Evaluation of Insurance Penetration and Insurance Density in India after Insurance Sector Reforms

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(Abstract)

The present study attempts to compute and analyze the growth of life insurance business using two parameters insurance penetration and density in India post insurance sector reforms i. e. from 2001-02 to 2021-22 and to make an international comparison of these parameters. The present study is of analytical nature and based on secondary data gathered from Annual Reports of IRDA of different years. The study shows that there is an upward growth trend in total life Insurance premiums underwritten by the public sector, private Sector and Industry total in India. In the case of Insurance penetration and density, in the financial year 2001-02 insurance penetration in India was only 2.71 percent and then increased to 5.20 percent in the year 2009-10 which was the highest during the period under study but in 2021-22 it again decreased to 4.20 percent showing a fluctuating trend. In case of insurance density it was 11.50 US dollars in 2001-02 which continuously increased to 64.40 US dollars in the year 2010-11 and again declined continuously up to year 2015-16 to 54.70 US dollars after that it followed a continuous growth pattern up to year 2021-22 to 91 US dollars. The International Comparison of Insurance Penetration and Insurance Density reveals that life insurance penetration the global average is 3.00 percent and our country scored 3.20 percent which is in line with global average but in case of non life insurance the global average is 3.90 percent but our country has scored only 1.0 percent which is almost one fourth of the global average.. In case of insurance density the global average is 382, 492 and 874 US dollar in Life insurance, non life insurance and total industry respectively, but our country's insurance density is only 69, 22 and 91 US dollar in Life insurance, non life insurance and total industry respectively. The results of ANOVA statistics reveal that there is significant difference in the mean values of insurance density and penetration of life, non-life and industry total.

Keywords: Insurance Penetration, Insurance Density, LIC, Life Insurance, Non-Life Insurance, GDP, IRDA

Introduction:

Insurance is a mechanism of risk management which provides protection against a risk or contingent loss it is a mean of protection from financial loss and compensation for the loss incurred. The present research paper attempts to evaluate the trends followed by of the life and non-life insurance business after insurance sector reforms by assessing two parameters namely insurance density and insurance penetration in India and its comparison with other countries in the world. India, the second largest populous country in the world has a huge business potential. Presently insurance sector in India showing a annual growth rate of 12-15 percent. A strong and well-developed insurance sector is a very favorable for economic development due to its two major benefits first it provides long term funds for the development of Country's infrastructure and second it enhances the risk taking ability of the nation. Even the statistics of the penetration and density of life insurance are growing but still these are very poor because around 81 percent of the Indian population has no access to insurance. (IRDAI Annual Report, 2021-22). For the development of Indian insurance sector Government of India introduced insurance sector regulations and in continuation "Malhotra Committee" was constituted in 1993 to study the various aspects of the industry. The main objective of the insurance sector reforms was to develop an efficient financial system suitable for the benefit of the economy. Since then insurance industry has been passing through drastic changes. On the recommendations provided by the Malhotra Committee, chaired by former Governor of RBI Mr. R. N. Malhotra, Insurance Regulatory Development Authority (IRDA) of India was constituted in 1999 as an autonomous body to regulate and promote the insurance sector in India. The committee after collecting information from various stakeholders recommended that the private sector should be permitted to participate in the insurance sector and foreign insurance companies should be allowed to enter the insurance industry through joint venture with Indian partners. Since its incorporation the IRDA has been framing various regulations for insurance sector and doing registration the private sector insurance companies. According to IRDA annual report 2021-22, at present there are 23 private sector companies are registered for life insurance business and 21 private sector companies are registered for non life insurance business. As per Swiss Re data, India ranks tenth (eleventh in 2020) in global insurance business with a market share of 1.85 per cent in 2021 (1.78 per cent in 2020). Total insurance premium in India increased by 13.46 per cent (7.8 percent inflation adjusted real growth) in 2021 whereas global total insurance premium increased by 9.04 per cent (3.4 percent inflation adjusted real growth) during the year.

Review of Literature:

Yadav and Mohania (2016) conducted a study to analyze the impact of Foreign Direct Investment (F.D.I.) on Life insurance business in India. The analytical study was based on secondary data collected from annual report of IRDA. The study revealed that Foreign Direct Investment in Insurance sector in India has increased the overall growth of the sector. The study also discussed about the outflow of money from (Indian Currency) which the Reserve Bank of India and IRDA need to keep check on. **Chandrashekhara and Sarala (2017)** in his paper evaluated the performance of selected General Insurance companies in India using the data of claims and premium as parameter for four Public sector non life insurance companies and ten private sector non life insurance companies. The study is based on secondary data collected from IRDA Annual reports for ten years. The study concluded that the public sector companies need to improve themselves to face the tough competition posed by the private sector companies by adopting new and different strategies. The study also suggested that the powers and functions of the regulators and insurance companies need to be standardized by IRDA. Alamelu & Vimala (2018) in there analytical study attempted to analyze the trends of insurance density and penetration from year 2017 to 2017. The data of insurance penetration and density were collected from IRDA annual report and analyzed by applying Mean, Median, Standard Deviation, Variance and one way The study revealed that there is an increase in the density and penetration of insurance industry in India. Among the three groups (life, non-life and the total industry) the total industry is having high mean and standard deviation as compared to life and non-life insurance sector. The result of one way ANOVA statistics revealed that there is a significant difference in the mean values of insurance density and penetration among life, non-life and industry total. **Ghosh (2020)** attempted to analyze the growth trends of insurance business in India after Insurance sector reforms and also conduct an International Comparison of Insurance penetration and density. This analytical study is based on Secondary data. Published Secondary data collected from the Annual Reports of IRDAI for various years. The study concluded that during the post reform period in insurance sector due to entry of a number of private sector insurance companies, the life insurance penetration and insurance density in country have increased significantly. Though the above review may not be the comprehensive literature review, but there is need to study different relevant aspects influencing the insurance sector with current information. The present study "Evaluation of Insurance Penetration and Insurance Density in India after Insurance Sector Reforms" is an attempt in this regard.

Research Objectives:

- To study growth of life insurance premium underwritten by public and private sector and industry total in India from 2017-2022 last five years.

- To study the growth of life and non-life insurance penetration and density in India after the insurance sector reforms i.e. 2001 to 2022.

- To make an international comparison of data of life insurance penetration and density in the year 2020-21.

Research Hypothesis:

- H_{01}: There is no significant difference in the mean value of Total Life Insurance Premium underwritten by Public Sector and Private Sector and Industry.

- H_{02}: There is no significant difference in the mean value of Penetration of Life Insurance, Non-Life Insurance and whole Industry.

- H_{03}: There is no significant difference in the mean value of Density of Life Insurance, Non-Life Insurance and whole Industry.

Research Methodology:

The present analytical study based on secondary data which has been collected from various journals, Annual reports of IRDA and various volumes of Swiss Re, Sigma. The study period is post insurance reforms i.e. 2001-02 to 2021-22. The present study is based on two universally accepted parameters which are calculated to assess the potential and development of Insurance sector in country viz., Insurance Penetration and Insurance Density. Insurance penetration is the ratio of premium underwritten in a given year to the Gross Domestic Product (GDP). The insurance density is the ratio of premium underwritten in a given year to the population of the country. The data has been analyzed by applying statistical and arithmetical tools like Percentage, Mean, Standard Deviation, and one way ANOVA.

Data Analysis:

Table 1 below shows the growth in total life Insurance premium underwritten by public sector, private Sector and Industry total in India during the period under study. The total life Insurance premium underwritten by public sector has shown a highest growth of 12.41 percent in 2019-20 over the previous year and the private sector has shown a highest growth of 21.37 percent in 2018-19 over the previous year. Overall there is an upward growth trend in total life Insurance premium underwritten by public sector, private Sector and Industry total in India during the period under study.

Table 1
Total Life Insurance Premium Underwritten

(in ₹ crores)

Year	Public Sector (LIC)	Private Sector	Industry Total
2017-18	3,18,223.21 (5.90)	1,40,586.23 (19.15)	4,58,809.44 (9.64)
2018-19	3,37,505.07 (6.06)	1,70,626.96 (21.37)	5,08,132.03 (10.75)
2019-20	3,79,389.60 (12.41)	1,93,520.59 (13.42)	5,72,910.19 (12.75)
2020-21	4,03,286.55 (6.30)	2,25,444.48 (16.50)	6,28,731.04 (9.74)
2021-22	4,28,024.97 (6.13)	2,64,589.17 (17.36)	6,92,614.14 (10.16)
Total	**1866429**	**994767.4**	**2861197**
Average	**373285.8804**	**198953.4862**	**572239.3664**
S.D.	**45403.27**	**48084.46**	**93083.22**

Source: IRDA Annual reports
Note: numbers in the brackets depicts the growth (in percentage) over the previous year.

Table 2 below shows the result of one way ANOVA test which shows that there is no significant difference in the mean value of Total Life Insurance Premium underwritten by Public Sector, Private Sector and Industry as a whole. Therefore null hypothesis (H_{01}) i.e. there is no significant difference in the mean value of total life Insurance premium underwritten by public sector, private Sector and Industry as a whole is accepted

Table 2

ANOVA						
Source of Variation	SS	df	MS	F	P-value	F crit
Between Groups	3.48861E+11	2	1.74E+11	40.13569777	4.84E-06	3.885294
Within Groups	52152231861	12	4.35E+09			
Total	4.01013E+11	14				

Source: Own Calculations using M. S. Excel

Table 3

Insurance Penetration and Density in India from 2001-02 to 2021-22

Year	Penetration (%)			Density (USD)		
	Life	Non-Life	Total	Life	Non-Life	Total
2001-02	2.15	0.56	2.71	9.10	2.40	11.50
2002-03	2.59	0.67	3.26	11.70	3.00	14.70
2003-04	2.26	0.62	2.88	12.90	3.50	16.40
2004-05	2.53	0.64	3.17	15.70	4.00	19.70
2005-06	2.53	0.61	3.14	18.30	4.40	22.70
2006-07	4.10	0.60	4.80	33.20	5.20	38.40
2007-08	4.00	0.60	4.70	40.40	6.20	46.60
2008-09	4.00	0.60	4.60	41.20	6.20	47.40
2009-10	4.60	0.60	5.20	47.70	6.70	54.30
2010-11	4.40	0.71	5.10	55.70	8.70	64.40
2011-12	3.40	0.70	4.10	49.00	10.00	59.00
2012-13	3.17	0.78	3.96	42.70	10.50	53.20
2013-14	3.10	0.80	3.90	41.00	11.00	52.00
2014-15	2.60	0.70	3.30	44.00	11.00	55.00
2015-16	2.72	0.72	3.44	43.20	11.50	54.70
2016-17	2.72	0.77	3.49	46.50	13.20	59.70
2017-18	2.76	0.93	3.69	55.00	18.00	73.00
2018-19	2.74	0.97	3.70	55.00	19.00	74.00
2019-20	2.82	0.94	3.76	58.00	19.00	78.00*
2020-21	3.20	1.00	4.20	59.00	19.00	78.00
2021-22	3.20	1.00	4.20	69.00	22.00	91.00
Minimum	**2.15**	**0.56**	**2.71**	**9.10**	**2.40**	**11.50**
Maximum	**4.60**	**1.00**	**5.20**	**69.00**	**22.00**	**91.00**
Mean	**3.12**	**0.74**	**3.87**	**40.40**	**10.21**	**49.29**
S. D.	**0.71**	**0.74**	**3.87**	**40.40**	**10.21**	**49.29**

Source: IRDA Annual reports

Insurance Density = Insurance Premium / Total Population

Insurance Penetration = Insurance Premium / GDP

Table 3 above depicts the data of Insurance Penetration and Density by grouping life, non-life and whole

industry data from year 2001 to 2022 with calculated values of Mean, Minimum Value, Maximum Value and Standard Deviation. It can be observed that in financial year 2001-02 insurance penetration was only 2.71 percent and then it raise to 5.20 percent in 2009-10 which is highest over the study period from 2001-02 to 2021-22 but in 2021-22 it again decreased to 4.20 percent following a fluctuating trend. In case of insurance density it was 11.50 US dollar in 2001-02 which continuously increased to 64.40 US dollar in 2010-11 and again declined continuously up to year 2015-16 to 54.70 US dollar after that it followed an upward pattern up to year 2021-22 to 91 US dollar. We can conclude that The Standard Deviation value of Insurance penetration works out at 3.87 percent which is low and it indicates that the deviations from the mean value of Life Insurance penetration in different years were narrow. Whereas Insurance Density works out at 49.29 US $ which is quite high and it indicates that the deviations from the mean value of Insurance Density in different years were very wide.

Table 4 below shows the result of one way ANOVA test which shows that there is no significant difference in the mean value of Penetration of Life Insurance, Non-Life Insurance and whole Industry. Therefore null hypothesis (H_{02}) i.e. there is no significant difference in the mean value of Penetration of Life Insurance, Non-Life Insurance and whole Industry is accepted.

Table 4

ANOVA						
Source of Variation	SS	df	MS	F	P-value	F crit
Between Groups	112.3939	2	56.19696			
Within Groups	20.5721	60	0.342868	163.9024	4.85E-25	3.150411
Total	132.966	62				
Total	132.966	62				

Source: Own Calculations using M. S. Excel

Table 5 below shows the result of one way ANOVA test which shows that there is no significant difference in the mean value of density of Life Insurance, Non-Life Insurance and whole Industry. Therefore null hypothesis (H_{02}) i.e. there is no significant difference in the mean value of Density of Life Insurance, Non-Life Insurance and whole Industry is accepted.

Table 5

ANOVA						
Source of Variation	*SS*	*df*	*MS*	*F*	*P-value*	*F crit*
Between Groups	112.3939	2	56.19696	163.9024	4.85E-25	3.150411
Within Groups	20.5721	60	0.342868			
Total	132.966	62				

Source: Own Calculations using M. S. Excel

Figure 1 below shows the insurance penetration from 2001-02 to 2021-22 for India is particularly low in the non-life insurance segment. In the first decade after the liberalization of the insurance sector, penetration rates registered a consistent rise from 2.71 per cent in 2001-02 to 5.20 per cent in 2009-10(IRDAI, 2018). Insurance penetration followed a downward trend thereafter and started declining. The penetration rates dropped to 3.30 per cent in 2014-15 (IRDAI, 2018). In 2015, the rates turned around and started increasing and reached 4.20 per cent in 2021-22 (IRDA, 2022).

Figure 1

Insurance penetration rates in India (2001-02 to 2021-22)
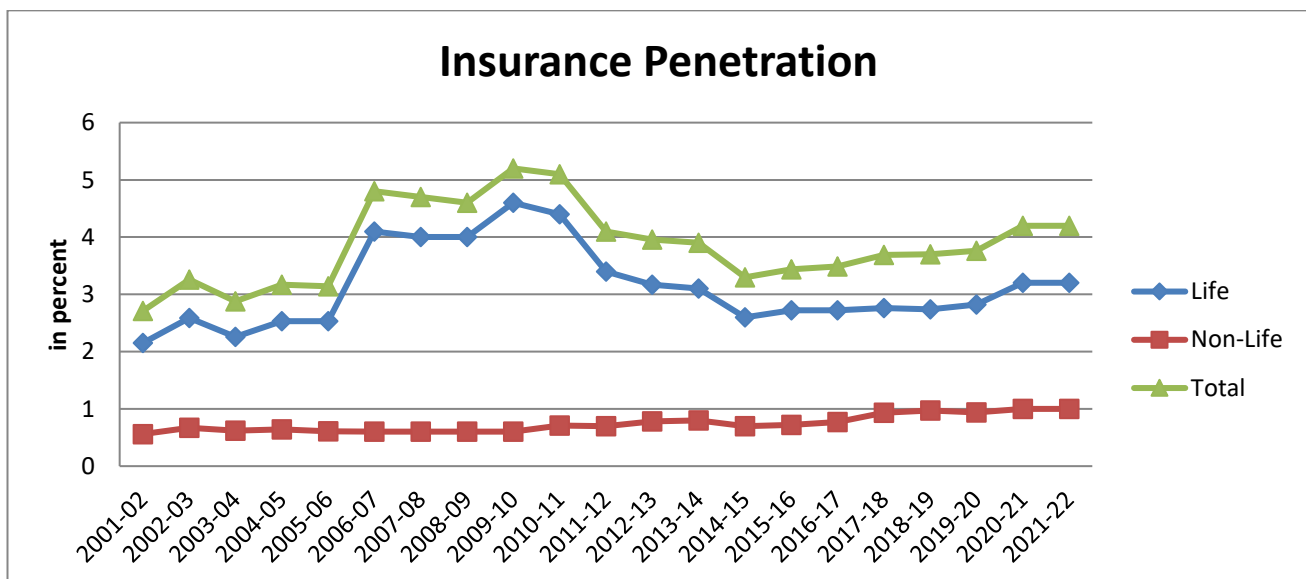
Source: IRDAI Annual Reports

Figure 2 below illustrates the trend of density of insurance in India. From USD 11.5 in 2001, the insurance density touched a high of USD 64.4 in 2010, after which it floated in the range of USD 50 to USD 60 from 2011 to 2016 before increasing to USD 91 in 2021 (IRDAI, 202). Since life insurance rules the sector due to its sheer market share as compared to non-life insurance, the total penetration and density mimics the pattern followed by life insurance penetration and density.
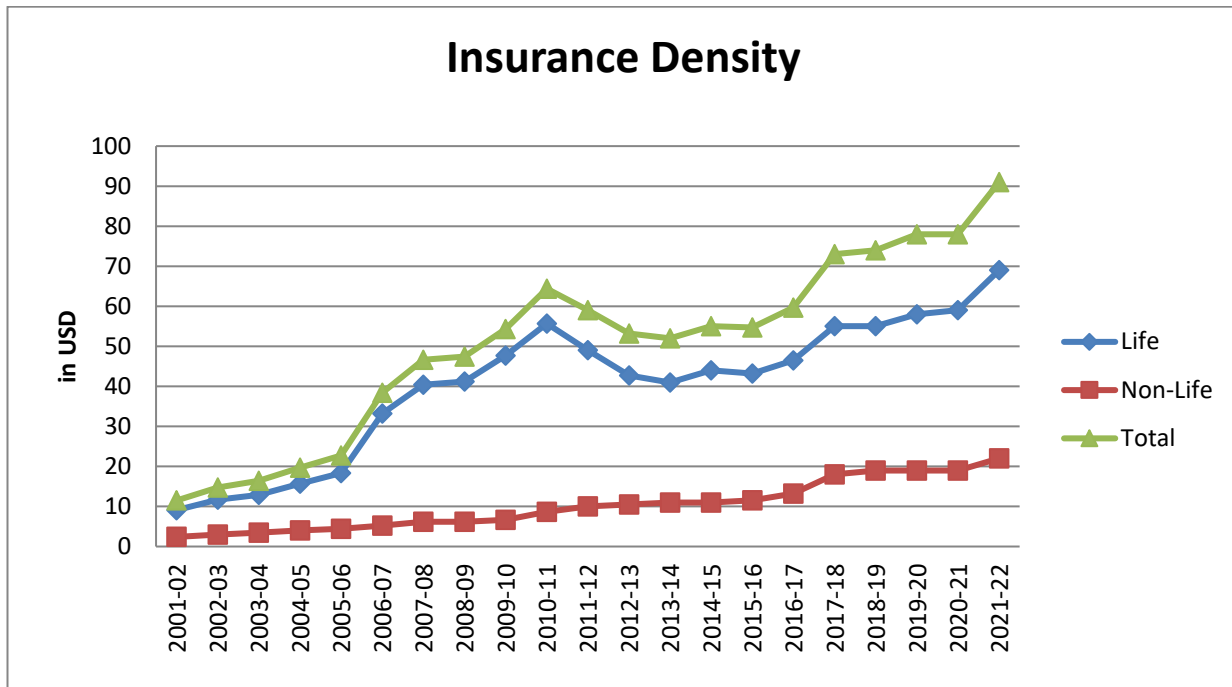
Source: IRDAI Annual Reports

Table 6 below shows the International Comparison of Insurance Penetration and Insurance Density in 2021 with respect to Life insurance, Non life insurance and total industry. In case of life insurance penetration the global average is 3.00 percent and our country scored 3.20 percent which is in line with global average but in case of non life insurance the global average is 3.90 percent but our country has scored only one percent which is almost one fourth of the global average. Due to low score in non life insurance penetration the total life insurance sector penetration is only 3.90 percent which is very less as compared to global average of 7.90 percent. In case of insurance density the global average is 382, 492 and 874 US dollar in Life insurance, non life insurance and total industry respectively, but our country's insurance density is only 69, 22 and 91 US dollar in Life insurance, non life insurance and total industry respectively which is far behind the global averages.

Table: 6

International Comparison of Insurance Penetration and Insurance Density in 2021

Country*	Penetration (In Percent)			Density (in USD)		
	Life	Non-Life	Total	Life	Non-Life	Total
Australia	1.00	3.50	4.40	623	2195	2817
Brazil	2.10	1.70	3.90	160	130	290
France	6.10	3.40	9.50	2654	1486	4140
Germany	2.60	3.90	6.50	1321	1992	3313
Russia	0.40	0.90	1.30	49	111	160
South Africa	10.00	2.20	12.20	698	154	852
Switzerland	3.10	4.00	7.10	2866	3744	6610
United Kingdom	8.90	2.20	11.10	4234	1039	5273
United States	2.60	9.10	11.70	1837	6356	8193
Hong Kong	17.30	2.30	19.60	8433	1123	9556
India#	**3.20**	**1.00**	**4.20**	**69**	**22**	**91**
Japan#	6.10	2.20	8.40	2347	855	3202
Malaysia#	3.90	1.40	5.30	444	157	600
Pakistan	0.50	0.20	0.70	7	4	11
PR China	2.10	1.90	3.90	253	229	482
Singapore	7.50	1.80	9.30	5414	1327	6742
South Korea#	5.80	5.20	10.90	1971	1764	3735
Sri Lanka	0.60	0.60	1.30	24	25	49
Taiwan	11.60	3.20	14.80	3772	1032	4804
Thailand	3.40	1.90	5.40	246	141	387
World	**3.00**	**3.90**	**7.00**	**382**	**492**	**874**

Source: Swiss Re, Sigma various volumes.

 *Data relates to calendar year

Data relates to financial year

Insurance Density = Insurance Premium / Total Population

Insurance Penetration = Insurance Premium / GDP

Conclusions:

The study shows that there is an upward growth trend in total life Insurance premium underwritten by public sector, private Sector and Industry total in India. In case of Insurance penetration and density, in financial year 2001-02 insurance penetration in India was only 2.71 percent and then it was 5.20 percent in 2009-10 which was highest over the study period from 2001-02 to 2021-22 but in 2021-22 it again decreased to 4.20 percent showing a fluctuating trend. In case of insurance density it was 11.50 US dollar in 2001-02 which continuously increased to 64.40 US dollar in 2010-11 and again declined continuously up to year 2015-16 to 54.70 US dollar after that it followed a continuous growth pattern up to year 2021-22 to 91 US dollar. The International Comparison of Insurance Penetration and Insurance Density reveals that life insurance penetration the global average is 3.00 percent and our country scored 3.20 percent which is in line with global average but in case of non life insurance the global average is 3.90 percent but our country has scored only one percent which is almost one fourth of the global average. Due to low score in non life insurance penetration the total life insurance sector penetration is only 3.90 percent which is very less as compared to global average of 7.90 percent. In case of insurance density the global average is 382, 492 and 874 US dollar in Life insurance, non life insurance and total industry respectively, but our country's insurance density is only 69, 22 and 91 US dollar in Life insurance, non life insurance and total industry respectively which is far behind the global averages.

References:

- Chandrashekhara.T., and Dr. Sarala. K.S., (2017*), "An Evaluation of Performance of Selected General Insurance Companies in India"*, International Journal of Business and Administration Research Review, 03, (17), 28 – 35.

- Ghosh, J. (2020). Life Insurance Density and Life Insurance Penetration in India after Life Insurance Sector Reform. *International Journal of Multidisciplinary Studies,E*, *V*(1),1–8. http://chakdahacollege.in.net/upld_journal/upld_jrnl_dcmnt/apr20/10-5(1)-1-8.pdf

- Vimala, B., & Alamelu, K. (2018). *Insurance Penetration and Insurance Density in India -An Analysis*. *5*. http://ijrar.com/upload_issue/ijrar_issue_20542543.pdf

- Yadav, R., & Mohania, S. (n.d.). *Impact of F.D.I. on Life Insurance Sector in India*. Retrieved July 9, 2023, from http://www.worldscientificnews.com/wp-content/uploads/2015/10/WSN-472-2016-190-201.pdf

- IRDA Annual Reports of different years
- Swiss Re, Sigma's various volumes