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Investigation on the Performance of Indian General Insurance Companies on Selected Variables: A Comparative Study

Srinivasa H. T. and K. Venkidasamy***

ABSTRACT

The privatization of India's insurance sector in 2000 triggered swift expansion and increased rivalry between public and private general insurers. At present, just four out of 28 general insurance companies are publicly owned, whereas private enterprises have enhanced their product ranges and service quality. This research assesses the effectiveness of public and private insurers over ten years utilizing secondary financial information from yearly reports and regulatory documents. Seven essential performance metrics net earned premiums, net incurred claims, solvency ratios, complaint resolution, surplus/deficit trends, equity share capital maintenance, and gross direct premiums were examined using correlation, regression, and the Mann-Whitney U test. Findings indicate a significant positive relationship between premiums and claims, with private insurers excelling in profitability, solvency, and complaint handling, propelled by innovation and a customer-centric approach. Public insurers preserved equity stability but fell short in market adaptability. The results provide important perspectives for policymakers, industry participants, and researchers regarding enhancing sector competitiveness.

Keywords: *Competition; General Insurance; Privatization; Public Sector; Private Sector.*

1.0 Introduction

Throughout the years, India's insurance sector has seen considerable expansion and has been notably affected by international frameworks, especially that of the United Kingdom (Mishra & Kumar, 2018).

**Corresponding author; Assistant Professor, Department of Commerce, Government First Grade College, Nagamangala, Karnataka, India (E-mail: htsrinivasa86@gmail.com)*
***Assistant Professor, Department of Commerce, MGR College of Arts & Commerce, Hosur, Tamil Nadu, India (E-mail: venkidasamy.2010@gmail.com)*

Up until the late 1990s, the industry was primarily controlled by government-owned companies, with the Life Insurance Corporation of India (LIC) having a significant hold on the life insurance sector. Before the privatization in 2000, there were just two nationalized insurers: Life Insurance Corporation and General Insurance Corporation (IRDAI, 2021).

In December 2000, the four subsidiaries of GIC Oriental Insurance Company Limited, New India Assurance Company Limited, National Insurance Company Limited, and United India Insurance Company Limited were transformed into autonomous business entities during the liberalization process (Kaur & Rao, 2020). This change was prompted by the government's policy adjustment that enabled private sector involvement and allowed foreign direct investment (FDI) of up to 26%, which was subsequently raised to 49% in 2015 (Department of Financial Services, 2015). The development of India's insurance sector has occurred over 200 years, characterized by periods of nationalization, regulation, and liberalization (Bawa & Chattha, 2013)

2.0 Literature Review

Naidu & Paramasivan (2020) emphasized that assessing the effectiveness of insurance firms is vital, as these organizations facilitate the allocation of savings into economic investments while also managing risks. Their function within the financial system renders performance assessment essential for regulatory and investment choices.

Joshi & Takodia (2020) state that to increase market share and foster industry expansion, life insurers must inform investors about the characteristics and advantages of life insurance. Their research highlighted the significance of various evaluation criteria, including payout timeliness, total resolved claims, simplicity of settlement processes, financial integrity, and upholding a strong financial position to draw in investors.

Kumari (2020) evaluated the effectiveness of India's life insurance industry after deregulation through various financial ratios. The results indicated that insurance penetration and density have increased due to liberalization, and multiple performance ratios like total assets to earned premium, investment income to earned premium, and investment income to total investments demonstrate the financial stability and decision-making effectiveness of insurers. Parmasivan (2021) performed a comparative study of both public and private life insurance companies in India. His research underscored LIC's market supremacy while also observing that private insurers have successfully employed marketing tactics and product innovation to increase their market share. Private insurers exhibited stronger key indicators such as solvency and lapse ratios, while LIC excelled in managing death litigation claims.

Mishra (2021) encouraged public sector insurers to stay competitive in the liberalized market. Even with attempts to adjust via strategic modifications, public insurers need to

persist in assessing their standing. The research indicates that product affordability, cost-effectiveness, dependability, sustainability, and quality of service are crucial factors for achieving long-term success in the insurance sector.

3.0 Research Design

3.1 Statement of the problem

The Indian general insurance market is highly competitive, with 28 companies currently in operation (IRDAI, 2023). The 2000 liberalization and privatization of the insurance sector enabled private entities to enter the market, which greatly transformed the industry's dynamics. Consequently, public sector insurers have needed to broaden their product range and adjust their business approaches to stay competitive and align with changing consumer demands and technological progress.

Considering the evolving market environment and strategic changes, it is crucial to assess the performance of general insurers in both the public and private sectors over the past ten years. The objective of this research is to examine and contrast the efficiency, expansion, and fiscal stability of insurers in both sectors to comprehend their responses to rising competition and regulatory changes within the industry (PwC India, 2022).

3.2 Objective of study

- To assess and compare the outcomes of the public and private sectors on selected variables.
- To comprehend the behaviour of companies functioning within the private sector.
- To understand the effectiveness of general insurance companies.

3.3 Methodology of research

This research relies on secondary data obtained from trustworthy and reputable sources. The main data sources consist of yearly reports released by the Insurance Regulatory and Development Authority of India (IRDAI), peer-reviewed academic journals, and insurance-focused periodicals and publications from the last decade. These sources offered detailed perspectives on the performance, financial trends, and strategic advancements of general insurance companies in both the public and private sectors in India.

3.4 Study scope

This research aims to assess the performance of chosen general insurance firms from both public and private sectors in India. Two public sector firms New India Assurance Company Limited and Oriental Insurance Company Limited and two private sector firms ICICI Lombard General Insurance and Bajaj Allianz General Insurance have been chosen for

comparative analysis. These firms were selected due to their market visibility, past performance, and data accessibility from the last decade.

The research seeks to evaluate and contrast their operational and financial performance by utilizing these key indicators:

- *Gross Direct Premium:* indicating the overall premium written directly by the insurer prior to any reinsurance deductions.
- *Net Earned Premium:* the premium kept by the insurer post-reinsurance, reflecting true income.
- *Claim Resolution and Net Incurred Losses:* indicative of the insurer's effectiveness in managing claims and underwriting outcomes.
- *Complaint Resolution:* highlighting customer service benchmarks and the efficacy of addressing grievances.
- *Solvency Ratio:* Assessing the insurer's financial stability and capability to fulfil long-term commitments.
- *Equity Share Capital:* signifying the ownership funds and financial foundation of the company.
- *Surplus or Deficit:* reflecting overall financial results after considering revenues and costs.

The comparative method used in this research offers important perspectives on the advantages and disadvantages of public and private general insurance companies, assisting in comprehending their strategic roles and impact on the Indian insurance sector.

3.5 Study limitations

Though this research seeks to offer valuable perspectives on the performance of general insurance firms in India, it is faced with specific limitations that could influence the generalizability and thoroughness of its conclusions:

- *Dependence on Secondary Information:* The evaluation relies solely on secondary data obtained from published materials like IRDAI reports, industry publications, and corporate financial statements. The lack of primary data, like stakeholder interviews or surveys, could restrict the richness of understanding regarding qualitative factors such as customer satisfaction and internal management practices.
- *Restricted Sample Size:* Despite the presence of 24 general insurance companies in India, as recorded by the IRDAI, only two firms from both the public and private sectors have been chosen for this research. This limited sample size might not completely reflect the diversity of strategies, performance standards, and market conditions throughout the industry.

- *Variable Selection Requirement:* The research concentrates on a defined group of performance metrics, such as gross direct premium, net earned premium, claim resolution, complaint handling, solvency ratio, equity share capital, and financial surplus or shortfall. Although these indicators are essential, excluding other possible factors like digital adoption, customer retention, and underwriting efficiency might constrain the breadth of performance evaluation.

3.6 Instruments for data analysis

Various statistical and Figureical methods have been utilized to assess the relative performance of chosen general insurance firms from both public and private sectors. These tools help in spotting trends, connections, and distinctions among essential financial and operational factors. The analytical methods employed in this study are as follows:

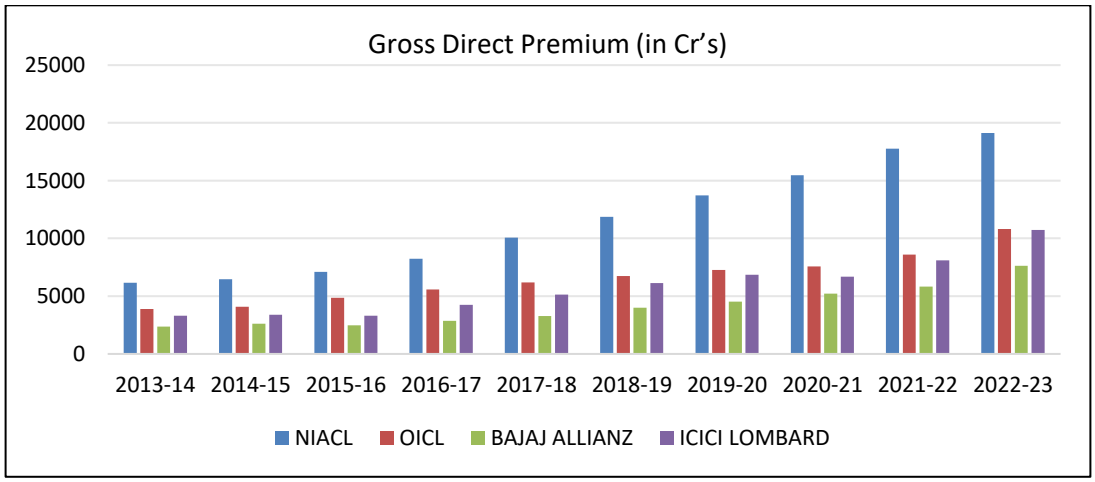
- *Mann-Whitney U Test:* This non-parametric test is utilized to determine if there is a statistically significant difference between two independent groups public and private insurance firms based on chosen financial metrics. It is especially beneficial when the data do not adhere to a normal distribution (McKnight & Najab, 2010).
- *Correlation Examination:* Pearson's correlation coefficient assesses the strength and direction of the linear relationship among critical variables like gross direct premium, solvency ratio, and net earned premium. This assists in determining the strength of the association between the performance metrics (Kothari, 2004).
- *Analysis of Regression:* Regression models are used to grasp the influence of independent variables (e.g., equity share capital, net earned premium) on dependent results like surplus or deficit. This approach helps in determining crucial factors that influence company performance (Gujarati & Porter, 2009).
- *Visual Representation (Bar and Line Charts):* Visual aids like bar and line charts are employed to depict trends, comparisons, and patterns among the chosen companies during the decade-long span. These visual representations improve the understanding of quantitative data (Bryman & Bell, 2015).

4.0 Data Analysis and Interpretation

Interpretation: Figure 1 depicts the gross direct premium (in ₹ crore) for NIACL, OICL, Bajaj Allianz, and ICICI Lombard from 2013–14 to 2022–23, showcasing a distinct upward trajectory for all insurers. NIACL consistently achieved the highest premiums, demonstrating significant growth especially from 2017–18 onward. OICL demonstrated consistent growth, albeit at a more gradual pace than NIACL. Bajaj Allianz and ICICI Lombard consistently reported year-on-year growth among private insurers, with significant

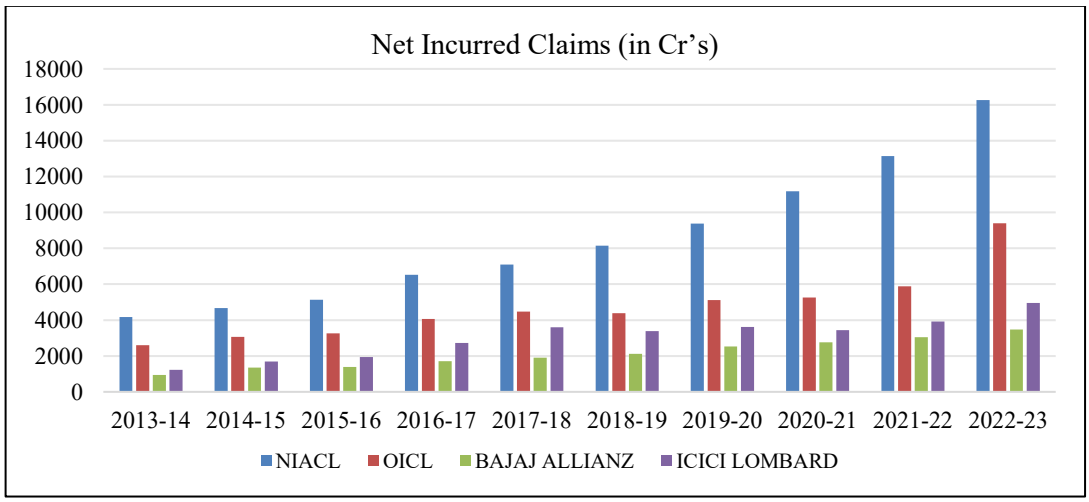
increases in their premiums in recent years, thus closing the gap with their public sector rivals. The ongoing growth of private insurers demonstrates their market enlargement, product variety, and competitive tactics, while NIACL's dominance shows the enduring market power of prominent public insurers. In general, the data highlights the growth path of the sector and the increasing rivalry between public and private entities in India's general insurance industry.

Figure 1: Showing Gross Direct Premium (In Crore)



Source: IRDAI Annual Reports from 2013-14 to 2022-23)

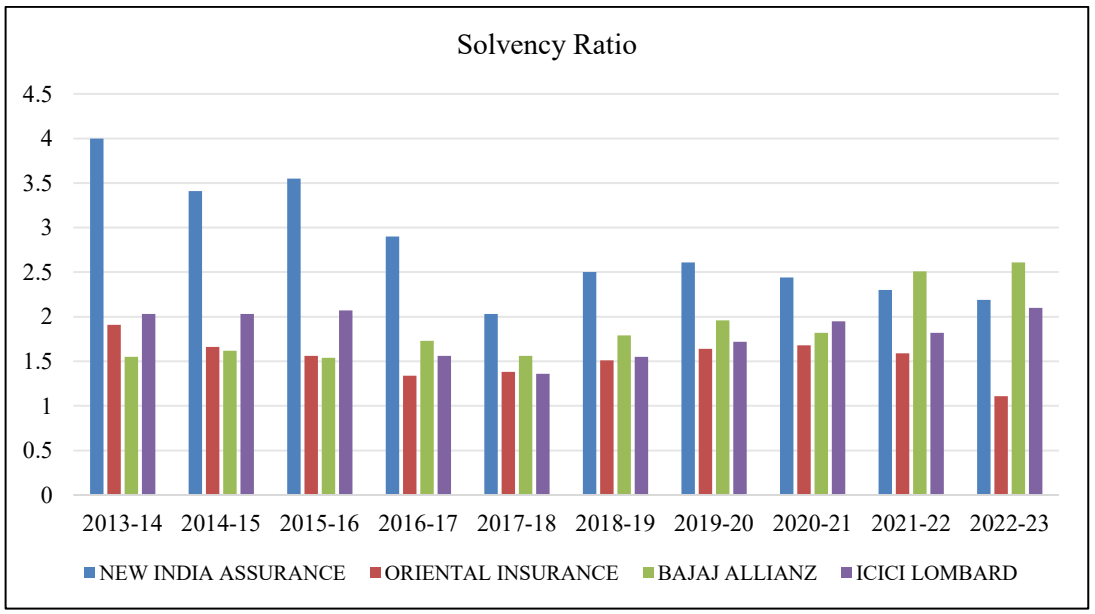
Figure 2: Showing Net Incurred Claims (In Crore)



Source: IRDAI Annual Reports from 2013-14 to 2022-23

Figure 2 shows the net claims incurred (in ₹ crore) for NIACL, OICL, Bajaj Allianz, and ICICI Lombard from 2013–14 to 2022–23, indicating an overall upward trend throughout the years. NIACL repeatedly documented the largest claim amounts, experiencing a significant increase following 2018–19, reaching a high in 2022–23. OICL exhibited a comparable but less rapid trend, demonstrating moderate increases in claims. Bajaj Allianz and ICICI Lombard, among private insurers, showed considerably lower claim volumes than public sector counterparts, although both displayed gradual increases over the years. The comparatively elevated claims for public insurers might indicate their greater market presence and wider policy options, while private insurers seem to uphold more regulated claim ratios, likely because of focused underwriting and risk management approaches. In summary, the figure emphasizes disparities in claim behaviors between public and private insurers, reflecting distinct operational strategies and market concentration.

Figure 3: Showing Solvency Ratio

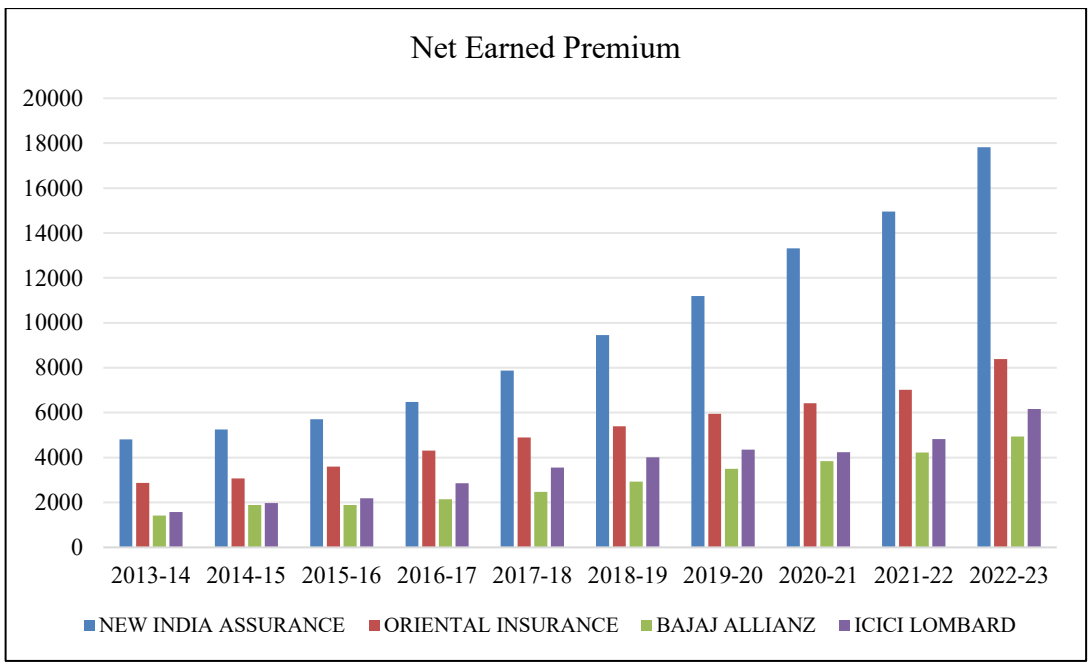


Source: IRDAI Annual Reports from 2013-14 to 2022-23

Interpretation: Figure 3 illustrates the solvency ratios of NIACL, OICL, Bajaj Allianz, and ICICI Lombard from 2013–14 to 2022–23, emphasizing differences in capital adequacy among insurers. NIACL consistently held the highest solvency ratio in previous years, reaching a peak of over 4 in 2013–14, but then saw a gradual decrease, ultimately stabilizing near the regulatory limit. OICL's solvency ratio stayed fairly stable, though it was

lower than NIACL's, experiencing a minor decline in the later years. Conversely, Bajaj Allianz and ICICI Lombard exhibited steady progress throughout the period, with Bajaj Allianz exceeding both public insurers by 2022–23. The increasing trend for private insurers implies efficient capital handling and risk-oriented underwriting, whereas the falling solvency ratios of public insurers might signal growing liabilities or delayed capital investment. In general, the data highlights a changing edge for private entities regarding solvency strength

Figure 4: Showing Net Earned Premium (In Crore)

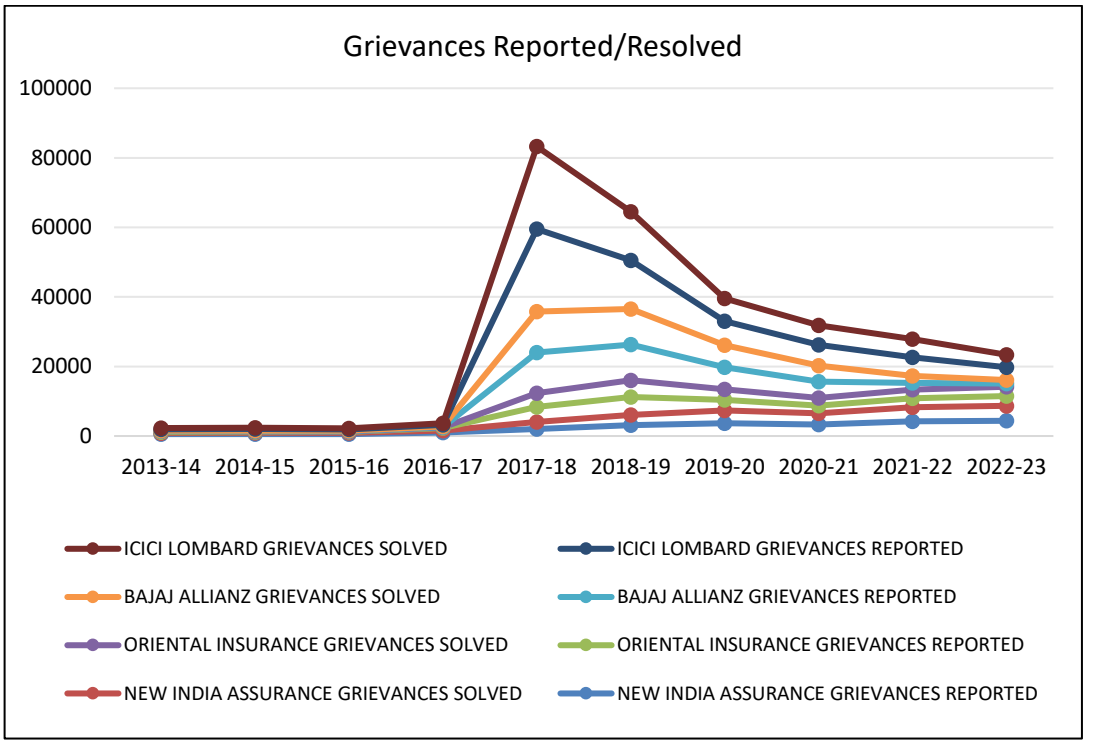


Source: IRDAI Annual Reports from 2013-14 to 2022-23

Interpretation: Figure 4 displays the net earned premium (in ₹ crore) for NIACL, OICL, Bajaj Allianz, and ICICI Lombard from 2013–14 to 2022–23, showing the retained premium revenue following reinsurance modifications. NIACL consistently posted the highest net earned premiums, showing a significant upward trend from 2017–18 onward, reaching a peak in 2022–23. OICL experienced moderate growth, whereas Bajaj Allianz and ICICI Lombard showed consistent gains, with their profits slowly narrowing the distance to public sector insurers. The accelerated growth rates of private insurers in recent years indicate successful market entry, focused product strategies, and competitive pricing. In contrast, although public insurers manage larger premium volumes, their growth rate seems slower,

possibly because of traditional operational methods and greater dependence on conventional markets. The figure underscores a robust growth trend across the sector, as private entities consistently increase their portion of net premium earnings.

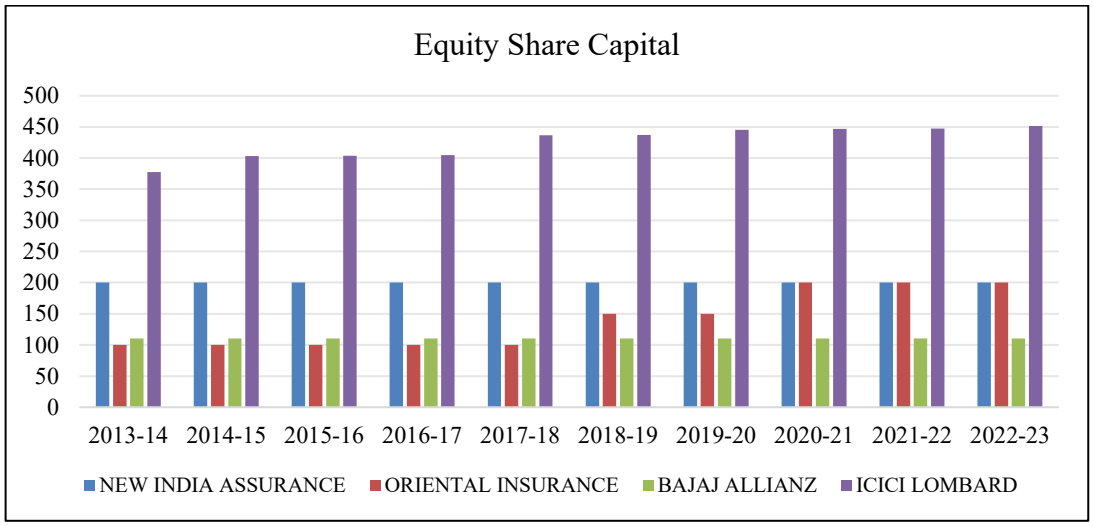
Figure 5: Showing Status of Grievances (Reported/Resolved)



Source: IRDAI Annual Reports from 2013-14 to 2022-23

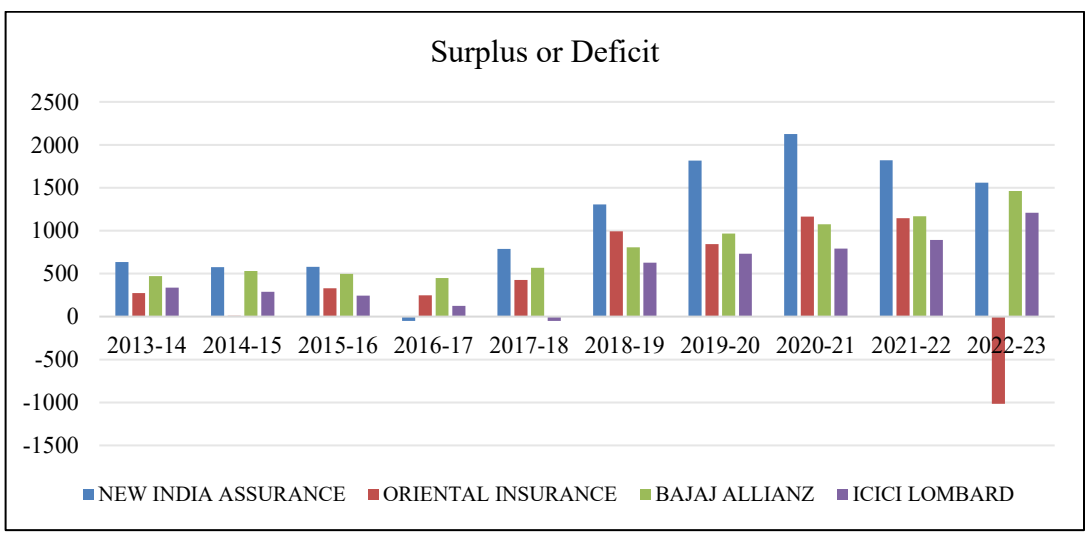
Interpretation: Figure 5 illustrates the patterns in complaints lodged and addressed for NIACL, OICL, Bajaj Allianz, and ICICI Lombard during 2013–14 to 2022–23. A significant increase is evident in 2017–18, especially for NIACL and ICICI Lombard, suggesting a rise in policyholder grievances during this time, likely as a result of operational, service, or claim resolution challenges. Despite the increase, grievance resolution closely followed grievance reporting among all insurers, indicating effective redressal processes. After 2017–18, there was a consistent decrease in both reported and resolved grievances, indicating enhanced service quality, improved communication, and proactive customer engagement efforts. Although public sector insurers experienced greater total grievance volumes, private insurers kept relatively lower figures, likely because of their smaller policyholder bases and more efficient service processes.

Figure 6: Showing Equity Share Capital (In Crore)



Source: IRDAI Annual Reports from 2013-14 to 2022-23

Figure 7: Showing Surplus or Deficit (In Crore)



Source: IRDAI Annual Reports from 2013-14 to 2022-23

Interpretations: Figure 6 showing the trends in equity share capital from 2013–14 to 2022–23 show a mostly stable pattern for all four insurers New India Assurance, Oriental Insurance, Bajaj Allianz, and ICICI Lombard reflecting steady capital structures throughout

the decade. ICICI Lombard consistently held the largest equity share capital, greatly exceeding its competitors, indicating a larger capital foundation and potentially enhanced ability for underwriting and growth. New India Assurance and Oriental Insurance maintained almost stable levels up until 2018–19, with Oriental Insurance experiencing a significant rise in 2017–18, indicating a possible capital injection during that time. Bajaj Allianz's equity capital stayed relatively low and stable, indicating a more streamlined capital structure. The general stability suggests minimal equity restructuring, with capital requirements mostly satisfied without regular alterations, consistent with the regulated character of the insurance industry.

Interpretation: Figure 7 showing the trends in surplus or deficit from 2013–14 to 2022–23 show significant variation among the four insurers New India Assurance, Oriental Insurance, Bajaj Allianz, and ICICI Lombard indicating distinct profitability patterns and operational efficiencies. New India Assurance regularly recorded favourable surpluses, reaching a notable high in 2019–20 and sustaining solid results afterward, indicating strong underwriting and investment earnings. Oriental Insurance exhibited moderate surpluses until 2021–22, but experienced a significant deficit in 2022–23, suggesting possible underwriting losses or negative claim experiences. Bajaj Allianz showed consistent and progressively rising surpluses throughout the timeframe, indicating stable profitability and careful risk management. ICICI Lombard sustained a consistently favourable surplus with a notable upward trajectory starting from 2017–18, highlighting robust market positioning and operational efficiency. In general, private insurers (Bajaj Allianz and ICICI Lombard) exhibit consistent growth, whereas public insurers experience more fluctuations, with Oriental Insurance's recent loss underscoring potential structural issues.

4.2 Regression analysis

Net earned premiums and net incurred claims have been taken into account in order to determine the companies' regression.

Table 8: Showing Regression Analysis of New India Assurance Company Limited (NIACL)

Regression Output						
Model		**Unstandardized Coefficients**		**Standardized Coefficients**	**t**	**Sig.**
		B	**Std. Error**	**Beta**		
1	(Constant)	11787.083	34699.406		.341	.742
	PREMIUM	.874	.033	.993	26.622	.000*
a. Dependent Variable: CLAIMS, *Significant at 5% level						

Source: Author compilation using SPSS

Interpretation: Table 8 showing the regression results show a statistically significant and strong positive correlation between Premium and Claims. The unstandardized coefficient (B = 0.874) suggests that for each one-unit rise in premium income, claims paid rise by about 0.874 units, provided that all other factors stay the same. The standardized coefficient (Beta = 0.993) indicates an exceptionally strong level of impact, suggesting that changes in premiums nearly fully account for the changes in claims. The t-value (26.622) is notably high, and the p-value (Sig. = 0.000) is significantly lower than the 5% significance threshold, verifying that the result is statistically significant. Nonetheless, the constant term is insignificant (p = 0.742), indicating it does not play a meaningful role when premiums equal zero. In summary, the model indicates that the premiums gathered are a very dependable indicator of claim payments, which corresponds with the financial intermediation function of insurers in risk aggregation and loss reimbursement.

Table 9: Showing Regression Analysis of Oriental Insurance Company Limited (OICL)

Regression Output						
Model		**Unstandardized Coefficients**		**Standardized Coefficients**	**t**	**Sig.**
		B	**Std. Error**	**Beta**		
1	(Constant)	-51392.997	70509.020		-.728	.488
	PREMIUM	1.013	.128	.942	7.857	.000*
a. Dependent Variable: CLAIMS, *Significant at 5% level						

Source: Author compilation using SPSS

Table 10: Showing Regression Analysis of Bajaj Allianz

Regression Output						
Model		**Unstandardized Coefficients**		**Standardized Coefficients**	**t**	**Sig.**
		B	**Std. Error**	**Beta**		
1	(Constant)	7479.933	6681.512		1.118	.294
	PREMIUM	.702	.022	.997	32.757	.000*
a. Dependent Variable: CLAIMS, *Significant at 5% level						

Source: Author compilation using SPSS

Interpretation: Table 9 showing the regression results indicate a robust and statistically meaningful positive correlation between Premium and Claims. The unstandardized coefficient (B = 1.013) indicates that for each one-unit rise in premium, claims rise by about 1.013 units, reflecting a nearly proportional connection between the two variables. The standardized coefficient (Beta = 0.942) indicates a very strong correlation,

suggesting that premiums are a key predictor of claims. The t-value of 7.857 and the p-value of 0.000 indicate that this relationship is statistically significant at the 5% level. Conversely, the intercept (constant = -51,392.997) lacks statistical significance (p = 0.488), indicating that it does not significantly aid in predicting claims when the premium is zero. This outcome strengthens the notion that claim outflows significantly rely on the amount of premiums collected, which aligns with the core functions of insurance firms, as increased premium inflows are usually linked to heightened risk exposure and, thus, higher claims.

Interpretation: Table 10 showing the regression results show a robust and statistically significant positive correlation between Premium and Claims. The unstandardized coefficient (B = 0.702) indicates that for each one-unit rise in premium, claims rise by about 0.702 units. The standardized coefficient (Beta = 0.997) reflects a very strong linear relationship, demonstrating that almost all the variation in claims is accounted for by fluctuations in premium. The t-value (32.757) is extremely elevated, and the p-value (Sig. = 0.000) verifies that the relationship is very significant at the 5% level. The constant (7479.933) lacks statistical significance (p = 0.294), suggesting it exerts minimal influence when the premium is zero.

Table 11: Showing Regression Analysis of ICICI Lombard

Regression output						
Model		**Unstandardized Coefficients**		**Standardized Coefficients**	**t**	**Sig.**
		B	**Std. Error**	**Beta**		
1	(Constant)	26244.471	22258.727		1.178	.273
	PREMIUM	.782	.059	.977	13.411	.000*
a. Dependent Variable: CLAIMS, *Significant at 5% level						

Source: Author compilation using SPSS

Interpretation: Table 11 showing the regression findings indicate a robust and statistically significant positive correlation between Premium and Claims. The unstandardized coefficient (B = 0.782) signifies that for every unit rise in premium, claims increase by about 0.782 units, indicating a significant proportional effect. The standardized coefficient (Beta = 0.977) indicates a highly significant linear relationship between the two variables. The t-value (13.411) and p-value (0.000) indicate that this connection is very significant at the 5% level. The constant term (26,244.471) is not statistically significant (p = 0.273), indicating that with zero premiums, the anticipated claims amount is not significantly distinct from zero. In general, these results reinforce the idea that premium revenue is a significant indicator of claims made, aligning with the essential operational principles of insurance companies.

4.3 Analysis of correlation

In this research, correlation analysis was performed to explore the strength and direction of the relationship between Net Earned Premiums and Net Incurred Claims among the chosen insurance firms. These two factors are essential financial metrics in the insurance industry, with net earned premiums indicating the real income kept by insurers post-reinsurance modifications, while net incurred claims show the total claims costs acknowledged throughout the period. Evaluating the relationship between these factors aids in comprehending how well the insurers' underwriting revenue corresponds with their claim obligations. A robust positive correlation would suggest that as the earned premiums grow, the claims incurred also increase, emphasizing the risk exposure and operational characteristics typical of insurance companies. This analysis offers insights into the financial performance and effectiveness of risk management for insurers in both the public and private sectors.

Table 12: Showing Correlation Analysis of New India Assurance Company Limited (NIACL)

		Premium	**Claims**
Premium	Pearson Correlation	1	.993**
	Sig. (2-tailed)		.000
	N	10	10
Claims	Pearson Correlation	.993**	1
	Sig. (2-tailed)	.000	
	N	10	10
**. Correlation is significant at the 0.01 level (2-tailed).			

Source: Author compilation using SPSS

Interpretation: Table 12 showing the analysis of correlation between **Premium** and **Claims** indicates a highly robust and statistically significant positive connection, with a Pearson correlation coefficient of **0.993** ($p < 0.01$). This almost flawless correlation suggests that as the premium amounts grow, the claims incurred also increase in proportion. The significance level of 0.000 (two-tailed) indicates that this relationship is extremely improbable to have happened randomly. The strong correlation demonstrates the essential characteristics of the insurance industry, where increased premiums collected generally align with higher risk exposure and, as a result, larger claim payments. This discovery highlights the strong financial connection between generating revenue and experiencing risk in general insurance firms.

Table 13: Showing Correlation Analysis of Oriental Insurance Company Limited (OICL)

		Premium	Claims
Premium	Pearson Correlation	1	.942**
	Sig. (2-tailed)		.000
	N	10	10
Claims	Pearson Correlation	.942**	1
	Sig. (2-tailed)	.000	
	N	10	10
**. Correlation is significant at the 0.01 level (2-tailed).			

Source: Author compilation using SPSS)

Interpretation: From the table 13 showing the analysis of correlation between Premium and Claims indicates a robust and statistically meaningful positive relationship, evidenced by a Pearson correlation coefficient of 0.942 ($p < 0.01$). This suggests that rises in premium income are strongly linked to rises in claims paid, indicating a significant linear correlation between the two factors. The significance level of 0.000 (two-tailed) indicates that this correlation is very trustworthy and unlikely to be a result of random chance. Such a significant positive correlation is consistent with anticipated trends in the insurance sector, where increased premiums typically relate to higher risk exposure and consequently elevated claims. This outcome emphasizes the strong relationship between underwriting revenue and claims responsibilities in the companies studied.

Table 14: Showing Correlation Analysis of Bajaj Allianz

		Premium	Claims
Premium	Pearson Correlation	1	.997**
	Sig. (2-tailed)		.000
	N	10	10
Claims	Pearson Correlation	.997**	1
	Sig. (2-tailed)	.000	
	N	10	10
**. Correlation is significant at the 0.01 level (2-tailed).			

Source: Author compilation using SPSS

Interpretation: Table 14 showing the correlation examination between **Premium** and **Claims** reveals an extremely strong and statistically significant positive association, featuring a Pearson correlation coefficient of **0.997** ($p < 0.01$). This almost perfect

correlation indicates that the number of claims paid is nearly directly related to the premium income received by the insurance companies. The significance level of 0.000 indicates that this relationship is very strong and not likely to be coincidental. This significant correlation illustrates the basic insurance concept that heightened premium inflows generally align with greater risk exposure and, therefore, higher claim payouts, highlighting the close financial connection between revenue generation and claim responsibilities in the analysed firms.

Table 15: Showing Correlation Analysis of ICICI Lombard

		Premium	**Claims**
Premium	Pearson Correlation	1	.977**
	Sig. (2-tailed)		.000
	N	10	10
Claims	Pearson Correlation	.977**	1
	Sig. (2-tailed)	.000	
	N	10	10
**. Correlation is significant at the 0.01 level (2-tailed).			

Source: Author compilation using SPSS

Interpretation: Table 15 showing the correlation assessment between **Premium** and **Claims** indicates a highly robust and statistically meaningful positive association, demonstrated by a Pearson correlation coefficient of **0.977** ($p < 0.01$). This strong correlation suggests that rises in premiums are closely linked to rises in claims, demonstrating a significant and almost linear connection between the two variables. The significance level of 0.000 (two-tailed) indicates that this correlation is extremely dependable and not a result of random occurrence. This conclusion corresponds with the anticipated operational dynamics in the insurance industry, where greater premium collections typically relate to greater risk exposure and therefore elevated claim payments, underscoring the significant interrelationship between underwriting income and claim responsibilities.

4.4 Mann-Whitney U test

The Mann-Whitney U test, a non-parametric statistical technique, was utilized to assess whether a significant difference exists in the growth rates of public and private general insurance firms in India. This examination is especially suitable when the sample size is limited or the data fail to satisfy the normality assumptions necessary for parametric tests (Mann & Whitney, 1947; Field, 2013). This study compared the variables Earned Premium and Incurred Claims between the two groups to evaluate if the growth trends in these financial metrics significantly vary between public and private sector insurers. Employing the Mann-

Whitney U test allows for solid comparisons without relying on a particular data distribution, thus offering trustworthy insights into differences in sector performance.

Table 16: Showing Mann-Whitney Results of Oriental Insurance Company Limited (OICL)

Net Earned Premium	Net Incurred Claim	Combined
Sum of ranks: 115	Sum of ranks: 95	Sum of ranks: 210
Mean of ranks: 11.5	Mean of ranks: 9.5	Mean of ranks: 10.5
Expected sum of ranks: 105	Expected sum of ranks: 105	Standard Deviation:
Expected mean of ranks: 10.5	Expected mean of ranks: 10.5	13.2288
U-value: 40	U-value: 60	
Expected U-value: 50	Expected U-value: 50	

Source: Author compilation using SPSS

Interpretation: Table 16 showing the results of the Mann-Whitney U test comparing **Net Earned Premium** and **Net Incurred Claims** indicate that the rank total for Net Earned Premium is 115 (mean rank 11.5), whereas Net Incurred Claims has a rank total of 95 (mean rank 9.5). The overall total of ranks is 210, resulting in an average rank of 10.5. The anticipated rank sum under the null hypothesis is 105 for each group, with an expected average rank of 10.5, suggesting that the actual rank sums differ from what would be expected in the absence of differences among the groups. The computed U-values are 40 and 60, differing from the anticipated U-value of 50, indicating a variation in distributions. The standard deviation of ranks is 13.2288; therefore, additional significance testing is necessary to establish whether these differences hold statistical significance. In summary, this suggests a variation in the growth trends of premiums and claims, hinting at possible differences in performance indicators between the two factors.

Table 17: Showing Mann-Whitney Results of New India Assurance Company Limited (NIACL)

Net Earned Premium	Net Incurred Claim	Combined
Sum of ranks: 114	Sum of ranks: 96	Sum of ranks: 210
Mean of ranks: 11.4	Mean of ranks: 9.6	Mean of ranks: 10.5
Expected sum of ranks: 105	Expected sum of ranks: 105	Standard Deviation:
Expected mean of ranks: 10.5	Expected mean of ranks: 10.5	13.2288
U-value: 41	U-value: 59	
Expected U-value: 50	Expected U-value: 50	

Source: Author compilation using SPSS

Interpretation: Table 17 showing *t*he Mann-Whitney U test analyzing **Net Earned Premium** and **Net Incurred Claim** shows slight variations in rank distributions for the two variables. The total ranks for Net Earned Premium amount to **114** (average rank **11.4**), whereas for Net Incurred Claim, it stands at **96** (average rank **9.6**), in contrast to the anticipated equal total of **105** and average rank of **10.5** based on the null hypothesis. The computed U-values are **41** and **59**, differing slightly from the anticipated U-value of **50**, with a standard deviation of **13.2288**. These slight differences indicate a minimal variation in performance between the two indicators, yet do not represent a statistically significant difference by themselves. To verify if the difference is significant, it would be essential to conduct a significance test (usually involving a critical U-value or p-value). In general, the findings suggest that although there is a variation in the distributions of earned premiums and incurred claims, it might not be significant enough to assert a pronounced gap without additional statistical confirmation.

Table 18: Showing Mann-Whitney Results of Bajaj Allianz

Net Earned Premium	Net Incurred Claim	Combined
Sum of ranks: 126	Sum of ranks: 84	Sum of ranks: 210
Mean of ranks: 12.6	Mean of ranks: 8.4	Mean of ranks: 10.5
Expected sum of ranks: 105	Expected sum of ranks: 105	Standard Deviation: 13.2288
Expected mean of ranks: 10.5	Expected mean of ranks: 10.5	
U-value: 29	U-value: 71	
Expected U-value: 50	Expected U-value: 50	

Source: Author compilation using SPSS

Interpretation: Table 18 showing the Mann-Whitney U test assessing **Net Earned Premium** and **Net Incurred Claim** shows a significant difference in rank distributions. The **total ranks** for Net Earned Premium is **126** (average rank **12.6**), whereas for Net Incurred Claim it stands at **84** (average rank **8.4**), compared to an anticipated equal distribution of **105** for each group. The computed **U-values** are **29** and **71**, respectively, differing greatly from the anticipated U-value of **50**. Having a standard deviation of **13.2288**, this outcome indicates a significant variation between the two variables. The elevated rank and reduced U-value for Net Earned Premium suggest that it typically surpasses Net Incurred Claims in the dataset, indicating that insurers might be achieving comparatively better revenue results in relation to their claim obligations. This difference, due to its size, could be statistically significant and indicates varying growth or efficiency patterns between premium income and claim responsibilities. Additional analysis

for statistical significance (e.g., comparing the U-value to a threshold value or determining the p-value) would validate the strength of this conclusion.

Table 19 Showing Mann-Whitney Results of ICICI Lombard

Net Earned Premium	Net Incurred Claim	Combined
Sum of ranks: 118	Sum of ranks: 92	Sum of ranks: 210
Mean of ranks: 11.8	Mean of ranks: 9.2	Mean of ranks: 10.5
Expected sum of ranks: 105	Expected sum of ranks: 105	Standard Deviation: 13.2288
Expected mean of ranks: 10.5	Expected mean of ranks: 10.5	
U-value: 37	U-value: 63	
Expected U-value: 50	Expected U-value: 50	

Source: Author compilation using SPSS

Interpretation: Table 19 showing the Mann-Whitney U test assessing **Net Earned Premium** and **Net Incurred Claim** shows a noticeable difference in the rank distributions for both variables. The **total ranks** for Net Earned Premium is **118** (average rank **11.8**), while for Net Incurred Claim it is **92** (average rank **9.2**), compared to an **expected total of 105** for each category under the null hypothesis indicating no difference. The **U-values** recorded are **37** and **63**, diverging from the **anticipated U-value of 50**, with a **standard deviation** of **13.2288**. This implies that Net Earned Premium usually ranks above Net Incurred Claim in various observations, indicating a relatively better performance or more positive results in premium revenues compared to claim obligations. Although this pattern suggests a possible variation in distributions, it is essential to validate statistical significance through critical U-values or p-values. However, the findings suggest that insurers might be finding a more effective equilibrium in revenue creation compared to handling claims costs.

5.0 Summary of Findings

- The Mann-Whitney U Test revealed no statistically significant difference between Net Earned Premium and Net Incurred Claims.
- There exists a significant positive relationship between Net Earned Premium and Net Incurred Claims, indicating that elevated scores in the Net Earned Claims variable are associated with higher scores in the Net Incurred Claims variable, and the reverse is also true.
- When it comes to surplus/deficit, private firms have typically outperformed public companies.

- Since 2013-14, Bajaj Allianz and New India Assurance have maintained their equity share capital, enhancing the company's rapport with its equity stakeholders.
- In addressing complaints, Bajaj Allianz and ICICI Lombard have surpassed New India Assurance and Oriental Insurance.
- The income earned from premiums has steadily risen for every company.
- In recent times, private firms have surpassed public companies regarding their solvency ratios.
- Over the last decade, the Gross Direct Premium and Net Incurred Claims of all companies have risen at an accelerating pace.
- When employing Regression Analysis to contrast the premium with the claim: For New India Assurance, one unit of premium corresponds to 0.874. Oriental Insurance = 1 premium amount = 1.014 for filing a claim, to claim, Bajaj Allianz = 1 premium amount = 0.70, ICICI Lombard = 1 premium amount = 0.782 to claim.

6.0 Conclusion

To summarize, private general insurance firms in India have shown comparatively better performance than their public sector equivalents. This can primarily be linked to the implementation of creative marketing approaches, the launch of varied and customer-focused insurance offerings, and improved complaint resolution systems. Firms such as Bajaj Allianz and ICICI Lombard have consistently demonstrated superior performance in solvency ratios, customer support, and financial surplus, reflecting greater operational efficiency and competitiveness (ICICI Lombard, 2023). Conversely, public insurers, though well-established, need to innovate and reconstruct their service delivery methods to stay relevant and retain market share. The general insurance sector in India has a positive outlook, supported by demoFigureic trends, rising awareness about insurance, and regulatory changes designed to promote growth and stability in the financial environment. With ongoing policy backing and digital advancements, India's general insurance sector is set for substantial growth and transformation in the years ahead.

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