs in 2018-19. The private sector insurers have a growth rate of 29.7% over the previous year 2017-18. However the public sector and specialized insurers have registered a negative growth of 8.6% and 33.2% respectively. In total the new business of general insurance has increased by 7.7% over the previous year.

Table 4 Number of new policies Issued: General Insurers (In Lakh)

Insurer	2017-18	2018-19
Public Sector	797.71 (-6.4)	733.02 (-8.1)
Private Sector	787.13 (26.1)	1021.23 (29.7)
Specialized insurers	117.46 (79.2)	78.49 (-33.2)
Total	1702.30 (10.4)	1832.74 (7.7)

Source: IRDAI Annual Reports

Table 5 reveals premium underwritten along with their market share by the Life Insurance Corporation and the Private sector life insurers. The table shows that the life insurance industry registered a total premium of 458809.44 crore in the year 2017-18 while these touched 508132.03 in the year 2018-19 with a growth rate of 10.75% as compared to the growth rate of 9.64% in the year 2017-18. The table indicates that there is a significant increase in the premium received by the private sector insurers. The market share of private sector insurers have 33.58% in the year 2018-19 whereas the same was 30.64% in the previous year. However the market share of LIC has declined to 66.42% from 69.36% in the year 2017-18.

Table 5 Premium Underwritten: Life Insurers

Insurer	Total Premium		Market Share	
	2017-18	2018-19	2017-18	2018-19
LIC	318223.2 (5.90)	337505.07 (6.06)	69.36	66.42
Private Sector	140586.24 (19.15)	170626.96 (21.37)	30.64	33.58
Total	458809.44 (9.64)	508132.03 (10.75)	100.00	100.00

Source: IRDAI Annual Reports

The premium underwritten by life insurers in the year 2017-18 and 2018-19 is also shown by figure 1 (Total Premium) and Figure 2 (Market Share)

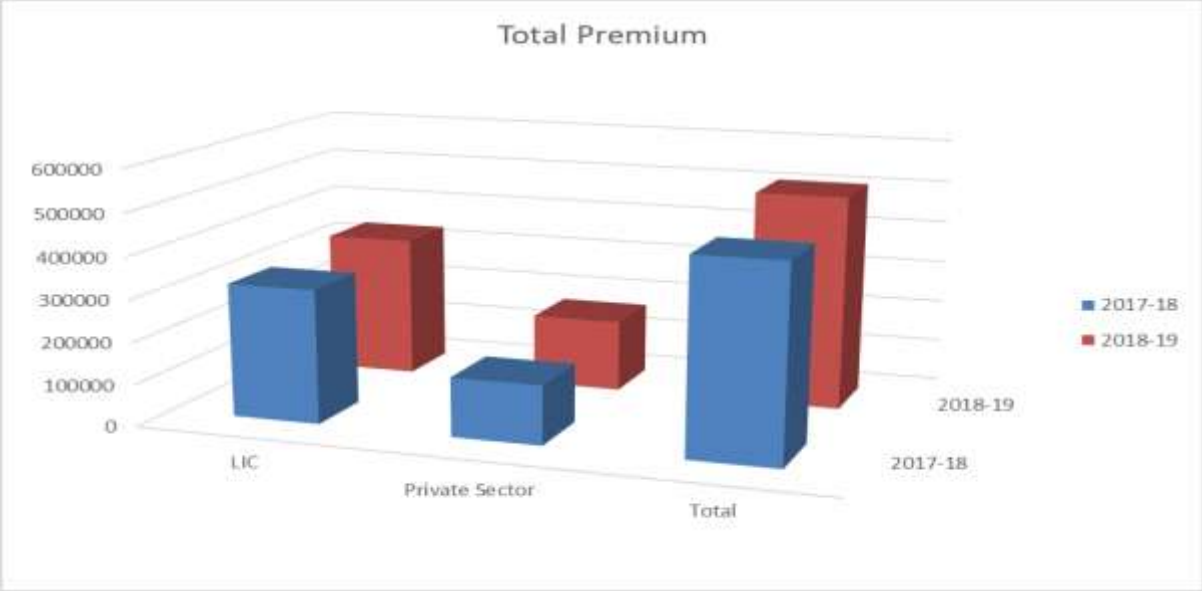

Figure 1

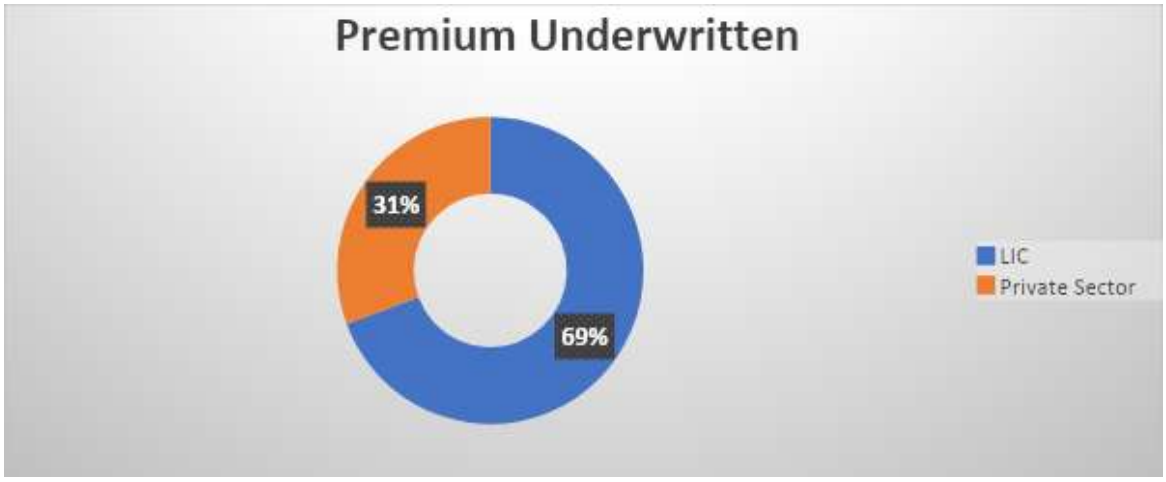

Figure 2

From table 6 it is observed that the general insurance industry registered a growth rate of 12.47% with total direct premium of 169448.46 as against 17.59% growth rate in the previous year. The table reveals that private general insurers registered a growth of 24.25% with market share of 47.97% during the year 2018-19 as against 21.59% growth rate during the year 2017-18. The standalone Health insurers exhibited growth of 36.56% with market share of 6.70% during the year over the previous year growth rate of 41.93%. Public sector insurer registered growth rate of 1.28% whereas specialized insurers recorded negative growth rate of 10.79%.The table also reveals that market share of public sector insurers and specialized insurers have decreased during the year 2018-19.

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TABLE 6 : GROSS DIRECT PREMIUM INCOME IN INDIA WITH MARKET SHARE: GENERAL AND HEALTH INSURERS

Insurer	Total Premium (□ crore) with growth rate over previous year		Market Share	
	2017-18	2018-19	2017-18	2018-19
Public Sector Insurers	67794.23 (12.58%)	68658.85 (1.28%)	45.00%	40.52%
Private Sector Insurers	65419.82 (21.59%)	81287.15 (24.25%)	43.42%	47.97%
Standalone Health Insurers	8314.28 (41.93%)	11354.03 (36.56%)	5.52%	6.70%
Specialized Insurers	9133.81 (10.75%)	8148.42 (-10.79%)	6.06%	4.81%
Total	150662.13 (17.59%)	169448.46 (12.47%)	100.00%	100.00%

Source: Self Compiled from IRDAI Annual Reports

The market share of the General and Health insurers shown in the table 6 is also evident from the figure 3.

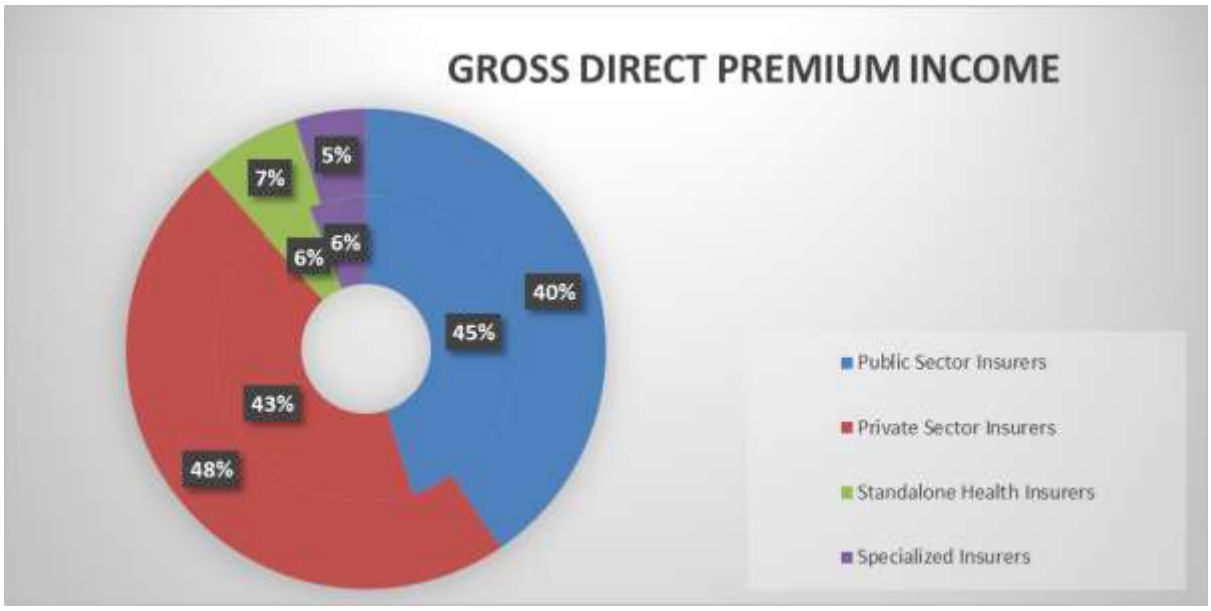

Figure 3

Table 7 shows the trend in density as well as in penetration level of life, non-life and industry as a whole. The above table reveals that density of life insurers varies from US$ 9.10 to US$ 55.70 during the study period with an average of US$ 36.79. The density of life insurers have an increasing trend from 2001 to 2010 and rose to US$ 55.70, thereafter it has decreasing trend during the year 2011,2012 and 2013 consecutively. Again it has been observed the increasing trend during the study period. The density of non-life insurer ranges from US$ 2.40 to US$ 19.00 from 2001 to 2018 with an average of US$ 8.58 . The density of non-life insurers have shown the increasing trend since 2001 to 2018 except in the years 2008 and 2014 where it became stagnant. The insurance industry as whole observed increasing trend in insurance density from 2001 to 2010 ranging from US$ 11.50 to US$ 64.40. Decreasing trend has been observed in the years 2011,2012 and 2013 thereafter it again shows increasing trend except a nominal decrease in the year 2015. The penetration level of life insurers have an increasing trend during the first nine years of the study period where it has increased from 2.15 percent to 4.60 percent. After that decreasing trend has been noted from 2010 to 2014 from there on a slight hike has been observed up to 2018 with an overall average of 3.13 percent. The variation in the penetration level of non-life sector ranges from 0.56 to 0.97 percent with an average of 0.70 percent from 2001 to 2018. No significant trend has been observed in the penetration level of non-life insurers. The penetration level of the insurance industry as whole varies from 2.71 percent to 5.20 percent during the study period of 18 years with an average of 3.84 percent The table 7 shows the decreasing trend in industry penetration level from the year 2010 to 2014 thereafter a nominal increasing trend has been observed till 2018.

The trends in insurance penetration and density shown by table 7 are also exhibited with the help of the figure 4 & 5 shown below:-

Table 7 INSURANCE PENETRATION AND DENSITY IN INDIA

Year	Life		Non-Life		Industry	
	Density (US$)	Penetration (Percentage)	Density (US$)	Penetration (Percentage)	Density (US$)	Penetration (Percentage)
2001	9.10	2.15	2.40	0.56	11.50	2.71
2002	11.70	2.59	3.00	0.67	14.70	3.26
2003	12.90	2.26	3.50	0.62	16.40	2.88
2004	15.70	2.53	4.00	0.64	19.70	3.17
2005	18.30	2.53	4.40	0.61	22.70	3.14
2006	33.20	4.10	5.20	0.60	38.40	4.80
2007	40.40	4.00	6.20	0.60	46.60	4.70
2008	41.20	4.00	6.20	0.60	47.40	4.60
2009	47.70	4.60	6.70	0.60	54.30	5.20
2010	55.70	4.40	8.70	0.71	64.40	5.10
2011	49.00	3.40	10.00	0.70	59.00	4.10
2012	42.70	3.17	10.50	0.78	53.20	3.96
2013	41.00	3.10	11.00	0.80	52.00	3.90
2014	44.00	2.60	11.00	0.70	55.00	3.30
2015	43.20	2.72	11.50	0.72	54.70	3.44
2016	46.50	2.72	13.20	0.77	59.70	3.49
2017	55.00	2.76	18.00	0.93	73.00	3.69
2018	55.00	2.74	19.00	0.97	74.00	3.70
Mean	36.79	3.13	8.58	0.70	45.37	3.84

Source: Self Compiled from IRDAI Annual Reports

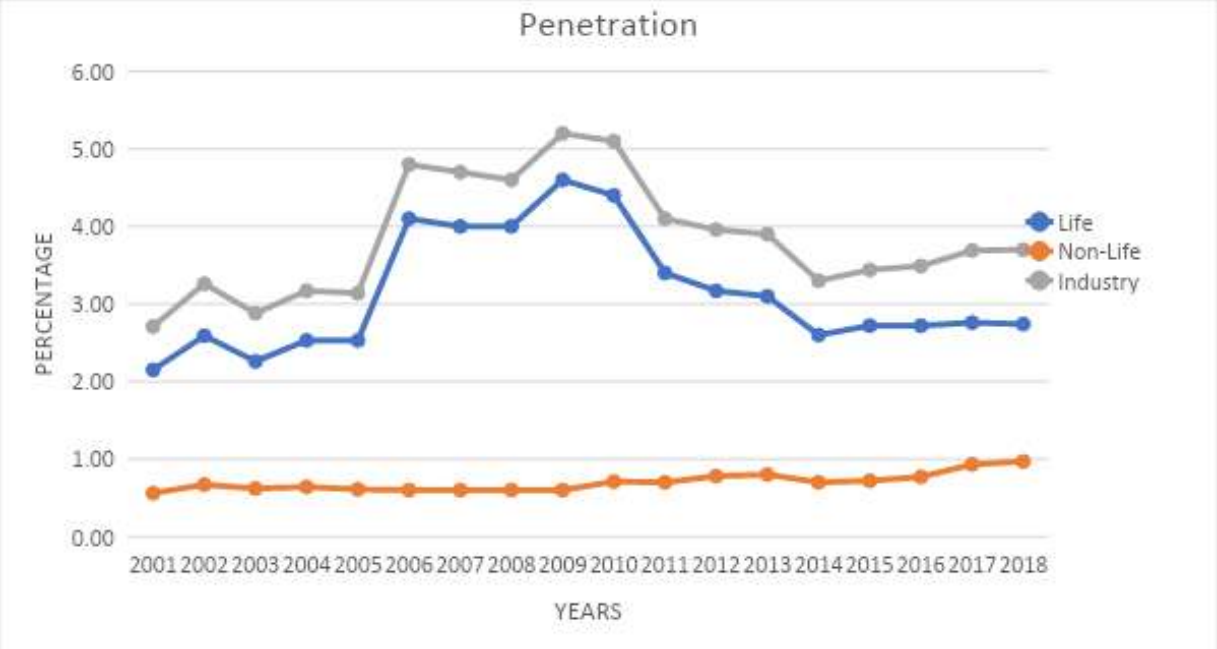

Figure 4: Insurance Penetration in India

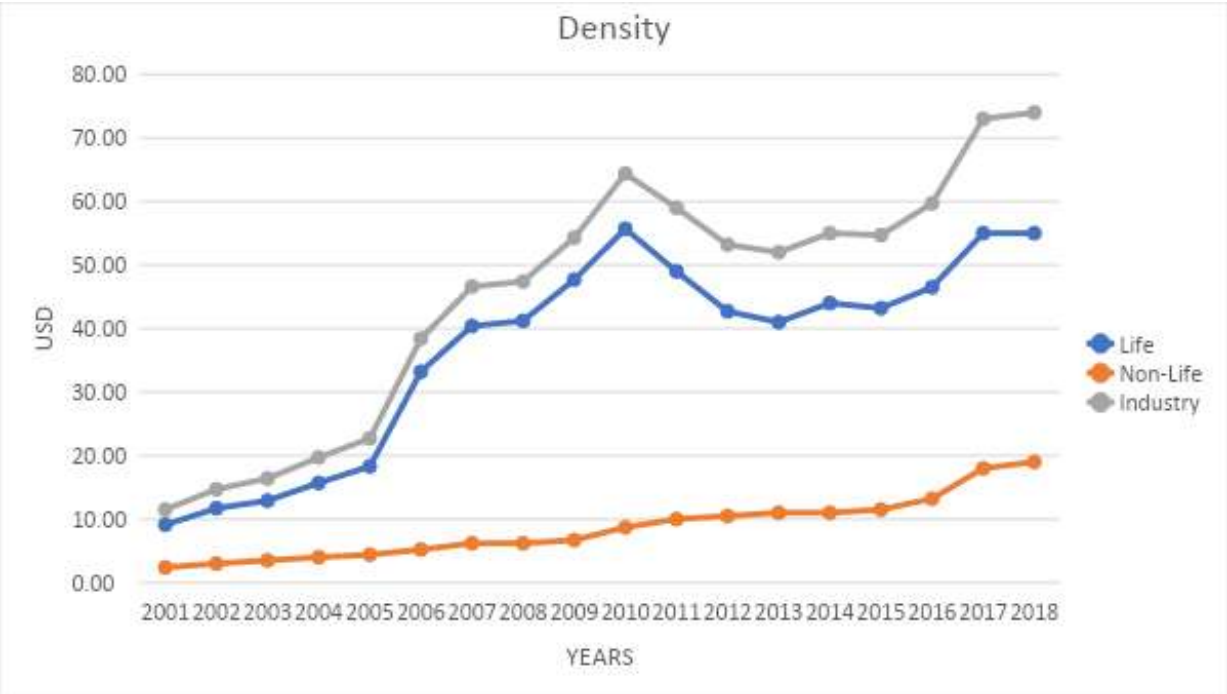

Figure 5: Insurance Density in India

Further an attempt was made to test the significance of difference in density before and after the US financial crisis of the year 2008. In this regard the group statistics before crisis and

after crisis are indicated in table 8 and the outcome of in dependent sample t-test is given in table 9.

Table 8 indicates average density of life insurance has almost doubled after the crisis period as it has increased from 22.81(before crisis) to 47.98 (after crisis). t-value for the difference of the density of life insurance stands -5.457 which is significant at 0.00 level. Hence the density after the crisis is significantly higher than before crisis. Regarding penetration of life insurance business, it is clear from the table that there is a negligible difference in the penetration level in before and after period of financial crisis. In simple words penetration level was US$ 3.02 per capita during before crisis period as compared to US$ 3.22 during after crisis period. Table 9 indicates t-value -0.543 which is not found significant at 5% level of significance. Hence there is no change in the penetration level during pre and post crisis periods. The density of non-life has more than two and a half times during after crisis period as the same has been increased to US$ 11.96 (after crisis) as compared to US$ 4.36 during pre-crisis period. t-value for the difference of the density of non-life insurance stands at -5.267 which is significant at 0.000 level. Hence the density of non-life insurance after the crisis is significantly higher than before crisis. The mean value of penetration of non-life after the crisis period is slightly higher than the before crisis period. The penetration level after the crisis period was 0.77 percent during after crisis period as the same was 0.61 percent during the before crisis period. Table 9 indicates t-value -3.806 which is found significant at 0.00 level. Hence penetration after the crisis is significantly higher than before crisis period. The average density of industry as a whole shown by table 8 has almost doubled after the crisis period as it has rose from 27.81(before crisis) to 59.93(after crisis). t-value for the difference of density of insurance industry stands at -6.046 which is significant at 0.00 level. Thus the density of the industry after crisis is significantly higher than before crisis. The t-value for the difference of the density of the insurance industry as a whole stands at -6.046 which is significant at 0.00 level of significance. Henceforth the density of the industry after the financial crisis is significantly higher than before crisis. With regard to penetration of the insurance industry it is crystal from table 8 that there is slight difference in the penetration level in before and after period of financial crisis. Table 9 indicates t-value -0.911 which is found not significant at 5% level of significance. Hence there is no change in the penetration level during pre and post financial crisis period of the insurance industry as a whole.

Table 8 Group Statistics for density and penetration of Life and Non- Life Insurance in India (2001-2008 & 2009-2018)

Group		N	Mean	Std. Deviation	Std. Error Mean
Density L	Before Crisis	8	22.81	13.288	4.698
	After Crisis	10	47.98	5.545	1.754
Penetration L	Before Crisis	8	3.02	0.852	0.301
	After Crisis	10	3.22	0.721	0.228
Density NL	Before Crisis	8	4.36	1.416	0.501
	After Crisis	10	11.96	3.857	1.220
Penetration NL	Before Crisis	8	0.61	0.032	0.011
	After Crisis	10	0.77	0.111	0.035
Density IND	Before Crisis	8	27.18	14.666	5.185
	After Crisis	10	59.93	8.036	2.541
Penetration IND	Before Crisis	8	3.66	0.882	0.312
	After Crisis	10	3.99	0.660	0.209

Table 9 Independent Samples Test for difference for density and penetration of Life and Non- Life Insurance

		Levene's Test for Equality of Variances		t-test for Equality of Means			
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference
Density L	Equal variances assumed	15.267	0.001	-5.457	16	0.000	-25.168
Penetration L	Equal variances assumed	1.501	0.238	-0.543	16	0.595	-0.201
Density NL	Equal variances assumed	3.815	0.069	-5.267	16	0.000	-7.598
Penetration NL	Equal variances assumed	5.223	0.036	-3.806	16	0.002	-0.156
Density IND	Equal variances assumed	7.402	0.015	-6.046	16	0.000	-32.755
Penetration IND	Equal variances assumed	2.938	0.106	-0.911	16	0.376	-0.331

CONCLUSION

The above analysis has revealed clearly that density of both life insurance as well as non-life sector has increased appreciably. Similar is the case with the penetration. However penetration level has remained stagnated in recent period. Both density as well as penetration level have improved significantly after the financial crisis. However at the overall level of the industry there is no significant change in penetration level. In contrast the density of insurance in India has improved considerably in post crisis period as compared to the pre-crisis period. The overall insurance penetration in India reached 3.70% in 2018, compared to 2.71% in 2001.

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