CHAPTER - 4

STATISTICAL DATA ANALYSIS

4.1. INTRODUCTION

This chapter presents a comprehensive evaluation of the financial performance of eight carefully selected non-life insurance companies operating in India, comprising four public sector and four private sector entities. The study spans a period of ten financial years, enabling a long-term perspective on the financial trends, stability, and performance consistency of these insurers. The primary objective of this analysis is to examine and compare the financial health of individual companies and to identify sectoral patterns that influence the overall soundness of the non-life insurance industry in the country.

To conduct this assessment, the study adopts the CARAMEL model, a multidimensional framework widely used in financial performance evaluations of insurance institutions. CARAMEL is an acronym representing key performance dimensions: Capital adequacy, Asset quality, Reinsurance and actuarial issues, Management soundness, Earnings and profitability, and Liquidity. These parameters collectively offer a holistic perspective on a company's operational robustness, solvency capacity, and management efficiency.

Each dimension of the CARAMEL model is analysed using specific financial ratios recommended by global financial institutions such as the International Monetary Fund (IMF) and the World Bank. These ratios capture critical financial indicators including underwriting risk, investment strength, operational cost management, and risk retention capacity. By employing both quantitative ratio analysis and statistical tools like ANOVA, the study aims to deliver an objective and statistically validated comparison between public and private sector insurers.

This structured and empirical approach ensures a deeper understanding of insurer behaviour under varying market conditions and regulatory environments over the decade-long period.

4.1.1. DESCRIPTION OF THE CARAMEL FRAMEWORK

The acronym CARAMEL encapsulates several performance dimensions, with each component represented through specific financial ratios:

1. CAPITAL ADEQUACY

Capital adequacy refers to an insurer's financial capacity to absorb losses and meet policyholder obligations. It is a core indicator of an insurance company's solvency and financial health. The higher the capital adequacy, the more financially sound the company is perceived to be. In this study, capital adequacy is assessed using two ratios: Net Earned Premium to Owner's Fund and Owner's Fund to Total Assets. The first measures underwriting risk—how much risk is retained versus the capital available to cover it. The second reflects the firm's reliance on equity in building its asset base. Maintaining adequate capital is crucial because it ensures the company can handle unexpected high claim volumes without collapsing financially. Though there are no global regulatory norms, IRDAI (Insurance Regulatory and Development Authority of India) requires insurers to maintain a solvency margin of at least 1.5, instead of a fixed capital adequacy ratio. Additionally, a capital base of ₹100 crores is required to enter the insurance business in India.

2. ASSET QUALITY

Asset quality evaluates the soundness of the insurer's investment portfolio and how it impacts overall financial stability. The principal concern is the risk associated with the insurer's assets, such as real estate, equities, and receivables. If assets are risky or illiquid, the insurer may struggle to meet claims or maintain operational stability during downturns. The key ratio used here is Equities to Total Assets, which indicates the exposure to market volatility. High exposure to equities may signal high returns but also higher risks. In the Indian context, insurers are often restricted from investing in stock markets or must comply with conservative investment norms, meaning unquoted equities and real estate may comprise significant portions of the asset base. Poor asset quality can result in losses, liquidity issues, and even regulatory non-compliance. Therefore, asset quality analysis is essential in assessing whether the insurer can meet liabilities without compromising long-term financial health.

3. REINSURANCE AND ACTUARIAL ISSUES (RISK RETENTION RATIO)

This component evaluates how much risk an insurer retains versus what is transferred to reinsurance companies. The ratio used is Net Earned Premium to Gross Earned Premium, which is also called the risk retention ratio. A higher value indicates greater retention of risk, whereas a lower value shows more reliance on reinsurance. In India, regulatory norms have evolved over time. Earlier, companies were mandated to reinsure 20% of their premium, which was later reduced to 10% for non-tariffed businesses. Reinsurance plays a dual role—it provides a buffer against large claims but reduces the premium income and hence the profitability. A balanced approach is ideal. If a company retains too much risk without adequate capital, it may face solvency issues. On the other hand, excessive reinsurance can erode profits. Therefore, this ratio reflects not only risk appetite but also the quality of underwriting and actuarial decision-making in the company.

4. MANAGEMENT SOUNDNESS

Management soundness assesses how efficiently the company operates and controls its costs. It is measured using the ratio of Operating Expenses to Gross Earned Premiums. This ratio indicates how much of the collected premium is spent on operations, including staff salaries, infrastructure, marketing, and distribution. A lower ratio suggests that the company is efficiently managed and spends less per unit of premium earned, while a higher ratio may reflect inefficiencies or high acquisition costs. This metric is crucial because an insurer’s profitability is directly impacted by its cost structure. In India, the Insurance Act, 1938 (specifically Section 40C) limits management expenses to a certain percentage of premium income, generally around 20%. Hence, this ratio also reflects regulatory compliance. Additionally, in the post-liberalization era, with rising competition, managing operational costs effectively has become more critical to sustaining market share and profitability.

5. EARNINGS AND PROFITABILITY

This is a multifaceted dimension involving several sub-indicators to evaluate both operational and investment performance:

- **Claim Analysis**: Measured by the ratio of Net Claims Incurred to Net Earned Premium, it assesses whether the premiums charged adequately cover claims. Higher claims may indicate poor underwriting practices.
- **Operating Analysis**: Ratio of Management Expenses to Net Earned Premium shows how cost-effective the insurer is in operations.

- **Commission Analysis**: Shows commission expenses as a proportion of Net Earned Premium, indicating the cost of acquiring business.
- **Investment Income Analysis**: Investment Income to Net Earned Premium ratio captures how effectively the company generates returns from its investments, a crucial aspect of insurer profitability.
- **Return on Equity (ROE)**: Measures net profit relative to shareholder's equity. This indicates how efficiently the insurer is using its capital to generate profits for shareholders.

Together, these sub-indicators provide a comprehensive view of how well the company performs financially and operationally, enabling an accurate assessment of sustainability.

6. FINANCIAL SOUNDNESS AND LIQUIDITY

This final component assesses the insurer's long-term and short-term financial stability. It comprises:

- **Return on Net Worth (RONW)**: Indicates how efficiently a company uses its capital to generate profits.
- **Total Assets to Total Liabilities**: Reflects how well the company's assets cover its obligations. A ratio above 1 is preferable.
- **Liquidity Ratio**: Shows the firm's ability to meet short-term obligations using current assets.
- **Solvency Ratio (as per IRDAI norms)**: Indicates the financial health and regulatory compliance of the insurer. A minimum solvency margin of 1.5 is mandated in India.

These indicators collectively measure whether the insurer can meet its liabilities — both expected and unexpected — without financial distress. A company with strong financial soundness and liquidity is more likely to weather economic uncertainties and maintain customer trust.

4.1.2. GRAPHICAL REPRESENTATION

Graphical analysis enhances the clarity and interpretability of data patterns across companies and time. In this study, comparative bar charts have been employed using

Microsoft Excel 2024. The visuals illustrate variations in financial ratios among the public and private insurers over the study period. This graphical representation complements numerical data, enabling easier identification of trends, outliers, and patterns in capital adequacy, profitability, and other financial dimensions. By juxtaposing firms’ performances visually, the researcher can more effectively communicate the relative strengths or weaknesses of each insurer, adding depth to the overall analysis and supporting the statistical and ratio-based findings.

4.1.3. STATISTICAL EVALUATION

To supplement ratio analysis, statistical testing has been conducted using One Way ANOVA. This method allows for comparison of financial performance across multiple insurance companies to determine if significant differences exist. The analysis is conducted at a 5% significance level, providing a robust statistical foundation for the study’s conclusions. One Way ANOVA is particularly useful for testing null hypotheses regarding the equality of various financial ratios among companies. This analytical layer validates whether the observed differences in capital adequacy, risk retention, or profitability are statistically significant or could have occurred by chance, thereby enhancing the study's reliability.

4.1.4. ANALYTICAL PROCEDURE

The data analysis follows a systematic 11-step approach:

1. Compile data for individual ratios for public sector insurers.
2. Compute relevant ratios for the same.
3. Analyse trends and implications for public sector firms.
4. Repeat data tabulation for private insurers.
5. Calculate financial ratios for private sector firms.
6. Perform ratio-based analysis for private companies.
7. Generate bar graphs for each company (public and private).
8. Compare graphical trends across all insurers.
9. Tabulate inputs for ANOVA across companies.
10. Conduct statistical testing using ANOVA.
11. Consolidate all findings—ratios, charts, and statistical insights—for final interpretation.

TABLE 4.1

4.1.5. NON-LIFE INSURANCE FINANCIAL SOUNDNESS INDICATOR

No.	SEGMENT		PARAMETER
1	**Capital Adequacy**	(a)	Net Earned Premium ÷ Owner’s Fund X 100
		(b)	Owner’s Fund ÷ Total Asset X 100
2	**Asset Quality**		Equities ÷ Total Assets X 100
3.	**Reinsurance & Actuarial Issues (Risk Retention Ratio)**		Net Earned Premium ÷ Gross Earned Premium X 100
4.	**Management Soundness**		Operating Expenses ÷ Gross Earned Premiums X 100
5.	**Earnings & Profitability Analysis**	(a)	Claim Analysis (Segment-wise) = Net Claims ÷ Net Earned Premium X 100
		(b)	Operating Analysis (Segment-wise) = Operating Expenses ÷ Net Earned Premium X 100
		(c)	Commission Analysis (Segment-wise) = Net Commission ÷ Net Earned Premium X 100
		(d)	Investment Income Analysis = Investment Income ÷ Net Earned Premium X 100
		(e)	Return on Equity (ROE) = Profit After Tax ÷ Equity Share Capital X 100
6.	**Financial Soundness & Liquidity Analysis**	(a)	Return on Net Worth = Profit After Tax ÷ Net Worth X 100 (Net Worth = Share Capital + Reserves & Surplus – Fictitious Assets)
		(b)	Total Assets to Total Liabilities = Total Assets ÷ Total Liabilities
		(c)	Liquidity Ratio = Current Assets ÷ Current Liabilities
		(d)	Solvency Ratio = As per IRDAI norms

4.2. CAPITAL ADEQUACY ASSESMENT

Capital adequacy is a critical measure of an insurer's financial stability, ensuring companies maintain sufficient capital to absorb losses and sustain operations. While banking regulations, such as those set by the Reserve Bank of India (RBI), mandate a minimum capital adequacy ratio of 8%, there is no universally accepted standard for capital adequacy in insurance. Instead, regulatory authorities focus on solvency margins to assess financial strength.

The Insurance Regulatory and Development Authority of India (IRDAI) requires insurers to maintain a solvency margin of 1.5, representing the excess of assets over liabilities. Additionally, only companies with a minimum capital base of ₹100 crores receive registration approval. Unlike the banking sector, where a fixed capital adequacy ratio is prescribed, the insurance industry relies on alternative metrics to evaluate financial soundness.

Two key ratios used to assess capital adequacy in insurance are Net Earned Premium to Owner’s Fund and Owner’s Fund to Total Assets. The former gauges underwriting risk, indicating the level of indemnity risk retained after reinsurance, while the latter measures asset risk. A strong Net Earned Premium growth rate can be beneficial, but without adequate capital backing, it can expose insurers to financial instability. Studies suggest that excessive focus on premium growth, especially during downturns, may lead to insolvency. This was evident during the South Asian Financial Crisis, where rapid expansion without balanced capital reserves contributed to distress.

In the absence of a global standard, capital in insurance is generally defined as the sum of total equity capital and reserves. A well-structured capital base acts as a financial cushion, safeguarding policyholders and promoting market stability. Therefore, insurers must strike a balance between business expansion and financial prudence to ensure long-term sustainability.

4.2.1. NET EARNED PREMIUM TO OWNER’S FUND

Indicates the level of risk associated with underwriting activities. It serves as a useful measure of the indemnity risk an insurer retains after accounting for reinsurance. A higher ratio suggests greater exposure to underwriting risks, emphasizing the need for sufficient capital buffers.

TABLE 4.2

The Statement Showing Net Earned Premium and Owner's Fund of Selected Sample Public Sector Non-Life Insurance Companies (Period from 2013-14 to 2022-23) (Figures in Thousand)

YEAR	THE NEW INDIA ASSURANCE CO. LTD.		THE ORIENTAL INSURANCE CO. LTD.		NATIONAL INSURANCE CO. LTD.		UNITED INDIA INSURANCE CO. LTD.	
	Net Earned Premium	Owner's Fund	Net Earned Premium	Owner's Fund	Net Earned Premium	Owner's Fund	Net Earned Premium	Owner's Fund
2013-14	111968746	96934231	59539683	29204570	86826698	31484173	76032991	53605280
2014-15	133152912	106496505	64251650	31793221	98981561	38912532	88162289	58962775
2015-16	150712330	118745510	70239021	36844822	107913822	40126864	100228655	60918196
2016-17	179353361	126407166	83832645	19953379	108036271	40495817	120356103	41780110
2017-18	198303938	161597850	96280064	35268856	112665548	18581945	128609842	51710956
2018-19	216116577	165210006	106015259	32459823	104002258	1752511	131045080	33011591
2019-20	236621833	180605193	109244417	17946038	96827149	25146569	137445418	18887572
2020-21	263763350	197157959	110369827	34733854	112414832	56906456	139079335	45452201
2021-22	290646997	197740391	116383688	46651606	123226679	93903003	136956001	41066443
2022-23	304249546	211150542	132509868	47189552	127061631	93894730	151442860	40682153

Source: Annual Report of respective company's website

A higher capital adequacy ratio is generally viewed as a positive indicator of financial stability. While IRDA has not set a specific benchmark, maintaining a strong capital adequacy ratio is essential to safeguard insurers against insolvency risks.

TABLE 4.3

The Statement Showing Ratio of Net Earned Premium and Owner's Fund of Selected Sample Public Sector Non-Life Insurance Companies (Period from 2013-14 to 2022-23) (Figures in %)

YEAR	THE NEW INDIA ASSURANCE CO. LTD.	THE ORIENTAL INSURANCE CO. LTD.	NATIONAL INSURANCE CO. LTD.	UNITED INDIA INSURANCE CO. LTD.
2013-14	115.51	203.87	275.78	141.84
2014-15	125.03	202.09	254.37	149.52
2015-16	126.92	190.63	268.93	164.53
2016-17	141.89	420.14	266.78	288.07
2017-18	122.71	272.99	606.32	248.71
2018-19	130.81	326.60	5934.47	396.97
2019-20	131.02	608.74	385.05	727.70
2020-21	133.78	317.76	197.54	305.99
2021-22	146.98	249.47	131.23	333.50
2022-23	144.09	280.80	135.32	372.26

ASSESSMENT OF THE TABULATED INFORMATION

- **The New India Assurance Co. Ltd.** exhibited a fluctuating trend, ranging from 115.51% in 2013-14 to 146.98% in 2021-22, before slightly declining to 144.09% in 2022-23. This suggests a relatively stable capital adequacy position, with moderate fluctuations in underwriting risk.
- **The Oriental Insurance Co. Ltd.** displayed significant variations, with the ratio peaking at 608.74% in 2019-20, reflecting a substantial increase in underwriting risk. The ratio remained high in certain years, such as 420.14% in 2016-17, indicating a heavy reliance on shareholder funds to cover indemnity risks.
- **National Insurance Co. Ltd.** the ratio varied widely, reaching an extraordinarily high of 5934.47% in 2018-19, suggesting an extreme imbalance in risk retention versus available capital. However, it gradually declined to 135.32% in 2022-23, indicating an improvement in capital management.
- **United India Insurance Co. Ltd.** also demonstrated fluctuations, with the ratio increasing from 141.84% in 2013-14 to a peak of 727.70% in 2019-20, before

stabilizing at 372.26% in 2022-23. The sharp increase highlights higher retained risk, potentially straining capital reserves.

Overall, the trends indicate that insurers with high ratios, such as NICL and UIICL, have retained more indemnity risk, requiring robust capital reserves to manage solvency concerns. Meanwhile, NIACL and OICL, despite fluctuations, show relatively controlled risk exposure. The sharp spikes in certain years suggest capital infusion needs or strategic shifts in risk management practices.

TABLE 4.4

The Statement Showing Net Earned Premium and Owner's Fund of Selected Sample Private Sector Non-Life Insurance Companies (Period from 2013-14 to 2022-23) (Figures in Thousand)

YEAR	BAJAJ ALLIANZ GENERAL INSURANCE CO. LTD.		TATA AIG GENERAL INSURANCE CO. LTD.		IFFCO TOKIO GENERAL INSURANCE CO. LTD.		ICICI LOMBARD GENERAL INSURANCE CO. LTD.	
	Net Earned Premium	Owner's Fund	Net Earned Premium	Owner's Fund	Net Earned Premium	Owner's Fund	Net Earned Premium	Owner's Fund
2013-14	34930567	16642955	16727815	7263074	19531038	8857280	43529133	23810921
2014-15	38319046	22254840	20128096	8347918	22674477	10917404	42353348	28233291
2015-16	42236473	27897088	20627372	10647709	28049484	12588287	48216173	31756464
2016-17	49370455	35175471	24074401	11831991	35109985	16856465	61636042	37252943
2017-18	60585689	44387883	33269666	15399070	32363085	18749355	69117348	45411629
2018-19	70097769	50857618	45782143	20019913	40303183	22535574	83753478	53204606
2019-20	82061822	59516540	48527980	25365967	46253213	24582543	94035170	61340342
2020-21	74361302	71329356	49354326	29843959	48987593	27811190	100139940	74351465
2021-22	77793681	83486090	66315490	34385413	55652506	28399299	130320866	91096500
2022-23	80187943	95885676	82327999	39915917	64325534	38756974	148228466	103922655

Source: Annual Report of respective company’s website

TABLE 4.5

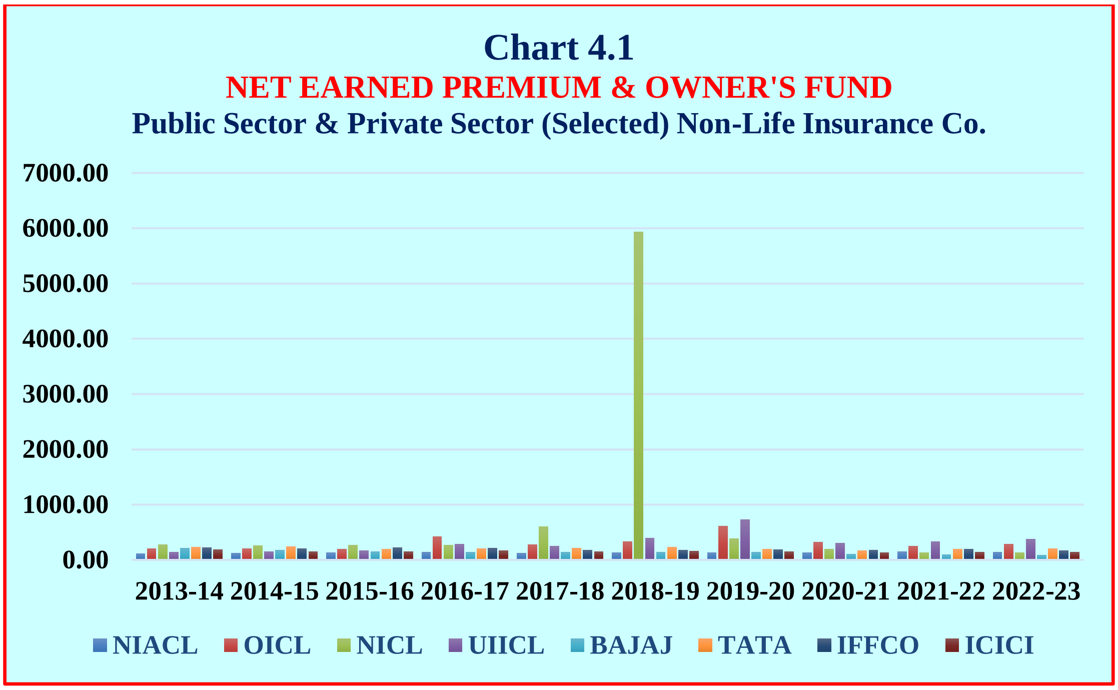
The Statement Showing Ratio of Net Earned Premium and Owner's Fund of Selected Sample Public Sector Non-Life Insurance Companies (Period from 2013-14 to 2022-23) (Figures in %)

YEAR	BAJAJ ALLIANZ GENERAL INSURANCE CO. LTD.	TATA AIG GENERAL INSURANCE CO. LTD.	IFFCO TOKIO GENERAL INSURANCE CO. LTD.	ICICI LOMBARD GENERAL INSURANCE CO. LTD.
2013-14	209.88	230.31	220.51	182.81
2014-15	172.18	241.12	207.69	150.01
2015-16	151.40	193.73	222.82	151.83
2016-17	140.35	203.47	208.29	165.45
2017-18	136.49	216.05	172.61	152.20
2018-19	137.83	228.68	178.84	157.42
2019-20	137.88	191.31	188.15	153.30
2020-21	104.25	165.37	176.14	134.68
2021-22	93.18	192.86	195.96	143.06
2022-23	83.63	206.25	165.97	142.63

ASSESSMENT OF THE TABULATED INFORMATION

- **Bajaj Allianz General Insurance Co. Ltd.** shows a consistent downward trend, starting from 209.88% in 2013-14 and gradually declining to 83.63% in 2022-23. This suggests improved capital adequacy and a reduction in underwriting risk over time.
- **Tata AIG General Insurance Co. Ltd.** exhibited fluctuations, with the ratio peaking at 241.12% in 2014-15 and dipping to 165.37% in 2020-21, before rising again to 206.25% in 2022-23. This pattern indicates variations in risk retention and capital allocation strategies.
- **IFFCO TOKIO General Insurance Co. Ltd.,** the ratio remained relatively stable, ranging between 165.97% and 222.82% throughout the period. This consistency suggests a well-balanced approach to underwriting risk and capital management.
- **ICICI Lombard General Insurance Co. Ltd.** maintained the lowest ratios among the selected insurers, starting at 182.81% in 2013-14 and gradually decreasing to 142.63% in 2022-23. This trend indicates effective risk transfer mechanisms and a stable capital base.

Overall, the analysis highlights a general decline in the ratio across most private insurers, reflecting stronger capital adequacy and improved risk management. Companies like Bajaj Allianz General Insurance Co. Ltd. and ICICI Lombard General Insurance Co. Ltd. have significantly reduced their reliance on shareholder funds to cover underwriting risks, whereas Tata AIG General Insurance Co. Ltd. and IFFCO Tokio General Insurance Co. Ltd. have shown more fluctuations, indicating periodic shifts in their capital and risk strategies.



DATA EXAMINATION (STATISTICAL TOOLS)

Null Hypothesis **(H^0)**	:	There is no statistically significant difference in **capital adequacy** among the selected public and private non-life insurance firms in India with respect to **Net Earned Premium to Owner's Fund.**
Alternative Hypothesis **(H^1)**	:	There is statistically significant difference in **capital adequacy** among the selected public and private non-life insurance firms in India with respect to **Net Earned Premium to Owner's Fund.**

COMPUTATION OF VARIANCE USING ONE WAY ANOVA

STEP-1: Ratio of Net Earned Premium and Owner's Fund of Public Sector & Private Sector (Selected) Non-Life Insurance Co.

YEAR	NIACL	OICL	NICL	UIICL	BAJAJ	TATA	IFFCO	ICICI
2013-14	115.51	203.87	275.78	141.84	209.88	230.31	220.51	182.81
2014-15	125.03	202.09	254.37	149.52	172.18	241.12	207.69	150.01
2015-16	126.92	190.63	268.93	164.53	151.40	193.73	222.82	151.83
2016-17	141.89	420.14	266.78	288.07	140.35	203.47	208.29	165.45
2017-18	122.71	272.99	606.32	248.71	136.49	216.05	172.61	152.20
2018-19	130.81	326.60	5934.47	396.97	137.83	228.68	178.84	157.42
2019-20	131.02	608.74	385.05	727.70	137.88	191.31	188.15	153.30
2020-21	133.78	317.76	197.54	305.99	104.25	165.37	176.14	134.68
2021-22	146.98	249.47	131.23	333.50	93.18	192.86	195.96	143.06
2022-23	144.09	280.80	135.32	372.26	83.63	206.25	165.97	142.63

STEP-2: Consolidated Output of One - Way ANOVA.

GROUPS	COUNT	SUM	AVERAGE	VARIANCE
NIACL	10	1318.74818	131.874818	100.7069555
OICL	10	3073.108725	307.3108725	16075.63552
NICL	10	8455.797438	845.5797438	3215843.634
UIICL	10	3129.087321	312.9087321	29536.58633
BAJAJ	10	1367.085311	136.7085311	1401.135123
TATA	10	2069.154719	206.9154719	514.1469545
IFFCO	10	1936.995047	193.6995047	417.0991825
ICICI	10	1533.403903	153.3403903	179.4387235

“F”-TEST ONE WAY ANOVA
TABLE 4.6

NET EARNED PREMIUM AND OWNER'S FUND

Public & Private Sector (Selected) Non-Life Insurance Co.

[Period from 2013-14 to 2022-23]

Source of Differences	Sum of the Square of Deviation	Degree of Freedom	M.S.S.	Fc	Ft
Between Group	3927225.39	7	561032.20	1.38	2.14
Within Group	29376615.45	72	408008.55		
TOTAL	**33303840.84**	**79**			

KEY OBSERVATIONS FROM THE TABLE:

The calculated F-value (Fc = 1.375) is less than the critical F-value (Ft = 2.140) at the given significance level, which suggests that the differences in the ratio of Net Earned Premium to Owner's Fund among the selected companies are not statistically significant.

STATISTICAL DECISION:

Since Fc (1.375) < Ft (2.140), we fail to reject the null hypothesis. This means there is no significant difference in the ratio of Net Earned Premium to Owner's Fund across the selected public and private sector non-life insurance companies in India.

IMPLICATIONS OF THE FINDINGS:

- Uniform Financial Structure: The ratio of Net Earned Premium to Owner's Fund does not significantly differ among the selected companies, indicating that both public and private non-life insurers in India maintain a similar financial structure in terms of premium generation and capital allocation.
- Regulatory Influence: The findings suggest that regulatory frameworks and industry standards may be ensuring consistent financial practices across insurers, minimizing disparities.
- Competition & Performance: The absence of significant differences implies that no company or sector (public/private) has a major advantage in terms of this financial ratio. It also indicates that competitive dynamics may be shaped more by operational efficiency rather than structural capital differences.

CONCLUSION:

The One-Way ANOVA test results reveal that the ratio of Net Earned Premium to Owner's Fund does not vary significantly across the selected non-life insurance companies in India. This suggests that both public and private sector insurers follow similar financial strategies and maintain comparable levels of premium generation relative to their shareholder capital. These findings highlight the stability and uniformity of financial performance in the Indian non-life insurance sector.

4.2.2. OWNER'S FUND TO TOTAL ASSETS

It is a financial ratio that indicates the proportion of a company's total assets financed by the shareholders' equity. It reflects the financial strength and stability of a company, showing how much of the assets are owned outright by the shareholders. A higher ratio generally suggests lower financial risk and greater solvency, as it indicates less dependence on external debt.

TABLE 4.7

The Statement Showing Owner's Fund and Total Assets of Selected Sample Public Sector Non-Life Insurance Companies (Period from 2013-14 to 2022-23) (Figures in Thousand)

YEAR	THE NEW INDIA ASSURANCE CO. LTD.		THE ORIENTAL INSURANCE CO. LTD.		NATIONAL INSURANCE CO. LTD.		UNITED INDIA INSURANCE CO. LTD.	
	Owner's Fund	Total Assets	Owner's Fund	Total Assets	Owner's Fund	Total Assets	Owner's Fund	Total Assets
2013-14	96934231	530108550	29204570	239069054	31484173	270501957	53605280	258867261
2014-15	106496505	617196253	31793221	262826899	38912532	303022663	58962775	290906664
2015-16	118745510	637036350	36844822	258907483	40126864	285657130	60918196	284369947
2016-17	126407166	699359033	19953379	297108005	40495817	322624933	41780110	342524951
2017-18	161597850	774545369	35268856	303542967	18581945	347791859	51710956	366419712
2018-19	165210006	804028422	32459823	341736996	1752511	324366379	33011591	381610280
2019-20	180605193	755213718	17946038	366179145	25146569	308982699	18887572	364680100
2020-21	197157959	912398306	34733854	346824882	56906456	378528976	45452201	444121630
2021-22	197740391	956761057	46651606	357430161	93903003	405318669	41066443	456182468
2022-23	211150542	978127335	47189552	356586564	93894730	389178756	40682153	447653599

Source: Annual Report of respective company's website

TABLE 4.8

The Statement Showing Ratio of Owner's Fund and Total Assets of Selected Sample Public Sector Non-Life Insurance Companies (Period from 2013-14 to 2022-23) (Figures in %)

YEAR	THE NEW INDIA ASSURANCE CO. LTD.	THE ORIENTAL INSURANCE CO. LTD.	NATIONAL INSURANCE CO. LTD.	UNITED INDIA INSURANCE CO. LTD.
2013-14	18.29	12.22	11.64	20.71
2014-15	17.25	12.10	12.84	20.27
2015-16	18.64	14.23	14.05	21.42
2016-17	18.07	6.72	12.55	12.20
2017-18	20.86	11.62	5.34	14.11
2018-19	20.55	9.50	0.54	8.65
2019-20	23.91	4.90	8.14	5.18
2020-21	21.61	10.01	15.03	10.23
2021-22	20.67	13.05	23.17	9.00
2022-23	21.59	13.23	24.13	9.09

ASSESSMENT OF THE TABULATED INFORMATION

- **The New India Assurance Co. Ltd.** remained relatively stable and healthy throughout the period, ranging between 17.25% and 23.91%. This consistent performance indicates a strong equity base relative to total assets, reflecting sound capital adequacy and financial resilience.
- **The Oriental Insurance Co. Ltd.** showed moderate fluctuations, with a notable decline to 4.90% in 2019-20, suggesting significant pressure on equity capital. However, it recovered to 13.23% by 2022-23, indicating a gradual rebuilding of its capital position.
- **National Insurance Co. Ltd.** exhibited significant volatility, with the ratio falling sharply to just 0.54% in 2018-19 an indication of extreme capital strain. The ratio rebounded impressively to 24.13% in 2022-23, suggesting substantial capital infusion or improved asset management during the later years.
- **United India Insurance Co. Ltd.** showed a declining trend overall, falling from a healthy 20.71% in 2013-14 to a low of 5.18% in 2019-20. Though it slightly improved

to 9.09% in 2022-23, the overall trend suggests persistent pressure on shareholder equity relative to total assets.

- Overall, the data indicates that while NIACL maintained a strong and stable capital base, the other insurers particularly NICL and UIICL faced significant capital adequacy challenges during certain years. Recovery in recent years points to strategic efforts to strengthen financial stability through either capital support or improved asset-liability management.

TABLE 4.9

The Statement Showing Owner's Fund and Total Assets of Selected Sample Private Sector Non-Life Insurance Companies (Period from 2013-14 to 2022-23) (Figures in Thousand)

YEAR	BAJAJ ALLIANZ GENERAL INSURANCE CO. LTD.		TATA AIG GENERAL INSURANCE CO. LTD.		IFFCO TOKIO GENERAL INSURANCE CO. LTD.		ICICI LOMBARD GENERAL INSURANCE CO. LTD.	
	Owner's Fund	Total Assets	Owner's Fund	Total Assets	Owner's Fund	Total Assets	Owner's Fund	Total Assets
2013-14	16642955	77737606	7263074	33876617	8857280	41507744	23810921	135448793
2014-15	22254840	89018539	8347918	37417989	10917404	49877691	28233291	136566891
2015-16	27897088	105087813	10647709	43446550	12588287	55320789	31756464	52758044
2016-17	35175471	127288406	11831991	58339714	16856465	20155579	37252943	233508755
2017-18	44387883	169376216	15399070	80313547	18749355	29240023	45411629	297496589
2018-19	50857618	197247571	20019913	124124762	22535574	103031628	53204606	334026207
2019-20	59516540	218657101	25365967	135175218	24582543	124616940	61340342	370420885
2020-21	71329356	256711844	29843959	178219239	27811190	143175075	74351465	392978288
2021-22	83486090	274821771	34385413	220076988	28399299	159971188	91096500	508483063
2022-23	95885676	313370844	39915917	257394700	38756974	191229942	103922655	550862045

Source: Annual Report of respective company's website

TABLE 4.10

The Statement Showing Ratio of Owner's Fund and Total Assets of Selected Sample Private Sector Non-Life Insurance Companies (Period from 2013-14 to 2022-23) (Figures in %)

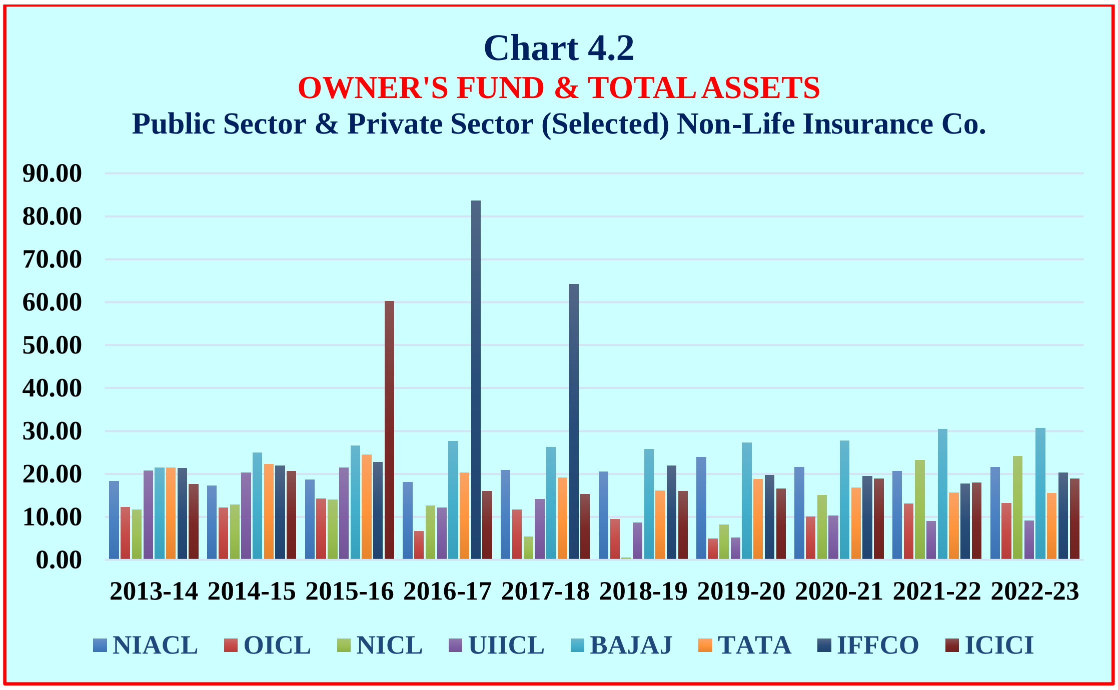
YEAR	BAJAJ ALLIANZ GENERAL INSURANCE CO. LTD.	TATA AIG GENERAL INSURANCE CO. LTD.	IFFCO TOKIO GENERAL INSURANCE CO. LTD.	ICICI LOMBARD GENERAL INSURANCE CO. LTD.
2013-14	21.41	21.44	21.34	17.58
2014-15	25.00	22.31	21.89	20.67
2015-16	26.55	24.51	22.76	60.19
2016-17	27.63	20.28	83.63	15.95
2017-18	26.21	19.17	64.12	15.26
2018-19	25.78	16.13	21.87	15.93
2019-20	27.22	18.77	19.73	16.56
2020-21	27.79	16.75	19.42	18.92
2021-22	30.38	15.62	17.75	17.92
2022-23	30.60	15.51	20.27	18.87

ASSESSMENT OF THE TABULATED INFORMATION

- **Bajaj Allianz General Insurance Co. Ltd.** consistently maintained a strong and improving Owner's Fund to Total Assets ratio, rising from 21.41% in 2013-14 to 30.60% in 2022-23. This steady growth indicates a robust equity position, reflecting prudent capital management and a solid financial base relative to its asset expansion.
- **Tata AIG General Insurance Co. Ltd.** exhibited a gradual declining trend, with the ratio decreasing from 21.44% in 2013-14 to 15.51% in 2022-23. Despite a strong starting point, the sustained decline suggests increasing reliance on liabilities or faster asset growth relative to capital augmentation, pointing to a relatively tighter capital buffer in recent years.
- **IFFCO TOKIO General Insurance Co. Ltd.** experienced notable fluctuations, with a significant spike to 83.63% in 2016-17, indicating a temporary capital surplus relative to total assets, possibly due to capital infusion or reduced asset size. However, the ratio normalized in subsequent years, settling at 20.27% in 2022-23, reflecting a more balanced and sustainable capital position.

- **ICICI Lombard General Insurance Co. Ltd.** maintained a relatively stable ratio, ranging between 15.26% and 20.67% over the ten-year period. The figures suggest a consistent capital structure with moderate equity support relative to asset base, indicating controlled financial leverage and risk exposure.

Overall, the private sector insurers demonstrated stronger and more consistent shareholder fund positions compared to their public sector counterparts. Bajaj Allianz General Insurance Co. Ltd. led in capital adequacy, while Tata AIG General Insurance Co. Ltd. and ICICI Lombard General Insurance Co. Ltd. showed stable yet conservative equity-to-asset structures. The outlier trend in IFFCO TOKIO General Insurance Co. Ltd. during 2016-17 highlights temporary capital dominance, followed by normalization in later years.



Data Examination (Statistical Tools)

Null Hypothesis **(H^0)** : There is no statistically significant difference in **capital adequacy** among the selected public and private non-life insurance firms in India with respect to **Owner's Fund to Total Assets.**

Alternative Hypothesis **(H[1])** : There is statistically significant difference in **capital adequacy** among the selected public and private non-life insurance firms in India with respect to **Owner's Fund to Total Assets.**

COMPUTATION OF VARIANCE USING ONE WAY ANOVA

STEP-1: Ratio of Owner's Fund and Total Assets of Public Sector & Private Sector (Selected) Non-Life Insurance Co.

YEAR	NIACL	OICL	NICL	UIICL	BAJAJ	TATA	IFFCO	ICICI
2013-14	18.29	12.22	11.64	20.71	21.41	21.44	21.34	17.58
2014-15	17.25	12.10	12.84	20.27	25.00	22.31	21.89	20.67
2015-16	18.64	14.23	14.05	21.42	26.55	24.51	22.76	60.19
2016-17	18.07	6.72	12.55	12.20	27.63	20.28	83.63	15.95
2017-18	20.86	11.62	5.34	14.11	26.21	19.17	64.12	15.26
2018-19	20.55	9.50	0.54	8.65	25.78	16.13	21.87	15.93
2019-20	23.91	4.90	8.14	5.18	27.22	18.77	19.73	16.56
2020-21	21.61	10.01	15.03	10.23	27.79	16.75	19.42	18.92
2021-22	20.67	13.05	23.17	9.00	30.38	15.62	17.75	17.92
2022-23	21.59	13.23	24.13	9.09	30.60	15.51	20.27	18.87

STEP-2: Consolidated Output of One-Way ANOVA.

GROUPS	COUNT	SUM	AVERAGE	VARIANCE
NIACL	10	201.445115	20.1445115	4.193660942
OICL	10	107.5782298	10.75782298	8.988274408
NICL	10	127.4290979	12.74290979	52.37088263
UIICL	10	130.8626552	13.08626552	33.77768452
BAJAJ	10	268.5619234	26.85619234	6.976875439
TATA	10	190.483871	19.0483871	9.540286345
IFFCO	10	312.7798151	31.27798151	527.3139551
ICICI	10	217.8523723	21.78523723	184.8782469

"F"-TEST ONE WAY ANOVA
TABLE 4.11

OWNER'S FUND AND TOTAL ASSETS

Public & Private Sector (Selected) Non-Life Insurance Co.

[Period from 2013-14 to 2022-23]

Source of Differences	Sum of the Square of Deviation	Degree of Freedom	M.S.S.	Fc	Ft
Between Group	3618.85	7	516.98	4.99	2.14
Within Group	7452.36	72	103.50		
TOTAL	**11071.21**	**79**			

KEY OBSERVATIONS FROM THE TABLE:

- The calculated F-value (Fc = 4.995) is greater than the critical F-value (Ft = 2.140) at the given level of significance.
- This indicates that the differences in the ratio of Owner's Fund to Total Assets among the selected non-life insurance companies are statistically significant.

STATISTICAL DECISION:

Since Fc (4.995) > Ft (2.140), we reject the null hypothesis. This means that there is a significant difference in the Owner's Fund to Total Assets ratio across the selected public and private sector non-life insurance companies in India.

IMPLICATIONS OF THE FINDINGS:

- Capital Structure Variation: The significant outcome suggests that the insurance companies maintain diverse capital structures, with some relying more on equity while others operate with lower equity relative to their asset base.
- Private Sector Leadership: Insurers such as IFFCO TOKIO General Insurance Co. Ltd. and Bajaj Allianz General Insurance Co. Ltd. exhibit relatively higher ratios, indicating stronger shareholder backing and potentially better solvency management.

- Public Sector Challenges: Companies like OICL and NICL reflect lower average ratios and higher variance, which may indicate capital adequacy concerns and inconsistencies in financial management strategies.
- Strategic Differentiation and Risk Appetite: The results imply that private and public sector insurers pursue different financial strategies, shaped by ownership models, competitive pressures, and regulatory oversight.

CONCLUSION:

The One-Way ANOVA test results confirm that the Owner's Fund to Total Assets ratio differs significantly among the selected public and private sector non-life insurance companies in India. This finding points to a divergence in financial strength and equity management across insurers, with private companies generally maintaining stronger equity positions. The result underscores the need for policy evaluation and potentially capital strengthening within certain public sector entities to ensure long-term financial stability and competitiveness in the insurance industry.

4.3. ASSETS QUALITY ANALYSIS

Asset quality analysis plays a pivotal role in assessing the financial soundness and operational efficiency of non-life insurance companies. Unlike banks, where asset quality is evaluated through loan performance, insurers assess it based on the performance, safety, and liquidity of their investments and the reliability of receivables such as reinsurance recoverable and outstanding premiums.

In India, IRDAI regulations mandate a prescribed investment pattern, ensuring a large share of funds is placed in government securities and approved instruments. Still, insurers also invest in corporate bonds, equities, and other market-linked assets for better returns. The credit rating, diversification, and associated risks of these assets significantly impact financial performance and solvency.

Other important factors include the recoverability of receivables. High unpaid premiums or delays in reinsurance settlements may indicate liquidity risks and weak internal controls. Evaluating these aspects of asset quality highlights potential financial stress and informs stakeholders of the insurer's risk profile.

In a comparative analysis, asset quality helps distinguish companies with prudent investment strategies and strong financial discipline. Those with high-grade, diversified assets show better resilience and solvency, while firms with riskier portfolios face greater exposure to market volatility.

In conclusion, asset quality analysis offers essential insights into an insurer's financial health, investment prudence, and ability to manage risk—making it a vital tool in evaluating the performance of non-life insurance companies.

TABLE 4.12

The Statement Showing Equity Share Capital and Total Assets of Selected Sample Public Sector Non-Life Insurance Companies (Period from 2013-14 to 2022-23) (Figures in Thousand)

YEAR	THE NEW INDIA ASSURANCE CO. LTD.		THE ORIENTAL INSURANCE CO. LTD.		NATIONAL INSURANCE CO. LTD.		UNITED INDIA INSURANCE CO. LTD.	
	Equity	Assets	Equity	Assets	Equity	Assets	Equity	Assets
2013-14	2000000	530108550	1500000	239069054	1000000	270501957	1500000	258867261
2014-15	2000000	617196253	2000000	262826899	1000000	303022663	1500000	290906664
2015-16	2000000	637036350	2000000	258907483	1000000	285657130	1500000	284369947
2016-17	2000000	699359033	2000000	297108005	1000000	322624933	1500000	342524951
2017-18	4120000	774545369	2000000	303542967	1000000	347791859	1500000	366419712
2018-19	8240000	804028422	2000000	341736996	1000000	324366379	1500000	381610280
2019-20	8240000	755213718	2500000	366179145	25000000	308982699	2000000	364680100
2020-21	8240000	912398306	34200000	346824882	56750000	378528976	38050000	444121630
2021-22	8240000	956761057	46200000	357430161	93750000	405318669	39050000	456182468
2022-23	8240000	978127335	46200000	356586564	93750000	389178756	39050000	447653599

Source: Annual Report of respective company's website

TABLE 4.13

The Statement Showing Ratio of Equity Share Capital and Total Assets of Selected Sample Public Sector Non-Life Insurance Companies (Period from 2013-14 to 2022-23) (Figures in %)

YEAR	THE NEW INDIA ASSURANCE CO. LTD.	THE ORIENTAL INSURANCE CO. LTD.	NATIONAL INSURANCE CO. LTD.	UNITED INDIA INSURANCE CO. LTD.
2013-14	0.38	0.63	0.37	0.58
2014-15	0.32	0.76	0.33	0.52
2015-16	0.31	0.77	0.35	0.53
2016-17	0.29	0.67	0.31	0.44
2017-18	0.53	0.66	0.29	0.41
2018-19	1.02	0.59	0.31	0.39
2019-20	1.09	0.68	8.09	0.55
2020-21	0.90	9.86	14.99	8.57
2021-22	0.86	12.93	23.13	8.56
2022-23	0.84	12.96	24.09	8.72

ASSESSMENT OF THE TABULATED INFORMATION

- **The New India Assurance Co. Ltd.** ratio of Equity Share Capital to Total Assets displayed a decreasing trend over the period from 2013-14 to 2022-23. The ratios declined from 0.38% to 0.84%, indicating a decreasing proportion of equity share capital relative to total assets.
- **The Oriental Insurance Co. Ltd.** showed varying ratios from 0.63% to 12.96% during the same period, with significant fluctuations in the proportion of equity share capital compared to total assets. The ratios varied, suggesting changes in the composition of OICL's capital structure.
- **National Insurance Co. Ltd.** exhibited ratios ranging from 0.29% to 24.09%, with significant fluctuations in the proportion of equity share capital to total assets. The company experienced varying levels of equity share capital relative to total assets over the years.
- **United India Insurance Co. Ltd.** ratios varied from 0.39% to 8.72%, showcasing fluctuations in the proportion of equity share capital to total assets. The company experienced changes in the composition of its capital structure over the years.

Overall, the analysis of the Ratio of Equity Share Capital and Total Assets for the selected Public Sector Non-Life Insurance Companies in India highlights varying trends in the proportion of equity share capital relative to total assets. Companies like OICL and NICL experienced significant fluctuations in this ratio, indicating changes in their capital structure composition. Effective management of the capital structure is essential for these companies to ensure financial stability and operational efficiency.

TABLE 4.14

The Statement Showing Equity Share Capital and Total Assets of Selected Sample Private Sector Non-Life Insurance Companies (Period from 2013-14 to 2022-23) (Figures in Thousand)

YEAR	BAJAJ ALLIANZ GENERAL INSURANCE CO. LTD.		TATA AIG GENERAL INSURANCE CO. LTD.		IFFCO TOKIO GENERAL INSURANCE CO. LTD.		ICICI LOMBARD GENERAL INSURANCE CO. LTD.	
	Equity	Assets	Equity	Assets	Equity	Assets	Equity	Assets
2013-14	1102273	77737606	5050000	33876617	2693215	41507744	4450555	135448793
2014-15	1102273	89018539	5050000	37417989	2693215	49877691	4465940	136566891
2015-16	1102273	105087813	6325000	43446550	2693215	55320789	4475384	52758044
2016-17	1102273	127288406	6325000	58339714	2693215	20155579	4511507	233508755
2017-18	1102273	169376216	7325000	80313547	2693215	29240023	4539483	297496589
2018-19	1102273	197247571	9075000	124124762	2742183	103031628	4543099	334026207
2019-20	1102273	218657101	9944560	135175218	2742183	124616940	4544663	370420885
2020-21	1102273	256711844	9944560	178219239	2742183	143175075	4545945	392978288
2021-22	1102273	274821771	9944560	220076988	2802544	159971188	4908914	508483063
2022-23	1102273	313370844	9944560	257394700	2878186	191229942	4911251	550862045

Source: Annual Report of respective company’s website

TABLE 4.15

The Statement Showing Ratio of Equity Share Capital and Total Assets of Selected Sample Private Sector Non-Life Insurance Companies (Period from 2013-14 to 2022-23) (Figures in %)

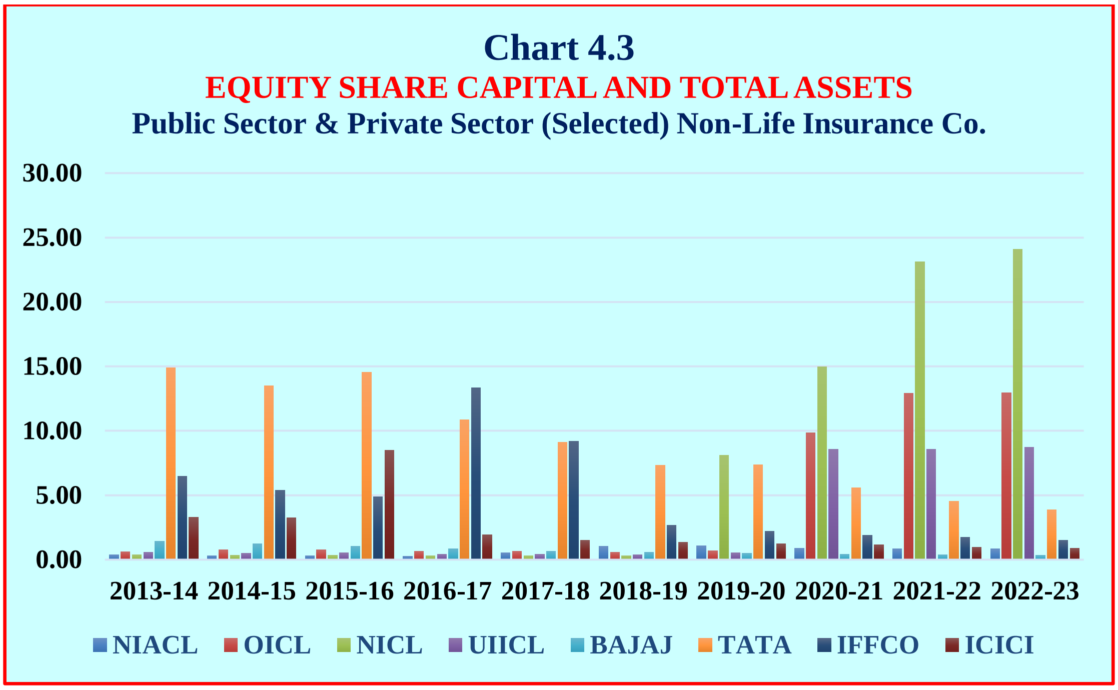
YEAR	BAJAJ ALLIANZ GENERAL INSURANCE CO. LTD.	TATA AIG GENERAL INSURANCE CO. LTD.	IFFCO TOKIO GENERAL INSURANCE CO. LTD.	ICICI LOMBARD GENERAL INSURANCE CO. LTD.
2013-14	1.42	14.91	6.49	3.29
2014-15	1.24	13.50	5.40	3.27
2015-16	1.05	14.56	4.87	8.48
2016-17	0.87	10.84	13.36	1.93
2017-18	0.65	9.12	9.21	1.53
2018-19	0.56	7.31	2.66	1.36
2019-20	0.50	7.36	2.20	1.23
2020-21	0.43	5.58	1.92	1.16
2021-22	0.40	4.52	1.75	0.97
2022-23	0.35	3.86	1.51	0.89

ASSESSMENT OF THE TABULATED INFORMATION

- **Bajaj Allianz General Insurance Co. Ltd.** ratio of Equity Share Capital to Total Assets exhibited a decreasing trend over the period from 2013-14 to 2022-23. The ratios decreased from 1.42% to 0.35%, indicating a declining proportion of equity share capital relative to total assets.
- **Tata AIG General Insurance Co. Ltd.** showed decreasing ratios from 14.91% to 3.86% during the same period, with a significant decline in the proportion of equity share capital compared to total assets. The ratios decreased consistently, suggesting a change in company’s capital structure.
- **IFFCO TOKIO General Insurance Co. Ltd.** exhibited a decreasing trend in ratios from 6.49% to 1.51%, with a decline in the proportion of equity share capital to total assets over the years. The company experienced a gradual decrease in this ratio.
- **ICICI Lombard General Insurance Co. Ltd.** ratios decreased from 3.29% to 0.89% over the period, indicating a decreasing proportion of equity share capital relative to

total assets. The ratios showed a consistent decline, reflecting changes in the capital structure of ICICI Lombard General Insurance Co. Ltd.

Overall, the analysis of the Ratio of Equity Share Capital and Total Assets for the selected Private Sector Non-Life Insurance Companies in India highlights a decreasing trend in the proportion of equity share capital relative to total assets for all companies. This trend indicates a shift in the capital structure towards a lower proportion of equity financing compared to total assets. Effective management of the capital structure is crucial for these companies to maintain financial stability and optimize their capital resources.



Data Examination (Statistical Tools)

Null Hypothesis (H0)	:	There is no statistically significant difference in **Asset Quality** among the selected public and private non-life insurance firms in India with respect to **Equity Share Capital to Total Assets.**

Alternative Hypothesis (H1) : There is statistically significant difference in **Asset Quality** among the selected public and private non-life insurance firms in India with respect to **Equity Share Capital to Total Assets.**

COMPUTATION OF VARIANCE USING ONE WAY ANOVA

STEP-1: Ratio of Equity Share Capital and Total Assets of Public Sector & Private Sector (Selected) Non-Life Insurance Co.

YEAR	NIACL	OICL	NICL	UIICL	BAJAJ	TATA	IFFCO	ICICI
2013-14	0.38	0.63	0.37	0.58	1.42	14.91	6.49	3.29
2014-15	0.32	0.76	0.33	0.52	1.24	13.50	5.40	3.27
2015-16	0.31	0.77	0.35	0.53	1.05	14.56	4.87	8.48
2016-17	0.29	0.67	0.31	0.44	0.87	10.84	13.36	1.93
2017-18	0.53	0.66	0.29	0.41	0.65	9.12	9.21	1.53
2018-19	1.02	0.59	0.31	0.39	0.56	7.31	2.66	1.36
2019-20	1.09	0.68	8.09	0.55	0.50	7.36	2.20	1.23
2020-21	0.90	9.86	14.99	8.57	0.43	5.58	1.92	1.16
2021-22	0.86	12.93	23.13	8.56	0.40	4.52	1.75	0.97
2022-23	0.84	12.96	24.09	8.72	0.35	3.86	1.51	0.89

STEP-2: Consolidated Output of One - Way ANOVA.

GROUPS	COUNT	SUM	AVERAGE	VARIANCE
NIACL	10	6.555882956	0.655588296	0.102273973
OICL	10	40.50354712	4.050354712	30.15360635
NICL	10	72.25799178	7.225799178	98.22627853
UIICL	10	29.26225352	2.926225352	15.42666576
BAJAJ	10	7.466999479	0.746699948	0.141912512
TATA	10	91.55367417	9.155367417	16.98673902
IFFCO	10	49.36355704	4.936355704	15.06592948
ICICI	10	24.09747202	2.409747202	5.317942593

"F"-TEST ONE WAY ANOVA
TABLE 4.16
EQUITY SHARE CAPITAL AND TOTAL ASSETS

Public & Private Sector (Selected) Non-Life Insurance Co.

[Period from 2013-14 to 2022-23]

Source of Differences	Sum of the Square of Deviation	Degree of Freedom	M.S.S.	Fc	Ft
Between Group	633.12	7	90.45	3.99	2.14
Within Group	1632.79	72	22.68		
Total	**2265.92**	**79**			

KEY OBSERVATIONS FROM THE TABLE:

- The ANOVA test results indicate that there are statistically significant differences in the ratio of Equity Share Capital to Total Assets among the selected public and private sector non-life insurance companies in India.
- The calculated F-value (Fc = 3.988) exceeds the critical F-value (Ft = 2.140), suggesting that the variations in the equity share capital and total assets ratios are not due to random chance but reflect meaningful differences among the companies.

STATISTICAL DECISION:

The rejection of the null hypothesis based on the F-test results signifies that the differences observed in the ratio of Equity Share Capital to Total Assets are statistically significant.

IMPLICATION OF FINDINGS:

- The significant differences in the capital structure and financial compositions among the selected insurers suggest diverse approaches to capital allocation and asset utilization.

- These findings may indicate varying levels of risk exposure, financial stability, and investment strategies among the public and private sector non-life insurance companies.
- Understanding these differences can provide insights into the financial health, risk management practices, and growth potential of the insurers in the non-life insurance sector.

CONCLUSION:

The ANOVA analysis highlights substantial variations in the ratio of Equity Share Capital to Total Assets across selected public and private sector non-life insurance companies in India. These findings underscore the importance of considering distinct financial structures and capital utilization strategies. The significant differences observed emphasize the diverse financial approaches and risk profiles in the sector, which can impact overall performance and competitiveness of the companies.

4.4. REINSURANCE AND ACTUARIAL ISSUES

Reinsurance and actuarial functions are crucial for managing risk and ensuring financial stability in the insurance sector. Reinsurance allows insurers to transfer a portion of their risk, protecting against large losses and improving capital efficiency. Actuarial work supports accurate pricing, reserving, and solvency assessment through data-driven analysis. Any weakness in these areas can lead to significant financial and regulatory challenges, making them essential for sound risk management and compliance.

TABLE 4.17

The Statement Showing Net Earned Premium and Gross Earned Premium of Selected Sample Public Sector Non-Life Insurance Companies (Period from 2013-14 to 2022-23) (Figures in Thousand)

YEAR	THE NEW INDIA ASSURANCE CO. LTD.		THE ORIENTAL INSURANCE CO. LTD.		NATIONAL INSURANCE CO. LTD.		UNITED INDIA INSURANCE CO. LTD.	
	Net Earned Prem.	Gross Earned Prem.	Net Earned Prem.	Gross Earned Prem.	Net Earned Prem.	Gross Earned Prem.	Net Earned Prem.	Gross Earned Prem.
2013-14	111968746	137276000	59539683	72825300	86826698	102609600	76032991	97089300
2014-15	133152912	154803500	64251650	75619200	98981561	112826200	88162289	106917300
2015-16	150712330	177633100	70239021	86115900	107913822	120189800	100228655	122503600
2016-17	179353361	215979200	83832645	111170200	108036271	142823600	120356103	160628100
2017-18	198303938	251593100	96280064	117368400	112665548	162436800	128609842	174299500
2018-19	216116577	266079900	106015259	134847500	104002258	151799700	131045080	164204700
2019-20	236621833	297150700	109244417	139960100	96827149	153128800	137445418	175150900
2020-21	263763350	315734200	110369827	127474200	112414832	141857500	139079335	167047000
2021-22	290646997	355159300	116383688	140204300	123226679	130768300	136956001	157222500
2022-23	304249546	374820400	132509868	159926100	127061631	152058500	151442860	176443100

Source: Annual Report of respective company's website

TABLE 4.18

The Statement Showing Ratio of Net Earned Premium and Gross Earned Premium of Selected Sample Public Sector Non-Life Insurance Companies (Period from 2013-14 to 2022-23) (Figures in %)

YEAR	THE NEW INDIA ASSURANCE CO. LTD.	THE ORIENTAL INSURANCE CO. LTD.	NATIONAL INSURANCE CO. LTD.	UNITED INDIA INSURANCE CO. LTD.
2013-14	81.56	81.76	84.62	78.31
2014-15	86.01	84.97	87.73	82.46
2015-16	84.84	81.56	89.79	81.82
2016-17	83.04	75.41	75.64	74.93
2017-18	78.82	82.03	69.36	73.79
2018-19	81.22	78.62	68.51	79.81
2019-20	79.63	78.05	63.23	78.47
2020-21	83.54	86.58	79.24	83.26
2021-22	81.84	83.01	94.23	87.11
2022-23	81.17	82.86	83.56	85.83

ASSESSMENT OF THE TABULATED INFORMATION

- **The New India Assurance Co. Ltd.** maintained a stable ratio of Net Earned Premium to Gross Earned Premium between 78.82% and 86.01% over the years. The company demonstrated consistent management of premium income composition and operational strategies, with moderate fluctuations but an overall steady trend.
- **The Oriental Insurance Co. Ltd.** ratio of Net Earned Premium to Gross Earned Premium fluctuated between 75.41% and 86.58%, indicating variability in its premium income structure. The company experienced changes in the relationship between Net Earned Premium and Gross Earned Premium, suggesting potential shifts in operational strategies.
- **National Insurance Co. Ltd.** ratio ranged significantly from 63.23% to 94.23%, showcasing notable fluctuations in premium income composition. The company's varying ratios suggest changes in its premium generation and operational approaches over the analysed period.
- **United India Insurance Co. Ltd.** ratio varied between 73.79% and 87.11%, demonstrating a mix of stability and changes in the Net Earned Premium to Gross

Earned Premium relationship. The company's premium income composition showed a balance between consistency and adjustments in operational strategies.

Overall, the analysis of the Ratio of Net Earned Premium and Gross Earned Premium of the selected Public Sector Non-Life Insurance Companies in India reveals diverse trends in premium income composition and operational strategies. While some companies maintained stable ratios over the years, others experienced fluctuations, indicating potential shifts in their premium generation and management approaches. These variations highlight the importance of effective premium income management, operational agility, and strategic decision-making in the non-life insurance sector. Further examination of these trends can provide valuable insights into the companies' financial performance and competitiveness in the market.

TABLE 4.19

The Statement Showing Net Earned Premium and Gross Earned Premium of Selected Sample Private Sector Non-Life Insurance Companies (Period from 2013-14 to 2022-23) (Figures in Thousand)

YEAR	BAJAJ ALLIANZ GENERAL INSURANCE CO. LTD.		TATA AIG GENERAL INSURANCE CO. LTD.		IFFCO TOKIO GENERAL INSURANCE CO. LTD.		ICICI LOMBARD GENERAL INSURANCE CO. LTD.	
	Net Earned Prem.	Gross Earned Prem.	Net Earned Prem.	Gross Earned Prem.	Net Earned Prem.	Gross Earned Prem.	Net Earned Prem.	Gross Earned Prem.
2013-14	34930567	45164400	16727815	23627100	19531038	29309200	43529133	68561600
2014-15	38319046	52298500	20128096	27141300	22674477	33299600	42353348	66778000
2015-16	42236473	58321500	20627372	29585600	28049484	36913300	48216173	80907100
2016-17	49370455	76332800	24074401	41679700	35109985	55637000	61636042	107252000
2017-18	60585689	94452200	33269666	54359200	32363085	56318900	69117348	123568500
2018-19	70097769	110594100	45782143	77426600	40303183	70018400	83753478	144882300
2019-20	82061822	127797700	48527980	73845300	46253213	79610400	94035170	133128400
2020-21	74361302	125695300	49354326	80420600	48987593	84108800	100139940	140030900
2021-22	77793681	136885900	66315490	100249700	55652506	84529100	130320866	179768700
2022-23	80187943	153366400	82327999	131760100	64325534	98709500	148228466	210250900

Source: Annual Report of respective company's website

TABLE 4.20

The Statement Showing Ratio of Net Earned Premium and Gross Earned Premium of Selected Sample Private Sector Non-Life Insurance Companies (Period from 2013-14 to 2022-23) **(Figures in %)**

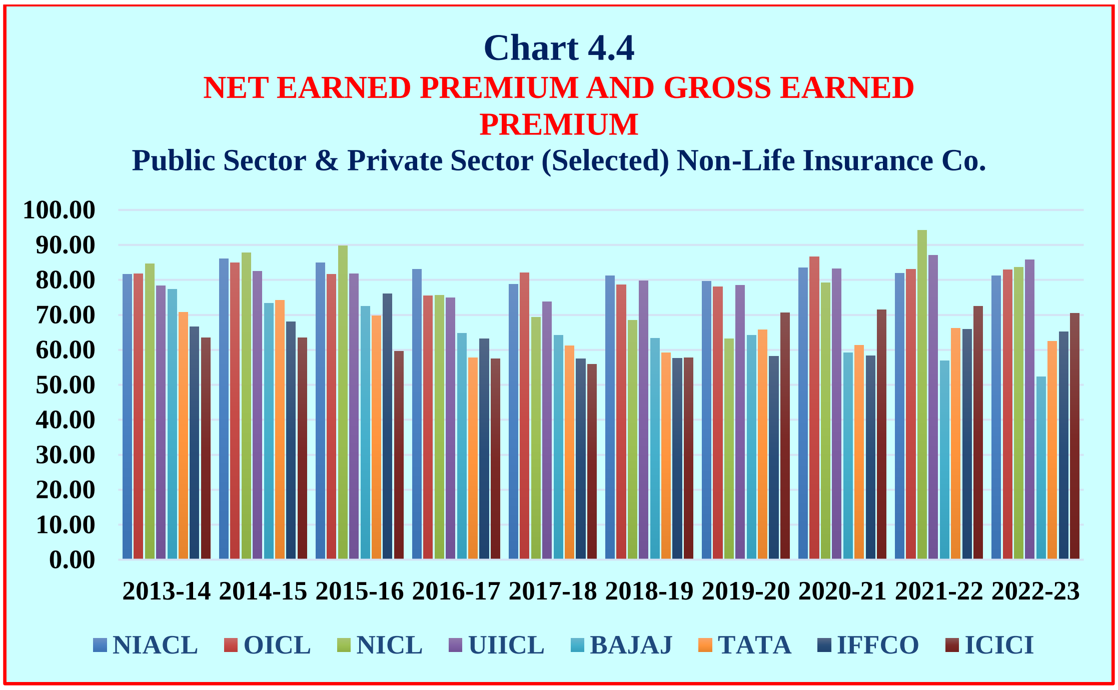
YEAR	BAJAJ ALLIANZ GENERAL INSURANCE CO. LTD.	TATA AIG GENERAL INSURANCE CO. LTD.	IFFCO TOKIO GENERAL INSURANCE CO. LTD.	ICICI LOMBARD GENERAL INSURANCE CO. LTD.
2013-14	77.34	70.80	66.64	63.49
2014-15	73.27	74.16	68.09	63.42
2015-16	72.42	69.72	75.99	59.59
2016-17	64.68	57.76	63.11	57.47
2017-18	64.14	61.20	57.46	55.93
2018-19	63.38	59.13	57.56	57.81
2019-20	64.21	65.72	58.10	70.63
2020-21	59.16	61.37	58.24	71.51
2021-22	56.83	66.15	65.84	72.49
2022-23	52.29	62.48	65.17	70.50

ASSESSMENT OF THE TABULATED INFORMATION

- **Bajaj Allianz General Insurance Co. Ltd.** exhibited a decreasing trend in the ratio of Net Earned Premium to Gross Earned Premium, declining from 77.34% in 2013-14 to 52.29% in 2022-23. This indicates a significant shift in premium income composition and operational strategies over the years.
- **Tata AIG General Insurance Co. Ltd.** ratio fluctuated between 57.76% and 74.16% during the period, showcasing variability in the relationship between Net Earned Premium and Gross Earned Premium. The company experienced fluctuations in premium income structure.
- **IFFCO TOKIO General Insurance Co. Ltd.** maintained a relatively stable ratio between 57.46% and 75.99%, with some fluctuations over the years. The company demonstrated a mix of stability and changes in premium income composition.
- **ICICI Lombard General Insurance Co. Ltd.** showed a decreasing trend in the ratio of Net Earned Premium to Gross Earned Premium, declining from 63.49% in 2013-14

to 70.50% in 2022-23. This indicates shifts in premium income structure and operational strategies over the years.

Overall, the analysis of the Ratio of Net Earned Premium and Gross Earned Premium of the selected Private Sector Non-Life Insurance Companies in India reveals diverse trends in premium income composition and operational strategies. Companies like Bajaj Allianz General Insurance Co. Ltd. and ICICI Lombard General Insurance Co. Ltd. experienced significant decreases in their ratios, indicating substantial changes in premium income structure and operational approaches. On the other hand, Tata AIG General Insurance Co. Ltd. and IFFCO TOKIO General Insurance Co. Ltd. displayed fluctuations in their ratios, suggesting variability in premium generation and management strategies. These variations underscore the dynamic nature of the non-life insurance sector, emphasizing the importance of adaptability, strategic decision-making, and operational efficiency for sustained growth and competitiveness in the market.



Data Examination (Statistical Tools)

Null Hypothesis (H0) : There is no statistically significant difference in **Risk Retention** among the selected public and private non-life insurance firms in India with respect to **Net Earned Premium to Gross Earned Premium.**

Alternative Hypothesis (H1) : There is statistically significant difference in **Risk Retention** among the selected public and private non-life insurance firms in India with respect to **Net Earned Premium to Gross Earned Premium.**

COMPUTATION OF VARIANCE USING ONE WAY ANOVA

STEP-1: Ratio of Net Earned Premium and Gross Earned Premium of Public Sector & Private Sector (Selected) Non-Life Insurance Co.

YEAR	NIACL	OICL	NICL	UIICL	BAJAJ	TATA	IFFCO	ICICI
2013-14	81.56	81.76	84.62	78.31	77.34	70.80	66.64	63.49
2014-15	86.01	84.97	87.73	82.46	73.27	74.16	68.09	63.42
2015-16	84.84	81.56	89.79	81.82	72.42	69.72	75.99	59.59
2016-17	83.04	75.41	75.64	74.93	64.68	57.76	63.11	57.47
2017-18	78.82	82.03	69.36	73.79	64.14	61.20	57.46	55.93
2018-19	81.22	78.62	68.51	79.81	63.38	59.13	57.56	57.81
2019-20	79.63	78.05	63.23	78.47	64.21	65.72	58.10	70.63
2020-21	83.54	86.58	79.24	83.26	59.16	61.37	58.24	71.51
2021-22	81.84	83.01	94.23	87.11	56.83	66.15	65.84	72.49
2022-23	81.17	82.86	83.56	85.83	52.29	62.48	65.17	70.50

STEP-2: Consolidated Output of One - Way ANOVA.

GROUPS	COUNT	SUM	AVERAGE	VARIANCE
NIACL	10	821.6849649	82.16849649	4.957485664
OICL	10	814.8509365	81.48509365	11.06637738
NICL	10	795.9207352	79.59207352	104.0339916
UIICL	10	805.7796163	80.57796163	18.96765973
BAJAJ	10	647.7244913	64.77244913	60.20047661
TATA	10	648.4938162	64.84938162	29.13718416
IFFCO	10	636.1953882	63.61953882	35.95980098
ICICI	10	642.8605688	64.28605688	42.23384184

"F"-TEST ONE WAY ANOVA
TABLE 4.21
NET EARNED PREMIUM AND GROSS EARNED PREMIUM

Public & Private Sector (Selected) Non-Life Insurance Co.

[Period from 2013-14 to 2022-23]

Source of Differences	Sum of the Square of Deviation	Degree of Freedom	M.S.S.	Fc	Ft
Between Group	5541.13	7	791.59	20.66	2.14
Within Group	2759.01	72	38.32		
Total	**8300.14**	**79**			

KEY OBSERVATIONS FROM THE TABLE:

- The ANOVA test results indicate that there are statistically significant differences in the ratio of Net Earned Premium and Gross Earned Premium among the selected public and private sector non-life insurance companies in India.
- The calculated F-value (Fc = 20.658) surpasses the critical F-value (Ft = 2.140), suggesting that the variations in the Net Earned Premium and Gross Earned Premium ratios are not random but meaningful differences exist among the companies.

STATISTICAL DECISION:

The rejection of the null hypothesis based on the F-test results indicates that the differences observed in the ratio of Net Earned Premium to Gross Earned Premium are statistically significant.

IMPLICATIONS OF THE FINDINGS:

- Significant differences in the Net Earned Premium and Gross Earned Premium ratios suggest varying approaches to premium generation and revenue management among the selected insurers.

- These findings may reflect differences in underwriting practices, risk assessment methods, and operational efficiency between public and private sector non-life insurance companies.
- Understanding these variations can provide insights into the competitive positioning, profitability, and financial performance of the insurers in the non-life insurance sector.

CONCLUSION:

The ANOVA analysis reveals substantial differences in the ratio of Net Earned Premium to Gross Earned Premium across the selected public and private sector non-life insurance companies in India. These differences underscore the diverse strategies employed by insurers in terms of premium generation, revenue retention, and overall financial management practices. The statistically significant variations observed in this ratio emphasize the distinct approaches to revenue generation and financial operations within the non-life insurance industry, which can influence the companies' competitive advantage and long-term sustainability.

4.5. MANAGEMENT SOUNDNESS ANALYSIS

Management soundness analysis assesses the capability and effectiveness of an insurer’s leadership in maintaining financial health and regulatory compliance. Strong management ensures prudent operations, strategic planning, and effective risk control. Poor leadership, on the other hand, can lead to inefficiencies and financial instability, making sound governance essential for sustainability.

TABLE 4.22

The Statement Showing Operating Expense and Gross Earned Premium of Selected Sample Public Sector Non-Life Insurance Companies (Period from 2013-14 to 2022-23) (Figures in Thousand)

YEAR	THE NEW INDIA ASSURANCE CO. LTD.		THE ORIENTAL INSURANCE CO. LTD.		NATIONAL INSURANCE CO. LTD.		UNITED INDIA INSURANCE CO. LTD.	
	Optg. Exp.	Gross Earned Prem.	Optg. Exp.	Gross Earned Prem.	Optg. Exp.	Gross Earned Prem.	Optg. Exp.	Gross Earned Prem.
2013-14	26299068	137276000	17754310	72825300	19289497	102609600	21112347	97089300
2014-15	30597548	154803500	23479765	75619200	26956950	112826200	8739812	106917300
2015-16	35607529	177633100	25800909	86115900	35090113	120189800	29240659	122503600
2016-17	38221107	215979200	27555446	111170200	33320658	142823600	29691163	160628100
2017-18	35696786	251593100	26094326	117368400	28959007	162436800	25978043	174299500
2018-19	40881712	266079900	24655194	134847500	25989057	151799700	30594077	164204700
2019-20	38741015	297150700	34425350	139960100	43880121	153128800	34329784	175150900
2020-21	54272322	315734200	30428114	127474200	34346282	141857500	39050237	167047000
2021-22	40698712	355159300	31897782	140204300	28051615	130768300	41409299	157222500
2022-23	43645484	374820400	51389416	159926100	51219324	152058500	63076772	176443100

Source: Annual Report of respective company’s website

TABLE 4.23

The Statement Showing Ratio of Operating Expense and Gross Earned Premium of Selected Sample Public Sector Non-Life Insurance Companies (Period from 2013-14 to 2022-23) **(Figures in %)**

YEAR	THE NEW INDIA ASSURANCE CO. LTD.	THE ORIENTAL INSURANCE CO. LTD.	NATIONAL INSURANCE CO. LTD.	UNITED INDIA INSURANCE CO. LTD.
2013-14	19.16	24.38	18.80	21.75
2014-15	19.77	31.05	23.89	8.17
2015-16	20.05	29.96	29.20	23.87
2016-17	17.70	24.79	23.33	18.48
2017-18	14.19	22.23	17.83	14.90
2018-19	15.36	18.28	17.12	18.63
2019-20	13.04	24.60	28.66	19.60
2020-21	17.19	23.87	24.21	23.38
2021-22	11.46	22.75	21.45	26.34
2022-23	11.64	32.13	33.68	35.75

ASSESSMENT OF THE TABULATED INFORMATION

- **The New India Assurance Co. Ltd.** ratio of Operating Expense to Gross Earned Premium ranged from 11.46% to 20.05% over the period from 2013-14 to 2022-23. The company showed fluctuations in operating expenses as a percentage of Gross Earned Premium, with some years experiencing lower expenses relative to premium income.
- **The Oriental Insurance Co. Ltd.** exhibited varying ratios between 22.23% and 32.13% during the same period, indicating fluctuations in operating expenses in relation to Gross Earned Premium. The company experienced changes in expense management strategies over the years.
- **National Insurance Co. Ltd.** ratio fluctuated significantly from 17.12% to 33.68%, demonstrating notable fluctuations in operating expenses as a percentage of Gross Earned Premium. The company showed varying levels of expense management effectiveness over the analysed period.

- **United India Insurance Co. Ltd.** ratio varied from 8.17% to 35.75%, showcasing a wide range of operating expense levels relative to Gross Earned Premium. The company experienced fluctuations in expense management strategies and operational efficiency.

Overall, the analysis of the Ratio of Operating Expense and Gross Earned Premium for the selected Public Sector Non-Life Insurance Companies in India reveals diverse trends in expense management and efficiency over the analysed period. The fluctuating expense ratios highlight the importance of effective cost control measures and operational efficiency in the non-life insurance sector. Variability in expense management effectiveness emphasizes the need for continuous monitoring and optimization of operational processes to enhance overall profitability and competitiveness. This analysis underscores the significance of prudent expense management practices and operational efficiency for sustainable growth and performance in the insurance industry.

TABLE 4.24

The Statement Showing Operating Expense and Gross Earned Premium of Selected Sample Private Sector Non-Life Insurance Companies (Period from 2013-14 to 2022-23) (Figures in Thousand)

YEAR	BAJAJ ALLIANZ GENERAL INSURANCE CO. LTD.		TATA AIG GENERAL INSURANCE CO. LTD.		IFFCO TOKIO GENERAL INSURANCE CO. LTD.		ICICI LOMBARD GENERAL INSURANCE CO. LTD.	
	Optg. Exp.	Gross Earned Prem.	Optg. Exp.	Gross Earned Prem.	Optg. Exp.	Gross Earned Prem.	Optg. Exp.	Gross Earned Prem.
2013-14	8362753	45164400	5048492	23627100	5020341	29309200	12145729	68561600
2014-15	9433153	52298500	5716443	27141300	6183328	33299600	13852748	66778000
2015-16	11407097	58321500	6905252	29585600	7291091	36913300	17112042	80907100
2016-17	13614489	76332800	8770850	41679700	9120528	55637000	19820372	107252000
2017-18	14051321	94452200	10884487	54359200	7137168	56318900	21118673	123568500
2018-19	18071090	110594100	14491019	77426600	5569290	70018400	19897782	144882300
2019-20	23202954	127797700	15479733	73845300	7442060	79610400	22931019	133128400
2020-21	20597714	125695300	17637778	80420600	7824133	84108800	27341839	140030900
2021-22	21648278	136885900	22316818	100249700	9453018	84529100	39201200	179768700

2022-23	26588401	153366400	26626778	131760100	11178018	98709500	45147807	210250900

Source: Annual Report of respective company's website

TABLE 4.25

The Statement Showing Ratio of Operating Expense and Gross Earned Premium of Selected Sample Private Sector Non-Life Insurance Companies (Period from 2013-14 to 2022-23) **(Figures in %)**

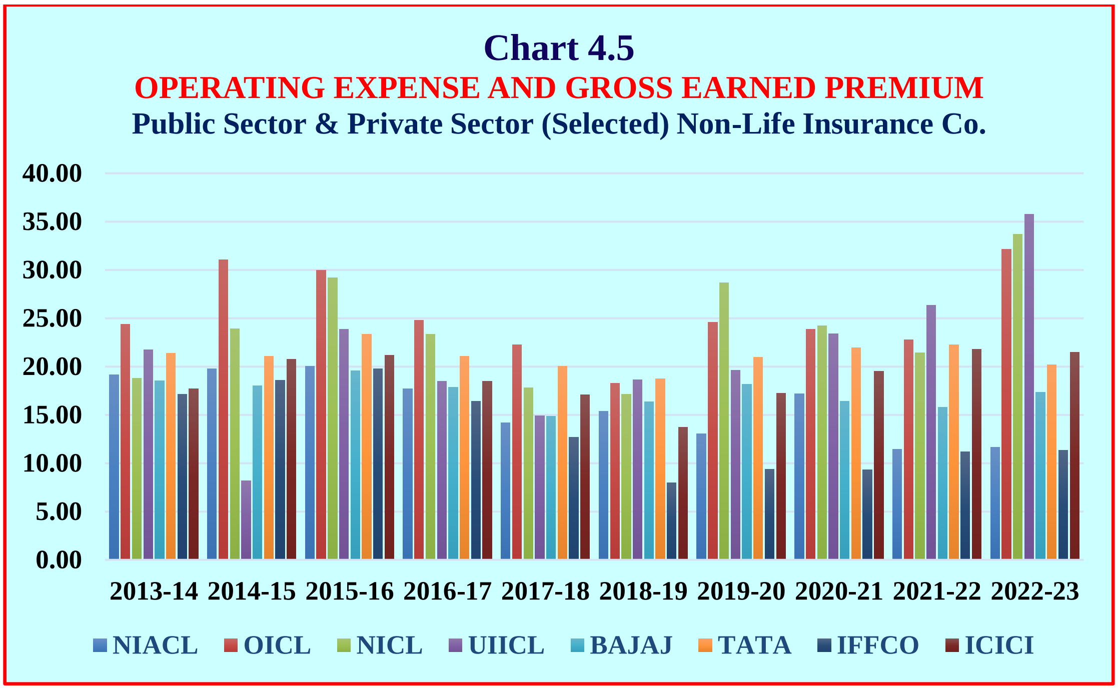
YEAR	BAJAJ ALLIANZ GENERAL INSURANCE CO. LTD.	TATA AIG GENERAL INSURANCE CO. LTD.	IFFCO TOKIO GENERAL INSURANCE CO. LTD.	ICICI LOMBARD GENERAL INSURANCE CO. LTD.
2013-14	18.52	21.37	17.13	17.72
2014-15	18.04	21.06	18.57	20.74
2015-16	19.56	23.34	19.75	21.15
2016-17	17.84	21.04	16.39	18.48
2017-18	14.88	20.02	12.67	17.09
2018-19	16.34	18.72	7.95	13.73
2019-20	18.16	20.96	9.35	17.22
2020-21	16.39	21.93	9.30	19.53
2021-22	15.81	22.26	11.18	21.81
2022-23	17.34	20.21	11.32	21.47

ASSESSMENT OF THE TABULATED INFORMATION

- **Bajaj Allianz General Insurance Co. Ltd.** ratio of Operating Expense to Gross Earned Premium ranged from 14.88% to 19.56% over the period from 2013-14 to 2022-23. The company experienced fluctuations in operating expenses as a percentage of Gross Earned Premium, with varying expense management strategies.
- **Tata AIG General Insurance Co. Ltd.** exhibited ratios between 18.72% and 23.34% during the same period, indicating fluctuations in operating expenses relative to Gross Earned Premium. The company showed variability in expense management effectiveness over the years.
- **IFFCO TOKIO General Insurance Co. Ltd.** maintained ratios ranging from 7.95% to 19.75%, with fluctuations in expense levels in relation to Gross Earned Premium. The company demonstrated varying expense management strategies and operational efficiency.

- **ICICI Lombard General Insurance Co. Ltd.** ratio varied from 13.73% to 21.81%, showcasing a range of operating expense levels relative to Gross Earned Premium. The company experienced fluctuations in expense management strategies and operational efficiency over the analysed period.

Overall**,** the analysis of the Ratio of Operating Expense and Gross Earned Premium for the selected Private Sector Non-Life Insurance Companies in India highlights diverse trends in expense management and operational efficiency over the analysed period. Companies like Bajaj Allianz General Insurance Co. Ltd and Tata AIG General Insurance Co. Ltd. exhibited fluctuations in expense ratios, indicating varying levels of expense management effectiveness. IFFCO TOKIO General Insurance Co. Ltd. showed a wide range of expense levels, suggesting potential challenges in maintaining consistent expense efficiency. ICICI Lombard General Insurance Co. Ltd. demonstrated fluctuations in expense ratios, emphasizing the importance of continuous monitoring and optimization of operational processes for sustained growth and competitiveness in the insurance industry.



Data Examination (Statistical Tools)

Null Hypothesis (H0) : There is no statistically significant difference in **Management Efficiency** among the selected public and private non-life insurance firms in India with respect to **Operating Expenses to Gross Earned Premium.**

Alternative Hypothesis (H1) : There is statistically significant difference in **Management Efficiency** among the selected public and private non-life insurance firms in India with respect to **Operating Expenses to Gross Earned Premium.**

COMPUTATION OF VARIANCE USING ONE WAY ANOVA

STEP-1: Ratio of Operating Expenses and Gross Earned Premium of Public Sector & Private Sector (Selected) Non-Life Insurance Co.

YEAR	NIACL	OICL	NICL	UIICL	BAJAJ	TATA	IFFCO	ICICI
2013-14	19.16	24.38	18.80	21.75	18.52	21.37	17.13	17.72
2014-15	19.77	31.05	23.89	8.17	18.04	21.06	18.57	20.74
2015-16	20.05	29.96	29.20	23.87	19.56	23.34	19.75	21.15
2016-17	17.70	24.79	23.33	18.48	17.84	21.04	16.39	18.48
2017-18	14.19	22.23	17.83	14.90	14.88	20.02	12.67	17.09
2018-19	15.36	18.28	17.12	18.63	16.34	18.72	7.95	13.73
2019-20	13.04	24.60	28.66	19.60	18.16	20.96	9.35	17.22
2020-21	17.19	23.87	24.21	23.38	16.39	21.93	9.30	19.53
2021-22	11.46	22.75	21.45	26.34	15.81	22.26	11.18	21.81
2022-23	11.64	32.13	33.68	35.75	17.34	20.21	11.32	21.47

STEP-2: Consolidated Output of One - Way ANOVA.

GROUPS	COUNT	SUM	AVERAGE	VARIANCE
NIACL	10	159.5485734	15.95485734	10.76014299
OICL	10	254.0440382	25.40440382	18.90579358
NICL	10	238.1682451	23.81682451	29.0651436
UIICL	10	210.873228	21.0873228	52.88247238
BAJAJ	10	172.8591193	17.28591193	1.997578193
TATA	10	210.9156702	21.09156702	1.643391838
IFFCO	10	133.6271379	13.36271379	18.05897369
ICICI	10	188.9444604	18.89444604	6.475191133

"F"-TEST ONE WAY ANOVA
TABLE 4.26

OPERATING EXPENSE AND GROSS EARNED PREMIUM

Public & Private Sector (Selected) Non-Life Insurance Co.

[Period from 2013-14 to 2022-23]

Source of Differences	Sum of the Square of Deviation	Degree of Freedom	M.S.S.	Fc	Ft
Between Group	1139.52	7	162.79	9.31	2.14
Within Group	1258.10	72	17.47		
Total	**2397.62**	**79**			

KEY OBSERVATIONS FROM THE TABLE:

- The ANOVA test results indicate statistically significant differences in the ratio of Operating Expense to Gross Earned Premium among the selected public and private sector non-life insurance companies in India.
- The calculated F-value (Fc = 9.316) exceeds the critical F-value (Ft = 2.140), indicating that the variations in the operating expense and Gross Earned Premium ratios are not random but reflect meaningful differences among the companies.

STATISTICAL DECISION:

The rejection of the null hypothesis based on the F-test results suggests that the differences observed in the ratio of Operating Expense to Gross Earned Premium are statistically significant.

Implications of the Findings:

- Significant variations in the operating expense and Gross Earned Premium ratios highlight differing cost structures and operational efficiencies among the selected insurers.

- These findings may indicate varying levels of cost management, efficiency in premium collection, and overall operational effectiveness between public and private sector non-life insurance companies.
- Understanding these differences can provide insights into the cost-effectiveness, profitability, and operational performance of the insurers in the non-life insurance sector.

CONCLUSION:

The ANOVA analysis reveals substantial differences in the ratio of Operating Expense to Gross Earned Premium across selected public and private sector non-life insurance companies in India. These variations underscore diverse cost management strategies and operational efficiencies. The statistically significant differences emphasize distinct approaches to cost control, operational excellence, and financial management practices within the sector, which can impact companies' profitability and competitive positioning.

4.6. EARNINGS AND PROFITABILITY ANALYSIS

Earnings and profitability are key indicators of financial performance in non-life insurance companies, reflecting their ability to generate income, manage risk, and sustain long-term operations. Profitability is shaped by factors such as underwriting efficiency, investment returns, claim ratios, and cost control.

A central metric is underwriting profit or loss—the difference between premiums earned and claims plus underwriting expenses. A consistent profit signals strong risk assessment and pricing. The combined ratio, which includes loss and expense ratios, is crucial; a ratio under 100% indicates profitability, while above 100% suggests losses.

Investment income also plays a vital role in overall earnings. Premiums are invested, and strong returns can offset weak underwriting results. Effective investment strategies often lead to higher net profits.

Metrics like Return on Assets (ROA) and Return on Equity (ROE) assess how efficiently assets and equity are used to generate profits, with higher ratios indicating better performance.

In India, profitability differs between public and private non-life insurers. Private insurers often show higher profits due to better cost control and technology use, while public insurers may struggle with high claims and legacy expenses.

Overall, analysing profitability provides a clear picture of a company's financial health, operational efficiency, and capacity to deliver long-term value.

4.6.1. CLAIM ANALYSIS

The claim ratio is a key indicator of how effective a non-life insurer's premium pricing strategy is. Given the uncertainty of non-life insurance, regular review and adjustment of pricing is essential. This study includes a segment-wise analysis (Fire, Marine, and Miscellaneous) across all research units to better understand claim trends and pricing efficiency.

(A) CLAIM ANALYSIS - FIRE INSURANCE

TABLE 4.27

The Statement Showing Net Claim (Fire) and Net Earned Premium (Fire) of Selected Sample Public Sector Non-Life Insurance Companies (Period from 2013-14 to 2022-23) (Figures in Thousand)

YEAR	THE NEW INDIA ASSURANCE CO. LTD.		THE ORIENTAL INSURANCE CO. LTD.		NATIONAL INSURANCE CO. LTD.		UNITED INDIA INSURANCE CO. LTD.	
	Claim (Fire)	Prem. (Fire)	Claim (Fire)	Prem. (Fire)	Claim (Fire)	Prem. (Fire)	Claim (Fire)	Prem. (Fire)
2013-14	15300619	17846263	5552520	6604357	5278589	7212304	5824283	8088665
2014-15	14415189	18873280	4250553	5900214	5633301	7533129	6065130	8064022
2015-16	14931087	20834114	4353327	5655915	6878650	7564611	5875403	7906843
2016-17	19666289	19324914	5554334	6103896	3965515	7637648	8747535	8496331
2017-18	15315520	19639705	5095663	5903810	8640102	6748837	8454795	8568763
2018-19	21403241	19066644	6771648	6019541	3898636	6973112	6874134	7682020
2019-20	18565009	24608416	5336769	6708711	5030116	6523146	10377526	7977087
2020-21	22421709	30374078	3946941	7358823	5576494	7819961	5171268	8854589
2021-22	21278773	28577328	4786402	7497605	8216025	9293893	5319758	9097570
2022-23	21617531	30553972	4660478	8018090	5074093	9490149	5735895	8205207

Source: Annual Report of respective company's website

TABLE 4.28

The Statement Showing Ratio of Net Claim (Fire) and Net Earned Premium (Fire) of Selected Sample Public Sector Non-Life Insurance Companies (Period from 2013-14 to 2022-23) (Figures in %)

YEAR	THE NEW INDIA ASSURANCE CO. LTD.	THE ORIENTAL INSURANCE CO. LTD.	NATIONAL INSURANCE CO. LTD.	UNITED INDIA INSURANCE CO. LTD.
2013-14	85.74	84.07	73.19	72.01
2014-15	76.38	72.04	74.78	75.21
2015-16	71.67	76.97	90.93	74.31
2016-17	101.77	91.00	51.92	102.96
2017-18	77.98	86.31	128.02	98.67
2018-19	112.25	112.49	55.91	89.48
2019-20	75.44	79.55	77.11	130.09
2020-21	73.82	53.64	71.31	58.40
2021-22	74.46	63.84	88.40	58.47
2022-23	70.75	58.12	53.47	69.91

ASSESSMENT OF THE TABULATED INFORMATION

- **The New India Assurance Co. Ltd.** ratio of Net Claim to Net Earned Premium in the Fire Business varied from 70.75% to 112.25% over the period from 2013-14 to 2022-23. The company experienced fluctuations in claim ratios, indicating varying levels of claims relative to premium income in the fire business.
- **The Oriental Insurance Co. Ltd.** exhibited ratios between 53.64% and 112.49% during the same period, showcasing fluctuations in claim ratios in the fire business. The company showed variability in claim management efficiency over the years.
- **National Insurance Co. Ltd.** ratio fluctuated significantly from 51.92% to 128.02%, demonstrating notable fluctuations in claim ratios in the fire business. The company showed varying levels of claim management effectiveness over the analysed period.
- **United India Insurance Co. Ltd.** ratio ranged from 58.40% to 130.09%, showcasing a wide range of claim ratios in the fire business. The company experienced fluctuations in claim management strategies and operational efficiency.

Overall, the analysis of the Ratio of Net Claim (Fire Business) and Net Earned Premium (Fire Business) for the selected Public Sector Non-Life Insurance Companies in India reveals diverse trends in claim management and efficiency over the analysed period. Fluctuations in claim ratios highlight the importance of effective claims processing and management in the fire insurance business. Variability in claim management effectiveness underscores the need for continuous monitoring and improvement of claims processes to enhance customer satisfaction and operational performance.

TABLE 4.29

The Statement Showing Net Claim (Fire) and Net Earned Premium (Fire) of Selected Sample Private Sector Non-Life Insurance Companies (Period from 2013-14 to 2022-23) (Figures in Thousand)

YEAR	BAJAJ ALLIANZ GENERAL INSURANCE CO. LTD.		TATA AIG GENERAL INSURANCE CO. LTD.		IFFCO TOKIO GENERAL INSURANCE CO. LTD.		ICICI LOMBARD GENERAL INSURANCE CO. LTD.	
	Claim (Fire)	Prem. (Fire)	Claim (Fire)	Prem. (Fire)	Claim (Fire)	Prem. (Fire)	Claim (Fire)	Prem. (Fire)
2013-14	450603	1446481	167289	268162	278035	372286	1027287	1534949
2014-15	936574	1466249	203191	410932	215463	392025	1023548	1088513
2015-16	1112508	1658503	255510	267636	250829	449291	633010	995012
2016-17	550326	1763868	271597	337441	211477	403317	846510	1237079
2017-18	886424	1796290	241773	660666	479064	481413	620754	1440912
2018-19	1396888	1876444	797559	1064418	305815	471315	1313631	1578840
2019-20	1822329	2679557	972078	1580208	270532	592286	1751576	2735818
2020-21	1466284	2691988	962533	2443008	518692	831674	3067922	4813392
2021-22	1439267	2522421	2308299	4093273	793238	1247112	3578414	6744741
2022-23	947340	2687743	2214869	4735325	952882	1781815	3216884	6521900

Source: Annual Report of respective company's website

TABLE 4.30

The Statement Showing Ratio of <u>Net Claim (Fire) and Net Earned Premium (Fire)</u> of Selected Sample <u>Private Sector</u> Non-Life Insurance Companies (Period from 2013-14 to 2022-23) (Figures in %)

YEAR	BAJAJ ALLIANZ GENERAL INSURANCE CO. LTD.	TATA AIG GENERAL INSURANCE CO. LTD.	IFFCO TOKIO GENERAL INSURANCE CO. LTD.	ICICI LOMBARD GENERAL INSURANCE CO. LTD.
2013-14	31.15	62.38	74.68	66.93
2014-15	63.88	49.45	54.96	94.03
2015-16	67.08	95.47	55.83	63.62
2016-17	31.20	80.49	52.43	68.43
2017-18	49.35	36.60	99.51	43.08
2018-19	74.44	74.93	64.89	83.20
2019-20	68.01	61.52	45.68	64.02
2020-21	54.47	39.40	62.37	63.74
2021-22	57.06	56.39	63.61	53.05
2022-23	35.25	46.77	53.48	49.32

ASSESSMENT OF THE TABULATED INFORMATION

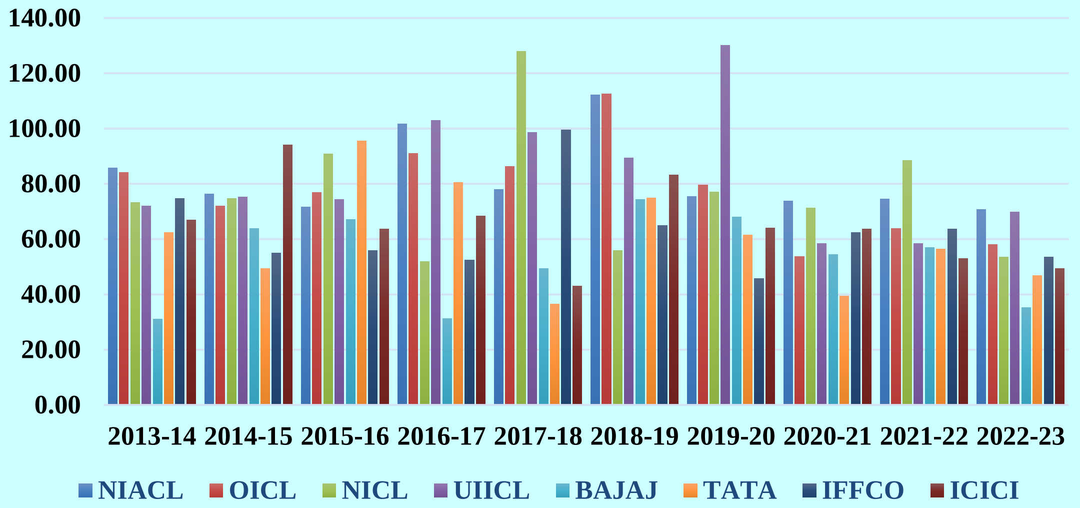
- **Bajaj Allianz General Insurance Co. Ltd.** ratio of Net Claim to Net Earned Premium in the Fire Business ranged from 31.20% to 74.44% over the period from 2013-14 to 2022-23. The company exhibited fluctuations in claim ratios, indicating varying levels of claims relative to premium income in the fire business.
- **Tata AIG General Insurance Co. Ltd.** showed ratios between 36.60% and 95.47% during the same period, showcasing fluctuations in claim ratios in the fire business. The company demonstrated variability in claim management efficiency over the years.
- **IFFCO TOKIO General Insurance Co. Ltd.** maintained ratios ranging from 45.68% to 99.51%, with fluctuations in claim levels relative to premium income in the fire business. The company demonstrated varying claim management strategies and operational efficiency.
- **ICICI Lombard General Insurance Co. Ltd.** ratio varied from 49.32% to 94.03%, showcasing a range of claim ratios in the fire business. The company experienced fluctuations in claim management strategies and operational efficiency over the analysed period.

Overall, the analysis of the Ratio of Net Claim (Fire Business) and Net Earned Premium (Fire Business) for the selected Private Sector Non-Life Insurance Companies in India highlights diverse trends in claim management and efficiency over the analysed period. Fluctuations in claim ratios underscore the importance of effective claims processing and management in the fire insurance business. Variability in claim management effectiveness emphasizes the need for continuous monitoring and improvement of claims processes to enhance customer satisfaction and operational performance.

Chart 4.6

NET CLAIM (FIRE) AND NET EARNED PREMIUM (FIRE)

Public Sector & Private Sector (Selected) Non-Life Insurance Co.



Data Examination (Statistical Tools)

Null Hypothesis (H0)	:	There is no statistically significant difference in **Claim Ratio (Fire)** among the selected public and private non-life insurance firms in India with respect to **Net Claim (Fire) to Net Earned Premium (Fire).**
Alternative Hypothesis (H1)	:	There is statistically significant difference in **Claim Ratio (Fire)** among the selected public and private non-life insurance firms in India with respect to **Net Claim (Fire) to Net Earned Premium (Fire).**

COMPUTATION OF VARIANCE USING ONE WAY ANOVA

STEP-1: Ratio of Net Claim (Fire) and Net Earned Premium (Fire) of Public Sector & Private Sector (Selected) Non-Life Insurance Co.

YEAR	NIACL	OICL	NICL	UIICL	BAJAJ	TATA	IFFCO	ICICI
2013-14	31.15	62.38	74.68	66.93	31.15	62.38	74.68	66.93
2014-15	63.88	49.45	54.96	94.03	63.88	49.45	54.96	94.03
2015-16	67.08	95.47	55.83	63.62	67.08	95.47	55.83	63.62
2016-17	31.20	80.49	52.43	68.43	31.20	80.49	52.43	68.43
2017-18	49.35	36.60	99.51	43.08	49.35	36.60	99.51	43.08
2018-19	74.44	74.93	64.89	83.20	74.44	74.93	64.89	83.20
2019-20	68.01	61.52	45.68	64.02	68.01	61.52	45.68	64.02
2020-21	54.47	39.40	62.37	63.74	54.47	39.40	62.37	63.74
2021-22	57.06	56.39	63.61	53.05	57.06	56.39	63.61	53.05
2022-23	35.25	46.77	53.48	49.32	35.25	46.77	53.48	49.32

STEP-2: Consolidated Output of One - Way ANOVA.

GROUPS	COUNT	SUM	AVERAGE	VARIANCE
NIACL	10	820.2574414	82.02574414	196.4281548
OICL	10	778.0350534	77.80350534	299.1700151
NICL	10	765.0469386	76.50469386	511.6091368
UIICL	10	829.5093705	82.95093705	504.2837625
BAJAJ	10	531.8796932	53.18796932	255.6625445
TATA	10	603.3920304	60.33920304	353.2218218
IFFCO	10	627.4317302	62.74317302	232.418774
ICICI	10	649.4278793	64.94278793	229.2138727

“F”-TEST ONE WAY ANOVA
TABLE 4.31

NET CLAIM (FIRE) AND NET EARNED PREMIUM (FIRE)

Public & Private Sector (Selected) Non-Life Insurance Co.

[Period from 2013-14 to 2022-23]

Source of Differences	Sum of the Square of Deviation	Degree of Freedom	M.S.S.	Fc	Ft
Between Group	8697.32	7	1242.47	3.85	2.14
Within Group	23238.07	72	322.75		
Total	**31935.40**	**79**			

KEY OBSERVATIONS FROM THE TABLE:

- The ANOVA test results show that there are statistically significant differences in the ratio of Net Claim (Fire Business) to Net Earned Premium (Fire Business) among the selected public and private sector non-life insurance companies in India.
- The calculated F-value (Fc = 3.850) exceeds the critical F-value (Ft = 2.140), indicating that the variations in the net claim to Net Earned Premium ratios are not random, but rather reflect meaningful differences among the companies.

STATISTICAL DECISION:

The rejection of the null hypothesis based on the F-test results suggests that the differences observed in the ratio of Net Claim (Fire Business) to Net Earned Premium (Fire Business) are statistically significant.

IMPLICATIONS OF THE FINDINGS:

- Significant variations in the net claim to Net Earned Premium ratios reflect differing claims management practices and risk assessment approaches among the selected insurers.
- These findings may indicate varying levels of underwriting discipline, claims processing efficiency, and overall risk mitigation strategies between public and private sector non-life insurance companies.
- Understanding these differences can provide insights into the claims management effectiveness, financial stability, and risk exposure of the insurers in the non-life insurance sector.

CONCLUSION:

The ANOVA analysis reveals notable differences in the ratio of Net Claim (Fire Business) to Net Earned Premium (Fire Business) across the selected public and private sector non-life insurance companies in India. These variations underscore the diverse claims management strategies and risk assessment methodologies employed by insurers in the non-life insurance industry. The statistically significant differences observed in this ratio underscore the distinct approaches to claims handling, risk management, and financial sustainability practices within the sector, which can influence the companies' overall profitability and risk profile.

(B) CLAIM ANALYSIS - MARINE BUSINESS

TABLE 4.32

The Statement Showing Net Claim (Marine) and Net Earned Premium (Marine) of Selected Sample Public Sector Non-Life Insurance Companies (Period from 2013-14 to 2022-23)

(Figures in Thousand)

YEAR	THE NEW INDIA ASSURANCE CO. LTD.		THE ORIENTAL INSURANCE CO. LTD.		NATIONAL INSURANCE CO. LTD.		UNITED INDIA INSURANCE CO. LTD.	
	Claim (Marine)	Prem. (Marine)	Claim (Marine)	Prem. (Marine)	Claim (Marine)	Prem. (Marine)	Claim (Marine)	Prem. (Marine)
2013-14	2143198	4610226	1665981	2855003	1380529	1912925	2150172	3000175
2014-15	3216650	6110405	1212855	3001854	1174794	2013777	2586531	3045389
2015-16	2869107	4788186	2168495	2901842	1047970	2057194	2065571	2887659
2016-17	3577504	4673115	2099635	2470270	1170929	1728068	1860023	2719678
2017-18	2214205	3837519	1609051	2301536	771346	1593937	1764966	2327344
2018-19	3494029	4303450	1388957	2083963	1294226	1438919	2183884	2225124
2019-20	3000560	4503367	1914125	1974473	772856	1532595	1342811	1966314
2020-21	3132030	4377913	1562497	2029232	954390	1285421	980759	1964017
2021-22	3836716	5159264	1763091	2100146	1319200	1405619	1795760	2029094
2022-23	3697815	5554910	1534567	2507634	419649	1791729	1341732	2267831

Source: Annual Report of respective company’s website

TABLE 4.33

The Statement Showing Ratio of Net Claim (Marine) and Net Earned Premium (Marine) of Selected Sample Public Sector Non-Life Insurance Companies (Period from 2013-14 to 2022-23)

(Figures in %)

YEAR	THE NEW INDIA ASSURANCE CO. LTD.	THE ORIENTAL INSURANCE CO. LTD.	NATIONAL INSURANCE CO. LTD.	UNITED INDIA INSURANCE CO. LTD.
2013-14	46.49	58.35	72.17	71.67
2014-15	52.64	40.40	58.34	84.93
2015-16	59.92	74.73	50.94	71.53
2016-17	76.56	85.00	67.76	68.39
2017-18	57.70	69.91	48.39	75.84
2018-19	81.19	66.65	89.94	98.15
2019-20	66.63	96.94	50.43	68.29
2020-21	71.54	77.00	74.25	49.94
2021-22	74.37	83.95	93.85	88.50
2022-23	66.57	61.20	23.42	59.16

ASSESSMENT OF THE TABULATED INFORMATION

- **The New India Assurance Co. Ltd.** ratio of Net Claim to Net Earned Premium in the Marine Business ranged from 66.57% to 81.19% over the period from 2013-14 to 2022-23. The company demonstrated fluctuations in claim ratios, indicating varying levels of claims relative to premium income in the marine business.
- **The Oriental Insurance Co. Ltd.** exhibited ratios between 40.40% and 96.94% during the same period, showcasing fluctuations in claim ratios in the marine business. The company showed variability in claim management efficiency over the years.
- **National Insurance Co. Ltd.** ratio fluctuated significantly from 23.42% to 89.94%, demonstrating notable fluctuations in claim ratios in the marine business. The company showed varying levels of claim management effectiveness over the analysed period.
- **United India Insurance Co. Ltd.** ratio varied from 49.94% to 98.15%, showcasing a wide range of claim ratios in the marine business. The company experienced fluctuations in claim management strategies and operational efficiency.

Overall, the analysis of the Ratio of Net Claim (Marine Business) and Net Earned Premium (Marine Business) for the selected Public Sector Non-Life Insurance Companies in India reveals diverse trends in claim management and operational efficiency over the analysed period. Fluctuations in claim ratios highlight the importance of effective claims processing and management in the marine insurance business. Variability in claim management effectiveness underscores the need for continuous monitoring and improvement of claims processes to enhance customer satisfaction and operational performance.

TABLE 4.34

The Statement Showing Net Claim (Marine) and Net Earned Premium (Marine) of Selected Sample Private Sector Non-Life Insurance Companies (Period from 2013-14 to 2022-23)

(Figures in Thousand)

YEAR	BAJAJ ALLIANZ GENERAL INSURANCE CO. LTD.		TATA AIG GENERAL INSURANCE CO. LTD.		IFFCO TOKIO GENERAL INSURANCE CO. LTD.		ICICI LOMBARD GENERAL INSURANCE CO. LTD.	
	Claim (Marine)	Prem. (Marine)	Claim (Marine)	Prem. (Marine)	Claim (Marine)	Prem. (Marine)	Claim (Marine)	Prem. (Marine)
2013-14	299124	798898	1043258	2185579	401318	429158	1526326	1566095
2014-15	646786	720087	1545828	2282199	377774	490949	1579920	1601131
2015-16	413465	848821	1824771	2258174	400281	396139	1803253	1849297
2016-17	566707	839750	1493573	2319275	384063	534270	1612373	1920765
2017-18	552315	883642	1917953	2477096	314703	576073	1060780	1957559
2018-19	974951	1038593	2401781	2803765	413107	683071	1988567	2367293
2019-20	788366	1173990	2208429	2987690	471082	736848	1672704	2563182
2020-21	703425	1068110	2328178	2972855	514533	755364	2168047	2601528
2021-22	765590	1198309	3838015	4194389	1202700	1149565	2923887	3768037
2022-23	1063810	1637849	4682122	5213357	1071662	1284094	3177226	4387088

Source: Annual Report of respective company’s website

TABLE 4.35

The Statement Showing Ratio of Net Claim (Marine) and Net Earned Premium (Marine) of Selected Sample Private Sector Non-Life Insurance Companies (Period from 2013-14 to 2022-23)

(Figures in %)

YEAR	BAJAJ ALLIANZ GENERAL INSURANCE CO. LTD.	TATA AIG GENERAL INSURANCE CO. LTD.	IFFCO TOKIO GENERAL INSURANCE CO. LTD.	ICICI LOMBARD GENERAL INSURANCE CO. LTD.
2013-14	37.44	47.73	93.51	97.46
2014-15	89.82	67.73	76.95	98.68
2015-16	48.71	80.81	101.05	97.51
2016-17	67.49	64.40	71.89	83.94
2017-18	62.50	77.43	54.63	54.19
2018-19	93.87	85.66	60.48	84.00
2019-20	67.15	73.92	63.93	65.26
2020-21	65.86	78.31	68.12	83.34
2021-22	63.89	91.50	104.62	77.60
2022-23	64.95	89.81	83.46	72.42

ASSESSMENT OF THE TABULATED INFORMATION

- **Bajaj Allianz General Insurance Co. Ltd.** ratio of Net Claim to Net Earned Premium in the Marine Business ranged from 37.44% to 93.87% over the period from 2013-14 to 2022-23. The company exhibited fluctuations in claim ratios, indicating varying levels of claims relative to premium income in the marine business.
- **Tata AIG General Insurance Co. Ltd.** showed ratios between 47.73% and 85.66% during the same period, showcasing fluctuations in claim ratios in the marine business. The company demonstrated variability in claim management efficiency over the years.
- **IFFCO TOKIO General Insurance Co. Ltd.** maintained ratios ranging from 60.48% to 104.62%, with fluctuations in claim levels relative to premium income in the marine business. The company demonstrated varying claim management strategies and operational efficiency.
- **ICICI Lombard General Insurance Co. Ltd.** ratio varied from 54.19% to 98.68%, showcasing a range of claim ratios in the marine business. The company experienced

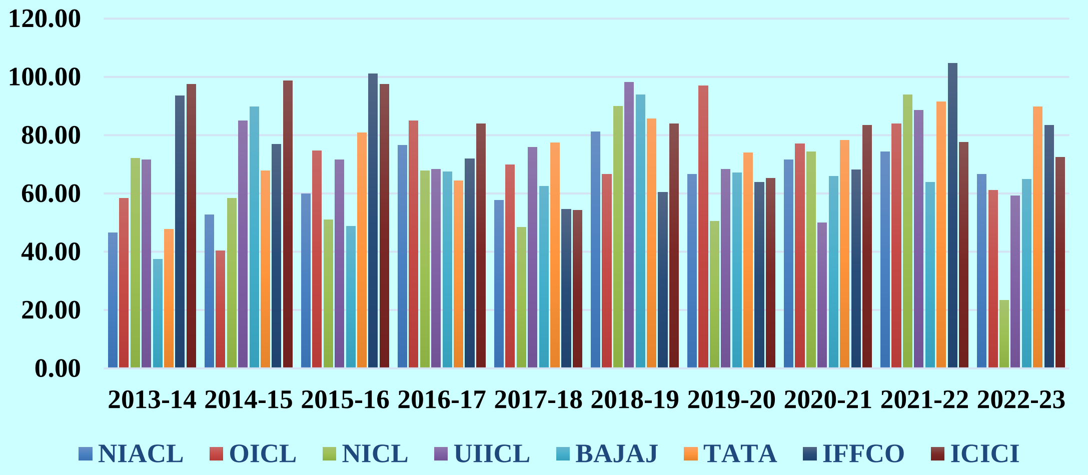
fluctuations in claim management strategies and operational efficiency over the analysed period.

Overall, the analysis of the Ratio of Net Claim (Marine Business) and Net Earned Premium (Marine Business) for the selected Private Sector Non-Life Insurance Companies in India highlights diverse trends in claim management and efficiency over the analysed period. Fluctuations in claim ratios underline the importance of effective claims processing and management in the marine insurance business. Variability in claim management effectiveness emphasizes the need for continuous monitoring and improvement of claims processes to enhance customer satisfaction and operational performance.

Chart 4.7

NET CLAIM (MARINE) AND NET EARNED PREMIUM (MARINE)

Public Sector & Private Sector (Selected) Non-Life Insurance Co.



Data Examination (Statistical Tools)

Null Hypothesis (H0)	:	There is no statistically significant difference in **Claim Ratio (Marine)** among the selected public and private non-life insurance firms in India with respect to **Net Claim (Marine) to Net Earned Premium (Marine).**

Alternative Hypothesis (H1) : There is statistically significant difference in **Claim Ratio (Marine)** among the selected public and private non-life insurance firms in India with respect to **Net Claim (Marine) to Net Earned Premium (Marine).**

COMPUTATION OF VARIANCE USING ONE WAY ANOVA

STEP-1: Ratio of Net Claim (Marine) and Net Earned Premium (Marine) of Public Sector & Private Sector (Selected) Non-Life Insurance Co.

YEAR	NIACL	OICL	NICL	UIICL	BAJAJ	TATA	IFFCO	ICICI
2013-14	46.49	58.35	72.17	71.67	37.44	47.73	93.51	97.46
2014-15	52.64	40.40	58.34	84.93	89.82	67.73	76.95	98.68
2015-16	59.92	74.73	50.94	71.53	48.71	80.81	101.05	97.51
2016-17	76.56	85.00	67.76	68.39	67.49	64.40	71.89	83.94
2017-18	57.70	69.91	48.39	75.84	62.50	77.43	54.63	54.19
2018-19	81.19	66.65	89.94	98.15	93.87	85.66	60.48	84.00
2019-20	66.63	96.94	50.43	68.29	67.15	73.92	63.93	65.26
2020-21	71.54	77.00	74.25	49.94	65.86	78.31	68.12	83.34
2021-22	74.37	83.95	93.85	88.50	63.89	91.50	104.62	77.60
2022-23	66.57	61.20	23.42	59.16	64.95	89.81	83.46	72.42

STEP-2: Consolidated Output of One - Way ANOVA.

GROUPS	COUNT	SUM	AVERAGE	VARIANCE
NIACL	10	653.6007169	65.36007169	122.7248044
OICL	10	714.1325158	71.41325158	255.243621
NICL	10	629.4928513	62.94928513	446.228823
UIICL	10	736.3972806	73.63972806	198.853754
BAJAJ	10	661.6855263	66.16855263	275.5342948
TATA	10	757.309514	75.7309514	173.3858878
IFFCO	10	778.626774	77.8626774	299.7081279
ICICI	10	814.3966491	81.43966491	214.3264657

"F"-TEST ONE WAY ANOVA
TABLE 4.36

NET CLAIM (MARINE) AND NET EARNED PREMIUM (MARINE)

Public & Private Sector (Selected) Non-Life Insurance Co.

[Period from 2013-14 to 2022-23]

Source of Differences	Sum of the Square of Deviation	Degree of Freedom	M.S.S.	Fc	Ft
Between Group	3001.83	7	428.83	1.73	2.14
Within Group	17874.05	72	248.25		
Total	**20875.89**	**79**			

KEY OBSERVATIONS FROM THE TABLE:

- The ANOVA test results suggest that there are no statistically significant differences in the ratio of Net Claim (Marine Business) to Net Earned Premium (Marine Business) among the selected public and private sector non-life insurance companies in India.
- The calculated F-value (Fc = 1.727) is lower than the critical F-value (Ft = 2.140), indicating that the variations in the net claim to Net Earned Premium ratios are not statistically significant.

STATISTICAL DECISION:

The failure to reject the null hypothesis based on the F-test results implies that there are no significant differences observed in the ratio of Net Claim (Marine Business) to Net Earned Premium (Marine Business) among the selected insurers.

IMPLICATIONS OF THE FINDINGS:

- The lack of statistically significant differences in the net claim to Net Earned Premium ratios suggests that the selected public and private sector insurers may have similar performance in their marine business segments.

- This finding could indicate comparable claims handling efficiency, risk assessment accuracy, and overall financial stability among the insurers in this specific business line.

Conclusion:

The ANOVA analysis indicates that there are no statistically significant differences in the ratio of Net Claim (Marine Business) to Net Earned Premium (Marine Business) across the selected public and private sector non-life insurance companies in India. This suggests that the insurers in the marine business segment exhibit comparable performance in terms of claims settlement and premium income generation, with no significant variations detected among the companies.

(C) CLAIM ANALYSIS - MISC. BUSINESS

TABLE 4.37

The Statement Showing Net Claim (Misc.) and Net Earned Premium (Misc.) of Selected Sample Public Sector Non-Life Insurance Companies (Period from 2013-14 to 2022-23)

(Figures in Thousand)

YEAR	THE NEW INDIA ASSURANCE CO. LTD.		THE ORIENTAL INSURANCE CO. LTD.		NATIONAL INSURANCE CO. LTD.		UNITED INDIA INSURANCE CO. LTD.	
	Claim (Misc.)	Prem. (Misc.)	Claim (Misc.)	Prem. (Misc.)	Claim (Misc.)	Prem. (Misc.)	Claim (Misc.)	Prem. (Misc.)
2013-14	76365732	89512257	43891701	50080323	63826939	77701469	54799326	64944151
2014-15	94248516	108169227	47151628	55349582	69943690	89434655	65778618	77052878
2015-16	114395886	125090030	52274099	61681264	94897365	98292017	80069948	89434153
2016-17	139901785	155355332	86327048	75258479	99930371	98670555	118207565	109140094
2017-18	152221098	174826714	75507423	88074718	119295329	104322774	111158388	117713735
2018-19	180589615	192746483	104320224	97911755	109147398	95590227	134302881	121137936
2019-20	194173618	207510050	104545290	100561233	96696503	88771408	127732768	127502017
2020-21	196013867	229011359	99707504	100981772	90408212	103309450	116869098	128260729
2021-22	263204548	256910405	122400243	106785937	118878066	112527167	127884641	125829337
2022-23	264788467	268140664	142396073	121984144	122649077	115779753	133532205	140969822

Source: Annual Report of respective company’s website

TABLE 4.38

The Statement Showing Ratio of Net Claim (Misc.) and Net Earned Premium (Misc.) of Selected Sample Public Sector Non-Life Insurance Companies (Period from 2013-14 to 2022-23)

(Figures in %)

YEAR	THE NEW INDIA ASSURANCE CO. LTD.	THE ORIENTAL INSURANCE CO. LTD.	NATIONAL INSURANCE CO. LTD.	UNITED INDIA INSURANCE CO. LTD.
2013-14	85.31	87.64	82.14	84.38
2014-15	87.13	85.19	78.21	85.37
2015-16	91.45	84.75	96.55	89.53
2016-17	90.05	114.71	101.28	108.31
2017-18	87.07	85.73	114.35	94.43
2018-19	93.69	106.55	114.18	110.87
2019-20	93.57	103.96	108.93	100.18
2020-21	85.59	98.74	87.51	91.12
2021-22	102.45	114.62	105.64	101.63
2022-23	98.75	116.73	105.93	94.72

ASSESSMENT OF THE TABULATED INFORMATION

- **The New India Assurance Co. Ltd.** ratio of Net Claim to Net Earned Premium in the Misc. Business ranged from 85.31% to 102.45% over the period from 2013-14 to 2022-23. The company exhibited fluctuations in claim ratios, indicating varying levels of claims relative to premium income in the miscellaneous business category.
- **The Oriental Insurance Co. Ltd.** showed ratios between 85.19% and 116.73% during the same period, showcasing fluctuations in claim ratios in the miscellaneous business category. The company demonstrated variability in claim management efficiency over the years.
- **National Insurance Co. Ltd.** ratio fluctuated significantly from 78.21% to 114.35%, demonstrating notable fluctuations in claim ratios in the miscellaneous business category. The company showed varying levels of claim management effectiveness over the analysed period.
- **United India Insurance Co. Ltd.** ratio varied from 84.38% to 110.87%, showcasing a wide range of claim ratios in the miscellaneous business category. The company experienced fluctuations in claim management strategies and operational efficiency.

Overall, the analysis of the Ratio of Net Claim (Misc. Business) and Net Earned Premium (Misc. Business) for the selected Public Sector Non-Life Insurance Companies in India reveals diverse trends in claim management and operational efficiency over the analysed period. Fluctuations in claim ratios emphasize the importance of effective claims processing and management in the miscellaneous insurance business. Variability in claim management effectiveness underscores the need for continuous monitoring and improvement of claims processes to enhance customer satisfaction and operational performance.

TABLE 4.39

The Statement Showing Net Claim (Misc.) and Net Earned Premium (Misc.) of Selected Sample Private Sector Non-Life Insurance Companies (Period from 2013-14 to 2022-23)

(Figures in Thousand)

YEAR	BAJAJ ALLIANZ GENERAL INSURANCE CO. LTD.		TATA AIG GENERAL INSURANCE CO. LTD.		IFFCO TOKIO GENERAL INSURANCE CO. LTD.		ICICI LOMBARD GENERAL INSURANCE CO. LTD.	
	Claim (Misc.)	Prem. (Misc.)	Claim (Misc.)	Prem. (Misc.)	Claim (Misc.)	Prem. (Misc.)	Claim (Misc.)	Prem. (Misc.)
2013-14	24503047	32685188	10194362	14274074	14137982	18729594	33635438	40428089
2014-15	25976565	36132710	11012560	17434965	16222026	21791503	31830900	39663704
2015-16	29012608	39729149	13822355	18101562	21545548	27204054	36845879	45371864
2016-17	33645904	46766837	15654084	21417685	28181622	34172398	47084432	58478198
2017-18	38986993	57905757	21500986	30131904	26033311	31305599	51465704	65718877
2018-19	45732265	67182732	32664324	41913960	34863307	39148797	59778978	79807345
2019-20	55437194	78208275	34401592	43960082	40242150	44924079	65091489	88736170
2020-21	48732582	70601204	30600266	43938463	40656387	47400555	63472164	92725020
2021-22	54555031	74072951	43594890	58027828	50373061	53255829	91316705	119808088
2022-23	56458424	75862351	53693026	72379317	54949664	61259625	100862406	137319478

Source: Annual Report of respective company’s website

TABLE 4.40

The Statement Showing Ratio of Net Claim (Misc.) and Net Earned Premium (Misc.) of Selected Sample Private Sector Non-Life Insurance Companies (Period from 2013-14 to 2022-23)

(Figures in %)

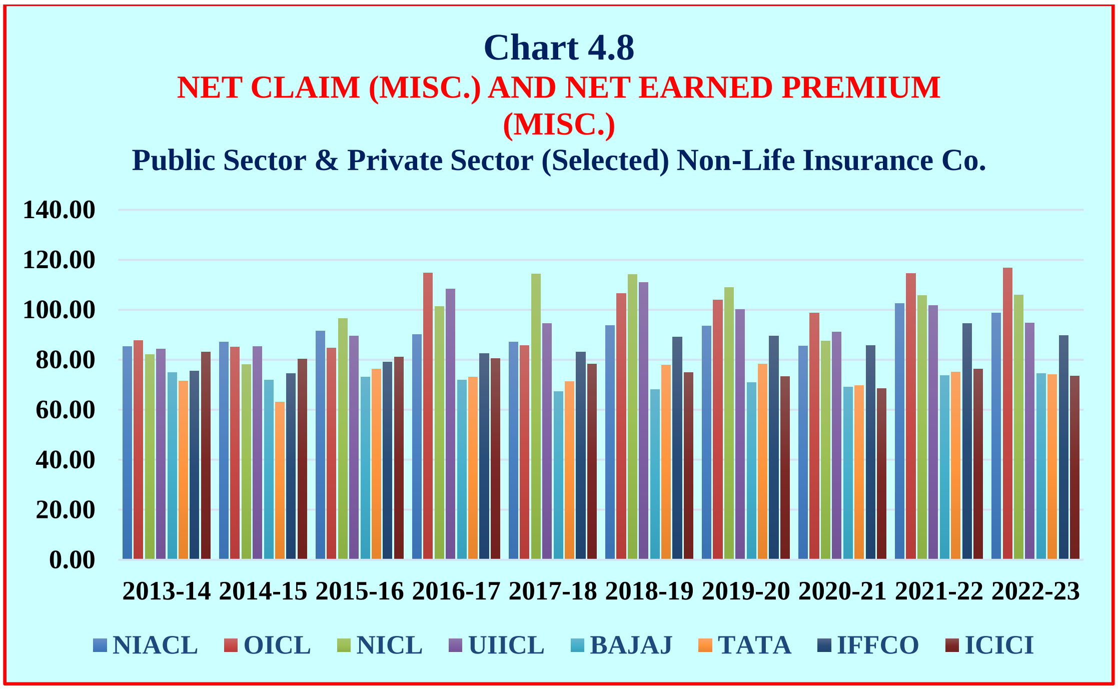
YEAR	BAJAJ ALLIANZ GENERAL INSURANCE CO. LTD.	TATA AIG GENERAL INSURANCE CO. LTD.	IFFCO TOKIO GENERAL INSURANCE CO. LTD.	ICICI LOMBARD GENERAL INSURANCE CO. LTD.
2013-14	74.97	71.42	75.48	83.20
2014-15	71.89	63.16	74.44	80.25
2015-16	73.03	76.36	79.20	81.21
2016-17	71.94	73.09	82.47	80.52
2017-18	67.33	71.36	83.16	78.31
2018-19	68.07	77.93	89.05	74.90
2019-20	70.88	78.26	89.58	73.35
2020-21	69.03	69.64	85.77	68.45
2021-22	73.65	75.13	94.59	76.22
2022-23	74.42	74.18	89.70	73.45

ASSESSMENT OF THE TABULATED INFORMATION

- **Bajaj Allianz General Insurance Co. Ltd.** ratio of Net Claim to Net Earned Premium in the Misc. Business ranged from 67.33% to 74.97% over the period from 2013-14 to 2022-23. The company exhibited fluctuations in claim ratios, indicating varying levels of claims relative to premium income in the miscellaneous business category.
- **Tata AIG General Insurance Co. Ltd.** showed ratios between 63.16% and 78.26% during the same period, showcasing fluctuations in claim ratios in the miscellaneous business category. The company demonstrated variability in claim management efficiency over the years.
- **IFFCO TOKIO General Insurance Co. Ltd.** maintained ratios ranging from 74.44% to 94.59%, with fluctuations in claim levels relative to premium income in the miscellaneous business category. The company demonstrated varying claim management strategies and operational efficiency.
- **ICICI Lombard General Insurance Co. Ltd.** ratio varied from 68.45% to 83.20%, showcasing a range of claim ratios in the miscellaneous business category. The

company experienced fluctuations in claim management strategies and operational efficiency over the analysed period.

Overall, the analysis of the Ratio of Net Claim (Misc. Business) and Net Earned Premium (Misc. Business) for the selected Private Sector Non-Life Insurance Companies in India highlights diverse trends in claim management and efficiency over the analysed period. Fluctuations in claim ratios underline the importance of effective claims processing and management in the miscellaneous insurance business. Variability in claim management effectiveness emphasizes the need for continuous monitoring and improvement of claims processes to enhance customer satisfaction and operational performance.



Data Examination (Statistical Tools)

Null Hypothesis (H0)	:	There is no statistically significant difference in **Claim Ratio (Misc.)** among the selected public and private non-life insurance firms in India with respect to **Net Claim (Misc.) to Net Earned Premium (Misc.).**

Alternative Hypothesis (H1) : There is statistically significant difference in **Claim Ratio (Misc.)** among the selected public and private non-life insurance firms in India with respect to **Net Claim (Misc.) to Net Earned Premium (Misc.).**

COMPUTATION OF VARIANCE USING ONE WAY ANOVA

STEP-1: Ratio of Net Claim (Misc.) and Net Earned Premium (Misc.) of Public Sector & Private Sector (Selected) Non-Life Insurance Co.

YEAR	NIACL	OICL	NICL	UIICL	BAJAJ	TATA	IFFCO	ICICI
2013-14	85.31	87.64	82.14	84.38	74.97	71.42	75.48	83.20
2014-15	87.13	85.19	78.21	85.37	71.89	63.16	74.44	80.25
2015-16	91.45	84.75	96.55	89.53	73.03	76.36	79.20	81.21
2016-17	90.05	114.71	101.28	108.31	71.94	73.09	82.47	80.52
2017-18	87.07	85.73	114.35	94.43	67.33	71.36	83.16	78.31
2018-19	93.69	106.55	114.18	110.87	68.07	77.93	89.05	74.90
2019-20	93.57	103.96	108.93	100.18	70.88	78.26	89.58	73.35
2020-21	85.59	98.74	87.51	91.12	69.03	69.64	85.77	68.45
2021-22	102.45	114.62	105.64	101.63	73.65	75.13	94.59	76.22
2022-23	98.75	116.73	105.93	94.72	74.42	74.18	89.70	73.45

STEP-2: Consolidated Output of One - Way ANOVA.

GROUPS	COUNT	SUM	AVERAGE	VARIANCE
NIACL	10	915.0741296	91.50741296	32.8413673
OICL	10	998.6190449	99.86190449	175.3701261
NICL	10	994.7247118	99.47247118	168.2679358
UIICL	10	960.5404789	96.05404789	82.17699605
BAJAJ	10	715.2104683	71.52104683	7.057692416
TATA	10	730.5302567	73.05302567	20.26344619
IFFCO	10	843.4440828	84.34440828	43.68161684
ICICI	10	769.8670751	76.98670751	20.52761441

"F"-TEST ONE WAY ANOVA
TABLE 4.41

NET CLAIM (MISC.) AND NET EARNED PREMIUM (MISC.)

Public & Private Sector (Selected) Non-Life Insurance Co.

[Period from 2013-14 to 2022-23]

Source of Differences	Sum of the Square of Deviation	Degree of Freedom	M.S.S.	Fc	Ft
Between Group	9634.39	7	1376.34	20.01	2.14
Within Group	4951.68	72	68.77		
Total	**14586.07**	**79**			

KEY OBSERVATIONS FROM THE TABLE:

- The ANOVA test results indicate statistically significant differences in the ratio of Net Claim (Misc. Business) to Net Earned Premium (Misc. Business) among the selected public and private sector non-life insurance companies in India.
- The calculated F-value (Fc = 20.013) exceeds the critical F-value (Ft = 2.140), suggesting that the variations in the net claim to Net Earned Premium ratios are not due to random chance but reflect meaningful differences among the companies.

STATISTICAL DECISION:

The rejection of the null hypothesis based on the F-test results implies that the differences observed in the ratio of Net Claim (Misc. Business) to Net Earned Premium (Misc. Business) are statistically significant.

IMPLICATIONS OF THE FINDINGS:

- Significant variations in net claim to Net Earned Premium ratios suggest differing claims experience, risk exposure, and underwriting practices among selected insurers in the miscellaneous business segment.
- These differences may reflect varying efficiency in claims management, accuracy in risk assessment, and operational effectiveness between public and private sector insurers.

- Understanding these variations offers insights into claims handling capabilities, profitability in the miscellaneous business line, and overall risk management strategies.

CONCLUSION:

The ANOVA analysis reveals substantial differences in the ratio of Net Claim (Misc. Business) to Net Earned Premium (Misc. Business) across selected public and private sector non-life insurance companies in India. These variations underscore the diverse claims experience and risk exposure profiles of insurers. The statistically significant differences in this ratio highlight distinct approaches to claims management, risk assessment, and financial performance, which can impact companies' profitability and operational efficiency in the miscellaneous business segment.

(D) CLAIM ANALYSIS - ALL BUSINESS

TABLE 4.42

The Statement Showing Net Claim and Net Earned Premium of Selected Sample Public Sector Non-Life Insurance Companies (Period from 2013-14 to 2022-23)

(Figures in Thousand)

YEAR	THE NEW INDIA ASSURANCE CO. LTD.		THE ORIENTAL INSURANCE CO. LTD.		NATIONAL INSURANCE CO. LTD.		UNITED INDIA INSURANCE CO. LTD.	
	Claim (All)	Prem. (All)	Claim (All)	Prem. (All)	Claim (All)	Prem. (All)	Claim (All)	Prem. (All)
2013-14	111968746	93809549	59539683	51110202	86826698	70486057	76032991	62773781
2014-15	133152912	111880355	64251650	52615036	98981561	76751785	88162289	74430279
2015-16	150712330	132196080	70239021	58795921	107913822	102823985	100228655	88010922
2016-17	179353361	163145578	83832645	93981017	108036271	105066815	120356103	128815123
2017-18	198303938	169750823	96280064	82212137	112665548	128706777	128609842	121378149
2018-19	216116577	205486885	106015259	112480829	104002258	114340260	131045080	143360899
2019-20	236621833	215739187	109244417	111796184	96827149	102499475	137445418	139453105
2020-21	263763350	221567606	110369827	105216942	112414832	96939096	139079335	123021125
2021-22	290646997	288320037	116383688	128949736	123226679	128413291	136956001	135000159
2022-23	304249546	290103813	132509868	148591118	127061631	128142819	151442860	140609832

Source: Annual Report of respective company’s website

TABLE 4.43

The Statement Showing Ratio of Net Claim and Net Earned Premium of Selected Sample Public Sector Non-Life Insurance Companies (Period from 2013-14 to 2022-23)

(Figures in %)

YEAR	THE NEW INDIA ASSURANCE CO. LTD.	THE ORIENTAL INSURANCE CO. LTD.	NATIONAL INSURANCE CO. LTD.	UNITED INDIA INSURANCE CO. LTD.
2013-14	119.36	116.49	123.18	121.12
2014-15	119.01	122.12	128.96	118.45
2015-16	114.01	119.46	104.95	113.88
2016-17	109.93	89.20	102.83	93.43
2017-18	116.82	117.11	87.54	105.96
2018-19	105.17	94.25	90.96	91.41
2019-20	109.68	97.72	94.47	98.56
2020-21	119.04	104.90	115.96	113.05
2021-22	100.81	90.26	95.96	101.45
2022-23	104.88	89.18	99.16	107.70

ASSESSMENT OF THE TABULATED INFORMATION

- **The New India Assurance Co. Ltd.** ratio of Net Claim to Net Earned Premium in the All-Business category ranged from 100.81% to 119.36% over the period from 2013-14 to 2022-23. The company exhibited fluctuations in claim ratios, indicating varying levels of claims relative to premium income across all business segments.
- **The Oriental Insurance Co. Ltd.** showed ratios between 89.18% and 122.12% during the same period, showcasing fluctuations in claim ratios in the All-Business category. The company demonstrated variability in claim management efficiency over the years.
- **National Insurance Co. Ltd.** ratio fluctuated significantly from 87.54% to 128.96%, demonstrating notable fluctuations in claim ratios in the All-Business category. The company showed varying levels of claim management effectiveness over the analysed period.
- **United India Insurance Co. Ltd.** ratio varied from 91.41% to 113.05%, showcasing a wide range of claim ratios in the All-Business category. The company experienced fluctuations in claim management strategies and operational efficiency.

Overall, the analysis of the Ratio of Net Claim (All Business) and Net Earned Premium (All Business) for the selected Public Sector Non-Life Insurance Companies in India reveals diverse trends in claim management and operational efficiency over the analysed period. Fluctuations in claim ratios underscore the importance of effective claims processing and management across all business segments. Variability in claim management effectiveness emphasizes the need for continuous monitoring and improvement of claims processes to enhance customer satisfaction and operational performance.

TABLE 4.44

The Statement Showing Net Claim and Net Earned Premium of Selected Sample Private Sector Non-Life Insurance Companies (Period from 2013-14 to 2022-23)

(Figures in Thousand)

YEAR	BAJAJ ALLIANZ GENERAL INSURANCE CO. LTD.		TATA AIG GENERAL INSURANCE CO. LTD.		IFFCO TOKIO GENERAL INSURANCE CO. LTD.		ICICI LOMBARD GENERAL INSURANCE CO. LTD.	
	Claim (All)	Prem. (All)	Claim (All)	Prem. (All)	Claim (All)	Prem. (All)	Claim (All)	Prem. (All)
2013-14	34930567	25252774	16727815	11404909	19531038	14817335	43529133	36189051
2014-15	38319046	27559925	20128096	12761579	22674477	16815263	42353348	34434368
2015-16	42236473	30538581	20627372	15902636	28049484	22196658	48216173	39282142
2016-17	49370455	34762937	24074401	17419254	35109985	28777162	61636042	49543315
2017-18	60585689	40425732	33269666	23660712	32363085	26827078	69117348	53147238
2018-19	70097769	48104104	45782143	35863664	40303183	35582229	83753478	63081176
2019-20	82061822	58047889	48527980	37582099	46253213	40983764	94035170	68515769
2020-21	74361302	50902291	49354326	33890977	48987593	41689612	100139940	68708133
2021-22	77793681	56759888	66315490	49741204	55652506	52368999	130320866	97819006
2022-23	80187943	58469574	82327999	60590017	64325534	56974208	148228466	107256516

Source: Annual Report of respective company's website

TABLE 4.45

The Statement Showing Ratio of Net Claim and Net Earned Premium of Selected Sample Private Sector Non-Life Insurance Companies (Period from 2013-14 to 2022-23)

(Figures in %)

YEAR	BAJAJ ALLIANZ GENERAL INSURANCE CO. LTD.	TATA AIG GENERAL INSURANCE CO. LTD.	IFFCO TOKIO GENERAL INSURANCE CO. LTD.	ICICI LOMBARD GENERAL INSURANCE CO. LTD.
2013-14	138.32	146.67	131.81	120.28
2014-15	139.04	157.72	134.84	123.00
2015-16	138.31	129.71	126.37	122.74
2016-17	142.02	138.21	122.01	124.41
2017-18	149.87	140.61	120.64	130.05
2018-19	145.72	127.66	113.27	132.77
2019-20	141.37	129.13	112.86	137.25
2020-21	146.09	145.63	117.51	145.75
2021-22	137.06	133.32	106.27	133.23
2022-23	137.14	135.88	112.90	138.20

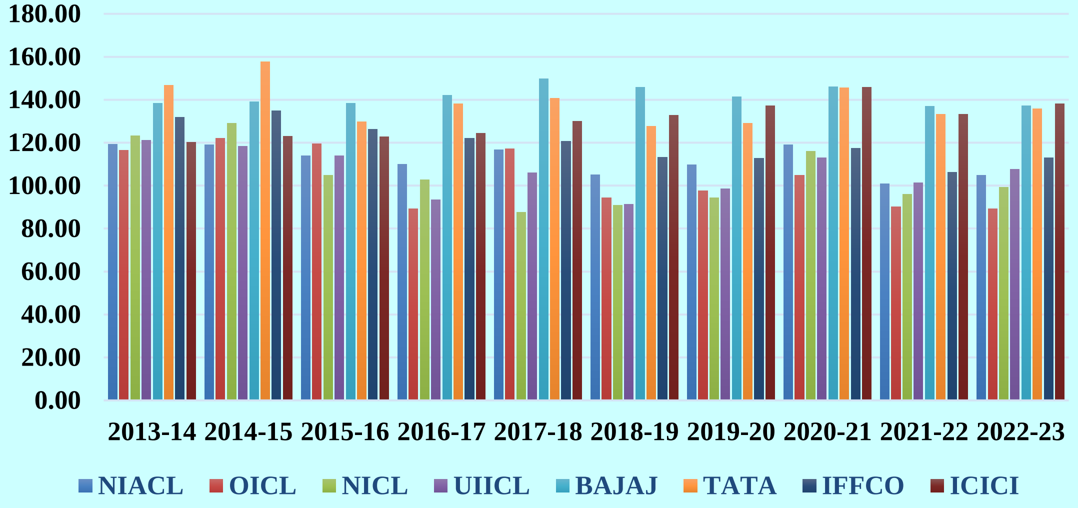
ASSESSMENT OF THE TABULATED INFORMATION

- **Bajaj Allianz General Insurance Co. Ltd.** ratio of Net Claim to Net Earned Premium in the All-Business category ranged from 137.06% to 149.87% over the period from 2013-14 to 2022-23. The company exhibited fluctuations in claim ratios, indicating varying levels of claims relative to premium income across all business segments.
- **Tata AIG General Insurance Co. Ltd.** showed ratios between 127.66% and 157.72% during the same period, showcasing fluctuations in claim ratios in the All-Business category. The company demonstrated variability in claim management efficiency over the years.
- **IFFCO TOKIO General Insurance Co. Ltd.** maintained ratios ranging from 106.27% to 134.84%, with fluctuations in claim levels relative to premium income in the All-Business category. The company demonstrated varying claim management strategies and operational efficiency.

- **ICICI Lombard General Insurance Co. Ltd.** ratio varied from 122.74% to 145.75%, showcasing a range of claim ratios in the All-Business category. The company experienced fluctuations in claim management strategies and operational efficiency over the analysed period.

Overall, the analysis of the Ratio of Net Claim (All Business) and Net Earned Premium (All Business) for the selected Private Sector Non-Life Insurance Companies in India highlights diverse trends in claim management and efficiency over the analysed period. Fluctuations in claim ratios underline the importance of effective claims processing and management across all business segments. Variability in claim management effectiveness emphasizes the need for continuous monitoring and improvement of claims processes to enhance customer satisfaction and operational performance.

Chart 4.9
NET CLAIM AND NET EARNED PREMIUM
Public Sector & Private Sector (Selected) Non-Life Insurance Co.



Data Examination (Statistical Tools)

Null Hypothesis (H0)	:	There is no statistically significant difference in **Claim Ratio** among the selected public and private non-life insurance firms in India with respect to **Net Claim to Net Earned Premium.**

Alternative Hypothesis (H1) : There is statistically significant difference in **Claim Ratio** among the selected public and private non-life insurance firms in India with respect to **Net Claim to Net Earned Premium.**

COMPUTATION OF VARIANCE USING ONE WAY ANOVA

STEP-1: Ratio of Net Claim and Net Earned Premium of Public Sector & Private Sector (Selected) Non-Life Insurance Co.

YEAR	NIACL	OICL	NICL	UIICL	BAJAJ	TATA	IFFCO	ICICI
2013-14	119.36	116.49	123.18	121.12	138.32	146.67	131.81	120.28
2014-15	119.01	122.12	128.96	118.45	139.04	157.72	134.84	123.00
2015-16	114.01	119.46	104.95	113.88	138.31	129.71	126.37	122.74
2016-17	109.93	89.20	102.83	93.43	142.02	138.21	122.01	124.41
2017-18	116.82	117.11	87.54	105.96	149.87	140.61	120.64	130.05
2018-19	105.17	94.25	90.96	91.41	145.72	127.66	113.27	132.77
2019-20	109.68	97.72	94.47	98.56	141.37	129.13	112.86	137.25
2020-21	119.04	104.90	115.96	113.05	146.09	145.63	117.51	145.75
2021-22	100.81	90.26	95.96	101.45	137.06	133.32	106.27	133.23
2022-23	104.88	89.18	99.16	107.70	137.14	135.88	112.90	138.20

STEP-2: Consolidated Output of One - Way ANOVA.

GROUPS	COUNT	SUM	AVERAGE	VARIANCE
NIACL	10	1118.712856	111.8712856	45.81502354
OICL	10	1040.684415	104.0684415	184.2394433
NICL	10	1043.965128	104.3965128	195.0114311
UIICL	10	1065.020799	106.5020799	104.7565826
BAJAJ	10	1414.936217	141.4936217	19.35964267
TATA	10	1384.530032	138.4530032	89.78885306
IFFCO	10	1198.470559	119.8470559	82.89800098
ICICI	10	1307.670676	130.7670676	67.4785291

"F"-TEST ONE WAY ANOVA
TABLE 4.46

NET CLAIM AND NET EARNED PREMIUM

Public & Private Sector (Selected) Non-Life Insurance Co.

[Period from 2013-14 to 2022-23]

Source of Differences	Sum of the Square of Deviation	Degree of Freedom	M.S.S.	Fc	Ft
Between Group	16631.50	7	2375.93	24.08	2.14
Within Group	7104.13	72	98.67		
Total	23735.63	**79**			

KEY OBSERVATIONS FROM THE TABLE:

- The ANOVA test results indicate statistically significant differences in the ratio of Net Claim (All Business) to Net Earned Premium (All Business) among the selected public and private sector non-life insurance companies in India.
- The calculated F-value (Fc = 24.080) exceeds the critical F-value (Ft = 2.140), indicating that the variations in the net claim to Net Earned Premium ratios are not due to random chance but reflect meaningful differences among the companies.

STATISTICAL DECISION:

The rejection of the null hypothesis based on the F-test results implies that the differences observed in the ratio of Net Claim (All Business) to Net Earned Premium (All Business) are statistically significant.

IMPLICATIONS OF THE FINDINGS:

- Significant variations in net claim to Net Earned Premium ratios suggest differing claims experience, risk exposure, and underwriting practices among selected insurers across all business lines.
- These differences may reflect varying efficiency in claims management, accuracy in risk assessment, and operational effectiveness between public and private sector insurers.

- Understanding these variations offers insights into insurers' overall risk management practices, financial stability, and profitability across different business segments.

CONCLUSION:

The ANOVA analysis reveals notable differences in the ratio of Net Claim (All Business) to Net Earned Premium (All Business) across selected public and private sector non-life insurance companies in India. These variations highlight diverse claims experience and risk exposure across entire business portfolios. The statistically significant differences emphasize distinct approaches to claims management, underwriting practices, and financial performance, which can impact the overall financial health and competitiveness of the companies in the market.

OVERALL ANALYSIS FOR CLAIM MANAGEMENT

Claim management is a crucial element in evaluating the financial and operational efficiency of non-life insurance companies. The overall analysis of claim ratios for various lines of business—namely fire, marine, miscellaneous, and total business—reveals important insights into the risk exposure and performance of selected public and private sector insurers in India.

The fire insurance segment demonstrated consistent performance, with claim ratios remaining below 100 percent throughout the study period for both public and private insurers. This indicates a relatively stable and predictable claim environment in this category. In contrast, marine insurance exhibited considerable volatility, with claim ratios exceeding 100 percent two to three times during the research period. This fluctuation may be attributed to the inherently high uncertainty and risk associated with marine operations, such as cargo damage, weather disruptions, and logistical issues.

Miscellaneous insurance showed mixed results. Public sector insurers recorded claim ratios averaging around or slightly above 100 percent for a few years, while private sector insurers experienced claim ratios consistently above 100 percent. This suggests higher claim frequency or severity in private insurers' portfolios, possibly due to broader risk coverage or aggressive underwriting strategies.

When analysing the overall claim ratios for all business segments combined, both public and private insurers exceeded the 100 percent level in two to three years of the research period. This indicates that, at times, claims outpaced premium income, challenging the profitability and sustainability of operations.

These patterns highlight the necessity of adopting a scientific, data-driven approach to claim management and pricing strategies. As insurance fundamentally deals with uncertainty, effective claim control mechanisms and accurate risk assessment are vital for ensuring long-term financial health and competitive strength in the market.

4.6.2. OPERATING ANALYSIS

Operating analysis is essential in evaluating the financial health and operational efficiency of non-life insurance companies. It examines how effectively these firms manage core functions like underwriting, claims processing, and investments to generate profits. Key indicators include the loss ratio, expense ratio, and combined ratio, which together reflect the company's performance in managing risk and controlling costs.

The loss ratio indicates underwriting efficiency by comparing claims paid to Net Earned Premiums earned, while the expense ratio measures operational costs relative to premiums. Their sum, the combined ratio, shows whether the company can earn a profit from its core insurance activities, independent of investment income.

In the Indian non-life insurance sector, operating analysis is particularly important due to regulatory shifts, growing competition, and changing consumer demands. Comparing operational metrics across selected insurers helps identify strengths, weaknesses, and areas for improvement, supporting strategic decisions aimed at long-term sustainability and improved competitiveness in the market.

(A) OPERATING ANALYSIS - FIRE BUSINESS

TABLE 4.47

The Statement Showing Operating Expense (Fire) and Net Earned Premium (Fire) of Selected Sample Public Sector Non-Life Insurance Companies (Period from 2013-14 to 2022-23)

(Figures in Thousand)

YEAR	THE NEW INDIA ASSURANCE CO. LTD.		THE ORIENTAL INSURANCE CO. LTD.		NATIONAL INSURANCE CO. LTD.		UNITED INDIA INSURANCE CO. LTD.	
	Optg. Exp (Fire)	Net Prem. (Fire)	Optg. Exp (Fire)	Net Prem. (Fire)	Optg. Exp (Fire)	Net Prem. (Fire)	Optg. Exp (Fire)	Net Prem. (Fire)
2013-14	5186762	17846263	2752146	6604357	1867734	7212304	2755288	8088665
2014-15	5936504	18873280	3446802	5900214	2536114	7533129	3294699	8064022
2015-16	6500076	20834114	3447383	5655915	2051423	7564611	3363338	7906843
2016-17	4141805	19324914	2594539	6103896	2146961	7637648	2719678	8496331
2017-18	3331266	19639705	2040155	5903810	1753654	6748837	2094938	8568763
2018-19	3946688	19066644	2217643	6019541	1594487	6973112	2331374	7682020
2019-20	4369944	24608416	3732800	6708711	3327002	6523146	3352088	7977087
2020-21	6057759	30374078	4243381	7358823	2300648	7819961	4372106	8854589
2021-22	3846523	28577328	4139509	7497605	2151672	9293893	5314622	9097570
2022-23	4302313	30553972	5857802	8018090	3456576	9490149	7345937	8205207

Source: Annual Report of respective company's website

TABLE 4.48

The Statement Showing Ratio of Operating Expense (Fire) and Net Earned Premium (Fire) of Selected Sample Public Sector Non-Life Insurance Companies (Period from 2013-14 to 2022-23)

(Figures in %)

YEAR	THE NEW INDIA ASSURANCE CO. LTD.	THE ORIENTAL INSURANCE CO. LTD.	NATIONAL INSURANCE CO. LTD.	UNITED INDIA INSURANCE CO. LTD.
2013-14	29.06	41.67	25.90	34.06
2014-15	31.45	58.42	33.67	40.86
2015-16	31.20	60.95	27.12	42.54
2016-17	21.43	42.51	28.11	32.01
2017-18	16.96	34.56	25.98	24.45
2018-19	20.70	36.84	22.87	30.35
2019-20	17.76	55.64	51.00	42.02
2020-21	19.94	57.66	29.42	49.38
2021-22	13.46	55.21	23.15	58.42
2022-23	14.08	73.06	36.42	89.53

ASSESSMENT OF THE TABULATED INFORMATION

- **The New India Assurance Co. Ltd.** ratio of Operating Expense (Fire Business) to Operating Income (Fire Business) displayed fluctuations over the period from 2013-14 to 2022-23. The ratios ranged from 13.46% to 31.45%, indicating varying levels of operating expenses relative to operating income.
- **The Oriental Insurance Co. Ltd.** showed varying ratios from 34.56% to 73.06% during the same period, reflecting significant fluctuations in operating expenses compared to operating income. The ratios fluctuated, suggesting changes in the efficiency of managing operating expenses for OICL.

- **National Insurance Co. Ltd.** exhibited ratios ranging from 22.87% to 51.00%, with fluctuations in operating expenses relative to operating income. The company experienced varying levels of operating expenses compared to operating income over the years.

- **United India Insurance Co. Ltd.** ratios varied from 24.45% to 89.53%, showcasing a wide range of operating expenses to operating income ratios. The company experienced significant fluctuations in managing operating expenses relative to operating income across the years.

Overall, the analysis of the Ratio of Operating Expense (Fire Business) and Operating Income (Fire Business) for the selected Public Sector Non-Life Insurance Companies in India highlights fluctuations in the efficiency of managing operating expenses relative to operating income. Companies like OICL and UIICL experienced significant fluctuations in these ratios, indicating the need for effective cost management strategies. Maintaining a balance between operating expenses and operating income is crucial for the financial health and sustainability of these insurance companies.

TABLE 4.49

The Statement Showing Operating Expense (Fire) and Net Earned Premium (Fire) of Selected Sample Private Sector Non-Life Insurance Companies (Period from 2013-14 to 2022-23)

(Figures in Thousand)

YEAR	BAJAJ ALLIANZ GENERAL INSURANCE CO. LTD.		TATA AIG GENERAL INSURANCE CO. LTD.		IFFCO TOKIO GENERAL INSURANCE CO. LTD.		ICICI LOMBARD GENERAL INSURANCE CO. LTD.	
	Optg. Exp (Fire)	Net Prem. (Fire)	Optg. Exp (Fire)	Net Prem. (Fire)	Optg. Exp (Fire)	Net Prem. (Fire)	Optg. Exp (Fire)	Net Prem. (Fire)
2013-14	379284	1446481	229819	268162	91777	372286	435348	1534949
2014-15	388555	1466249	412896	410932	89793	392025	376108	1088513
2015-16	471320	1658503	573219	267636	114976	449291	360321	995012
2016-17	550366	1763868	1087738	337441	121900	403317	354177	1237079
2017-18	573239	1796290	1597169	660666	91501	481413	455812	1440912
2018-19	695640	1876444	1699523	1064418	73533	471315	411575	1578840
2019-20	2417584	2679557	2067644	1580208	118377	592286	885672	2735818
2020-21	2860693	2691988	2994977	2443008	109321	831674	1280153	4813392
2021-22	3225807	2522421	3059217	4093273	288579	1247112	2032440	6744741
2022-23	4158873	2687743	2262311	4735325	304255	1781815	1686076	6521900

Source: Annual Report of respective company’s website

TABLE 4.50

The Statement Showing Ratio of Operating Expense (Fire) and Net Earned Premium (Fire) of Selected Sample Private Sector Non-Life Insurance Companies (Period from 2013-14 to 2022-23)

(Figures in %)

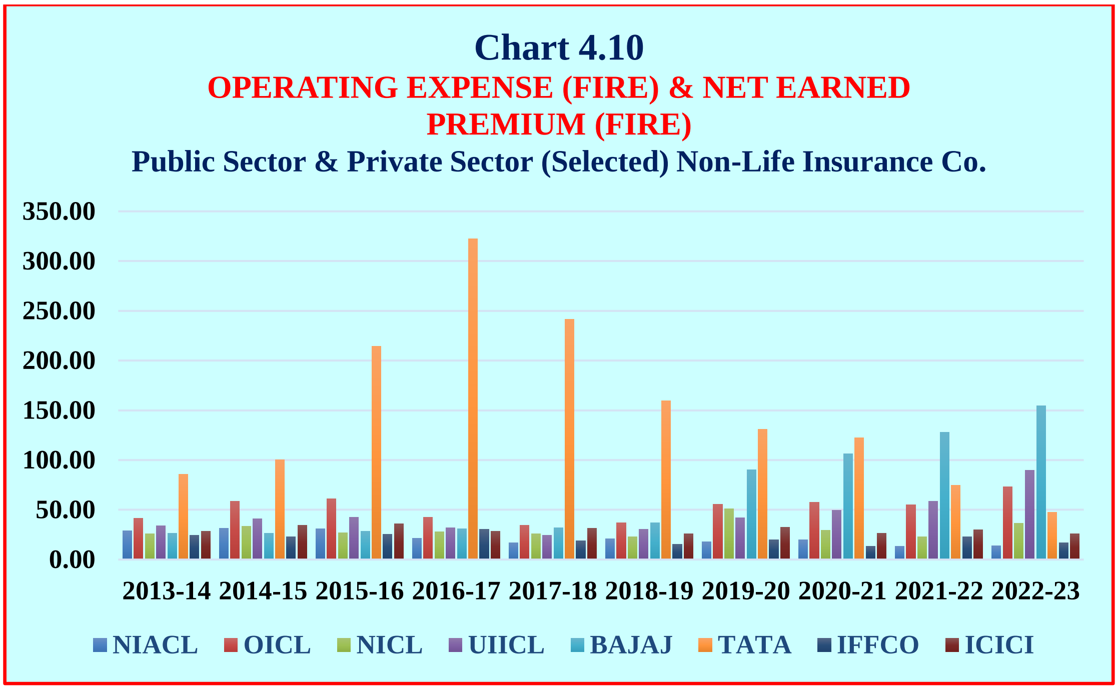
YEAR	BAJAJ ALLIANZ GENERAL INSURANCE CO. LTD.	TATA AIG GENERAL INSURANCE CO. LTD.	IFFCO TOKIO GENERAL INSURANCE CO. LTD.	ICICI LOMBARD GENERAL INSURANCE CO. LTD.
2013-14	26.22	85.70	24.65	28.36
2014-15	26.50	100.48	22.90	34.55
2015-16	28.42	214.18	25.59	36.21
2016-17	31.20	322.35	30.22	28.63
2017-18	31.91	241.75	19.01	31.63
2018-19	37.07	159.67	15.60	26.07
2019-20	90.22	130.85	19.99	32.37
2020-21	106.27	122.59	13.14	26.60
2021-22	127.89	74.74	23.14	30.13
2022-23	154.73	47.78	17.08	25.85

ASSESSMENT OF THE TABULATED INFORMATION

- **Bajaj Allianz General Insurance Co. Ltd.** ratio of Operating Expense (Fire Business) to Operating Income (Fire Business) exhibited an increasing trend over the period from 2013-14 to 2022-23. The ratios increased from 26.22% to 154.73%, indicating a significant rise in operating expenses relative to operating income.
- **Tata AIG General Insurance Co. Ltd.** showed fluctuating ratios from 85.70% to 47.78% during the same period, with varying levels of operating expenses compared to operating income. The ratios fluctuated, suggesting changes in the efficiency of managing operating expenses for TATA AIG GENERAL INSURANCE.
- **IFFCO TOKIO General Insurance Co. Ltd.** exhibited fluctuating ratios ranging from 13.14% to 30.22%, with variations in operating expenses relative to operating income. The company experienced fluctuations in managing operating expenses over the years.

ICICI Lombard General Insurance Co. Ltd. ratios varied from 25.85% to 36.21% over the period, indicating fluctuations in operating expenses compared to operating income. The ratios showed some variability, reflecting changes in the efficiency of cost management for ICICI Lombard General Insurance Co. Ltd.

Overall, the analysis of the Ratio of Operating Expense (Fire Business) and Operating Income (Fire Business) for the selected Private Sector Non-Life Insurance Companies in India highlights varying trends in managing operating expenses relative to operating income. Companies like Bajaj Allianz General Insurance Co. Ltd. and Tata AIG General Insurance Co. Ltd. experienced significant fluctuations in these ratios, indicating the importance of efficient cost management strategies. Maintaining a balance between operating expenses and operating income is essential for ensuring profitability and operational efficiency for these insurance companies.



Data Examination (Statistical Tools)

Null Hypothesis (H0)	:	There is no statistically significant difference in **Operating Ratio (Fire)** among the selected public and private non-life insurance firms in India with respect to **Operating Expense (Fire) to Net Earned Premium (Fire).**

Alternative Hypothesis (H1) : There is statistically significant difference in **Operating Ratio (Fire)** among the selected public and private non-life insurance firms in India with respect to **Operating Expense (Fire) to Net Earned Premium (Fire).**

COMPUTATION OF VARIANCE USING ONE WAY ANOVA

STEP-1: Ratio of Operating Expense (Fire) and Net Earned Premium (Fire) of Public Sector & Private Sector (Selected) Non-Life Insurance Co.

YEAR	NIACL	OICL	NICL	UIICL	BAJAJ	TATA	IFFCO	ICICI
2013-14	29.06	41.67	25.90	34.06	26.22	85.70	24.65	28.36
2014-15	31.45	58.42	33.67	40.86	26.50	100.48	22.90	34.55
2015-16	31.20	60.95	27.12	42.54	28.42	214.18	25.59	36.21
2016-17	21.43	42.51	28.11	32.01	31.20	322.35	30.22	28.63
2017-18	16.96	34.56	25.98	24.45	31.91	241.75	19.01	31.63
2018-19	20.70	36.84	22.87	30.35	37.07	159.67	15.60	26.07
2019-20	17.76	55.64	51.00	42.02	90.22	130.85	19.99	32.37
2020-21	19.94	57.66	29.42	49.38	106.27	122.59	13.14	26.60
2021-22	13.46	55.21	23.15	58.42	127.89	74.74	23.14	30.13
2022-23	14.08	73.06	36.42	89.53	154.73	47.78	17.08	25.85

STEP-2: Consolidated Output of One - Way ANOVA.

GROUPS	COUNT	SUM	AVERAGE	VARIANCE
NIACL	10	216.0539557	21.60539557	45.29005088
OICL	10	516.5186913	51.65186913	150.0063477
NICL	10	303.6397817	30.36397817	70.82894132
UIICL	10	443.608384	44.3608384	348.3681915
BAJAJ	10	660.4366688	66.04366688	2408.498266
TATA	10	1500.078422	150.0078422	7350.43039
IFFCO	10	211.3270324	21.13270324	26.53130122
ICICI	10	300.4145182	30.04145182	12.93699189

"F"-TEST ONE WAY ANOVA
TABLE 4.51

OPERATING EXPENSE (FIRE) AND NET EARNED PREMIUM (FIRE)

Public & Private Sector (Selected) Non-Life Insurance Co.

[Period from 2013-14 to 2022-23]

Source of Differences	Sum of the Square of Deviation	Degree of Freedom	M.S.S.	Fc	Ft
Between Group	126880.79	7	18125.83	13.93	2.14
Within Group	93716.01	72	1301.61		
Total	**220596.80**	**79**			

KEY OBSERVATIONS FROM THE TABLE:

- The ANOVA test results suggest that there are statistically significant differences in the ratio of Operating Expense (Fire Business) to Net Earned Premium (Fire Business) among the selected public and private sector non-life insurance companies in India.
- The calculated F-value (Fc = 13.926) exceeds the critical F-value (Ft = 2.140), indicating that the variations in the operating expense to Net Earned Premium ratios are not due to random chance but reflect meaningful differences among the companies.

STATISTICAL DECISION:

The rejection of the null hypothesis based on the F-test results implies that the differences observed in the ratio of Operating Expense (Fire Business) to Net Earned Premium (Fire Business) are statistically significant.

IMPLICATIONS OF THE FINDINGS:

- Significant variations in operating expense to Net Earned Premium ratios suggest differing cost structures, operational efficiencies, and expense management among selected insurers in the fire business segment.
- These differences may reflect varying levels of cost control, operational effectiveness, and premium generation efficiency between public and private sector insurers.

- Understanding these variations offers insights into insurers' cost management strategies, operational performance, and profitability in the fire insurance segment.

CONCLUSION:

The ANOVA analysis reveals substantial differences in the ratio of Operating Expense (Fire) to Net Earned Premium (Fire) across the selected public and private sector non-life insurance companies in India. These variations underscore the diverse cost structures and operational efficiencies of insurers in the fire insurance business. The statistically significant differences observed in this ratio highlight the distinct approaches to expense management, operational effectiveness, and financial performance within this specific business segment, which can impact the companies' profitability and competitiveness in the market.

(B) OPERATING ANALYSIS - MARINE BUSINESS

TABLE 4.52

The Statement Showing Operating Expense (Marine) and Net Earned Premium (Marine) of Selected Sample Public Sector Non-Life Insurance Companies (Period from 2013-14 to 2022-23)

(Figures in Thousand)

YEAR	THE NEW INDIA ASSURANCE CO. LTD.		THE ORIENTAL INSURANCE CO. LTD.		NATIONAL INSURANCE CO. LTD.		UNITED INDIA INSURANCE CO. LTD.	
	Optg. Exp (Marine)	Net Prem. (Marine)	Optg. Exp (Marine)	Net Prem. (Marine)	Optg. Exp (Marine)	Net Prem. (Marine)	Optg. Exp (Marine)	Net Prem. (Marine)
2013-14	1218890	4610226	882087	2855003	491322	1912925	978443	3000175
2014-15	1176129	6110405	1016348	3001854	580283	2013777	1000958	3045389
2015-16	1056041	4788186	996478	2901842	363178	2057194	804108	2887659
2016-17	782710	4673115	416748	2470270	268035	1728068	576073	2719678
2017-18	738340	3837519	295331	2301536	210340	1593937	412399	2327344
2018-19	862984	4303450	490216	2083963	256480	1438919	465944	2225124
2019-20	715261	4503367	727839	1974473	473196	1532595	589350	1966314
2020-21	879772	4377913	638601	2029232	259578	1285421	632782	1964017
2021-22	738090	5159264	703533	2100146	234644	1405619	757898	2029094
2022-23	824665	5554910	1162503	2507634	451321	1791729	1175818	2267831

Source: Annual Report of respective company's website

TABLE 4.53

The Statement Showing Ratio of Operating Expense (Marine) and Net Earned Premium (Marine) of Selected Sample Public Sector Non-Life Insurance Companies (Period from 2013-14 to 2022-23)

(Figures in %)

YEAR	THE NEW INDIA ASSURANCE CO. LTD.	THE ORIENTAL INSURANCE CO. LTD.	NATIONAL INSURANCE CO. LTD.	UNITED INDIA INSURANCE CO. LTD.
2013-14	26.44	30.90	25.68	32.61
2014-15	19.25	33.86	28.82	32.87
2015-16	22.06	34.34	17.65	27.85
2016-17	16.75	16.87	15.51	21.18
2017-18	19.24	12.83	13.20	17.72
2018-19	20.05	23.52	17.82	20.94
2019-20	15.88	36.86	30.88	29.97
2020-21	20.10	31.47	20.19	32.22
2021-22	14.31	33.50	16.69	37.35
2022-23	14.85	46.36	25.19	51.85

ASSESSMENT OF THE TABULATED INFORMATION

- **The New India Assurance Co. Ltd.** ratio of Operating Expense (Marine Business) to Net Earned Premium (Marine Business) fluctuated over the period from 2013-14 to 2022-23. The ratios ranged from 14.31% to 26.44%, indicating varying levels of operating expenses relative to Net Earned Premium.
- **The Oriental Insurance Co. Ltd.** showed fluctuating ratios from 12.83% to 46.36% during the same period, reflecting significant fluctuations in operating expenses compared to Net Earned Premium. The ratios varied, suggesting changes in the efficiency of managing operating expenses for OICL.
- **National Insurance Co. Ltd.** exhibited ratios ranging from 13.20% to 30.88%, with fluctuations in operating expenses relative to Net Earned Premium. The company experienced varying levels of operating expenses compared to Net Earned Premium over the years.
- **United India Insurance Co. Ltd.** ratios varied from 17.72% to 51.85%, showcasing a wide range of operating expenses to Net Earned Premium ratios. The company

experienced significant fluctuations in managing operating expenses relative to Net Earned Premium across the years.

Overall, the Ratio of Operating Expense (Marine Business) and Net Earned Premium (Marine Business) for the selected Public Sector Non-Life Insurance Companies in India highlights fluctuations in the efficiency of managing operating expenses relative to Net Earned Premium. Companies like OICL and UIICL experienced significant fluctuations in these ratios, indicating the importance of effective cost management strategies in the marine business segment. Maintaining a balance between operating expenses and Net Earned Premium is crucial for ensuring profitability and operational efficiency for these insurance companies in the marine business segment.

TABLE 4.54

The Statement Showing Operating Expense (Marine) and Net Earned Premium (Marine) of Selected Sample Private Sector Non-Life Insurance Companies (Period from 2013-14 to 2022-23)

(Figures in Thousand)

YEAR	BAJAJ ALLIANZ GENERAL INSURANCE CO. LTD.		TATA AIG GENERAL INSURANCE CO. LTD.		IFFCO TOKIO GENERAL INSURANCE CO. LTD.		ICICI LOMBARD GENERAL INSURANCE CO. LTD.	
	Optg. Exp (Marine)	Net Prem. (Marine)	Optg. Exp (Marine)	Net Prem. (Marine)	Optg. Exp (Marine)	Net Prem. (Marine)	Optg. Exp (Marine)	Net Prem. (Marine)
2013-14	155736	798898	310101	2185579	95779	429158	420241	1566095
2014-15	166908	720087	349392	2282199	98653	490949	488187	1601131
2015-16	216190	848821	436891	2258174	90759	396139	583863	1849297
2016-17	211724	839750	295912	2319275	150046	534270	454648	1920765
2017-18	182269	883642	251169	2477096	115854	576073	382477	1957559
2018-19	228936	1038593	268768	2803765	91415	683071	642468	2367293
2019-20	316688	1173990	312846	2987690	123561	736848	431824	2563182
2020-21	275428	1068110	362415	2972855	116327	755364	435859	2601528
2021-22	328843	1198309	358663	4194389	197047	1149565	755053	3768037
2022-23	507074	1637849	1505735	5213357	216563	1284094	707573	4387088

Source: Annual Report of respective company's website

TABLE 4.55

The Statement Showing Ratio of Operating Expense (Marine) and Net Earned Premium (Marine) of Selected Sample Private Sector Non-Life Insurance Companies (Period from 2013-14 to 2022-23)

(Figures in %)

YEAR	BAJAJ ALLIANZ GENERAL INSURANCE CO. LTD.	TATA AIG GENERAL INSURANCE CO. LTD.	IFFCO TOKIO GENERAL INSURANCE CO. LTD.	ICICI LOMBARD GENERAL INSURANCE CO. LTD.
2013-14	19.49	14.19	22.32	26.83
2014-15	23.18	15.31	20.09	30.49
2015-16	25.47	19.35	22.91	31.57
2016-17	25.21	12.76	28.08	23.67
2017-18	20.63	10.14	20.11	19.54
2018-19	22.04	9.59	13.38	27.14
2019-20	26.98	10.47	16.77	16.85
2020-21	25.79	12.19	15.40	16.75
2021-22	27.44	8.55	17.14	20.04
2022-23	30.96	28.88	16.87	16.13

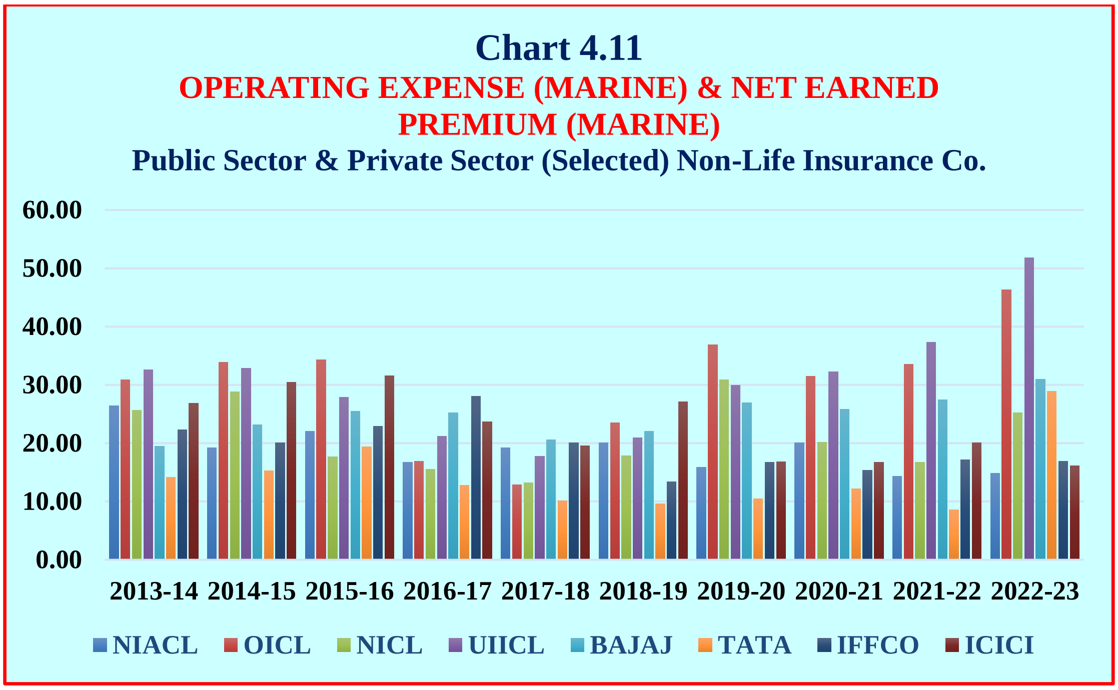
ASSESSMENT OF THE TABULATED INFORMATION

- **Bajaj Allianz General Insurance Co. Ltd.** ratio of Operating Expense (Marine Business) to Net Earned Premium (Marine Business) showed an increasing trend over the period from 2013-14 to 2022-23. The ratios increased from 19.49% to 30.96%, indicating a rise in operating expenses relative to Net Earned Premium.
- **Tata AIG General Insurance Co. Ltd.** exhibited fluctuating ratios from 8.55% to 28.88% during the same period, with varying levels of operating expenses compared to Net Earned Premium. The ratios fluctuated, suggesting changes in the efficiency of managing operating expenses for TATA AIG GENERAL INSURANCE.
- **IFFCO TOKIO General Insurance Co. Ltd.** showed varying ratios ranging from 13.38% to 28.08%, with fluctuations in operating expenses relative to Net Earned Premium. The company experienced variations in managing operating expenses over the years.

ICICI Lombard General Insurance Co. Ltd. ratios varied from 16.13% to 31.57% over the period, indicating fluctuations in operating expenses compared to Net Earned

Premium. The ratios showed some variability, reflecting changes in the efficiency of cost management for ICICI Lombard General Insurance Co. Ltd.

Overall, the Ratio of Operating Expense (Marine Business) and Net Earned Premium (Marine Business) for the selected Private Sector Non-Life Insurance Companies in India highlights varying trends in managing operating expenses relative to Net Earned Premium. Companies like Bajaj Allianz General Insurance Co. Ltd. and Tata AIG General Insurance Co. Ltd. experienced significant fluctuations in these ratios, indicating the importance of efficient cost management strategies. Maintaining a balance between operating expenses and Net Earned Premium is essential for ensuring profitability and operational efficiency for these insurance companies in the marine business segment.



Data Examination (Statistical Tools)

Null Hypothesis (H0) : There is no statistically significant difference in **Operating Ratio (Marine)** among the selected public and private non-life insurance firms in India with respect to **Operating Expense (Marine) to Net Earned Premium (Marine).**

Alternative Hypothesis (H1) : There is statistically significant difference in **Operating Ratio (Marine)** among the selected public and private non-life insurance firms in India with respect to **Operating Expense (Marine) to Net Earned Premium (Marine).**

COMPUTATION OF VARIANCE USING ONE WAY ANOVA

STEP-1: Ratio of Operating Expense (Marine) and Net Earned Premium (Marine) of Public Sector & Private Sector (Selected) Non-Life Insurance Co.

YEAR	NIACL	OICL	NICL	UIICL	BAJAJ	TATA	IFFCO	ICICI
2013-14	26.44	30.90	25.68	32.61	19.49	14.19	22.32	26.83
2014-15	19.25	33.86	28.82	32.87	23.18	15.31	20.09	30.49
2015-16	22.06	34.34	17.65	27.85	25.47	19.35	22.91	31.57
2016-17	16.75	16.87	15.51	21.18	25.21	12.76	28.08	23.67
2017-18	19.24	12.83	13.20	17.72	20.63	10.14	20.11	19.54
2018-19	20.05	23.52	17.82	20.94	22.04	9.59	13.38	27.14
2019-20	15.88	36.86	30.88	29.97	26.98	10.47	16.77	16.85
2020-21	20.10	31.47	20.19	32.22	25.79	12.19	15.40	16.75
2021-22	14.31	33.50	16.69	37.35	27.44	8.55	17.14	20.04
2022-23	14.85	46.36	25.19	51.85	30.96	28.88	16.87	16.13

STEP-2: Consolidated Output of One - Way ANOVA.

GROUPS	COUNT	SUM	AVERAGE	VARIANCE
NIACL	10	188.9148015	18.89148015	13.45058343
OICL	10	300.509067	30.0509067	96.96257362
NICL	10	211.6373553	21.16373553	36.59343916
UIICL	10	304.5590626	30.45590626	96.06131961
BAJAJ	10	247.1886698	24.71886698	11.88674801
TATA	10	141.4247261	14.14247261	36.9959767
IFFCO	10	193.0764021	19.30764021	18.646205
ICICI	10	229.0119958	22.90119958	34.06750952

"F"-TEST ONE WAY ANOVA
TABLE 4.56

OPERATING EXPENSE (MARINE) AND NET EARNED PREMIUM (MARINE)

Public & Private Sector (Selected) Non-Life Insurance Co.

[Period from 2013-14 to 2022-23]

Source of Differences	Sum of the Square of Deviation	Degree of Freedom	M.S.S.	Fc	Ft
Between Group	2199.10	7	314.16	7.291	2.14
Within Group	3101.98	72	43.08		
Total	**5301.08**	**79**			

KEY OBSERVATIONS FROM THE TABLE:

- The ANOVA test results suggest that there are statistically significant differences in the ratio of Operating Expense (Marine Business) to Net Earned Premium (Marine Business) among the selected public and private sector non-life insurance companies in India.
- The calculated F-value (Fc = 7.292) exceeds the critical F-value (Ft = 2.140), indicating that the variations in the operating expense to Net Earned Premium ratios are not due to random chance but reflect meaningful differences among the companies.

STATISTICAL DECISION:

The rejection of the null hypothesis based on the F-test results implies that the differences observed in the ratio of Operating Expense (Marine Business) to Net Earned Premium (Marine Business) are statistically significant.

IMPLICATIONS OF THE FINDINGS:

- Significant variations in the operating expense to Net Earned Premium ratios suggest differing cost structures, operational efficiencies, and expense management practices among the selected insurers in the marine business segment.

- These findings may indicate varying levels of cost control, operational effectiveness, and efficiency in premium generation between public and private sector non-life insurance companies in the marine insurance business.
- Understanding these differences can provide insights into the insurers' cost management strategies, operational performance, and profitability in the marine insurance segment.

CONCLUSION:

The ANOVA analysis reveals substantial differences in the ratio of Operating Expense (Marine Business) to Net Earned Premium (Marine Business) across the selected public and private sector non-life insurance companies in India. These variations underscore the diverse cost structures and operational efficiencies of insurers in the marine insurance business. The statistically significant differences observed in this ratio highlight the distinct approaches to expense management, operational effectiveness, and financial performance within this specific business segment, which can impact the companies' profitability and competitiveness in the market.

(C) OPERATING ANALYSIS - MISC. BUSINESS

TABLE 4.57

The Statement Showing Operating Expense (Misc.) and Net Earned Premium (Misc.) of Selected Sample Public Sector Non-Life Insurance Companies (Period from 2013-14 to 2022-23)

(Figures in Thousand)

YEAR	THE NEW INDIA ASSURANCE CO. LTD.		THE ORIENTAL INSURANCE CO. LTD.		NATIONAL INSURANCE CO. LTD.		UNITED INDIA INSURANCE CO. LTD.	
	Optg. Exp (Misc.)	Net Prem. (Misc.)	Optg. Exp (Misc.)	Net Prem. (Misc.)	Optg. Exp (Misc.)	Net Prem. (Misc.)	Optg. Exp (Misc.)	Net Prem. (Misc.)
2013-14	19893416	89512257	14120077	50080323	16930441	77701469	17378616	64944151
2014-15	23484915	108169227	19016615	55349582	23840553	89434655	4444155	77052878
2015-16	28051412	125090030	21357048	61681264	32675512	98292017	25073213	89434153
2016-17	33296592	155355332	24544159	75258479	30905662	98670555	26395412	109140094
2017-18	31627180	174826714	23758840	88074718	26995013	104322774	23470706	117713735
2018-19	36072040	192746483	21947335	97911755	24138090	95590227	27796759	121137936
2019-20	33655810	207510050	29964711	100561233	40079923	88771408	30388346	127502017
2020-21	47334791	229011359	25546132	100981772	31786056	103309450	34045349	128260729
2021-22	36114099	256910405	27054740	106785937	25665299	112527167	35336779	125829337
2022-23	38518506	268140664	44369111	121984144	47311427	115779753	54555017	140969822

Source: Annual Report of respective company's website

TABLE 4.58

The Statement Showing Ratio of Operating Expense (Misc.) and Net Earned Premium (Misc.) of Selected Sample Public Sector Non-Life Insurance Companies (Period from 2013-14 to 2022-23)

(Figures in %)

YEAR	THE NEW INDIA ASSURANCE CO. LTD.	THE ORIENTAL INSURANCE CO. LTD.	NATIONAL INSURANCE CO. LTD.	UNITED INDIA INSURANCE CO. LTD.
2013-14	22.22	28.19	21.79	26.76
2014-15	21.71	34.36	26.66	5.77
2015-16	22.42	34.62	33.24	28.04
2016-17	21.43	32.61	31.32	24.18
2017-18	18.09	26.98	25.88	19.94
2018-19	18.71	22.42	25.25	22.95
2019-20	16.22	29.80	45.15	23.83
2020-21	20.67	25.30	30.77	26.54
2021-22	14.06	25.34	22.81	28.08
2022-23	14.37	36.37	40.86	38.70

ASSESSMENT OF THE TABULATED INFORMATION

- **The New India Assurance Co. Ltd.** ratio of Operating Expense (Misc. Business) to Net Earned Premium (Misc. Business) displayed fluctuations over the period from 2013-14 to 2022-23. The ratios ranged from 14.06% to 22.42%, indicating varying levels of operating expenses relative to Net Earned Premium.
- **The Oriental Insurance Co. Ltd.** showed fluctuating ratios from 25.30% to 36.37% during the same period, reflecting significant fluctuations in operating expenses compared to Net Earned Premium. The ratios varied, suggesting changes in the efficiency of managing operating expenses for OICL.
- **National Insurance Co. Ltd.** exhibited ratios ranging from 21.79% to 45.15%, with fluctuations in operating expenses relative to Net Earned Premium. The company experienced varying levels of operating expenses compared to Net Earned Premium over the years.
- **United India Insurance Co. Ltd.** ratios varied from 19.94% to 38.70%, showcasing a wide range of operating expenses to Net Earned Premium ratios. The company

experienced significant fluctuations in managing operating expenses relative to Net Earned Premium across the years.

Overall, the analysis of the Ratio of Operating Expense (Misc. Business) and Net Earned Premium (Misc. Business) for the selected Public Sector Non-Life Insurance Companies in India highlights fluctuations in the efficiency of managing operating expenses relative to Net Earned Premium. Companies like NICL and UIICL experienced significant fluctuations in these ratios, indicating the need for effective cost management strategies in the miscellaneous business segment. Maintaining a balance between operating expenses and Net Earned Premium is crucial for the financial health and sustainability of these insurance companies in the miscellaneous business segment.

TABLE 4.59

The Statement Showing Operating Expense (Misc.) and Net Earned Premium (Misc.) of Selected Sample Private Sector Non-Life Insurance Companies (Period from 2013-14 to 2022-23)

(Figures in Thousand)

YEAR	BAJAJ ALLIANZ GENERAL INSURANCE CO. LTD.		TATA AIG GENERAL INSURANCE CO. LTD.		IFFCO TOKIO GENERAL INSURANCE CO. LTD.		ICICI LOMBARD GENERAL INSURANCE CO. LTD.	
	Optg. Exp (Misc.)	Net Prem. (Misc.)	Optg. Exp (Misc.)	Net Prem. (Misc.)	Optg. Exp (Misc.)	Net Prem. (Misc.)	Optg. Exp (Misc.)	Net Prem. (Misc.)
2013-14	7827733	32685188	4508572	14274074	4832785	18729594	11290140	40428089
2014-15	8877690	36132710	4954155	17434965	5994882	21791503	12988453	39663704
2015-16	10719587	39729149	5895142	18101562	7085356	27204054	16167858	45371864
2016-17	12852399	46766837	7387200	21417685	8848582	34172398	19011547	58478198
2017-18	13295813	57905757	9036149	30131904	6929813	31305599	20280384	65718877
2018-19	17146514	67182732	12522728	41913960	5404342	39148797	18843739	79807345
2019-20	20468682	78208275	13099243	43960082	7200122	44924079	21613523	88736170
2020-21	17461593	70601204	14280386	43938463	7598485	47400555	25625827	92725020
2021-22	18093628	74072951	18898938	58027828	8967392	53255829	36413707	119808088
2022-23	21922454	75862351	22858732	72379317	10657200	61259625	42754158	137319478

Source: Annual Report of respective company’s website

TABLE 4.60

The Statement Showing Ratio of Operating Expense (Misc.) and Net Earned Premium (Misc.) of Selected Sample Private Sector Non-Life Insurance Companies (Period from 2013-14 to 2022-23)

(Figures in %)

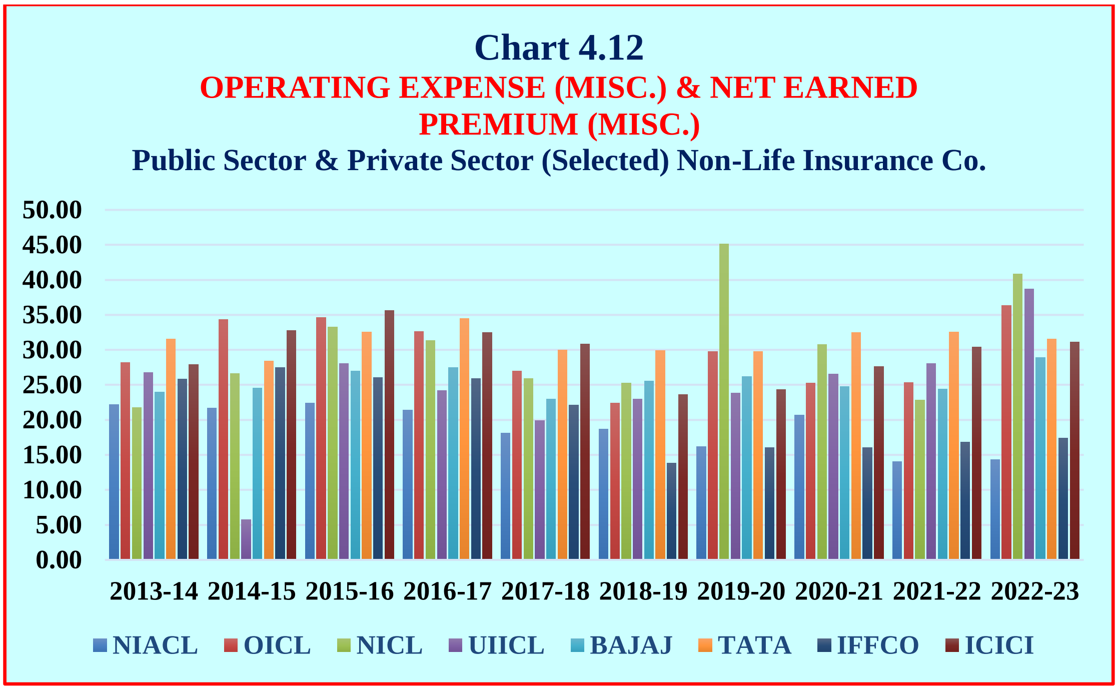
YEAR	BAJAJ ALLIANZ GENERAL INSURANCE CO. LTD.	TATA AIG GENERAL INSURANCE CO. LTD.	IFFCO TOKIO GENERAL INSURANCE CO. LTD.	ICICI LOMBARD GENERAL INSURANCE CO. LTD.
2013-14	23.95	31.59	25.80	27.93
2014-15	24.57	28.42	27.51	32.75
2015-16	26.98	32.57	26.05	35.63
2016-17	27.48	34.49	25.89	32.51
2017-18	22.96	29.99	22.14	30.86
2018-19	25.52	29.88	13.80	23.61
2019-20	26.17	29.80	16.03	24.36
2020-21	24.73	32.50	16.03	27.64
2021-22	24.43	32.57	16.84	30.39
2022-23	28.90	31.58	17.40	31.13

ASSESSMENT OF THE TABULATED INFORMATION

- **Bajaj Allianz General Insurance Co. Ltd.** ratio of Operating Expense (Misc. Business) to Net Earned Premium (Misc. Business) exhibited fluctuations over the period from 2013-14 to 2022-23. The ratios ranged from 23.95% to 28.90%, indicating varying levels of operating expenses relative to Net Earned Premium.
- **Tata AIG General Insurance Co. Ltd.** showed ratios ranging from 28.42% to 32.57% during the same period, with fluctuations in operating expenses compared to Net Earned Premium. The ratios fluctuated, suggesting changes in the efficiency of managing operating expenses for TATA AIG GENERAL INSURANCE.
- **IFFCO TOKIO General Insurance Co. Ltd.** exhibited ratios ranging from 13.80% to 26.05%, with varying levels of operating expenses relative to Net Earned Premium. The company experienced fluctuations in managing operating expenses over the years. **ICICI Lombard General Insurance Co. Ltd.** ratios varied from 23.61% to 31.13% over the period, indicating fluctuations in operating expenses compared to Net Earned

Premium. The ratios showed variability, reflecting changes in the efficiency of cost management for ICICI Lombard General Insurance Co. Ltd.

Overall, the Ratio of Operating Expense (Misc. Business) and Net Earned Premium (Misc. Business) for the selected Private Sector Non-Life Insurance Companies in India highlights fluctuations in managing operating expenses relative to Net Earned Premium. Companies like Tata AIG General Insurance Co. Ltd. and ICICI Lombard General Insurance Co. Ltd. experienced significant fluctuations in these ratios, indicating the importance of effective cost management strategies. Maintaining a balance between operating expenses and Net Earned Premium is essential for ensuring profitability and operational efficiency for these insurance companies in the miscellaneous business segment.



Data Examination (Statistical Tools)

Null Hypothesis (H0)	:	There is no statistically significant difference in **Operating Ratio (Misc.)** among the selected public and private non-life insurance firms in India with respect to **Operating Expense (Misc.) to Net Earned Premium (Misc.).**

Alternative Hypothesis (H1) : There is statistically significant difference in **Operating Ratio (Misc.)** among the selected public and private non-life insurance firms in India with respect to **Operating Expense (Misc.) to Net Earned Premium (Misc.).**

COMPUTATION OF VARIANCE USING ONE WAY ANOVA

STEP-1: Ratio of Operating Expense (Misc.) and Net Earned Premium (Misc.) of Public Sector & Private Sector (Selected) Non-Life Insurance Co.

YEAR	NIACL	OICL	NICL	UIICL	BAJAJ	TATA	IFFCO	ICICI
2013-14	22.22	28.19	21.79	26.76	23.95	31.59	25.80	27.93
2014-15	21.71	34.36	26.66	5.77	24.57	28.42	27.51	32.75
2015-16	22.42	34.62	33.24	28.04	26.98	32.57	26.05	35.63
2016-17	21.43	32.61	31.32	24.18	27.48	34.49	25.89	32.51
2017-18	18.09	26.98	25.88	19.94	22.96	29.99	22.14	30.86
2018-19	18.71	22.42	25.25	22.95	25.52	29.88	13.80	23.61
2019-20	16.22	29.80	45.15	23.83	26.17	29.80	16.03	24.36
2020-21	20.67	25.30	30.77	26.54	24.73	32.50	16.03	27.64
2021-22	14.06	25.34	22.81	28.08	24.43	32.57	16.84	30.39
2022-23	14.37	36.37	40.86	38.70	28.90	31.58	17.40	31.13

STEP-2: Consolidated Output of One - Way ANOVA.

GROUPS	COUNT	SUM	AVERAGE	VARIANCE
NIACL	10	189.9085601	18.99085601	10.30423715
OICL	10	295.9849355	29.59849355	22.22720642
NICL	10	303.7282629	30.37282629	58.76189688
UIICL	10	244.7928078	24.47928078	67.8789968
BAJAJ	10	255.694577	25.5694577	3.281012856
TATA	10	313.3743449	31.33743449	3.25669834
IFFCO	10	207.4857077	20.74857077	27.44611697
ICICI	10	296.8099456	29.68099456	14.36593838

"F"-TEST ONE WAY ANOVA
TABLE 4.61

OPERATING EXPENSE (MISC.) AND NET EARNED PREMIUM (MISC.)

Public & Private Sector (Selected) Non-Life Insurance Co.

[Period from 2013-14 to 2022-23]

Source of Differences	Sum of the Square of Deviation	Degree of Freedom	M.S.S.	Fc	Ft
Between Group	1523.48	7	217.64	8.39	2.14
Within Group	1867.70	72	25.94		
Total	**3391.18**	**79**			

KEY OBSERVATIONS FROM THE TABLE:

- The ANOVA test results suggest that there are statistically significant differences in the ratio of Operating Expense (Misc. Business) to Net Earned Premium (Misc. Business) among the selected public and private sector non-life insurance companies in India.
- The calculated F-value (Fc = 8.390) exceeds the critical F-value (Ft = 2.140), indicating that the variations in the operating expense to Net Earned Premium ratios are not due to random chance but reflect meaningful differences among the companies.

STATISTICAL DECISION:

The rejection of the null hypothesis based on the F-test results implies that the differences observed in the ratio of Operating Expense (Misc. Business) to Net Earned Premium (Misc. Business) are statistically significant.

IMPLICATIONS OF THE FINDINGS:

- Significant variations in the operating expense to Net Earned Premium ratios suggest differing cost structures, operational efficiencies, and expense management practices among the selected insurers in the miscellaneous business segment.

- These findings may indicate varying levels of cost control, operational effectiveness, and efficiency in premium generation between public and private sector non-life insurance companies in the miscellaneous insurance business.
- Understanding these differences can provide insights into the insurers' cost management strategies, operational performance, and profitability in the miscellaneous business segment.

CONCLUSION:

The ANOVA analysis reveals substantial differences in the ratio of Operating Expense (Misc. Business) to Net Earned Premium (Misc. Business) across the selected public and private sector non-life insurance companies in India. These variations underscore the diverse cost structures and operational efficiencies of insurers in the miscellaneous business segment. The statistically significant differences observed in this ratio highlight the distinct approaches to expense management, operational effectiveness, and financial performance within this specific business segment, which can impact the companies' profitability and competitiveness in the market.

(D) OPERATING ANALYSIS - ALL BUSINESS

TABLE 4.62

The Statement Showing Operating Expense and Net Earned Premium of Selected Sample Public Sector Non-Life Insurance Companies (Period from 2013-14 to 2022-23)

(Figures in Thousand)

YEAR	THE NEW INDIA ASSURANCE CO. LTD.		THE ORIENTAL INSURANCE CO. LTD.		NATIONAL INSURANCE CO. LTD.		UNITED INDIA INSURANCE CO. LTD.	
	Optg. Exp (All)	Net Prem. (All)	Optg. Exp (All)	Net Prem. (All)	Optg. Exp (All)	Net Prem. (All)	Optg. Exp (All)	Net Prem. (All)
2013-14	26299068	111968746	17754310	59539683	19289497	86826698	21112347	76032991
2014-15	30597548	133152912	23479765	64251650	26956950	98981561	8739812	88162289
2015-16	35607529	150712330	25800909	70239021	35090113	107913822	29240659	100228655
2016-17	38221107	179353361	27555446	83832645	33320658	108036271	29691163	120356103
2017-18	35696786	198303938	26094326	96280064	28959007	112665548	25978043	128609842
2018-19	40881712	216116577	24655194	106015259	25989057	104002258	30594077	131045080
2019-20	38741015	236621833	34425350	109244417	43880121	96827149	34329784	137445418
2020-21	54272322	263763350	30428114	110369827	34346282	112414832	39050237	139079335
2021-22	40698712	290646997	31897782	116383688	28051615	123226679	41409299	136956001
2022-23	43645484	304249546	51389416	132509868	51219324	127061631	63076772	151442860

Source: Annual Report of respective company’s website

TABLE 4.63

The Statement Showing Ratio of Operating Expense and Net Earned Premium of Selected Sample Public Sector Non-Life Insurance Companies (Period from 2013-14 to 2022-23)

(Figures in %)

YEAR	THE NEW INDIA ASSURANCE CO. LTD.	THE ORIENTAL INSURANCE CO. LTD.	NATIONAL INSURANCE CO. LTD.	UNITED INDIA INSURANCE CO. LTD.
2013-14	23.49	29.82	22.22	27.77
2014-15	22.98	36.54	27.23	9.91
2015-16	23.63	36.73	32.52	29.17
2016-17	21.31	32.87	30.84	24.67
2017-18	18.00	27.10	25.70	20.20
2018-19	18.92	23.26	24.99	23.35
2019-20	16.37	31.51	45.32	24.98
2020-21	20.58	27.57	30.55	28.08
2021-22	14.00	27.41	22.76	30.24
2022-23	14.35	38.78	40.31	41.65

ASSESSMENT OF THE TABULATED INFORMATION

- **The New India Assurance Co. Ltd.** ratio of Operating Expense (All Business) to Net Earned Premium (All Business) exhibited fluctuations from 16.37% in 2019-20 to 23.49% in 2013-14. The company showed a declining trend in the ratio over the years, reflecting varying levels of operating expenses relative to Net Earned Premium.
- **The Oriental Insurance Co. Ltd.** experienced significant fluctuations in the ratio, ranging from 27.41% in 2021-22 to 38.78% in 2022-23. The company demonstrated a notable increase in the ratio in recent years, indicating potential shifts in expense management practices.
- **National Insurance Co. Ltd.** ratio varied from 22.76% in 2021-22 to 45.32% in 2019-20, showing substantial fluctuations. The company saw a significant spike in the ratio in 2019-20, suggesting unique challenges in managing operating expenses during that period.
- **United India Insurance Co. Ltd.** ratio ranged from 20.20% in 2017-18 to 41.65% in 2022-23, displaying fluctuations over the years. The company experienced varying

levels of operating expenses relative to Net Earned Premiums, indicating potential changes in expense management strategies.

Overall, the analysis reveals fluctuations in managing operating expenses relative to Net Earned Premium for the selected Public Sector Non-Life Insurance Companies in India. Companies like NIACL and NICL faced significant variations in these ratios, underscoring the importance of effective cost management strategies. Maintaining a balance between operating expenses and Net Earned Premiums is crucial for ensuring profitability and operational efficiency in the non-life insurance sector.

TABLE 4.64

The Statement Showing Operating Expense and Net Earned Premium of Selected Sample Private Sector Non-Life Insurance Companies (Period from 2013-14 to 2022-23)

(Figures in Thousand)

YEAR	BAJAJ ALLIANZ GENERAL INSURANCE CO. LTD.		TATA AIG GENERAL INSURANCE CO. LTD.		IFFCO TOKIO GENERAL INSURANCE CO. LTD.		ICICI LOMBARD GENERAL INSURANCE CO. LTD.	
	Optg. Exp (All)	Net Prem. (All)	Optg. Exp (All)	Net Prem. (All)	Optg. Exp (All)	Net Prem. (All)	Optg. Exp (All)	Net Prem. (All)
2013-14	8362753	34930567	5048492	16727815	5020341	19531038	12145729	43529133
2014-15	9433153	38319046	5716443	20128096	6183328	22674477	13852748	42353348
2015-16	11407097	42236473	6905252	20627372	7291091	28049484	17112042	48216173
2016-17	13614489	49370455	8770850	24074401	9120528	35109985	19820372	61636042
2017-18	14051321	60585689	10884487	33269666	7137168	32363085	21118673	69117348
2018-19	18071090	70097769	14491019	45782143	5569290	40303183	19897782	83753478
2019-20	23202954	82061822	15479733	48527980	7442060	46253213	22931019	94035170
2020-21	20597714	74361302	17637778	49354326	7824133	48987593	27341839	100139940
2021-22	21648278	77793681	22316818	66315490	9453018	55652506	39201200	130320866
2022-23	26588401	80187943	26626778	82327999	11178018	64325534	45147807	148228466

Source: Annual Report of respective company’s website

TABLE 4.65

The Statement Showing Ratio of Operating Expense and Net Earned Premium of Selected Sample Private Sector Non-Life Insurance Companies (Period from 2013-14 to 2022-23)

(Figures in %)

YEAR	BAJAJ ALLIANZ GENERAL INSURANCE CO. LTD.	TATA AIG GENERAL INSURANCE CO. LTD.	IFFCO TOKIO GENERAL INSURANCE CO. LTD.	ICICI LOMBARD GENERAL INSURANCE CO. LTD.
2013-14	23.94	30.18	25.70	27.90
2014-15	24.62	28.40	27.27	32.71
2015-16	27.01	33.48	25.99	35.49
2016-17	27.58	36.43	25.98	32.16
2017-18	23.19	32.72	22.05	30.55
2018-19	25.78	31.65	13.82	23.76
2019-20	28.27	31.90	16.09	24.39
2020-21	27.70	35.74	15.97	27.30
2021-22	27.83	33.65	16.99	30.08
2022-23	33.16	32.34	17.38	30.46

ASSESSMENT OF THE TABULATED INFORMATION

- **Bajaj Allianz General Insurance Co. Ltd.** ratio of Operating Expense (All Business) to Net Earned Premium (All Business) fluctuated from 23.94% in 2013-14 to 33.16% in 2022-23. The company exhibited varying levels of operating expenses relative to Net Earned Premium over the years, with a notable increase in the ratio in recent years.
- **Tata AIG General Insurance Co. Ltd.** showed fluctuations in the ratio, ranging from 28.40% in 2014-15 to 35.74% in 2020-21. The company experienced changes in managing operating expenses compared to Net Earned Premium, highlighting potential shifts in expense management strategies.
- **IFFCO TOKIO General Insurance Co. Ltd.** demonstrated a range of ratios from 13.82% in 2018-19 to 17.38% in 2022-23. The company experienced fluctuations in managing operating expenses relative to Net Earned Premiums, suggesting varying cost management approaches over the years.

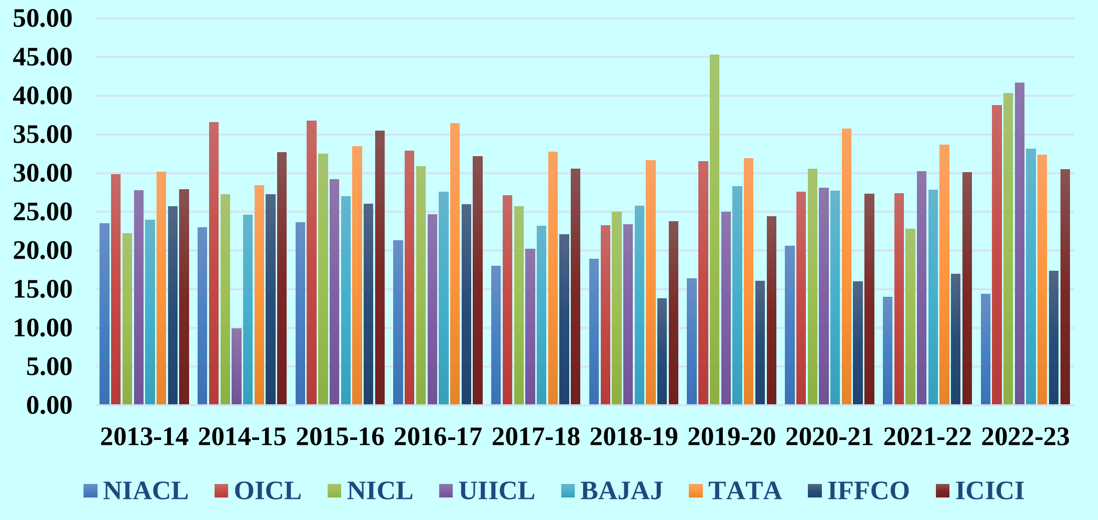
- **ICICI Lombard General Insurance Co. Ltd.** ratio varied from 23.76% in 2018-19 to 30.46% in 2022-23. The company exhibited changes in operating expenses compared to Net Earned Premium, indicating potential adjustments in cost management practices.

Overall, the analysis reveals fluctuations in managing operating expenses relative to Net Earned Premium for the selected Private Sector Non-Life Insurance Companies in India. Companies like Bajaj Allianz General Insurance Co. Ltd. and Tata AIG General Insurance Co. Ltd. experienced significant variations in these ratios, emphasizing the importance of effective cost management strategies. Maintaining a balance between operating expenses and Net Earned Premiums is crucial for ensuring profitability and operational efficiency in the private sector non-life insurance segment.

Chart 4.13

OPERATING EXPENSE & NET EARNED PREMIUM

Public Sector & Private Sector (Selected) Non-Life Insurance Co.



Data Examination (Statistical Tools)

Null Hypothesis (H0)	:	There is no statistically significant difference in **Operating Ratio** among the selected public and private non-life insurance firms in India with respect to **Operating Expense to Net Earned Premium.**

Alternative Hypothesis (H1) : There is statistically significant difference in **Operating Ratio** among the selected public and private non-life insurance firms in India with respect to **Operating Expense to Net Earned Premium.**

COMPUTATION OF VARIANCE USING ONE WAY ANOVA

STEP-1: Ratio of Operating Expense and Net Earned Premium of Public Sector & Private Sector (Selected) Non-Life Insurance Co.

YEAR	NIACL	OICL	NICL	UIICL	BAJAJ	TATA	IFFCO	ICICI
2013-14	23.49	29.82	22.22	27.77	23.94	30.18	25.70	27.90
2014-15	22.98	36.54	27.23	9.91	24.62	28.40	27.27	32.71
2015-16	23.63	36.73	32.52	29.17	27.01	33.48	25.99	35.49
2016-17	21.31	32.87	30.84	24.67	27.58	36.43	25.98	32.16
2017-18	18.00	27.10	25.70	20.20	23.19	32.72	22.05	30.55
2018-19	18.92	23.26	24.99	23.35	25.78	31.65	13.82	23.76
2019-20	16.37	31.51	45.32	24.98	28.27	31.90	16.09	24.39
2020-21	20.58	27.57	30.55	28.08	27.70	35.74	15.97	27.30
2021-22	14.00	27.41	22.76	30.24	27.83	33.65	16.99	30.08
2022-23	14.35	38.78	40.31	41.65	33.16	32.34	17.38	30.46

STEP-2: Consolidated Output of One - Way ANOVA.

GROUPS	COUNT	SUM	AVERAGE	VARIANCE
NIACL	10	193.6181137	19.36181137	13.15967131
OICL	10	311.5945966	31.15945966	25.43112014
NICL	10	302.4477554	30.24477554	56.87388543
UIICL	10	260.0101046	26.00101046	64.74265118
BAJAJ	10	269.0745563	26.90745563	7.998052611
TATA	10	326.487463	32.6487463	5.704660845
IFFCO	10	207.2415591	20.72415591	26.85632811
ICICI	10	294.7978151	29.47978151	13.56717199

"F"-TEST ONE WAY ANOVA
TABLE 4.66

OPERATING EXPENSE AND NET EARNED PREMIUM

Public & Private Sector (Selected) Non-Life Insurance Co.

[Period from 2013-14 to 2022-23]

Source of Differences	Sum of the Square of Deviation	Degree of Freedom	M.S.S.	Fc	Ft
Between Group	1645.87	7	235.12	8.78	2.14
Within Group	1929.00	72	26.79		
Total	**3574.87**	**79**			

KEY OBSERVATIONS FROM THE TABLE:

- The ANOVA test results suggest that there are statistically significant differences in the ratio of Operating Expense (All Business) to Net Earned Premium (All Business) among the selected public and private sector non-life insurance companies in India.
- The calculated F-value (Fc = 8.776) exceeds the critical F-value (Ft = 2.140), indicating that the variations in the operating expense to Net Earned Premium ratios are not due to random chance but reflect meaningful differences among the companies.

STATISTICAL DECISION:

Rejecting the null hypothesis based on the F-test confirms statistically significant differences in the ratios observed.

IMPLICATIONS OF THE FINDINGS:

- Significant variations in operating expense to Net Earned Premium ratios suggest differing cost structures, operational efficiencies, and expense management among selected insurers across all business lines.
- These differences may reflect varying levels of cost control, operational effectiveness, and premium generation efficiency between public and private sector insurers.

- Understanding these variations provides insights into insurers' cost management strategies, operational performance, and profitability across different business segments.

CONCLUSION:

The ANOVA analysis reveals notable differences in the ratio of Operating Expense (All Business) to Net Earned Premium (All Business) across the selected public and private sector non-life insurance companies in India. These variations underscore the diverse cost structures and operational efficiencies of insurers across their entire business portfolios. The statistically significant differences observed in this ratio highlight the distinct approaches to expense management, operational effectiveness, and financial performance within the sector, which can impact the companies' profitability and competitiveness in the market.

4.6.3. NET COMMISSION ANALYSIS

In the non-life insurance sector, commissions play a crucial role in shaping the financial and operational structure of companies. These commissions are typically paid to agents and intermediaries for bringing in business. At the same time, insurers also earn commissions through reinsurance transactions when they cede part of their risk to other insurers. This dual nature—where commissions serve as both an expense and a source of income—makes it essential to study *net commission* for evaluating financial performance.

Net commission is defined as the difference between commission paid and commission received. Commission paid reflects the cost of acquiring insurance business through agents or intermediaries, while commission received arises primarily from reinsurance arrangements, where insurers transfer part of their risk and receive a share of the premium and associated commission in return. This income contributes to overall profitability.

Given the agent-centric nature of non-life insurance in India, examining net commission in relation to Net Earned Premium earned provides meaningful insights. A lower ratio of net commission to Net Earned Premium may suggest cost efficiency or reliance on direct/corporate channels, while a higher ratio could indicate dependence on agent-based models.

This study analyses net commission against Net Earned Premium for selected non-life insurance companies over a defined period. It highlights how commissions influence operational outcomes and financial stability. Special attention is given to instances where commission income from reinsurance exceeds commission expenses, resulting in negative net commission values. Graphs are used to illustrate these trends, helping to understand each company's strategic approach to commission management and risk-sharing.

(A) NET COMMISSION ANALYSIS - FIRE BUSINESS

TABLE 4.67

The Statement Showing Net Commission (Fire) and Net Earned Premium (Fire) of Selected Sample Public Sector Non-Life Insurance Companies (Period from 2013-14 to 2022-23)

(Figures in Thousand)

YEAR	THE NEW INDIA ASSURANCE CO. LTD.		THE ORIENTAL INSURANCE CO. LTD.		NATIONAL INSURANCE CO. LTD.		UNITED INDIA INSURANCE CO. LTD.	
	Net Comm. (Fire)	Net Prem. (Fire)	Net Comm. (Fire)	Net Prem. (Fire)	Net Comm. (Fire)	Net Prem. (Fire)	Net Comm. (Fire)	Net Prem. (Fire)
2013-14	3184666	17846263	206235	6604357	656207	7212304	285700	8088665
2014-15	4031468	18873280	262331	5900214	609525	7533129	577260	8064022
2015-16	3758884	20834114	526659	5655915	731786	7564611	680466	7906843
2016-17	3346780	19324914	686956	6103896	825548	7637648	850424	8496331
2017-18	2836530	19639705	960705	5903810	911441	6748837	902879	8568763
2018-19	4462896	19066644	856812	6019541	697323	6973112	904500	7682020
2019-20	4297182	24608416	1154102	6708711	911411	6523146	1049563	7977087
2020-21	5585484	30374078	1144379	7358823	1078267	7819961	1167486	8854589
2021-22	4525776	28577328	1049150	7497605	1022254	9293893	1263156	9097570
2022-23	3984989	30553972	1175043	8018090	1121418	9490149	971503	8205207

Source: Annual Report of respective company's website

TABLE 4.68

The Statement Showing Ratio of Net Commission (Fire) and Net Earned Premium (Fire) of Selected Sample Public Sector Non-Life Insurance Companies (Period from 2013-14 to 2022-23)

(Figures in %)

YEAR	THE NEW INDIA ASSURANCE CO. LTD.	THE ORIENTAL INSURANCE COMPANY LTD. (OICL)	NATIONAL INSURANCE COMPANY LTD. (NICL)	UNITED INDIA INSURANCE COMPANY LTD. (UIICL)
2013-14	17.85	3.12	9.10	3.53
2014-15	21.36	4.45	8.09	7.16
2015-16	18.04	9.31	9.67	8.61
2016-17	17.32	11.25	10.81	10.01
2017-18	14.44	16.27	13.51	10.54
2018-19	23.41	14.23	10.00	11.77
2019-20	17.46	17.20	13.97	13.16
2020-21	18.39	15.55	13.79	13.19
2021-22	15.84	13.99	11.00	13.88
2022-23	13.04	14.65	11.82	11.84

- **ASSESSMENT OF THE TABULATED INFORMATION**
- **The New India Assurance Co. Ltd.** ratio of Net Commission to Net Earned Premium in the Fire Business category displayed a decreasing trend from 2013-14 to 2022-23. The ratios ranged from 13.04% to 23.41%, indicating fluctuations in the commission earned relative to the premium received in the fire insurance segment.
- **The Oriental Insurance Co. Ltd.** showed varying ratios from 3.12% to 17.20% during the same period, reflecting fluctuations in the commission earned compared to the premium received in the Fire Business category. The ratios fluctuated, indicating changes in commission efficiency in the fire insurance segment.
- **National Insurance Co. Ltd.** exhibited ratios ranging from 9.10% to 13.97%, with fluctuations in the commission relative to premium in the Fire Business category. The ratios varied over the years, suggesting changes in commission performance in the fire insurance segment.
- **United India Insurance Co. Ltd.** ratios varied from 3.53% to 13.88%, showcasing a range of commission to premium ratios in the Fire Business category. The company

experienced fluctuations in commission efficiency relative to premium received in the fire insurance segment.

Overall, the analysis of the Ratio of Net Commission (Fire Business) and Net Earned Premium (Fire Business) for the selected Public Sector Non-Life Insurance Companies in India highlights fluctuations in commission efficiency relative to premium received in the fire insurance segment. The varying ratios underscore the importance of monitoring and optimizing commission structures to enhance profitability and operational performance in the fire insurance business segment.

TABLE 4.69

The Statement Showing Net Commission (Fire) and Net Earned Premium (Fire) of Selected Sample Private Sector Non-Life Insurance Companies (Period from 2013-14 to 2022-23)

(Figures in Thousand)

YEAR	BAJAJ ALLIANZ GENERAL INSURANCE CO. LTD.		TATA AIG GENERAL INSURANCE CO. LTD.		IFFCO TOKIO GENERAL INSURANCE CO. LTD.		ICICI LOMBARD GENERAL INSURANCE CO. LTD.	
	Net Comm. (Fire)	Net Prem. (Fire)	Net Comm. (Fire)	Net Prem. (Fire)	Net Comm. (Fire)	Net Prem. (Fire)	Net Comm. (Fire)	Net Prem. (Fire)
2013-14	-148515	1446481	-572721	268162	-157675	372286	-95213	1534949
2014-15	-170837	1466249	-578535	410932	-151304	392025	-288312	1088513
2015-16	-171142	1658503	-546403	267636	-262516	449291	-490877	995012
2016-17	-102227	1763868	-605213	337441	-377910	403317	-495076	1237079
2017-18	118895	1796290	-441681	660666	-48603	481413	-482064	1440912
2018-19	-183568	1876444	-119261	1064418	-157337	471315	-259122	1578840
2019-20	-1442355	2679557	-1414478	1580208	-537062	592286	-285721	2735818
2020-21	-1623445	2691988	-1079645	2443008	-372800	831674	-1110192	4813392
2021-22	-2579061	2522421	-975358	4093273	-655124	1247112	-1791467	6744741
2022-23	-3478747	2687743	-1449396	4735325	-1159225	1781815	-2905023	6521900

Source: Annual Report of respective company’s website

TABLE 4.70

The Statement Showing Ratio of Net Commission (Fire) and Net Earned Premium (Fire) of Selected Sample Private Sector Non-Life Insurance Companies (Period from 2013-14 to 2022-23)

(Figures in %)

YEAR	BAJAJ ALLIANZ GENERAL INSURANCE CO. LTD.	TATA AIG GENERAL INSURANCE CO. LTD.	IFFCO TOKIO GENERAL INSURANCE CO. LTD.	ICICI LOMBARD GENERAL INSURANCE CO. LTD.
2013-14	-10.27	-213.57	-42.35	-6.20
2014-15	-11.65	-140.79	-38.60	-26.49
2015-16	-10.32	-204.16	-58.43	-49.33
2016-17	-5.80	-179.35	-93.70	-40.02
2017-18	6.62	-66.85	-10.10	-33.46
2018-19	-9.78	-11.20	-33.38	-16.41
2019-20	-53.83	-89.51	-90.68	-10.44
2020-21	-60.31	-44.19	-44.83	-23.06
2021-22	-102.25	-23.83	-52.53	-26.56
2022-23	-129.43	-30.61	-65.06	-44.54

ASSESSMENT OF THE TABULATED INFORMATION

- **Bajaj Allianz General Insurance Co. Ltd.** ratio of Net Commission to Net Earned Premium in the Fire Business category exhibited negative values over the period from 2013-14 to 2022-23. The ratios ranged from -129.43% to -5.80%, indicating challenges in commission earnings relative to premium received in the fire insurance segment.
- **Tata AIG General Insurance Co. Ltd.** showed varying negative ratios from -213.57% to -11.20% during the same period, reflecting fluctuations in the commission earned compared to the premium received in the Fire Business category. The negative values suggest difficulties in commission efficiency in the fire insurance segment.
- **IFFCO TOKIO General Insurance Co. Ltd.** exhibited negative ratios ranging from -93.70% to -33.38%, with fluctuations in the commission relative to premium in the Fire Business category. The negative values indicate challenges in commission performance in the fire insurance segment over the analysed years.
- **ICICI Lombard General Insurance Co. Ltd.** ratios varied from -49.33% to -10.44%, showcasing negative commission to premium ratios in the Fire Business category. The

company experienced fluctuations in commission efficiency relative to premium received in the fire insurance segment.

Overall, the analysis of the Ratio of Net Commission (Fire Business) and Net Earned Premium (Fire Business) for the selected Private Sector Non-Life Insurance Companies in India highlights challenges in commission earnings relative to premium received in the fire insurance segment, as indicated by the negative ratios. The varying negative values underscore the importance of enhancing commission structures and optimizing operational performance to improve profitability in the fire insurance business segment.

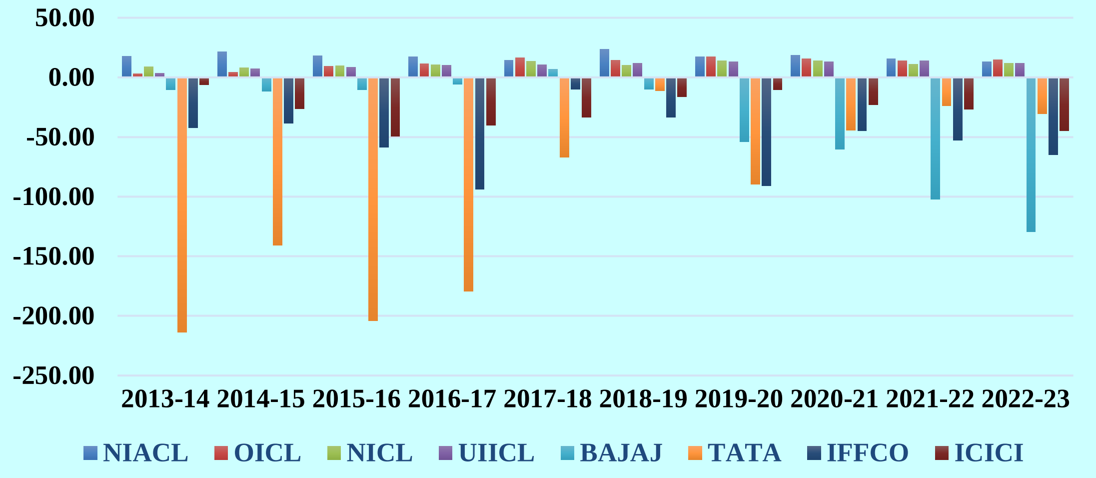


Chart 4.14
NET COMMISSION (FIRE) AND NET EARNED PREMIUM (FIRE)
Public Sector & Private Sector (Selected) Non-Life Insurance Co.

Data Examination (Statistical Tools)

Null Hypothesis (H0)	:	There is no statistically significant difference in **Net Commission Ratio (Fire)** among the selected public and private non-life insurance firms in India with respect to **Net Commission (Fire) to Net Earned Premium (Fire).**

Alternative Hypothesis (H1) : There is statistically significant difference in **Net Commission Ratio (Fire)** among the selected public and private non-life insurance firms in India with respect to **Net Commission (Fire) to Net Earned Premium (Fire).**

COMPUTATION OF VARIANCE USING ONE WAY ANOVA

STEP-1: Ratio of Net Commission (Fire) and Net Earned Premium (Fire) of Public Sector & Private Sector (Selected) Non-Life Insurance Co.

YEAR	NIACL	OICL	NICL	UIICL	BAJAJ	TATA	IFFCO	ICICI
2013-14	17.85	3.12	9.10	3.53	-10.27	-213.57	-42.35	-6.20
2014-15	21.36	4.45	8.09	7.16	-11.65	-140.79	-38.60	-26.49
2015-16	18.04	9.31	9.67	8.61	-10.32	-204.16	-58.43	-49.33
2016-17	17.32	11.25	10.81	10.01	-5.80	-179.35	-93.70	-40.02
2017-18	14.44	16.27	13.51	10.54	6.62	-66.85	-10.10	-33.46
2018-19	23.41	14.23	10.00	11.77	-9.78	-11.20	-33.38	-16.41
2019-20	17.46	17.20	13.97	13.16	-53.83	-89.51	-90.68	-10.44
2020-21	18.39	15.55	13.79	13.19	-60.31	-44.19	-44.83	-23.06
2021-22	15.84	13.99	11.00	13.88	-102.25	-23.83	-52.53	-26.56
2022-23	13.04	14.65	11.82	11.84	-129.43	-30.61	-65.06	-44.54

STEP-2: Consolidated Output of One - Way ANOVA.

GROUPS	COUNT	SUM	AVERAGE	VARIANCE
NIACL	10	177.146451	17.7146451	9.172678912
OICL	10	120.0435291	12.00435291	24.17763452
NICL	10	111.7542198	11.17542198	4.235082973
UIICL	10	103.6839643	10.36839643	10.27985518
BAJAJ	10	-387.007314	-38.70073145	2142.65623
TATA	10	-1004.07169	-100.4071688	6059.089271
IFFCO	10	-529.647919	-52.96479192	651.598714
ICICI	10	-276.522867	-27.65228671	205.3492347

"F"-TEST ONE WAY ANOVA
TABLE 4.71

NET COMMISSION (FIRE) AND NET EARNED PREMIUM (FIRE)

Public & Private Sector (Selected) Non-Life Insurance Co.

[Period from 2013-14 to 2022-23]

Source of Differences	Sum of the Square of Deviation	Degree of Freedom	M.S.S.	Fc	Ft
Between Group	122921.33	7	17560.19	15.43	2.14
Within Group	81959.02	72	1138.32		
Total	**204880.36**	**79**			

KEY OBSERVATIONS FROM THE TABLE:

- The ANOVA test results suggest that there are statistically significant differences in the ratio of Net Commission (Fire Business) to Net Earned Premium (Fire Business) among the selected public and private sector non-life insurance companies in India.
- The calculated F-value (Fc = 15.426) exceeds the critical F-value (Ft = 2.140), indicating that the variations in the net commission to Net Earned Premium ratios are not due to random chance but reflect meaningful differences among the companies.

STATISTICAL DECISION:

The rejection of the null hypothesis based on the F-test results implies that the differences observed in the ratio of Net Commission (Fire Business) to Net Earned Premium (Fire Business) are statistically significant.

IMPLICATIONS OF THE FINDINGS:

- Significant variations in the net commission to Net Earned Premium ratios suggest differing commission structures, sales strategies, and premium income generation practices among the selected insurers in the fire business segment.

- These findings may indicate varying levels of commission expenses, sales efficiency, and overall financial performance between public and private sector non-life insurance companies in the fire insurance segment.
- Understanding these differences can provide insights into the insurers' commission payout strategies, sales effectiveness, and profitability in the fire insurance business.

CONCLUSION:

The ANOVA analysis reveals notable differences in the ratio of Net Commission (Fire Business) to Net Earned Premium (Fire Business) across the selected public and private sector non-life insurance companies in India. These variations underscore the diverse commission structures and sales strategies of insurers in the fire insurance segment. The statistically significant differences observed in this ratio highlight the distinct approaches to commission management, sales efficiency, and financial performance within this specific business segment, which can impact the companies' profitability and competitiveness in the market.

(B) NET COMMISSION ANALYSIS - MARINE BUSINESS

TABLE 4.72

The Statement Showing Net Commission (Marine) and Net Earned Premium (Marine) of Selected Sample Public Sector Non-Life Insurance Companies (Period from 2013-14 to 2022-23)

(Figures in Thousand)

YEAR	THE NEW INDIA ASSURANCE CO. LTD.		THE ORIENTAL INSURANCE CO. LTD.		NATIONAL INSURANCE CO. LTD.		UNITED INDIA INSURANCE CO. LTD.	
	Net Comm. (Marine)	Net Prem. (Marine)	Net Comm. (Marine)	Net Prem. (Marine)	Net Comm. (Marine)	Net Prem. (Marine)	Net Comm. (Marine)	Net Prem. (Marine)
2013-14	485925	4610226	284883	2855003	181980	1912925	285056	3000175
2014-15	425847	6110405	274977	3001854	207082	2013777	291512	3045389
2015-16	478735	4788186	221224	2901842	127021	2057194	226963	2887659
2016-17	450918	4673115	246349	2470270	152323	1728068	272951	2719678
2017-18	568638	3837519	215142	2301536	187726	1593937	234502	2327344
2018-19	615236	4303450	201496	2083963	159846	1438919	268929	2225124
2019-20	740993	4503367	212771	1974473	86538	1532595	220929	1966314
2020-21	624358	4377913	204129	2029232	153647	1285421	202991	1964017
2021-22	843522	5159264	262392	2100146	104590	1405619	262851	2029094
2022-23	814727	5554910	312185	2507634	175601	1791729	266967	2267831

Source: Annual Report of respective company's website

TABLE 4.73

The Statement Showing Ratio of Net Commission (Marine) and Net Earned Premium (Marine) of Selected Sample Public Sector Non-Life Insurance Companies (Period from 2013-14 to 2022-23)

(Figures in %)

YEAR	THE NEW INDIA ASSURANCE CO. LTD.	THE ORIENTAL INSURANCE CO. LTD.	NATIONAL INSURANCE CO. LTD.	UNITED INDIA INSURANCE CO. LTD.
2013-14	10.54	9.98	9.51	9.50
2014-15	6.97	9.16	10.28	9.57
2015-16	10.00	7.62	6.17	7.86
2016-17	9.65	9.97	8.81	10.04
2017-18	14.82	9.35	11.78	10.08
2018-19	14.30	9.67	11.11	12.09
2019-20	16.45	10.78	5.65	11.24
2020-21	14.26	10.06	11.95	10.34
2021-22	16.35	12.49	7.44	12.95
2022-23	14.67	12.45	9.80	11.77

ASSESSMENT OF THE TABULATED INFORMATION

- **The New India Assurance Co. Ltd.** ratio of Net Commission to Net Earned Premium in the Marine Business category exhibited fluctuations over the period from 2013-14 to 2022-23. The ratios ranged from 6.97% to 16.45%, indicating varying levels of commission earnings relative to premium received in the marine insurance segment.
- **The Oriental Insurance Co. Ltd.** showed varying ratios from 7.62% to 12.49% during the same period, reflecting fluctuations in the commission earned compared to the premium received in the Marine Business category. The ratios fluctuated, suggesting changes in commission efficiency in the marine insurance segment.
- **National Insurance Co. Ltd.** exhibited ratios ranging from 5.65% to 11.78%, with fluctuations in the commission relative to premium in the Marine Business category. The ratios varied over the years, indicating changes in commission performance in the marine insurance segment.

- **United India Insurance Co. Ltd.** ratios varied from 7.86% to 12.95%, showcasing a range of commission to premium ratios in the Marine Business category. The company experienced fluctuations in commission efficiency relative to premium received in the marine insurance segment.

Overall, the analysis of the Ratio of Net Commission (Marine Business) and Net Earned Premium (Marine Business) for the selected Public Sector Non-Life Insurance Companies in India highlights fluctuations in commission earnings relative to premium received in the marine insurance segment. The varying ratios underscore the importance of monitoring and optimizing commission structures to enhance profitability and operational performance in the marine insurance business segment.

TABLE 4.74

The Statement Showing Net Commission (Marine) and Net Earned Premium (Marine) of Selected Sample Private Sector Non-Life Insurance Companies (Period from 2013-14 to 2022-23)

(Figures in Thousand)

YEAR	BAJAJ ALLIANZ GENERAL INSURANCE CO. LTD.		TATA AIG GENERAL INSURANCE CO. LTD.		IFFCO TOKIO GENERAL INSURANCE CO. LTD.		ICICI LOMBARD GENERAL INSURANCE CO. LTD.	
	Net Comm. (Marine)	Net Prem. (Marine)	Net Comm. (Marine)	Net Prem. (Marine)	Net Comm. (Marine)	Net Prem. (Marine)	Net Comm. (Marine)	Net Prem. (Marine)
2013-14	51419	798898	257794	2185579	-56060	429158	164307	1566095
2014-15	44834	720087	276478	2282199	-49040	490949	100264	1601131
2015-16	67824	848821	251877	2258174	-68212	396139	210581	1849297
2016-17	67402	839750	284893	2319275	-42608	534270	180149	1920765
2017-18	135017	883642	412019	2477096	-16065	576073	247683	1957559
2018-19	146433	1038593	480088	2803765	-21251	683071	317876	2367293
2019-20	151058	1173990	449049	2987690	-16136	736848	325893	2563182
2020-21	84661	1068110	471423	2972855	60893	755364	304254	2601528
2021-22	128469	1198309	663485	4194389	74763	1149565	464031	3768037
2022-23	163744	1637849	886036	5213357	77595	1284094	590617	4387088

Source: Annual Report of respective company's website

TABLE 4.75

The Statement Showing Ratio of Net Commission (Marine) and Net Earned Premium (Marine) of Selected Sample Private Sector Non-Life Insurance Companies (Period from 2013-14 to 2022-23)

(Figures in %)

YEAR	BAJAJ ALLIANZ GENERAL INSURANCE CO. LTD.	TATA AIG GENERAL INSURANCE CO. LTD.	IFFCO TOKIO GENERAL INSURANCE CO. LTD.	ICICI LOMBARD GENERAL INSURANCE CO. LTD.
2013-14	6.44	11.80	-13.06	10.49
2014-15	6.23	12.11	-9.99	6.26
2015-16	7.99	11.15	-17.22	11.39
2016-17	8.03	12.28	-7.97	9.38
2017-18	15.28	16.63	-2.79	12.65
2018-19	14.10	17.12	-3.11	13.43
2019-20	12.87	15.03	-2.19	12.71
2020-21	7.93	15.86	8.06	11.70
2021-22	10.72	15.82	6.50	12.31
2022-23	10.00	17.00	6.04	13.46

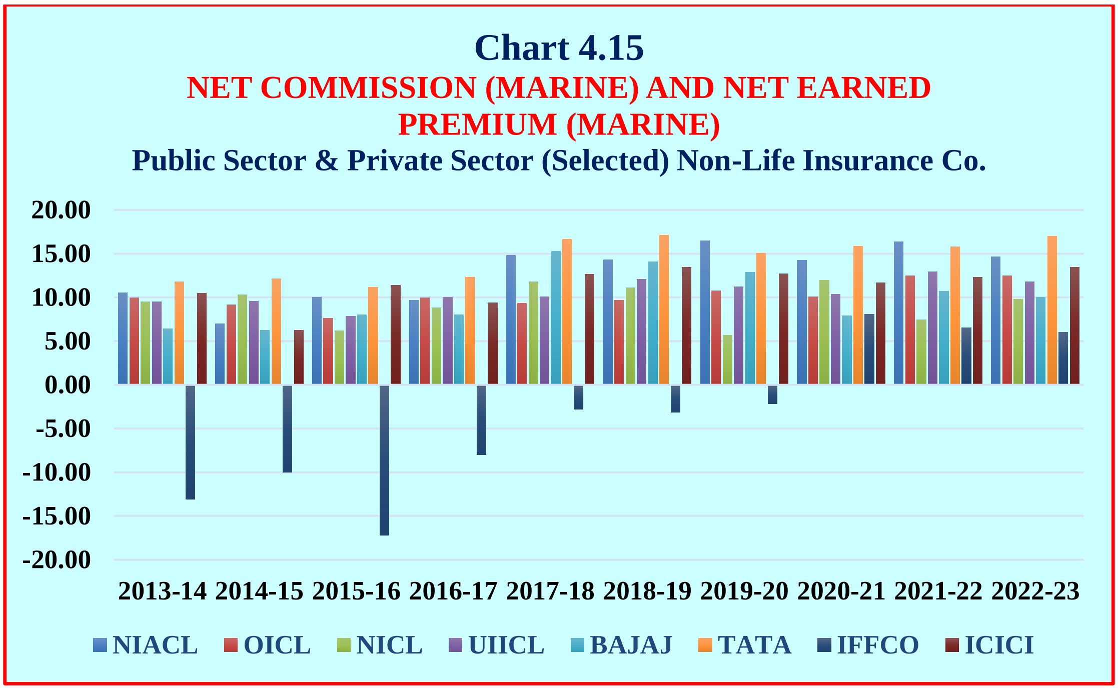
ASSESSMENT OF THE TABULATED INFORMATION

- **Bajaj Allianz General Insurance Co. Ltd.** ratio of Net Commission to Net Earned Premium in the Marine Business category exhibited fluctuations over the period from 2013-14 to 2022-23. The ratios ranged from 6.23% to 10.72%, indicating varying levels of commission earnings relative to premium received in the marine insurance segment.
- **Tata AIG General Insurance Co. Ltd.** showed varying ratios from 11.15% to 17.12% during the same period, reflecting fluctuations in the commission earned compared to the premium received in the Marine Business category. The ratios fluctuated, suggesting changes in commission efficiency in the marine insurance segment.

- **IFFCO TOKIO General Insurance Co. Ltd.** exhibited ratios ranging from -17.22% to 8.06%, with fluctuations in the commission relative to premium in the Marine Business category. The wide range of ratios suggests challenges in commission earnings and efficiency in the marine insurance segment.

- **ICICI Lombard General Insurance Co. Ltd.** ratios varied from 9.38% to 13.46%, showcasing a range of commission to premium ratios in the Marine Business category. The company experienced fluctuations in commission efficiency relative to premium received in the marine insurance segment.

Overall, the analysis of the Ratio of Net Commission (Marine Business) and Net Earned Premium (Marine Business) for the selected Private Sector Non-Life Insurance Companies in India highlights fluctuations in commission earnings relative to premium received in the marine insurance segment. The varying ratios underscore the importance of monitoring and optimizing commission structures to enhance profitability and operational performance in the marine insurance business segment.



Data Examination (Statistical Tools)

Null Hypothesis (H0)	:	There is no statistically significant difference in **Net Commission Ratio (Marine)** among the selected public and private non-life insurance firms in India with respect to **Net Commission (Marine) to Net Earned Premium (Marine).**

Alternative Hypothesis (H1) : There is statistically significant difference in **Net Commission Ratio (Marine)** among the selected public and private non-life insurance firms in India with respect to **Net Commission (Marine) to Net Earned Premium (Marine).**

COMPUTATION OF VARIANCE USING ONE WAY ANOVA

STEP-1: Ratio of Net Commission (Marine) and Net Earned Premium (Marine) of Public Sector & Private Sector (Selected) Non-Life Insurance Co.

YEAR	NIACL	OICL	NICL	UIICL	BAJAJ	TATA	IFFCO	ICICI
2013-14	10.54	9.98	9.51	9.50	6.44	11.80	-13.06	10.49
2014-15	6.97	9.16	10.28	9.57	6.23	12.11	-9.99	6.26
2015-16	10.00	7.62	6.17	7.86	7.99	11.15	-17.22	11.39
2016-17	9.65	9.97	8.81	10.04	8.03	12.28	-7.97	9.38
2017-18	14.82	9.35	11.78	10.08	15.28	16.63	-2.79	12.65
2018-19	14.30	9.67	11.11	12.09	14.10	17.12	-3.11	13.43
2019-20	16.45	10.78	5.65	11.24	12.87	15.03	-2.19	12.71
2020-21	14.26	10.06	11.95	10.34	7.93	15.86	8.06	11.70
2021-22	16.35	12.49	7.44	12.95	10.72	15.82	6.50	12.31
2022-23	14.67	12.45	9.80	11.77	10.00	17.00	6.04	13.46

STEP-2: Consolidated Output of One - Way ANOVA.

GROUPS	COUNT	SUM	AVERAGE	VARIANCE
NIACL	10	128.0032064	12.80032064	10.52971043
OICL	10	101.5302706	10.15302706	2.164447461
NICL	10	92.51286948	9.251286948	4.944045719
UIICL	10	105.4286451	10.54286451	2.21441745
BAJAJ	10	99.56968565	9.956968565	10.28606522
TATA	10	144.8050646	14.48050646	5.625541819
IFFCO	10	-35.7276982	-3.572769817	74.32414828
ICICI	10	113.7873047	11.37873047	4.876788833

"F"-TEST ONE WAY ANOVA
TABLE 4.76

NET COMMISSION (MARINE) AND NET EARNED PREMIUM (MARINE)

Public & Private Sector (Selected) Non-Life Insurance Co.

[Period from 2013-14 to 2022-23]

Source of Differences	Sum of the Square of Deviation	Degree of Freedom	M.S.S.	Fc	Ft
Between Group	2117.82	7	302.55	21.05	2.14
Within Group	1034.69	72	14.37		
Total	**3152.51**	**79**			

KEY OBSERVATIONS FROM THE TABLE:

- The ANOVA test results suggest that there are statistically significant differences in the ratio of Net Commission (Marine Business) to Net Earned Premium (Marine Business) among the selected public and private sector non-life insurance companies in India.
- The calculated F-value (Fc = 21.053) exceeds the critical F-value (Ft = 2.140), indicating that the variations in the net commission to Net Earned Premium ratios are not due to random chance but reflect meaningful differences among the companies.

STATISTICAL DECISION:

- The rejection of the null hypothesis based on the F-test results implies that the differences observed in the ratio of Net Commission (Marine Business) to Net Earned Premium (Marine Business) are statistically significant.

IMPLICATIONS OF THE FINDINGS:

- Significant variations in the net commission to Net Earned Premium ratios suggest differing commission structures, sales strategies, and premium income generation practices among the selected insurers in the marine business segment.

- These findings may indicate varying levels of commission expenses, sales efficiency, and overall financial performance between public and private sector non-life insurance companies in the marine insurance business.
- Understanding these differences can provide insights into the insurers' commission payout strategies, sales effectiveness, and profitability in the marine insurance business.

CONCLUSION:

The ANOVA analysis reveals substantial differences in the ratio of Net Commission (Marine Business) to Net Earned Premium (Marine Business) across the selected public and private sector non-life insurance companies in India. These variations underscore the diverse commission structures and sales strategies of insurers in the marine insurance segment. The statistically significant differences observed in this ratio highlight the distinct approaches to commission management, sales efficiency, and financial performance within this specific business segment, which can impact the companies' profitability and competitiveness in the market.

(C) NET COMMISSION ANALYSIS - MISC. BUSINESS

TABLE 4.77

The Statement Showing Net Commission (Misc.) and Net Earned Premium (Misc.) of Selected Sample Public Sector Non-Life Insurance Companies (Period from 2013-14 to 2022-23)

(Figures in Thousand)

YEAR	THE NEW INDIA ASSURANCE CO. LTD.		THE ORIENTAL INSURANCE CO. LTD.		NATIONAL INSURANCE CO. LTD.		UNITED INDIA INSURANCE CO. LTD.	
	Net Comm. (Misc.)	Net Prem. (Misc.)	Net Comm. (Misc.)	Net Prem. (Misc.)	Net Comm. (Misc.)	Net Prem. (Misc.)	Net Comm. (Misc.)	Net Prem. (Misc.)
2013-14	8055467	89512257	3083301	50080323	4992881	77701469	3817583	64944151
2014-15	8381394	108169227	2940861	55349582	4829287	89434655	4444155	77052878
2015-16	9891675	125090030	3883114	61681264	5339771	98292017	4226089	89434153
2016-17	9522709	155355332	4069243	75258479	1914380	98670555	5139283	109140094
2017-18	14921943	174826714	5196171	88074718	9904484	104322774	5538491	117713735
2018-19	17028161	192746483	5527117	97911755	7315137	95590227	6153600	121137936
2019-20	18044605	207510050	6804291	100561233	7043690	88771408	6376564	127502017
2020-21	18628761	229011359	7666665	100981772	8442407	103309450	7812828	128260729
2021-22	17760858	256910405	7950018	106785937	7191106	112527167	7498894	125829337
2022-23	19599173	268140664	7976106	121984144	6730340	115779753	9373450	140969822

Source: Annual Report of respective company's website

TABLE 4.78

The Statement Showing Ratio of Net Commission (Misc.) and Net Earned Premium (Misc.) of Selected Sample Public Sector Non-Life Insurance Companies (Period from 2013-14 to 2022-23)

(Figures in %)

YEAR	THE NEW INDIA ASSURANCE CO. LTD.	THE ORIENTAL INSURANCE CO. LTD.	NATIONAL INSURANCE CO. LTD.	UNITED INDIA INSURANCE CO. LTD.
2013-14	9.00	6.16	6.43	5.88
2014-15	7.75	5.31	5.40	5.77
2015-16	7.91	6.30	5.43	4.73
2016-17	6.13	5.41	1.94	4.71
2017-18	8.54	5.90	9.49	4.71
2018-19	8.83	5.64	7.65	5.08
2019-20	8.70	6.77	7.93	5.00
2020-21	8.13	7.59	8.17	6.09
2021-22	6.91	7.44	6.39	5.96
2022-23	7.31	6.54	5.81	6.65

ASSESSMENT OF THE TABULATED INFORMATION

- **The New India Assurance Co. Ltd.** ratio of Net Commission to Net Earned Premium in the Miscellaneous Business category displayed fluctuations over the period from 2013-14 to 2022-23. The ratios ranged from 6.13% to 8.83%, indicating varying levels of commission earnings relative to premium received in the miscellaneous insurance segment.
- **The Oriental Insurance Co. Ltd.** showed varying ratios from 5.31% to 7.59% during the same period, reflecting fluctuations in the commission earned compared to the premium received in the Miscellaneous Business category. The ratios fluctuated, suggesting changes in commission efficiency in the miscellaneous insurance segment.
- **National Insurance Co. Ltd.** exhibited ratios ranging from 1.94% to 9.49%, with fluctuations in the commission relative to premium in the Miscellaneous Business category. The ratios varied over the years, indicating changes in commission performance in the miscellaneous insurance segment.

- **United India Insurance Co. Ltd.** ratios varied from 4.71% to 6.65%, showcasing a range of commission to premium ratios in the Miscellaneous Business category. The company experienced fluctuations in commission efficiency relative to premium received in the miscellaneous insurance segment.

Overall, the analysis of the Ratio of Net Commission (Misc. Business) and Net Earned Premium (Misc. Business) for the selected Public Sector Non-Life Insurance Companies in India highlights fluctuations in commission earnings relative to premium received in the miscellaneous insurance segment. The varying ratios underscore the importance of monitoring and optimizing commission structures to enhance profitability and operational performance in the miscellaneous insurance business segment.

TABLE 4.79

The Statement Showing Net Commission (Misc.) and Net Earned Premium (Misc.) of Selected Sample Private Sector Non-Life Insurance Companies (Period from 2013-14 to 2022-23)

(Figures in Thousand)

YEAR	BAJAJ ALLIANZ GENERAL INSURANCE CO. LTD.		TATA AIG GENERAL INSURANCE CO. LTD.		IFFCO TOKIO GENERAL INSURANCE CO. LTD.		ICICI LOMBARD GENERAL INSURANCE CO. LTD.	
	Net Comm. (Misc.)	Net Prem. (Misc.)	Net Comm. (Misc.)	Net Prem. (Misc.)	Net Comm. (Misc.)	Net Prem. (Misc.)	Net Comm. (Misc.)	Net Prem. (Misc.)
2013-14	1449103	32685188	683678	14274074	-108601	18729594	-2359979	40428089
2014-15	618442	36132710	688281	17434965	571019	21791503	-3550165	39663704
2015-16	1042607	39729149	1082066	18101562	826120	27204054	-2999436	45371864
2016-17	391088	46766837	849160	21417685	-1441575	34172398	-4026376	58478198
2017-18	2926799	57905757	1574795	30131904	1195435	31305599	-2605164	65718877
2018-19	3784286	67182732	-80255	41913960	2315474	39148797	2170298	79807345
2019-20	2207634	78208275	663425	43960082	2206873	44924079	3599763	88736170
2020-21	2032510	70601204	3437818	43938463	2443540	47400555	6815278	92725020
2021-22	1508129	74072951	2677499	58027828	4347147	53255829	7666325	119808088
2022-23	-347183	75862351	4933127	72379317	5572729	61259625	7036459	137319478

Source: Annual Report of respective company’s website

TABLE 4.80

The Statement Showing Ratio of Net Commission (Misc.) and Net Earned Premium (Misc.) of Selected Sample Private Sector Non-Life Insurance Companies (Period from 2013-14 to 2022-23)

(Figures in %)

YEAR	BAJAJ ALLIANZ GENERAL INSURANCE CO. LTD.	TATA AIG GENERAL INSURANCE CO. LTD.	IFFCO TOKIO GENERAL INSURANCE CO. LTD.	ICICI LOMBARD GENERAL INSURANCE CO. LTD.
2013-14	4.43	4.79	-0.58	-5.84
2014-15	1.71	3.95	2.62	-8.95
2015-16	2.62	5.98	3.04	-6.61
2016-17	0.84	3.96	-4.22	-6.89
2017-18	5.05	5.23	3.82	-3.96
2018-19	5.63	-0.19	5.91	2.72
2019-20	2.82	1.51	4.91	4.06
2020-21	2.88	7.82	5.16	7.35
2021-22	2.04	4.61	8.16	6.40
2022-23	-0.46	6.82	9.10	5.12

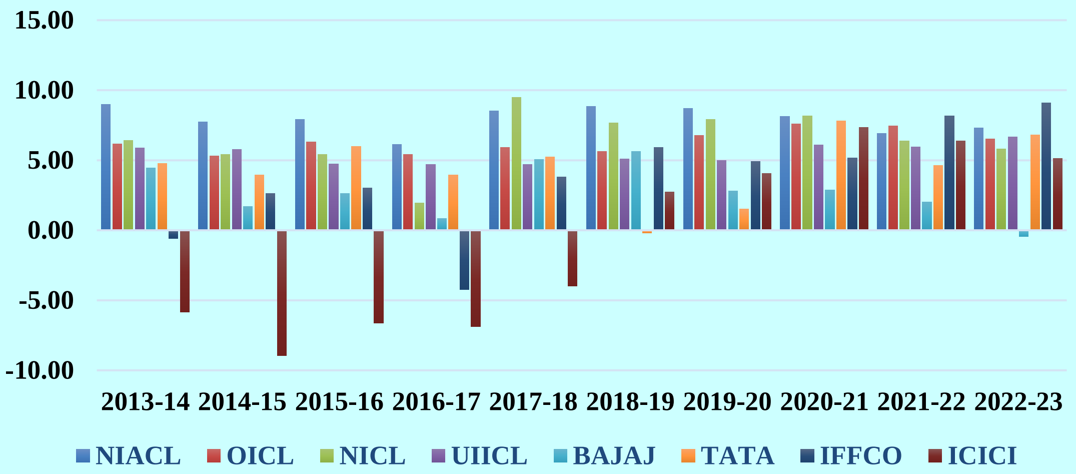
ASSESSMENT OF THE TABULATED INFORMATION

- **Bajaj Allianz General Insurance Co. Ltd.** ratio of Net Commission to Net Earned Premium in the Miscellaneous Business category exhibited fluctuations over the period from 2013-14 to 2022-23. The ratios ranged from -0.46% to 5.63%, indicating varying levels of commission earnings relative to premium received in the miscellaneous insurance segment.
- **Tata AIG General Insurance Co. Ltd.** showed varying ratios from 1.51% to 7.82% during the same period, reflecting fluctuations in the commission earned compared to the premium received in the Miscellaneous Business category. The ratios fluctuated, suggesting changes in commission efficiency in the miscellaneous insurance segment.
- **IFFCO TOKIO General Insurance Co. Ltd.** exhibited ratios ranging from -6.89% to 9.10%, with fluctuations in the commission relative to premium in the Miscellaneous Business category. The wide range of ratios suggests challenges and improvements in commission earnings and efficiency in the miscellaneous insurance segment.

- **ICICI Lombard General Insurance Co. Ltd.** ratios varied from -8.95% to 7.35%, showcasing a range of commission to premium ratios in the Miscellaneous Business category. The company experienced fluctuations in commission efficiency relative to premium received in the miscellaneous insurance segment.

Overall, the analysis of the Ratio of Net Commission (Misc. Business) and Net Earned Premium (Misc. Business) for the selected Private Sector Non-Life Insurance Companies in India highlights fluctuations in commission earnings relative to premium received in the miscellaneous insurance segment. The varying ratios underscore the importance of monitoring and optimizing commission structures to enhance profitability and operational performance in the miscellaneous insurance business segment.

Chart 4.16
NET COMMISSION (MISC.) AND NET EARNED PREMIUM (MISC.)
Public Sector & Private Sector (Selected) Non-Life Insurance Co.



Data Examination (Statistical Tools)

Null Hypothesis (H0)	:	There is no statistically significant difference in **Net Commission Ratio (Misc.)** among the selected public and private non-life insurance firms in India with respect to **Net Commission (Misc.) to Net Earned Premium (Misc.)**

Alternative Hypothesis (H1) : There is statistically significant difference in **Net Commission Ratio (Misc.)** among the selected public and private non-life insurance firms in India with respect to **Net Commission (Misc.) to Net Earned Premium (Misc.)**

COMPUTATION OF VARIANCE USING ONE WAY ANOVA

STEP-1: Ratio of Net Commission (Misc.) and Net Earned Premium (Misc.) of Public Sector & Private Sector (Selected) Non-Life Insurance Co.

YEAR	NIACL	OICL	NICL	UIICL	BAJAJ	TATA	IFFCO	ICICI
2013-14	9.00	6.16	6.43	5.88	4.43	4.79	-0.58	-5.84
2014-15	7.75	5.31	5.40	5.77	1.71	3.95	2.62	-8.95
2015-16	7.91	6.30	5.43	4.73	2.62	5.98	3.04	-6.61
2016-17	6.13	5.41	1.94	4.71	0.84	3.96	-4.22	-6.89
2017-18	8.54	5.90	9.49	4.71	5.05	5.23	3.82	-3.96
2018-19	8.83	5.64	7.65	5.08	5.63	-0.19	5.91	2.72
2019-20	8.70	6.77	7.93	5.00	2.82	1.51	4.91	4.06
2020-21	8.13	7.59	8.17	6.09	2.88	7.82	5.16	7.35
2021-22	6.91	7.44	6.39	5.96	2.04	4.61	8.16	6.40
2022-23	7.31	6.54	5.81	6.65	-0.46	6.82	9.10	5.12

STEP-2: Consolidated Output of One - Way ANOVA.

GROUPS	COUNT	SUM	AVERAGE	VARIANCE
NIACL	10	79.2074746	7.92074746	0.849893906
OICL	10	63.05906604	6.305906604	0.62612599
NICL	10	64.65512772	6.465512772	4.307335126
UIICL	10	54.56640108	5.456640108	0.48454515
BAJAJ	10	27.57286146	2.757286146	3.559107042
TATA	10	44.47786666	4.447786666	5.637771543
IFFCO	10	37.91910412	3.791910412	15.56551625
ICICI	10	-6.59918264	-0.659918264	40.19282569

"F"-TEST ONE WAY ANOVA

TABLE 4.81

NET COMMISSION (MISC.) AND NET EARNED PREMIUM (MISC.)

Public & Private Sector (Selected) Non-Life Insurance Co.

[Period from 2013-14 to 2022-23]

Source of Differences	Sum of the Square of Deviation	Degree of Freedom	M.S.S.	Fc	Ft
Between Group	498.77	7	71.25	8.00	2.14
Within Group	641.01	72	8.90		
Total	**1139.78**	**79**			

KEY OBSERVATIONS FROM THE TABLE:

- The ANOVA test results suggest that there are statistically significant differences in the ratio of Net Commission (Misc. Business) to Net Earned Premium (Misc. Business) among the selected public and private sector non-life insurance companies in India.
- The calculated F-value (Fc = 8.003) exceeds the critical F-value (Ft = 2.140), indicating that the variations in the net commission to Net Earned Premium ratios are not due to random chance but reflect meaningful differences among the companies.

STATISTICAL DECISION:

The rejection of the null hypothesis based on the F-test results implies that the differences observed in the ratio of Net Commission (Misc. Business) to Net Earned Premium (Misc. Business) are statistically significant.

IMPLICATIONS OF THE FINDINGS:

- Significant variations in the net commission to Net Earned Premium ratios suggest differing commission structures, sales strategies, and premium income generation practices among the selected insurers in the miscellaneous business segment.

- These findings may indicate varying levels of commission expenses, sales efficiency, and overall financial performance between public and private sector non-life insurance companies in the miscellaneous insurance business.
- Understanding these differences can provide insights into the insurers' commission payout strategies, sales effectiveness, and profitability in the miscellaneous business segment.

CONCLUSION:

The ANOVA analysis reveals substantial differences in the ratio of Net Commission (Misc. Business) to Net Earned Premium (Misc. Business) across the selected public and private sector non-life insurance companies in India. These variations underscore the diverse commission structures and sales strategies of insurers in the miscellaneous business segment. The statistically significant differences observed in this ratio highlight the distinct approaches to commission management, sales efficiency, and financial performance within this specific business segment, which can impact the companies' profitability and competitiveness in the market.

(D) NET COMMISSION ANALYSIS - ALL BUSINESS

TABLE 4.82

The Statement Showing Net Commission and Net Earned Premium of Selected Sample Public Sector Non-Life Insurance Companies (Period from 2013-14 to 2022-23)

(Figures in Thousand)

YEAR	THE NEW INDIA ASSURANCE CO. LTD.		THE ORIENTAL INSURANCE CO. LTD.		NATIONAL INSURANCE CO. LTD.		UNITED INDIA INSURANCE CO. LTD.	
	Net Comm. (All)	Net Prem. (All)	Net Comm. (All)	Net Prem. (All)	Net Comm. (All)	Net Prem. (All)	Net Comm. (All)	Net Prem. (All)
2013-14	11726058	111968746	3574419	59539683	5831068	86826698	4388339	76032991
2014-15	12838709	133152912	3478169	64251650	5645894	98981561	5312927	88162289
2015-16	14129294	150712330	4630997	70239021	6198578	107913822	5133518	100228655
2016-17	13320407	179353361	5002548	83832645	2892251	108036271	6262658	120356103
2017-18	18327111	198303938	6372018	96280064	11003651	112665548	6675872	128609842
2018-19	22106293	216116577	6585425	106015259	8172306	104002258	7327029	131045080
2019-20	23082780	236621833	8171164	109244417	8041639	96827149	7647056	137445418
2020-21	24838603	263763350	9015173	110369827	9674321	112414832	9183305	139079335
2021-22	23130156	290646997	9261560	116383688	8317950	123226679	9024901	136956001
2022-23	24398889	304249546	9463334	132509868	8027359	127061631	10611920	151442860

Source: Annual Report of respective company's website

TABLE 4.83

The Statement Showing Ratio of Net Commission and Net Earned Premium of Selected Sample Public Sector Non-Life Insurance Companies (Period from 2013-14 to 2022-23)

(Figures in %)

YEAR	THE NEW INDIA ASSURANCE CO. LTD.	THE ORIENTAL INSURANCE CO. LTD.	NATIONAL INSURANCE CO. LTD.	UNITED INDIA INSURANCE CO. LTD.
2013-14	10.47	6.00	6.72	5.77
2014-15	9.64	5.41	5.70	6.03
2015-16	9.38	6.59	5.74	5.12
2016-17	7.43	5.97	2.68	5.20
2017-18	9.24	6.62	9.77	5.19
2018-19	10.23	6.21	7.86	5.59
2019-20	9.76	7.48	8.31	5.56
2020-21	9.42	8.17	8.61	6.60
2021-22	7.96	7.96	6.75	6.59
2022-23	8.02	7.14	6.32	7.01

ASSESSMENT OF THE TABULATED INFORMATION

- **The New India Assurance Co. Ltd.** ratio of Net Commission to Net Earned Premium in the All-Business category displayed fluctuations over the period from 2013-14 to 2022-23. The ratios ranged from 7.43% to 10.47%, indicating varying levels of commission earnings relative to premium received across all business segments.
- **The Oriental Insurance Co. Ltd.** showed varying ratios from 5.41% to 8.17% during the same period, reflecting fluctuations in the commission earned compared to the premium received in the All-Business category. The ratios fluctuated, suggesting changes in commission efficiency across all business segments.
- **National Insurance Co. Ltd.** exhibited ratios ranging from 2.68% to 9.77%, with fluctuations in the commission relative to premium in the All-Business category. The ratios varied over the years, indicating changes in commission performance across all business segments.
- **United India Insurance Co. Ltd.** ratios varied from 5.12% to 7.01%, showcasing a range of commission to premium ratios in the All-Business category. The company

experienced fluctuations in commission efficiency relative to premium received across all business segments.

Overall, the analysis of the Ratio of Net Commission (All Business) and Net Earned Premium (All Business) for the selected Public Sector Non-Life Insurance Companies in India highlights fluctuations in commission earnings relative to premium received across all business segments. The varying ratios underscore the importance of monitoring and optimizing commission structures to enhance profitability and operational performance in all business segments of non-life insurance companies.

TABLE 4.84

The Statement Showing Net Commission and Net Earned Premium of Selected Sample Private Sector Non-Life Insurance Companies (Period from 2013-14 to 2022-23)

(Figures in Thousand)

YEAR	BAJAJ ALLIANZ GENERAL INSURANCE CO. LTD.		TATA AIG GENERAL INSURANCE CO. LTD.		IFFCO TOKIO GENERAL INSURANCE CO. LTD.		ICICI LOMBARD GENERAL INSURANCE CO. LTD.	
	Net Comm. (All)	Net Prem. (All)	Net Comm. (All)	Net Prem. (All)	Net Comm. (All)	Net Prem. (All)	Net Comm. (All)	Net Prem. (All)
2013-14	1352007	34930567	368751	16727815	-322336	19531038	-2290885	43529133
2014-15	492439	38319046	386224	20128096	370675	22674477	-3738213	42353348
2015-16	939289	42236473	787540	20627372	495392	28049484	-3279732	48216173
2016-17	356263	49370455	528840	24074401	-1862093	35109985	-4341303	61636042
2017-18	3180711	60585689	1545133	33269666	1130767	32363085	-2839545	69117348
2018-19	3747151	70097769	280572	45782143	2136886	40303183	2229052	83753478
2019-20	916337	82061822	-302004	48527980	1653675	46253213	3639935	94035170
2020-21	493726	74361302	2829596	49354326	2131633	48987593	6009340	100139940
2021-22	-942463	77793681	2365626	66315490	3766786	55652506	6338889	130320866
2022-23	-3662186	80187943	4369767	82327999	4491099	64325534	4722053	148228466

Source: Annual Report of respective company’s website

TABLE 4.85

The Statement Showing Ratio of Net Commission and Net Earned Premium of Selected Sample Private Sector Non-Life Insurance Companies (Period from 2013-14 to 2022-23)

(Figures in %)

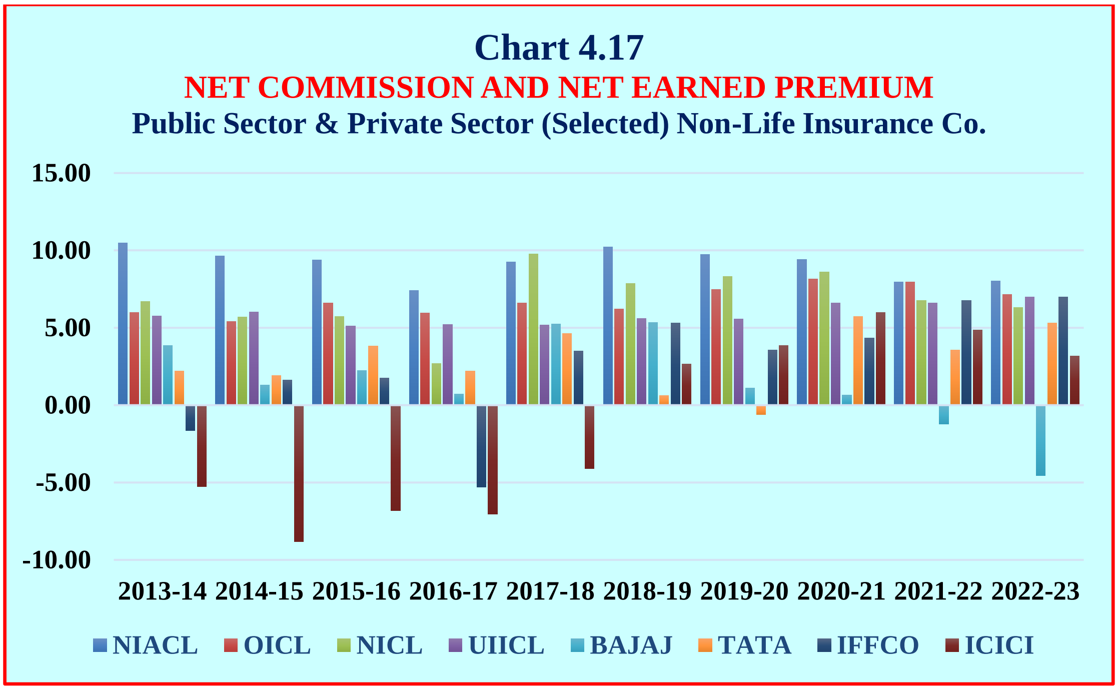
YEAR	BAJAJ ALLIANZ GENERAL INSURANCE CO. LTD.	TATA AIG GENERAL INSURANCE CO. LTD.	IFFCO TOKIO GENERAL INSURANCE CO. LTD.	ICICI LOMBARD GENERAL INSURANCE CO. LTD.
2013-14	3.87	2.20	-1.65	-5.26
2014-15	1.29	1.92	1.63	-8.83
2015-16	2.22	3.82	1.77	-6.80
2016-17	0.72	2.20	-5.30	-7.04
2017-18	5.25	4.64	3.49	-4.11
2018-19	5.35	0.61	5.30	2.66
2019-20	1.12	-0.62	3.58	3.87
2020-21	0.66	5.73	4.35	6.00
2021-22	-1.21	3.57	6.77	4.86
2022-23	-4.57	5.31	6.98	3.19

ASSESSMENT OF THE TABULATED INFORMATION

- **Bajaj Allianz General Insurance Co. Ltd.** ratio of Net Commission to Net Earned Premium in the All-Business category exhibited fluctuations over the period from 2013-14 to 2022-23. The ratios ranged from -4.57% to 5.35%, indicating varying levels of commission earnings relative to premium received across all business segments.
- **Tata AIG General Insurance Co. Ltd.** showed varying ratios from -0.62% to 5.73% during the same period, reflecting fluctuations in the commission earned compared to the premium received in the All-Business category. The ratios fluctuated, suggesting changes in commission efficiency across all business segments.
- **IFFCO TOKIO General Insurance Co. Ltd.** exhibited ratios ranging from -5.30% to 6.98%, with fluctuations in the commission relative to premium in the All-Business category. The wide range of ratios suggests challenges and improvements in commission earnings and efficiency across all business segments.
- **ICICI Lombard General Insurance Co. Ltd.** ratios varied from -8.83% to 6.00%, showcasing a range of commission to premium ratios in the All-Business category. The

company experienced fluctuations in commission efficiency relative to premium received across all business segments.

Overall, the analysis of the Ratio of Net Commission (All Business) and Net Earned Premium (All Business) for the selected Private Sector Non-Life Insurance Companies in India highlights fluctuations in commission earnings relative to premium received across all business segments. The varying ratios underscore the importance of monitoring and optimizing commission structures to enhance profitability and operational performance in all business segments of non-life insurance companies.



Data Examination (Statistical Tools)

Null Hypothesis (H0) : There is no statistically significant difference in **Net Commission Ratio** among the selected public and private non-life insurance firms in India with respect to **Net Commission to Net Earned Premium.**

Alternative Hypothesis (H1) : There is statistically significant difference in **Net Commission Ratio** among the selected public and private non-life insurance firms in India with respect to **Net Commission to Net Earned Premium.**

COMPUTATION OF VARIANCE USING ONE WAY ANOVA

STEP-1: Ratio of Net Commission and Net Earned Premium of Public Sector & Private Sector (Selected) Non-Life Insurance Co.

YEAR	NIACL	OICL	NICL	UIICL	BAJAJ	TATA	IFFCO	ICICI
2013-14	10.47	6.00	6.72	5.77	3.87	2.20	-1.65	-5.26
2014-15	9.64	5.41	5.70	6.03	1.29	1.92	1.63	-8.83
2015-16	9.38	6.59	5.74	5.12	2.22	3.82	1.77	-6.80
2016-17	7.43	5.97	2.68	5.20	0.72	2.20	-5.30	-7.04
2017-18	9.24	6.62	9.77	5.19	5.25	4.64	3.49	-4.11
2018-19	10.23	6.21	7.86	5.59	5.35	0.61	5.30	2.66
2019-20	9.76	7.48	8.31	5.56	1.12	-0.62	3.58	3.87
2020-21	9.42	8.17	8.61	6.60	0.66	5.73	4.35	6.00
2021-22	7.96	7.96	6.75	6.59	-1.21	3.57	6.77	4.86
2022-23	8.02	7.14	6.32	7.01	-4.57	5.31	6.98	3.19

STEP-2: Consolidated Output of One - Way ANOVA.

GROUPS	COUNT	SUM	AVERAGE	VARIANCE
NIACL	10	91.53708273	9.153708273	1.035523294
OICL	10	67.55450607	6.755450607	0.827075701
NICL	10	68.44419672	6.844419672	3.887093537
UIICL	10	58.6686724	5.86686724	0.446584431
BAJAJ	10	14.69879957	1.469879957	8.960433519
TATA	10	29.38086794	2.938086794	4.191033615
IFFCO	10	26.91982697	2.691982697	14.52996161
ICICI	10	-11.4600832	-1.146008323	33.01222463

"F"-TEST ONE WAY ANOVA
TABLE 4.86

NET COMMISSION AND NET EARNED PREMIUM

Public & Private Sector (Selected) Non-Life Insurance Co.

[Period from 2013-14 to 2022-23]

Source of Differences	Sum of the Square of Deviation	Degree of Freedom	M.S.S.	Fc	Ft
Between Group	806.22	7	115.17	13.77	2.14
Within Group	602.01	72	8.36		
Total	**1408.23**	**79**			

KEY OBSERVATIONS FROM THE TABLE:

- The ANOVA test results suggest that there are statistically significant differences in the ratio of Net Commission (All Business) to Net Earned Premium (All Business) among the selected public and private sector non-life insurance companies in India.
- The calculated F-value (Fc = 13.775) exceeds the critical F-value (Ft = 2.140), indicating that the variations in the net commission to Net Earned Premium ratios are not due to random chance but reflect meaningful differences among the companies.

STATISTICAL DECISION:

The rejection of the null hypothesis based on the F-test results implies that the differences observed in the ratio of Net Commission (All Business) to Net Earned Premium (All Business) are statistically significant.

IMPLICATIONS OF THE FINDINGS:

- Significant variations in the net commission to Net Earned Premium ratios suggest differing commission structures, sales strategies, and premium income generation practices among the selected insurers across all business lines.

- These findings may indicate varying levels of commission expenses, sales efficiency, and overall financial performance between public and private sector non-life insurance companies across their entire business portfolios.
- Understanding these differences can provide insights into the insurers' commission payout strategies, sales effectiveness, and profitability across different business segments.

CONCLUSION:

The ANOVA analysis reveals substantial differences in the ratio of Net Commission (All Business) to Net Earned Premium (All Business) across the selected public and private sector non-life insurance companies in India. These variations underscore the diverse commission structures and sales strategies of insurers across their entire business portfolios. The statistically significant differences observed in this ratio highlight the distinct approaches to commission management, sales efficiency, and financial performance within the sector, which can impact the companies' profitability and competitiveness in the market.

4.6.4. INVESTMENT INCOME ANALYSIS

Investment income serves as a significant source of revenue for non-life insurance companies, supplementing their core income from premiums. Since claim payouts are not immediate, insurers invest collected premiums in instruments such as government securities, bonds, equities, and real estate to generate additional returns.

This income supports profitability, enhances operational efficiency, and strengthens the financial stability of insurers. The ability to generate consistent returns from investments is essential, especially in managing underwriting risks and maintaining solvency.

To evaluate the effectiveness of investment strategies, the **Investment Income Ratio** is used:

Investment Income Ratio = (Net Investment Income ÷ Net Earned Premium) × 100

This ratio helps assess how much investment income is generated relative to underwriting activities. A higher ratio reflects efficient investment management, while a lower ratio may indicate over-reliance on core business income.

By comparing this ratio across insurers, one can identify those with better investment performance and gain insight into the impact of investments on overall financial health.

TABLE 4.87

The Statement Showing Net Income from Investment and Net Earned Premium of Selected Sample Public Sector Non-Life Insurance Companies (Period from 2013-14 to 2022-23)

(Figures in Thousand)

YEAR	THE NEW INDIA ASSURANCE CO. LTD.		THE ORIENTAL INSURANCE CO. LTD.		NATIONAL INSURANCE CO. LTD.		UNITED INDIA INSURANCE CO. LTD.	
	Net Invst. Income	Net Earned Prem.	Net Invst. Income	Net Earned Prem.	Net Invst. Income	Net Earned Prem.	Net Invst. Income	Net Earned Prem.
2013-14	10608790	111968746	4260078	59539683	4569412	86826698	5870776	76032991
2014-15	11296094	133152912	4637960	64251650	5548295	98981561	6270517	88162289
2015-16	12997996	150712330	4238837	70239021	8338961	107913822	7332374	100228655
2016-17	15250229	179353361	4552034	83832645	7678354	108036271	4196556	120356103
2017-18	16528674	198303938	3148244	96280064	7168563	112665548	6785635	128609842
2018-19	21590984	216116577	6351144	106015259	2517895	104002258	3369811	131045080
2019-20	23290247	236621833	329574	109244417	200784	96827149	2017777	137445418
2020-21	19793446	263763350	645886	110369827	0	112414832	3406534	139079335
2021-22	20120895	290646997	562231	116383688	608914	123226679	2248756	136956001
2022-23	30066273	304249546	-5922065	132509868	2684092	127061631	319139	151442860

Source: Annual Report of respective company's website

TABLE 4.88

The Statement Ratio of Showing Net Income from Investment and Net Earned Premium of Selected Sample Public Sector Non-Life Insurance Companies (Period from 2013-14 to 2022-23)

(Figures in %)

YEAR	THE NEW INDIA ASSURANCE CO. LTD.	THE ORIENTAL INSURANCE CO. LTD.	NATIONAL INSURANCE CO. LTD.	UNITED INDIA INSURANCE CO. LTD.
2013-14	9.47	7.16	5.26	7.72
2014-15	8.48	7.22	5.61	7.11
2015-16	8.62	6.03	7.73	7.32
2016-17	8.50	5.43	7.11	3.49
2017-18	8.34	3.27	6.36	5.28
2018-19	9.99	5.99	2.42	2.57
2019-20	9.84	0.30	0.21	1.47
2020-21	7.50	0.59	0.00	2.45
2021-22	6.92	0.48	0.49	1.64
2022-23	9.88	-4.47	2.11	0.21

ASSESSMENT OF THE TABULATED INFORMATION

- **The New India Assurance Co. Ltd.** ratio of Net Income from Investment to Net Earned Premium displayed fluctuations over the period from 2013-14 to 2022-23. The ratios ranged from 6.92% to 9.99%, indicating varying levels of income from investments relative to premium received.
- **The Oriental Insurance Co. Ltd.** showed varying ratios from -4.47% to 7.22% during the same period, reflecting fluctuations in the income from investments compared to the premium received. The negative ratio in some years suggests challenges in generating income from investments for OICL.
- **National Insurance Co. Ltd.** exhibited ratios ranging from 0.00% to 7.73%, with fluctuations in the income from investments relative to premium. The company experienced varying levels of income from investments compared to premium received over the years.
- **United India Insurance Co. Ltd.** ratios varied from 0.21% to 7.72%, showcasing a range of income from investments to premium ratios. The fluctuations in the ratios

suggest varying levels of income generated from investments relative to premium received by UIICL.

Overall, the analysis of the Ratio of Net Income from Investment and Net Earned Premium for the selected Public Sector Non-Life Insurance Companies in India highlights fluctuations in income from investments relative to premium received. The varying ratios underscore the importance of effective investment strategies in generating income to support the insurance business operations of these companies.

TABLE 4.89

The Statement Showing Net Income from Investment and Net Earned Premium of Selected Sample Private Sector Non-Life Insurance Companies (Period from 2013-14 to 2022-23)

(Figures in Thousand)

YEAR	BAJAJ ALLIANZ GENERAL INSURANCE CO. LTD.		TATA AIG GENERAL INSURANCE CO. LTD.		IFFCO TOKIO GENERAL INSURANCE CO. LTD.		ICICI LOMBARD GENERAL INSURANCE CO. LTD.	
	Invst. Income	Net Prem.	Invst. Income	Net Prem.	Invst. Income	Net Prem.	Invst. Income	Net Prem.
2013-14	1137611	34930567	724577	16727815	572841	19531038	1368432	43529133
2014-15	1577540	38319046	837369	20128096	585564	22674477	1780127	42353348
2015-16	2166382	42236473	903912	20627372	696034	28049484	2274559	48216173
2016-17	2752422	49370455	971373	24074401	1664954	35109985	3092224	61636042
2017-18	1916395	60585689	1129391	33269666	1378710	32363085	4058928	69117348
2018-19	2721845	70097769	1318648	45782143	1396122	40303183	4600062	83753478
2019-20	3406363	82061822	1823092	48527980	1740128	46253213	4644447	94035170
2020-21	3299862	74361302	2202631	49354326	1971831	48987593	5046280	100139940
2021-22	3860985	77793681	2639071	66315490	2667555	55652506	7031913	130320866
2022-23	5479696	80187943	2941350	82327999	2647826	64325534	7317283	148228466

Source: Annual Report of respective company’s website

TABLE 4.90

The Statement Showing Ratio of Net Income from Investment and Net Earned Premium of Selected Sample Private Sector Non-Life Insurance Companies (Period from 2013-14 to 2022-23)

(Figures in %)

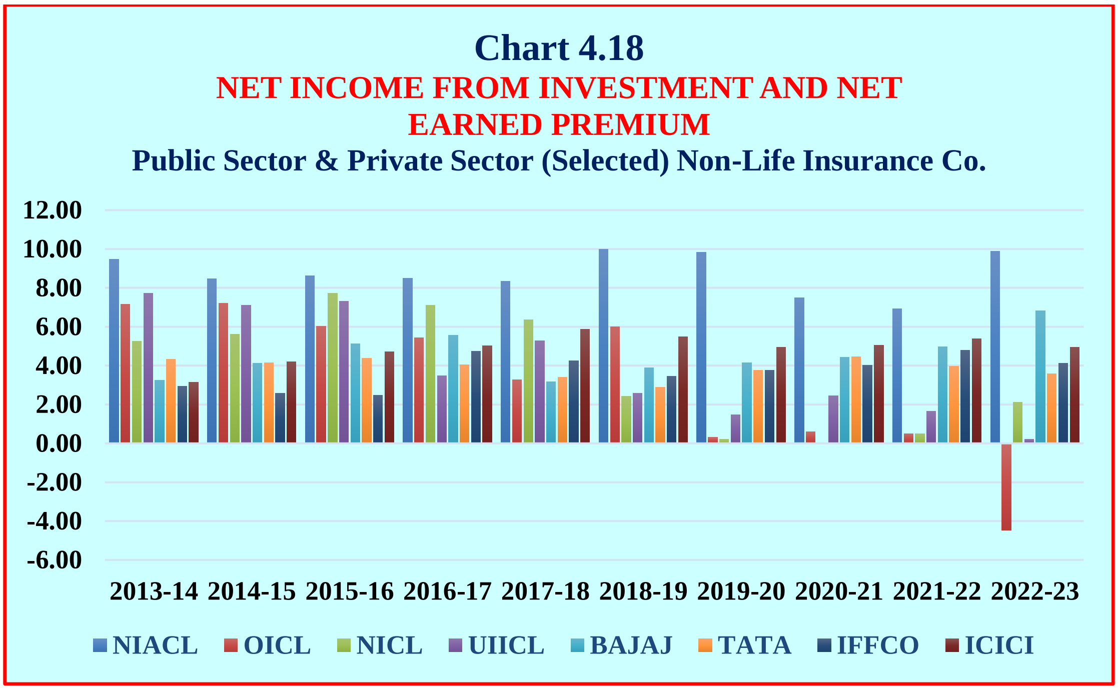
YEAR	BAJAJ ALLIANZ GENERAL INSURANCE CO. LTD.	TATA AIG GENERAL INSURANCE CO. LTD.	IFFCO TOKIO GENERAL INSURANCE CO. LTD.	ICICI LOMBARD GENERAL INSURANCE CO. LTD.
2013-14	3.26	4.33	2.93	3.14
2014-15	4.12	4.16	2.58	4.20
2015-16	5.13	4.38	2.48	4.72
2016-17	5.58	4.03	4.74	5.02
2017-18	3.16	3.39	4.26	5.87
2018-19	3.88	2.88	3.46	5.49
2019-20	4.15	3.76	3.76	4.94
2020-21	4.44	4.46	4.03	5.04
2021-22	4.96	3.98	4.79	5.40
2022-23	6.83	3.57	4.12	4.94

ASSESSMENT OF THE TABULATED INFORMATION

- **Bajaj Allianz General Insurance Co. Ltd.** ratio of Net Income from Investment to Net Earned Premium exhibited an increasing trend over the period from 2013-14 to 2022-23. The ratios increased from 3.26% to 6.83%, indicating a steady growth in income from investments relative to premium received.
- **Tata AIG General Insurance Co. Ltd.** showed varying ratios from 2.88% to 4.46% during the same period, with fluctuations in the income from investments compared to the premium received. The ratios fluctuated, suggesting changes in the income generated from investments for TATA AIG GENERAL INSURANCE.
- **IFFCO TOKIO General Insurance Co. Ltd.** exhibited ratios ranging from 2.48% to 4.74%, with fluctuations in the income from investments relative to premium. The company experienced varying levels of income from investments compared to premium received over the years.

- **ICICI Lombard General Insurance Co. Ltd.** ratios varied from 3.14% to 5.49%, showcasing a range of income from investments to premium ratios. The company experienced fluctuations in the income from investments relative to premium received across the years.

Overall, the analysis of the Ratio of Net Income from Investment and Net Earned Premium for the selected Private Sector Non-Life Insurance Companies in India highlights varying trends in income from investments relative to premium received. BAJAJ ALLIANZ GENERAL INSURANCE demonstrated a consistent increase in this ratio, while other companies showed fluctuations in their income from investments over the period. Effective investment strategies play a crucial role in generating income to support the insurance business operations of these companies.



Data Examination (Statistical Tools)

Null Hypothesis (H0)	:	There is no statistically significant difference in **Investment Income Analysis** among the selected public and private non-life insurance firms in India with respect to **Net Income from Investment to Net Earned Premium.**

Alternative Hypothesis (H1) : There is statistically significant difference in **Investment Income Analysis** among the selected public and private non-life insurance firms in India with respect to **Net Income from Investment to Net Earned Premium.**

COMPUTATION OF VARIANCE USING ONE WAY ANOVA

STEP-1: Ratio of Net Income from Investment and Net Earned Premium of Public Sector & Private Sector (Selected) Non-Life Insurance Co.

YEAR	NIACL	OICL	NICL	UIICL	BAJAJ	TATA	IFFCO	ICICI
2013-14	9.47	7.16	5.26	7.72	3.26	4.33	2.93	3.14
2014-15	8.48	7.22	5.61	7.11	4.12	4.16	2.58	4.20
2015-16	8.62	6.03	7.73	7.32	5.13	4.38	2.48	4.72
2016-17	8.50	5.43	7.11	3.49	5.58	4.03	4.74	5.02
2017-18	8.34	3.27	6.36	5.28	3.16	3.39	4.26	5.87
2018-19	9.99	5.99	2.42	2.57	3.88	2.88	3.46	5.49
2019-20	9.84	0.30	0.21	1.47	4.15	3.76	3.76	4.94
2020-21	7.50	0.59	0.00	2.45	4.44	4.46	4.03	5.04
2021-22	6.92	0.48	0.49	1.64	4.96	3.98	4.79	5.40
2022-23	9.88	-4.47	2.11	0.21	6.83	3.57	4.12	4.94

STEP-2: Consolidated Output of One - Way ANOVA.

GROUPS	COUNT	SUM	AVERAGE	VARIANCE
NIACL	10	87.56301522	8.756301522	1.083347664
OICL	10	31.99971826	3.199971826	14.8919143
NICL	10	37.30032084	3.730032084	9.033865849
UIICL	10	39.25397337	3.925397337	7.460061821
BAJAJ	10	45.50914106	4.550914106	1.241311133
TATA	10	38.95564207	3.895564207	0.250044584
IFFCO	10	37.16006568	3.716006568	0.694771503
ICICI	10	48.75659752	4.875659752	0.575131493

"F"-TEST ONE WAY ANOVA
TABLE 4.91

NET INCOME FROM INVESTMENT AND NET EARNED PREMIUM

Public & Private Sector (Selected) Non-Life Insurance Co.

[Period from 2013-14 to 2022-23]

Source of Differences	Sum of the Square of Deviation	Degree of Freedom	M.S.S.	Fc	Ft
Between Group	218.00	7	31.14	7.07	2.14
Within Group	317.07	72	4.40		
Total	**535.08**	**79**			

KEY OBSERVATIONS FROM THE TABLE:

- The ANOVA results indicate significant differences in the ratio of Net Income from Investment to Net Earned Premium among the selected insurance companies.
- The calculated **F-value (Fc = 7.072)** is **greater than the critical F-value (Ft = 2.140)**, suggesting that these variations are statistically significant and not due to random chance.

STATISTICAL DECISION:

- Since Fc > Ft, the **null hypothesis is rejected**.
- This implies that there are significant differences among the insurers in terms of their investment income efficiency relative to Net Earned Premium.

IMPLICATIONS OF THE FINDINGS:

- The statistically significant variation in this ratio reflects **different investment strategies, portfolio management practices**, and **premium retention policies** among the companies.

- Companies like **NIACL and ICICI LOMBARD GENERAL INSURANCE** may have more effective investment income generation mechanisms, while others exhibit relatively lower returns from investments.
- These insights are critical for understanding the **financial health, risk management approaches**, and **profitability** of insurers across sectors.

CONCLUSION:

The ANOVA analysis confirms notable disparities in the **ratio of Net Investment Income to Net Earned Premium** among both public and private sector non-life insurance firms in India over the period 2013–14 to 2022–23. These differences highlight the **diverse investment practices** and financial performance strategies within the industry. The findings are useful for regulators, investors, and company management to benchmark and improve investment efficiency relative to earned premiums.

4.6.5. RETURN ON EQUITY ANALYSIS [ROE]

Return on Equity (ROE) is a key financial metric that measures the profitability of a company relative to the equity contributed by its shareholders. In the context of non-life insurance companies, ROE reflects the insurer's ability to generate profits from shareholders' original capital investment. For this study, ROE has been calculated using only the equity share capital, excluding reserves and surplus. This approach has been adopted to focus solely on the return generated on the core capital initially infused by the investors.

While comprehensive return measures like Return on Net Worth (which includes reserves, surplus, and excludes fictitious assets) are also important, this analysis isolates equity capital to better understand the efficiency and performance of the insurers in rewarding shareholders' actual investment. A high ROE generally indicates efficient use of shareholder funds in profit generation, whereas a low ROE may point to underutilization or operational inefficiencies. This parameter is particularly useful when comparing companies of different sizes and capital structures, as it offers a standardized view of profitability relative to invested equity.

The formula applied is:

Return on Equity = (Profit After Tax ÷ Equity Share Capital) × 100

This metric provides vital insight into financial sustainability and investor value creation in the non-life insurance sector.

TABLE 4.92

The Statement Showing Profit After Tax and Equity Share Capital of Selected Sample Public Sector Non-Life Insurance Companies (Period from 2013-14 to 2022-23)

(Figures in Thousand)

YEAR	THE NEW INDIA ASSURANCE CO. LTD.		THE ORIENTAL INSURANCE CO. LTD.		NATIONAL INSURANCE CO. LTD.		UNITED INDIA INSURANCE CO. LTD.	
	Profit After Tax	Equity Share Capital	Profit After Tax	Equity Share Capital	Profit After Tax	Equity Share Capital	Profit After Tax	Equity Share Capital
2013-14	10889814	2000000	4590706	1500000	8228873	1000000	5276040	1500000
2014-15	14312245	2000000	3908623	2000000	9701084	1000000	3369610	1500000
2015-16	8244497	2000000	3274243	2000000	1752158	1000000	2469378	1500000
2016-17	10279685	2000000	-16726902	2000000	631781	1000000	-18925764	1500000
2017-18	21892226	4120000	15080238	2000000	-21741797	1000000	9887698	1500000
2018-19	6047748	8240000	-2909072	2000000	-16935645	1000000	-18830658	1500000
2019-20	14356662	8240000	-15152954	2500000	-40998005	25000000	-14788620	2000000
2020-21	16277514	8240000	-15098382	34200000	-5470861	56750000	-9675307	38050000
2021-22	1779202	8240000	-30988031	46200000	-16583570	93750000	-21142103	39050000
2022-23	10612920	8240000	-49851394	46200000	-38824169	93750000	-28132066	39050000

Source: Annual Report of respective company’s website

TABLE 4.93

The Statement Showing Ratio of Profit After Tax and Equity Share Capital of Selected Sample Public Sector Non-Life Insurance Companies (Period from 2013-14 to 2022-23)

(Figures in %)

YEAR	THE NEW INDIA ASSURANCE CO. LTD.	THE ORIENTAL INSURANCE CO. LTD.	NATIONAL INSURANCE CO. LTD.	UNITED INDIA INSURANCE CO. LTD.
2013-14	544.49	306.05	822.89	351.74
2014-15	715.61	195.43	970.11	224.64
2015-16	412.22	163.71	175.22	164.63
2016-17	513.98	-836.35	63.18	-1261.72
2017-18	531.36	754.01	-2174.18	659.18
2018-19	73.40	-145.45	-1693.56	-1255.38
2019-20	174.23	-606.12	-163.99	-739.43
2020-21	197.54	-44.15	-9.64	-25.43
2021-22	21.59	-67.07	-17.69	-54.14
2022-23	128.80	-107.90	-41.41	-72.04

ASSESSMENT OF THE TABULATED INFORMATION

- **The New India Assurance Co. Ltd.** ratio of Profit After Tax to Equity Share Capital displayed fluctuations over the period from 2013-14 to 2022-23. The ratios ranged from 21.59% to 715.61%, indicating varying levels of profitability relative to the equity share capital.
- **The Oriental Insurance Co. Ltd.** showed varying ratios from -836.35% to 754.01% during the same period, reflecting significant fluctuations in profitability compared to equity share capital. The negative ratio in some years suggests challenges in profitability for OICL.
- **National Insurance Co. Ltd.** exhibited ratios ranging from -2174.18% to 970.11%, with fluctuations in profitability relative to equity share capital. The company experienced varying levels of profitability compared to equity share capital over the years.

- **United India Insurance Co. Ltd.** ratios varied from -1261.72% to 659.18%, showcasing a range of profitability to equity share capital ratios. The company experienced fluctuations in profitability relative to equity share capital across the years.

Overall, the analysis of the Ratio of Profit After Tax (PAT) and Equity Share Capital for the selected Public Sector Non-Life Insurance Companies in India highlights significant fluctuations in profitability relative to equity share capital. NIACL showed varying profitability levels, while OICL, NICL, and UIICL experienced challenges in maintaining consistent profitability throughout the period. Effective management of profitability in relation to equity share capital is crucial for the financial health and sustainability of these insurance companies.

TABLE 4.94

The Statement Showing Profit After Tax and Equity Share Capital of Selected Sample Private Sector Non-Life Insurance Companies (Period from 2013-14 to 2022-23)

(Figures in Thousand)

YEAR	BAJAJ ALLIANZ GENERAL INSURANCE CO. LTD.		TATA AIG GENERAL INSURANCE CO. LTD.		IFFCO TOKIO GENERAL INSURANCE CO. LTD.		ICICI LOMBARD GENERAL INSURANCE CO. LTD.	
	Profit After Tax	Equity Share Capital	Profit After Tax	Equity Share Capital	Profit After Tax	Equity Share Capital	Profit After Tax	Equity Share Capital
2013-14	4089892	1102273	1622855	5050000	2160550	2693215	5113559	4450555
2014-15	5623190	1102273	1540698	5050000	2060124	2693215	5356145	4465940
2015-16	5642248	1102273	199791	6325000	1670883	2693215	5074467	4475384
2016-17	7278383	1102273	1184282	6325000	4268178	2693215	7018839	4511507
2017-18	9212412	1102273	1567079	7325000	1892890	2693215	8617757	4539483
2018-19	7798583	1102273	1120843	9075000	1786219	2742183	10492626	4543099
2019-20	9987770	1102273	3346066	9944560	2046969	2742183	11937570	4544663
2020-21	13300884	1102273	4477992	9944560	3198575	2742183	14730548	4545945
2021-22	13391279	1102273	4541454	9944560	587648	2802544	12710088	4908914
2022-23	13479813	1102273	5530504	9944560	1358104	2878186	17290519	4911251

Source: Annual Report of respective company’s website

TABLE 4.95

The Statement Showing Ratio of Profit After Tax and Equity Share Capital of Selected Sample Private Sector Non-Life Insurance Companies (Period from 2013-14 to 2022-23)

(Figures in %)

YEAR	BAJAJ ALLIANZ GENERAL INSURANCE CO. LTD.	TATA AIG GENERAL INSURANCE CO. LTD.	IFFCO TOKIO GENERAL INSURANCE CO. LTD.	ICICI LOMBARD GENERAL INSURANCE CO. LTD.
2013-14	371.04	32.14	80.22	114.90
2014-15	510.14	30.51	76.49	119.93
2015-16	511.87	3.16	62.04	113.39
2016-17	660.31	18.72	158.48	155.58
2017-18	835.77	21.39	70.28	189.84
2018-19	707.50	12.35	65.14	230.96
2019-20	906.11	33.65	74.65	262.67
2020-21	1206.68	45.03	116.64	324.04
2021-22	1214.88	45.67	20.97	258.92
2022-23	1222.91	55.61	47.19	352.06

ASSESSMENT OF THE TABULATED INFORMATION

- **Bajaj Allianz General Insurance Co. Ltd.** ratio of Profit After Tax to Equity Share Capital exhibited a positive trend over the period from 2013-14 to 2022-23. The ratios increased from 371.04% to 1222.91%, indicating significant growth in profitability relative to equity share capital.
- **Tata AIG General Insurance Co. Ltd.** showed varying ratios from 3.16% to 55.61% during the same period, with fluctuations in profitability compared to equity share capital. The ratios fluctuated, suggesting changes in profitability levels for TATA AIG GENERAL INSURANCE.
- **IFFCO TOKIO General Insurance Co. Ltd.** exhibited ratios ranging from 20.97% to 158.48%, with fluctuations in profitability relative to equity share capital. The company experienced varying levels of profitability compared to equity share capital over the years.

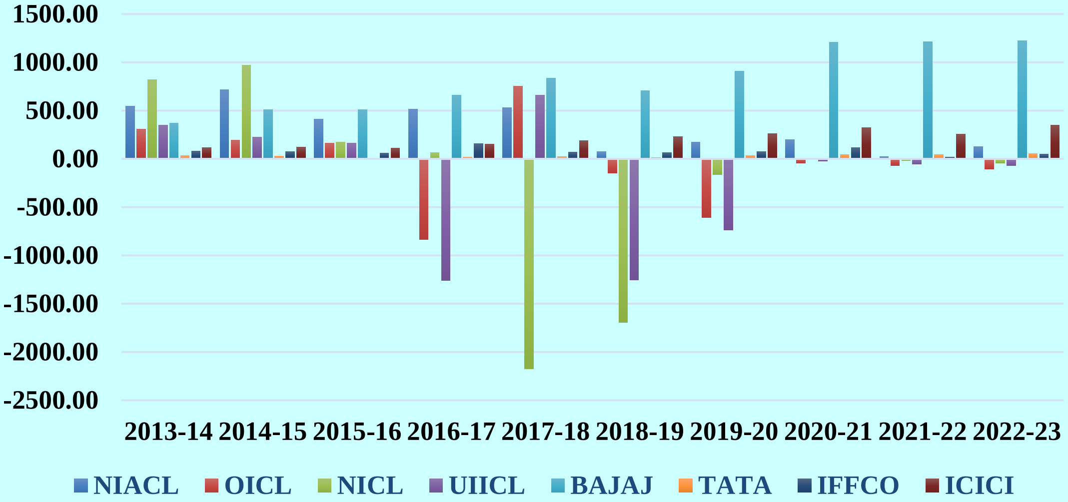
- **ICICI Lombard General Insurance Co. Ltd.** ratios varied from 113.39% to 352.06%, showcasing a range of profitability to equity share capital ratios. The company experienced fluctuations in profitability relative to equity share capital across the years.

Overall, the analysis of the Ratio of Profit After Tax (PAT) and Equity Share Capital for the selected Private Sector Non-Life Insurance Companies in India highlights significant growth in profitability relative to equity share capital for companies like BAJAJ ALLIANZ GENERAL INSURANCE. Other companies like TATA AIG GENERAL INSURANCE, IFFCO TOKIO GENERAL INSURANCE, and ICICI LOMBARD GENERAL INSURANCE also showed varying levels of profitability compared to equity share capital. Effective management of profitability in relation to equity share capital is crucial for the financial health and sustainability of these insurance companies.

Chart 4.19

PROFIT AFTER TAX AND EQUITY SHARE CAPITAL

Public Sector & Private Sector (Selected) Non-Life Insurance Co.



Data Examination (Statistical Tools)

Null Hypothesis (H0)	:	There is no statistically significant difference in **Return on Equity Analysis** among the selected public and private non-life insurance firms in India with respect to **Profit After Tax to Equity Share Capital.**
Alternative Hypothesis (H1)	:	There is statistically significant difference in **Return on Equity Analysis** among the selected public and private non-life insurance firms in India with respect to **Profit After Tax to Equity Share Capital.**

COMPUTATION OF VARIANCE USING ONE WAY ANOVA

STEP-1: Ratio of Profit After Tax and Equity Share Capital of Public Sector & Private Sector (Selected) Non-Life Insurance Co.

YEAR	NIACL	OICL	NICL	UIICL	BAJAJ	TATA	IFFCO	ICICI
2013-14	544.49	306.05	822.89	351.74	371.04	32.14	80.22	114.90
2014-15	715.61	195.43	970.11	224.64	510.14	30.51	76.49	119.93
2015-16	412.22	163.71	175.22	164.63	511.87	3.16	62.04	113.39
2016-17	513.98	-836.35	63.18	-1261.72	660.31	18.72	158.48	155.58
2017-18	531.36	754.01	-2174.18	659.18	835.77	21.39	70.28	189.84
2018-19	73.40	-145.45	-1693.56	-1255.38	707.50	12.35	65.14	230.96
2019-20	174.23	-606.12	-163.99	-739.43	906.11	33.65	74.65	262.67
2020-21	197.54	-44.15	-9.64	-25.43	1206.68	45.03	116.64	324.04
2021-22	21.59	-67.07	-17.69	-54.14	1214.88	45.67	20.97	258.92
2022-23	128.80	-107.90	-41.41	-72.04	1222.91	55.61	47.19	352.06

STEP-2: Consolidated Output of One - Way ANOVA.

GROUPS	COUNT	SUM	AVERAGE	VARIANCE
NIACL	10	3313.235569	331.3235569	57677.45912
OICL	10	-387.83902	-38.78390195	202027.9956
NICL	10	-2069.08849	-206.9088492	983229.4938
UIICL	10	-2007.95419	-200.7954194	439560.2638
BAJAJ	10	8147.206182	814.7206182	100649.2857
TATA	10	298.2294943	29.82294943	264.2650057
IFFCO	10	772.1019868	77.21019868	1407.127097
ICICI	10	2122.27765	212.227765	7622.385637

"F"-TEST ONE WAY ANOVA
TABLE 4.96

PROFIT AFTER TAX AND EQUITY SHARE CAPITAL

Public & Private Sector (Selected) Non-Life Insurance Co.

[Period from 2013-14 to 2022-23]

Source of Variation	Sum of Square	Degree of Freedom	Mean Sum of Square	Fc	Ft
Between Group	7803222.06	7	1114746.01	4.98	2.14
Within Group	16131944.48	72	224054.78		
Total	**23935166.55**	**79**			

KEY OBSERVATIONS FROM THE TABLE:

- The calculated **F-value (Fc = 4.975)** is **greater than** the critical **F-value (Ft = 2.140)**.
- This result indicates that the differences in the ratio of Profit After Tax to Equity Share Capital among the insurance companies are **statistically significant**.

STATISTICAL DECISION:

- Since **Fc > Ft**, the **null hypothesis is rejected**.
- There are **significant differences** in how efficiently different insurance companies are generating profits relative to their equity base.

IMPLICATIONS OF THE FINDINGS:

- The wide variance in this ratio suggests **divergent profitability performance and capital efficiency** among insurers.
- Private sector insurers like **BAJAJ ALLIANZ GENERAL INSURANCE** and **ICICI LOMBARD GENERAL INSURANCE** show much higher profitability per unit of equity capital, indicating **better return on capital**.

- On the other hand, some public sector insurers such as **NICL** and **UIICL** have negative or very low ratios, possibly reflecting **operational inefficiencies or accumulated losses**.

CONCLUSION:

The ANOVA analysis highlights statistically significant differences in the **Ratio of Profit After Tax to Equity Share Capital** across selected non-life insurers in India from 2013–14 to 2022–23. These disparities reveal how differently public and private insurers utilize their capital to generate profits. The results emphasize the need for better capital deployment strategies, especially among underperforming public sector insurers, to enhance financial sustainability and shareholder value.

4.7. FINANCIAL SOUNDNESS & LIQUIDITY ANALYSIS

Assessing the financial soundness and liquidity of non-life insurance companies is essential to evaluate their long-term sustainability and ability to meet policyholder obligations. Financial soundness reflects a company’s resilience against financial shocks, its profitability, and its ability to maintain stability under changing market conditions. This assessment combines both quantitative data and qualitative aspects such as governance, risk management practices, and operational efficiency.

This study focuses on Financial Soundness Indicators (FSIs), which serve as standardized tools for evaluating the financial health of insurers. These indicators provide insights into solvency, profitability, liquidity, and operational efficiency, making them valuable for comparison across companies.

Liquidity analysis is equally important as it measures an insurer’s ability to meet short-term liabilities. Given that non-life insurance companies collect premiums in advance and pay claims later, efficient liquidity management is vital to ensure timely settlements without financial strain.

For the purpose of this research, four key parameters have been selected to evaluate financial soundness and liquidity:

1. **Return on Net Worth (RONW)** – Measures profitability in relation to shareholders' funds.
2. **Current Ratio** – Assesses short-term financial strength by comparing current assets to current liabilities.
3. **Solvency Margin** – Indicates the insurer's capacity to absorb losses and fulfil long-term obligations.
4. **Liquid Assets to Total Assets Ratio** – Shows the share of assets readily available to meet immediate financial needs.

Together, these indicators provide a comprehensive view of the financial stability of selected non-life insurance companies in India. Sound financial health not only ensures regulatory compliance but also enhances stakeholder confidence and supports consistent business performance.

4.7.1. RETURN ON NETWORTH

Return on Net Worth (RONW) is an important financial metric that measures the profitability of a company in relation to shareholders' funds. In non-life insurance companies, it reflects how effectively the company is utilizing its owned capital to generate profits. It is particularly relevant for shareholders, as it indicates the returns they earn on their investments after accounting for business and financial risks.

Net worth, also referred to as shareholders' funds, includes equity and preference share capital along with reserves and surplus, after deducting intangible assets and accumulated losses. The formula used is:

Return on Net Worth = (Profit After Tax ÷ Net Worth) × 100

A higher RONW indicates efficient use of capital, strong profitability, and sound financial management. It suggests that the insurer is generating sufficient returns to reward its investors. On the other hand, a low RONW may signal underperformance, operational inefficiencies, or poor risk management.

This ratio is crucial not only for current stakeholders but also for potential investors and management, as it helps assess long-term financial sustainability and competitive strength. In this study, RONW serves as a key indicator for evaluating and comparing the financial soundness of selected non-life insurance companies in India.

TABLE 4.97

The Statement Showing Profit After Tax and Net Worth of Selected Sample Public Sector Non-Life Insurance Companies

(Period from 2013-14 to 2022-23)

(Figures in Thousand)

YEAR	THE NEW INDIA ASSURANCE CO. LTD.		THE ORIENTAL INSURANCE CO. LTD.		NATIONAL INSURANCE CO. LTD.		UNITED INDIA INSURANCE CO. LTD.	
	Profit After Tax	Net Worth	Profit After Tax	Net Worth	Profit After Tax	Net Worth	Profit After Tax	Net Worth
2013-14	10889814	274374422	4590706	114905706	8228873	109373462	5276040	96528115
2014-15	14312245	334538367	3908623	129084599	9701084	126298863	3369610	118424926
2015-16	8244497	305988563	3274243	121089047	1752158	91987464	2469378	102979920
2016-17	10279685	362130854	-16726902	123251439	631781	107094396	-18925764	99525499
2017-18	21892226	388743271	15080238	121842595	-21741797	66090578	9887698	103734333
2018-19	6047748	387210718	-2909072	115816386	-16935645	36771913	-18830658	77507548
2019-20	14356662	267150028	-15152954	48056057	-40998005	17524404	-14788620	22533908
2020-21	16277514	373104717	-15098382	89925287	-5470861	83742956	-9675307	83115863
2021-22	1779202	390891831	-30988031	110804169	-16583570	129776901	-21142103	82831050
2022-23	10612920	389432656	-49851394	126310103	-38824169	134129910	-28132066	77635252

Source: Annual Report of respective company's website

TABLE 4.98

The Statement Showing Ratio of Profit After Tax and Net Worth of Selected Sample Public Sector Non-Life Insurance Companies (Period from 2013-14 to 2022-23)

(Figures in %)

YEAR	THE NEW INDIA ASSURANCE CO. LTD.	THE ORIENTAL INSURANCE CO. LTD.	NATIONAL INSURANCE CO. LTD.	UNITED INDIA INSURANCE CO. LTD.
2013-14	3.97	4.00	7.52	5.47
2014-15	4.28	3.03	7.68	2.85
2015-16	2.69	2.70	1.90	2.40
2016-17	2.84	-13.57	0.59	-19.02
2017-18	5.63	12.38	-32.90	9.53
2018-19	1.56	-2.51	-46.06	-24.30
2019-20	5.37	-31.53	-233.95	-65.63
2020-21	4.36	-16.79	-6.53	-11.64
2021-22	0.46	-27.97	-12.78	-25.52
2022-23	2.73	-39.47	-28.95	-36.24

ASSESSMENT OF THE TABULATED INFORMATION

- **The New India Assurance Co. Ltd.** showed relatively stable performance with its Profit After Tax to Net Worth ratio ranging from a low of 0.46% in 2021–22 to a high of 5.63% in 2017–18. Despite some fluctuations, NIACL generally maintained a positive return on net worth, reflecting consistent profitability relative to its net worth.
- **The Oriental Insurance Co. Ltd.** exhibited significant volatility in its performance. The ratio ranged from a peak of 12.38% in 2017–18 to a low of -39.47% in 2022–23. Multiple years of negative ratios indicate periods of loss-making and eroded shareholder value.
- **National Insurance Co. Ltd.** experienced extreme fluctuations with its ratios ranging from a high of 7.68% in 2014–15 to a dramatic low of -233.95% in 2019–20. This sharp decline reflects severe financial instability and mounting losses, especially in the later years.
- **United India Insurance Co. Ltd.** also demonstrated declining performance, with the ratio falling from a positive 5.47% in 2013–14 to a low of -65.63% in 2019–20 and

remaining negative thereafter. This pattern signifies continued losses and weakening financial health.

Overall, the analysis of the Profit After Tax to Net Worth ratio reveals substantial disparities in profitability among the selected public sector non-life insurance companies over the ten-year period. While NIACL maintained relatively stable and positive returns, OICL, NICL, and UIICL struggled with persistent losses and declining returns in recent years. These trends underscore the importance of strategic financial management and capital efficiency to ensure long-term sustainability in the public sector insurance domain.

TABLE 4.99

The Statement Showing Profit After Tax and Net Worth of Selected Sample Private Sector Non-Life Insurance Companies

(Period from 2013-14 to 2022-23)

(Figures in Thousand)

YEAR	BAJAJ ALLIANZ GENERAL INSURANCE CO. LTD.		TATA AIG GENERAL INSURANCE CO. LTD.		IFFCO TOKIO GENERAL INSURANCE CO. LTD.		ICICI LOMBARD GENERAL INSURANCE CO. LTD.	
	Profit After Tax	Net Worth	Profit After Tax	Net Worth	Profit After Tax	Net Worth	Profit After Tax	Net Worth
2013-14	4089892	16642955	1622855	7404345	2160550	8857280	5113559	24948603
2014-15	5623190	22254840	1540698	8471017	2060124	10916393	5356145	31794771
2015-16	5642248	27897088	199791	10473189	1670883	12581827	5074467	34846594
2016-17	7278383	35175471	1184282	14190768	4268178	16854590	7018839	48888136
2017-18	9212412	44663631	1567079	17677815	1892890	18743579	8617757	57600345
2018-19	7798583	51640081	1120843	22158100	1786219	22527136	10492626	61438819
2019-20	9987770	56421066	3346066	25765981	2046969	24556501	11937570	61906189
2020-21	13300884	75244615	4477992	38395710	3198575	27804167	14730548	86009841
2021-22	13391279	88222160	4541454	46700302	587648	32412584	12710088	97239549
2022-23	13479813	98063472	5530504	51038783	1358104	38772610	17290519	106410517

Source: Annual Report of respective company's website

TABLE 4.100

The Statement Showing Ratio of Profit After Tax and Net Worth of Selected Sample Private Sector Non-Life Insurance Companies (Period from 2013-14 to 2022-23)

(Figures in %)

YEAR	BAJAJ ALLIANZ GENERAL INSURANCE CO. LTD.	TATA AIG GENERAL INSURANCE CO. LTD.	IFFCO TOKIO GENERAL INSURANCE CO. LTD.	ICICI LOMBARD GENERAL INSURANCE CO. LTD.
2013-14	24.57	21.92	24.39	20.50
2014-15	25.27	18.19	18.87	16.85
2015-16	20.23	1.91	13.28	14.56
2016-17	20.69	8.35	25.32	14.36
2017-18	20.63	8.86	10.10	14.96
2018-19	15.10	5.06	7.93	17.08
2019-20	17.70	12.99	8.34	19.28
2020-21	17.68	11.66	11.50	17.13
2021-22	15.18	9.72	1.81	13.07
2022-23	13.75	10.84	3.50	16.25

ASSESSMENT OF THE TABULATED INFORMATION

- **Bajaj Allianz General Insurance Co. Ltd.** consistently demonstrated strong performance with the Profit After Tax to Net Worth ratio ranging between 13.75% (2022–23) and 25.27% (2014–15). The company maintained double-digit returns throughout the period, indicating robust profitability and efficient capital utilization.
- **Tata AIG General Insurance Co. Ltd.** displayed moderate but improving performance. After a significant dip to 1.91% in 2015–16, the company gradually improved its ratio to 12.99% in 2019–20 and 10.84% in 2022–23, reflecting better financial management and growth in profitability.
- **IFFCO TOKIO General Insurance Co. Ltd.** showed a mixed trend, with high returns of over 24% in early years like 2013–14 and 2016–17, but a noticeable decline in the later years, reaching as low as 1.81% in 2021–22. This suggests inconsistent profitability and possible pressure on margins or increased operating costs.

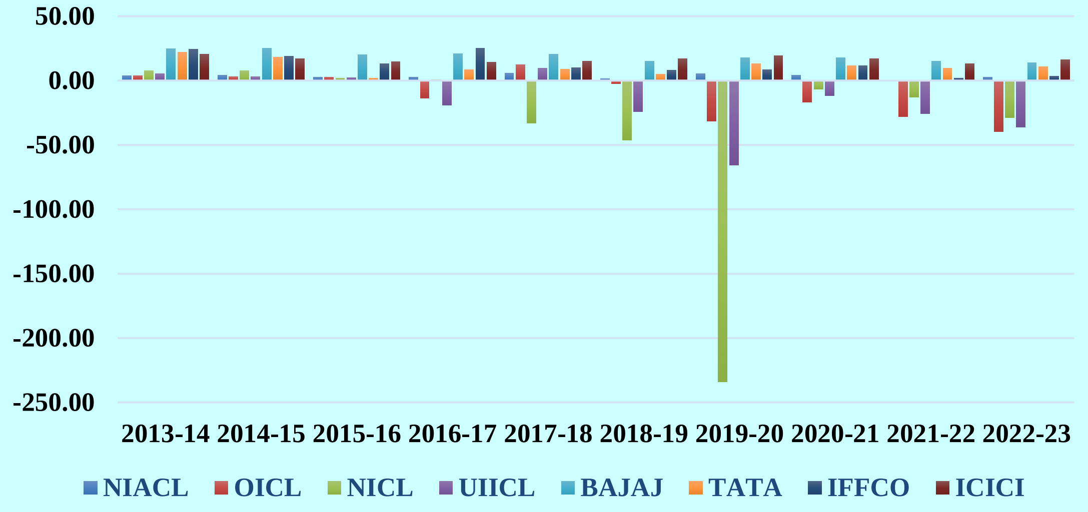
- **ICICI Lombard General Insurance Co. Ltd.** one of the leading private insurers, maintained a stable and strong return on net worth throughout the period. The ratio remained largely in the 13–20% range, peaking at 20.50% in 2013–14 and maintaining 16.25% in 2022–23, indicating consistent financial health and efficiency.

Overall, the Profit After Tax to Net Worth ratios of the selected private sector non-life insurance companies reflect relatively stable and healthy profitability compared to their public sector counterparts. **BAJAJ ALLIANZ GENERAL INSURANCE** and **ICICI LOMBARD GENERAL INSURANCE** consistently delivered strong returns, showcasing effective capital use and operational performance. **TATA AIG GENERAL INSURANCE** and **IFFCO TOKIO GENERAL INSURANCE** exhibited more variability but generally remained in the positive zone. These findings suggest that private sector insurers have managed to maintain better financial discipline and resilience over the observed period.

Chart 4.20

PROFIT AFTER TAX AND NET WORTH

Public Sector & Private Sector (Selected) Non-Life Insurance Co.



Data Examination (Statistical Tools)

Null Hypothesis (H0)	:	There is no statistically significant difference in **Return on Net Worth** among the selected public and private non-life insurance firms in India with respect to **Profit After Tax to Net Worth.**

Alternative Hypothesis (H1) : There is statistically significant difference in **Return on Net Worth** among the selected public and private non-life insurance firms in India with respect to **Profit After Tax to Net Worth.**

COMPUTATION OF VARIANCE USING ONE WAY ANOVA

STEP-1: Ratio of Profit After Tax and Net Worth of Public Sector & Private Sector (Selected) Non-Life Insurance Co.

YEAR	NIACL	OICL	NICL	UIICL	BAJAJ	TATA	IFFCO	ICICI
2013-14	3.97	4.00	7.52	5.47	24.57	21.92	24.39	20.50
2014-15	4.28	3.03	7.68	2.85	25.27	18.19	18.87	16.85
2015-16	2.69	2.70	1.90	2.40	20.23	1.91	13.28	14.56
2016-17	2.84	-13.57	0.59	-19.02	20.69	8.35	25.32	14.36
2017-18	5.63	12.38	-32.90	9.53	20.63	8.86	10.10	14.96
2018-19	1.56	-2.51	-46.06	-24.30	15.10	5.06	7.93	17.08
2019-20	5.37	-31.53	-233.95	-65.63	17.70	12.99	8.34	19.28
2020-21	4.36	-16.79	-6.53	-11.64	17.68	11.66	11.50	17.13
2021-22	0.46	-27.97	-12.78	-25.52	15.18	9.72	1.81	13.07
2022-23	2.73	-39.47	-28.95	-36.24	13.75	10.84	3.50	16.25

STEP-2: Consolidated Output of One - Way ANOVA.

GROUPS	COUNT	SUM	AVERAGE	VARIANCE
NIACL	10	33.89074654	3.389074654	2.690682278
OICL	10	-109.734893	-10.97348929	309.767367
NICL	10	-343.458198	-34.34581978	5255.786601
UIICL	10	-162.100031	-16.21000312	540.6596619
BAJAJ	10	190.7905633	19.07905633	15.34795203
TATA	10	109.4912905	10.94912905	34.05022984
IFFCO	10	125.0519497	12.50519497	65.24960178
ICICI	10	164.0307653	16.40307653	5.22303416

"F"-TEST ONE WAY ANOVA
TABLE 4.101

PROFIT AFTER TAX AND NET WORTH

Public & Private Sector (Selected) Non-Life Insurance Co.

[Period from 2013-14 to 2022-23]

Source of Differences	Sum of the Square of Deviation	Degree of Freedom	M.S.S.	Fc	Ft
Between Group	24835.58	7	3547.94	4.56	2.14
Within Group	56058.98	72	778.60		
Total	**80894.56**	**79**			

KEY OBSERVATIONS FROM THE TABLE:

- The calculated **F-value (Fc = 4.56)** is **greater than** the critical **F-value (Ft = 2.14)** at the 5% significance level.
- This implies that the differences in the **PAT to Net Worth ratios** among the insurers are **statistically significant**.

STATISTICAL DECISION:

Reject the null hypothesis.

The variation in profit-generation efficiency (relative to net worth) is **not due to random chance** but reflects **meaningful differences among insurers**.

IMPLICATIONS OF THE FINDINGS:

- Private sector companies such as **BAJAJ ALLIANZ GENERAL INSURANCE**, **ICICI LOMBARD GENERAL INSURANCE**, and **IFFCO TOKIO GENERAL INSURANCE** demonstrate stronger performance in leveraging net worth to generate profits.
- Public sector companies like **NICL**, **UIICL**, and **OICL** have **negative or very low averages**, reflecting **persistent losses** or **ineffective capital utilization**.
- The wide **variance values**, especially for NICL (5255.79) and UIICL (540.66), suggest **high instability** in their financial performance.

CONCLUSION:

The ANOVA test confirms significant variation in the **Ratio of Profit After Tax to Net Worth** among selected non-life insurance companies in India. These differences underline contrasting **capital productivity and financial management strategies** between public and private sector insurers. Private insurers appear to be more consistent and effective in generating returns on net worth, whereas public sector insurers show volatility and weaker capital efficiency, necessitating reforms for financial strengthening.

4.7.2. RATIO OF TOTAL ASSETS TO TOTAL LIABILITIES

This ratio indicates an insurer's ability to cover its liabilities using its total assets. A higher ratio reflects strong financial health, effective asset management, and better control over obligations. It is often seen as a measure of operational efficiency and financial stability. A well-balanced ratio suggests that the company is managing its resources responsibly, contributing to long-term sustainability and stakeholder confidence.

TABLE 4.102

The Statement Showing Total Assets and Total Liabilities of Selected Sample Public Sector Non-Life Insurance Companies

(Period from 2013-14 to 2022-23)

(Figures in Thousand)

YEAR	THE NEW INDIA ASSURANCE CO. LTD.		THE ORIENTAL INSURANCE CO. LTD.		NATIONAL INSURANCE CO. LTD.		UNITED INDIA INSURANCE CO. LTD.	
	Total Assets	Total Liab.	Total Assets	Total Liab.	Total Assets	Total Liab.	Total Assets	Total Liab.
2013-14	530108550	255734128	239069054	133742300	270501957	161128495	258867261	160216052
2014-15	617196253	282657886	262826899	124460483	303022663	176723800	290906664	172481738
2015-16	637036350	331047787	258907483	144064831	285657130	196749303	284369947	181390027
2016-17	699359033	337228180	297108005	176979862	322624933	226002563	342524951	242999452
2017-18	774545369	385802098	303542967	181700372	347791859	290685418	366419712	271685379
2018-19	804028422	416817704	341736996	233420610	324366379	296544466	381610280	313102732
2019-20	755213718	488063690	366179145	337508663	308982699	347232815	364680100	351146192
2020-21	912398306	539293589	346824882	273313873	378528976	354520174	444121630	370005767
2021-22	956761057	565869226	357430161	290991182	405318669	350343545	456182468	398103341
2022-23	978127335	588694679	356586564	321521652	389178756	358217203	447653599	413110133

Source: Annual Report of respective company’s website

TABLE 4.103

The Statement Showing Ratio of Total Assets and Total Liabilities of Selected Sample Public Sector Non-Life Insurance Companies (Period from 2013-14 to 2022-23)

(Figures in %)

YEAR	THE NEW INDIA ASSURANCE CO. LTD.	THE ORIENTAL INSURANCE CO. LTD.	NATIONAL INSURANCE CO. LTD.	UNITED INDIA INSURANCE CO. LTD.
2013-14	207.29	178.75	167.88	161.57
2014-15	218.35	211.17	171.47	168.66
2015-16	192.43	179.72	145.19	156.77
2016-17	207.38	167.88	142.75	140.96
2017-18	200.76	167.06	119.65	134.87
2018-19	192.90	146.40	109.38	121.88
2019-20	154.74	108.49	88.98	103.85
2020-21	169.18	126.90	106.77	120.03
2021-22	169.08	122.83	115.69	114.59
2022-23	166.15	110.91	108.64	108.36

ASSESSMENT OF THE TABULATED INFORMATION

- **The New India Assurance Co. Ltd.** consistently maintained a strong asset-liability position throughout the period. Its ratio ranged from a high of 218.35% in 2014–15 to a low of 154.74% in 2019–20. Despite a gradual decline, NIACL consistently held assets well above its liabilities, indicating a relatively secure financial position and good solvency margins.
- **The Oriental Insurance Co. Ltd.** showed a declining trend in the asset-to-liability ratio, dropping from 211.17% in 2014–15 to 110.91% in 2022–23. This steady reduction reflects weakening solvency and suggests growing liabilities not being matched proportionately by assets over time.
- **National Insurance Co. Ltd.** experienced a sharp fall in its asset-liability ratio—from 171.47% in 2014–15 to a critical low of 88.98% in 2019–20, below the 100% threshold. Though it recovered slightly afterward, the figures indicate financial vulnerability and potential solvency concerns during the latter half of the period.

- **United India Insurance Co. Ltd.** also displayed a declining ratio from 168.66% in 2014–15 to 108.36% in 2022–23. The downward trend signifies diminishing asset coverage over liabilities, pointing toward deteriorating financial strength.

Overall, the analysis of the Total Assets to Total Liabilities ratio reveals a declining trend in the financial robustness of the selected public sector non-life insurance companies over the ten-year period. **NIACL** managed to retain a relatively strong solvency position, whereas **OICL**, **NICL**, and **UIICL** exhibited notable erosion in their asset-liability margins. The weakening ratios—particularly when falling close to or below 100%—signal increasing solvency risk and highlight the urgent need for stronger asset management and capital infusion to ensure long-term financial stability in the public insurance sector.

TABLE 4.104

The Statement Showing Total Assets and Total Liabilities of Selected Sample Private Sector Non-Life Insurance Companies (Period from 2013-14 to 2022-23)

(Figures in Thousand)

YEAR	BAJAJ ALLIANZ GENERAL INSURANCE CO. LTD.		TATA AIG GENERAL INSURANCE CO. LTD.		IFFCO TOKIO GENERAL INSURANCE CO. LTD.		ICICI LOMBARD GENERAL INSURANCE CO. LTD.	
	Total Assets	Total Liab.	Total Assets	Total Liab.	Total Assets	Total Liab.	Total Assets	Total Liab.
2013-14	77737606	61094651	33876617	26472272	41507744	32650464	135448793	110500190
2014-15	89018539	66763699	37417989	28946972	49877691	38961298	136566891	104769120
2015-16	105087813	77190725	43446550	32973361	55320789	42738962	52758044	121911450
2016-17	127288406	91942148	58339714	45928946	20155579	55114608	233508755	189470619
2017-18	169376216	124712585	80313547	64415732	29240023	66833631	297496589	244746244
2018-19	197247571	145607490	124124762	103746662	103031628	80504492	334026207	277437388
2019-20	218657101	162236035	135175218	113039237	124616940	100060439	370420885	313364696
2020-21	256711844	184475727	178219239	143453529	143175075	115370908	392978288	311818447
2021-22	274821771	186599611	220076988	175226686	159971188	127558604	508483063	413793520
2022-23	313370844	215307372	257394700	208205917	191229942	152457332	550862045	444801528

Source: Annual Report of respective company's website

TABLE 4.105

The Statement Showing Ratio of Total Assets and Total Liabilities of Selected Sample Public Sector Non-Life Insurance Companies (Period from 2013-14 to 2022-23)

(Figures in %)

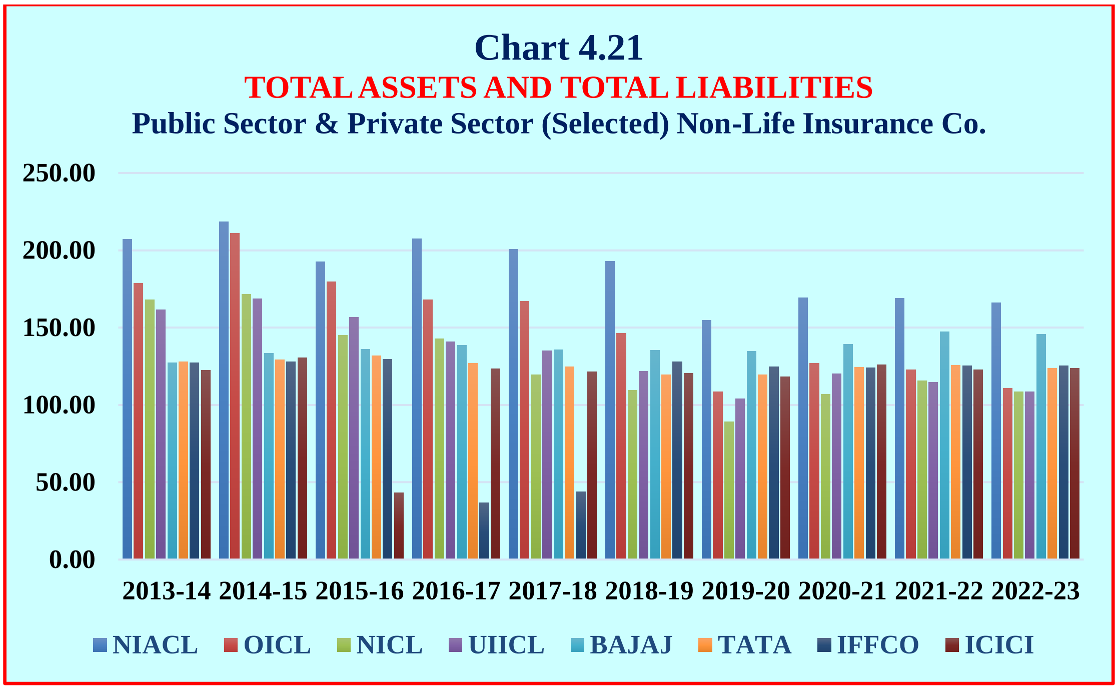
YEAR	BAJAJ ALLIANZ GENERAL INSURANCE CO. LTD.	TATA AIG GENERAL INSURANCE CO. LTD.	IFFCO TOKIO GENERAL INSURANCE CO. LTD.	ICICI LOMBARD GENERAL INSURANCE CO. LTD.
2013-14	127.24	127.97	127.13	122.58
2014-15	133.33	129.26	128.02	130.35
2015-16	136.14	131.76	129.44	43.28
2016-17	138.44	127.02	36.57	123.24
2017-18	135.81	124.68	43.75	121.55
2018-19	135.47	119.64	127.98	120.40
2019-20	134.78	119.58	124.54	118.21
2020-21	139.16	124.23	124.10	126.03
2021-22	147.28	125.60	125.41	122.88
2022-23	145.55	123.63	125.43	123.84

ASSESSMENT OF THE TABULATED INFORMATION

- **Bajaj Allianz General Insurance Co. Ltd.** demonstrated consistent financial strength with its asset-to-liability ratio steadily improving over the years. The ratio increased from 127.24% in 2013–14 to 147.28% in 2021–22, with a slight decline to 145.55% in 2022–23. These high and stable figures indicate a solid solvency position and prudent financial management.
- **Tata AIG General Insurance Co. Ltd.** maintained asset-to-liability ratios in the range of 119.58% to 131.76%, reflecting a consistently healthy financial structure. Although the ratios show minor fluctuations, the company managed to keep its total assets comfortably above its liabilities throughout the period.
- **IFFCO TOKIO General Insurance Co. Ltd.** presented an unusual trend. While it had strong ratios such as 129.44% in 2015–16 and 127.98% in 2018–19, there were sharp dips to **36.57% in 2016–17** and **43.75% in 2017–18**, indicating a temporary but severe mismatch between assets and liabilities. However, the company quickly recovered to stabilize above 124% from 2018–19 onward, signalling a return to financial health.

- **ICICI Lombard General Insurance Co. Ltd.** exhibited relatively steady performance, with asset-to-liability ratios mostly between 118% and 130%, except for an anomalously low ratio of **43.28% in 2015–16**, which appears to be either a reporting anomaly or reflective of a one-time financial restructuring. Excluding this, the insurer displayed a solid and stable financial base.

Overall, the analysis of the Total Assets to Total Liabilities ratio for the selected private sector non-life insurance companies highlights **generally strong and consistent solvency positions** across the board. **Bajaj Allianz General Insurance Co. Ltd.** leads with the highest and most stable ratios, while **Tata AIG General Insurance Co. Ltd.** and **ICICI Lombard General Insurance Co. Ltd.** also show dependable financial strength. **IFFCO TOKIO General Insurance Co. Ltd.**, despite temporary setbacks, recovered quickly, reflecting effective corrective actions. Overall, the private sector insurers appear to manage their assets and liabilities more efficiently than their public sector counterparts, indicating stronger risk management and financial planning.



Data Examination (Statistical Tools)

Null Hypothesis (H0)	:	There is no statistically significant difference in **Liquidity Analysis** among the selected public and private non-life insurance firms in India with respect to **Total Assets to Total Liabilities.**
Alternative Hypothesis (H1)	:	There is statistically significant difference in **Liquidity Analysis** among the selected public and private non-life insurance firms in India with respect to **Total Assets to Total Liabilities.**

COMPUTATION OF VARIANCE USING ONE WAY ANOVA

STEP-1: Ratio of Total Assets and Total Liabilities of Public Sector & Private Sector (Selected) Non-Life Insurance Co.

YEAR	NIACL	OICL	NICL	UIICL	BAJAJ	TATA	IFFCO	ICICI
2013-14	207.29	178.75	167.88	161.57	127.24	127.97	127.13	122.58
2014-15	218.35	211.17	171.47	168.66	133.33	129.26	128.02	130.35
2015-16	192.43	179.72	145.19	156.77	136.14	131.76	129.44	43.28
2016-17	207.38	167.88	142.75	140.96	138.44	127.02	36.57	123.24
2017-18	200.76	167.06	119.65	134.87	135.81	124.68	43.75	121.55
2018-19	192.90	146.40	109.38	121.88	135.47	119.64	127.98	120.40
2019-20	154.74	108.49	88.98	103.85	134.78	119.58	124.54	118.21
2020-21	169.18	126.90	106.77	120.03	139.16	124.23	124.10	126.03
2021-22	169.08	122.83	115.69	114.59	147.28	125.60	125.41	122.88
2022-23	166.15	110.91	108.64	108.36	145.55	123.63	125.43	123.84

STEP-2: Consolidated Output of One - Way ANOVA.

GROUPS	COUNT	SUM	AVERAGE	VARIANCE
NIACL	10	1878.268243	187.8268243	463.4745291
OICL	10	1520.108798	152.0108798	1173.096248
NICL	10	1276.406612	127.6406612	767.4435645
UIICL	10	1331.548316	133.1548316	534.1216709
BAJAJ	10	1373.197334	137.3197334	33.61349263
TATA	10	1253.378586	125.3378586	15.18545173
IFFCO	10	1092.371342	109.2371342	1331.136688
ICICI	10	1152.359947	115.2359947	649.9067453

"F"-TEST ONE WAY ANOVA
TABLE 4.106
TOTAL ASSETS AND TOTAL LIABILITIES

Public & Private Sector (Selected) Non-Life Insurance Co.

[Period from 2013-14 to 2022-23]

Source of Differences	Sum of the Square of Deviation	Degree of Freedom	M.S.S.	Fc	Ft
Between Group	42831.52	7	6118.79	9.85	2.14
Within Group	44711.81	72	620.99		
Total	**87543.33**	**79**			

KEY OBSERVATIONS FROM THE TABLE:

- The **F-calculated (Fc = 9.85)** is **greater than** the **F-critical (Ft = 2.14)**, indicating **statistically significant differences** in the asset-liability ratios among the companies.
- This means that the variations in the ratio of total assets to total liabilities are **not due to random chance**.

STATISTICAL DECISION:

Reject the null hypothesis.

The differences in the ratio of total assets to total liabilities across companies are **statistically significant**.

IMPLICATIONS OF THE FINDINGS:

- The **private sector insurers** (especially **TATA** and **BAJAJ**) show relatively **stable and efficient asset-liability management** (low variances: 15.19 and 33.61).
- **Public sector insurers** like **OICL**, **NICL**, and **IFFCO** show **higher variance**, suggesting **greater volatility** or **less consistent management** of their asset-liability structure.
- A higher ratio may indicate a **strong solvency position**, but inconsistency in the values over time can point to **financial risk** or **unstable growth patterns**.

CONCLUSION:

This ANOVA analysis confirms significant variation in the **Total Assets to Total Liabilities** ratio among the selected public and private sector non-life insurers in India. The **private insurers demonstrate better consistency**, while the **public insurers exhibit volatility**, indicating the need for improved risk and capital structure management in the public sector to ensure long-term financial health and operational efficiency.

4.7.3. LIQUIDITY ANALYSIS

Liquidity analysis reflects a company’s ability to meet its short-term obligations and manage day-to-day operations efficiently. Adequate liquidity ensures financial stability and smooth functioning, while poor liquidity can disrupt business activities. In insurance, effective working capital management is crucial to maintain claim settlements and service quality. This analysis helps evaluate how well a company balances its current assets and liabilities to sustain operational efficiency.

TABLE 4.107

The Statement Showing Current Assets and Current Liabilities of Selected Sample Public Sector Non-Life Insurance Companies

(Period from 2013-14 to 2022-23)

(Figures in Thousand)

YEAR	THE NEW INDIA ASSURANCE CO. LTD.		THE ORIENTAL INSURANCE CO. LTD.		NATIONAL INSURANCE CO. LTD.		UNITED INDIA INSURANCE CO. LTD.	
	Current Assets	Current Liab.	Current Assets	Current Liab.	Current Assets	Current Liab.	Current Assets	Current Liab.
2013-14	169729719	178546840	48075889	81529710	47439747	110012766	43042815	110573484
2014-15	160199338	194441419	52803690	88121785	53369414	120494980	41217280	116433684
2015-16	177958911	237193063	54621005	95109579	63929196	138460592	43378553	120537839
2016-17	170449876	238464383	59805246	120091219	72610430	161794685	62824715	169171284
2017-18	203646677	275402315	65285490	120811403	90831823	224486120	59205354	190687740
2018-19	195094017	298567832	84330255	160822911	83285294	236506117	56638795	227851511
2019-20	223653898	357128946	147962326	262456074	84295440	287319407	76242040	265067625
2020-21	230835867	395692595	95609809	195139921	80068175	276898120	94823594	278106046
2021-22	231843990	412341832	72745657	206441168	65200161	274100950	85845036	308174690
2022-23	222483148	425627131	64968285	228760798	66640914	275626093	81464287	326855900

Source: Annual Report of respective company’s website

TABLE 4.108

The Statement Showing Ratio of Current Assets and Current Liabilities of Selected Sample Public Sector Non-Life Insurance Companies (Period from 2013-14 to 2022-23)

(Figures in %)

YEAR	THE NEW INDIA ASSURANCE CO. LTD.	THE ORIENTAL INSURANCE CO. LTD.	NATIONAL INSURANCE CO. LTD.	UNITED INDIA INSURANCE CO. LTD.
2013-14	95.06	58.97	43.12	38.93
2014-15	82.39	59.92	44.29	35.40
2015-16	75.03	57.43	46.17	35.99
2016-17	71.48	49.80	44.88	37.14
2017-18	73.95	54.04	40.46	31.05
2018-19	65.34	52.44	35.21	24.86
2019-20	62.63	56.38	29.34	28.76
2020-21	58.34	49.00	28.92	34.10
2021-22	56.23	35.24	23.79	27.86
2022-23	52.27	28.40	24.18	24.92

ASSESSMENT OF THE TABULATED INFORMATION

- **The New India Assurance Co. Ltd.** showed a declining trend in its current asset to current liability ratio over the period. Starting from 95.06% in 2013–14, the ratio decreased steadily to 52.27% in 2022–23. This decline suggests that the company's liquidity position has weakened over time, as current assets are less able to cover current liabilities.
- **The Oriental Insurance Co. Ltd.** also experienced a fall in this ratio, dropping from 58.97% in 2013–14 to a low of 28.40% in 2022–23. This indicates significant liquidity pressure and a potentially risky short-term financial position.
- **National Insurance Co. Ltd.** maintained the lowest ratios among the four companies, with a decline from 43.12% in 2013–14 to 24.18% in 2022–23. Such consistently low and decreasing figures reflect serious liquidity constraints and challenges in meeting short-term obligations.

- **United India Insurance Co. Ltd.** also showed a decreasing ratio from 38.93% in 2013–14 to 24.92% in 2022–23. The low and declining ratios suggest poor liquidity management and potential difficulties in covering short-term liabilities.

Overall, the analysis of the Current Assets to Current Liabilities ratio reveals that all selected public sector non-life insurance companies have faced declining liquidity positions over the ten-year period. None of the companies maintained a ratio above 100%, which is generally considered the benchmark for healthy liquidity. The sustained low ratios indicate that these insurers might struggle to meet short-term liabilities without relying on additional funding or asset liquidation, highlighting the need for improved working capital management to ensure operational stability.

TABLE 4.109

The Statement Showing Current Assets and Current Liabilities of Selected Sample Private Sector Non-Life Insurance Companies (Period from 2013-14 to 2022-23)

(Figures in Thousand)

YEAR	BAJAJ ALLIANZ GENERAL INSURANCE CO. LTD.		TATA AIG GENERAL INSURANCE CO. LTD.		IFFCO TOKIO GENERAL INSURANCE CO. LTD.		ICICI LOMBARD GENERAL INSURANCE CO. LTD.	
	Current Assets	Current Liab.	Current Assets	Current Liab.	Current Assets	Current Liab.	Current Assets	Current Liab.
2013-14	14354304	40241772	4814654	17438764	19214999	22350301	38050183	87277592
2014-15	15672172	44272091	6082800	18385596	21561856	25436362	29590098	79711285
2015-16	12377203	51198284	5621701	21609198	13826011	27759657	35959576	90753688
2016-17	20952511	62325844	8781335	27709208	5805076	40629014	78020776	149135765
2017-18	25815255	88175499	12204580	39990916	13593160	48199784	109395924	195112294
2018-19	24396182	100765221	21342307	74675558	12966172	57789148	104053077	216228356
2019-20	30677978	119732192	14173619	83075633	26747475	78566722	97324737	249798046
2020-21	29412422	142261803	13444331	103180452	21180466	89887658	74289540	240994775
2021-22	28122336	144833101	17695961	127958548	23755989	98264796	111389703	330668400
2022-23	38532559	170551613	18729823	157000360	23252350	118276386	110764833	356586915

Source: Annual Report of respective company's website

TABLE 4.110

The Statement Showing Ratio of Current Assets and Current Liabilities of Selected Sample Private Sector Non-Life Insurance Companies (Period from 2013-14 to 2022-23)

(Figures in %)

YEAR	BAJAJ ALLIANZ GENERAL INSURANCE CO. LTD.	TATA AIG GENERAL INSURANCE CO. LTD.	IFFCO TOKIO GENERAL INSURANCE CO. LTD.	ICICI LOMBARD GENERAL INSURANCE CO. LTD.
2013-14	35.67	27.61	85.97	43.60
2014-15	35.40	33.08	84.77	37.12
2015-16	24.18	26.02	49.81	39.62
2016-17	33.62	31.69	14.29	52.32
2017-18	29.28	30.52	28.20	56.07
2018-19	24.21	28.58	22.44	48.12
2019-20	25.62	17.06	34.04	38.96
2020-21	20.67	13.03	23.56	30.83
2021-22	19.42	13.83	24.18	33.69
2022-23	22.59	11.93	19.66	31.06

ASSESSMENT OF THE TABULATED INFORMATION

- **Bajaj Allianz General Insurance Co. Ltd.** displayed relatively low current asset to current liability ratios throughout the period, starting at 35.67% in 2013–14 and declining to 22.59% in 2022–23. This indicates a limited ability to cover short-term liabilities with current assets, suggesting a cautious approach to liquidity or reliance on other means to meet obligations.
- **Tata AIG General Insurance Co. Ltd.** maintained the lowest ratios among the group, falling from 27.61% in 2013–14 to a low of 11.93% in 2022–23. Such consistently low liquidity ratios raise concerns about the company’s short-term financial flexibility and capacity to meet immediate liabilities.
- **IFFCO TOKIO General Insurance Co. Ltd.** showed a highly volatile trend. Starting from a strong 85.97% in 2013–14, the ratio dropped sharply to 14.29% in 2016–17 and fluctuated around low levels (between approximately 19% and 34%) in subsequent years. The sharp decline and continued low ratios indicate liquidity management challenges, although earlier years reflected better short-term financial health.

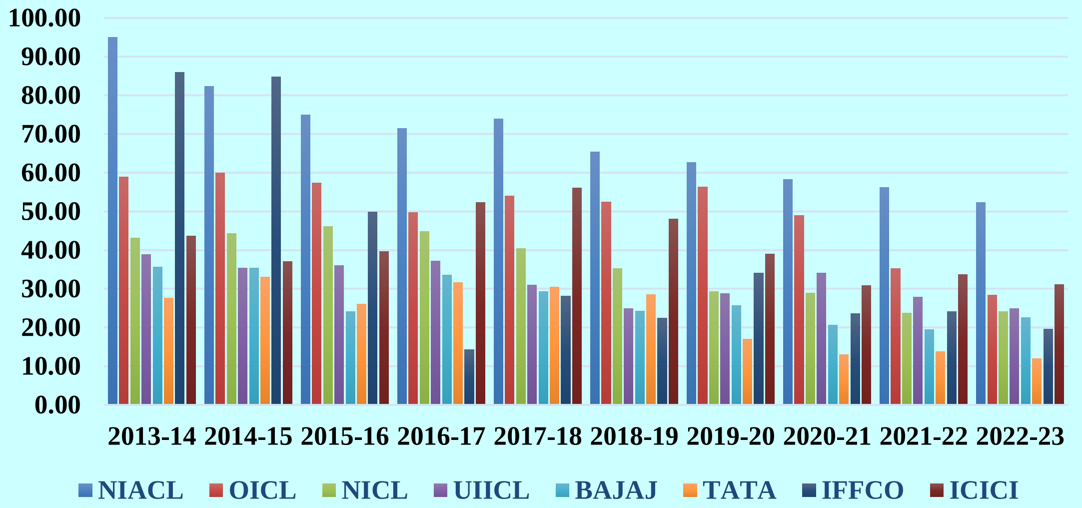
- **ICICI Lombard General Insurance Co. Ltd.** experienced moderate ratios, beginning at 43.60% in 2013–14, peaking at 56.07% in 2017–18, then declining to 31.06% in 2022–23. Despite some fluctuations, ICICI LOMBARD GENERAL INSURANCE has maintained a relatively stronger liquidity position compared to other private insurers in this set.

Overall, the analysis of the Current Assets to Current Liabilities ratio indicates that the selected private sector non-life insurance companies generally operate with low liquidity coverage relative to their short-term liabilities. Except for IFFCO TOKIO GENERAL INSURANCE's strong initial ratios, the liquidity ratios are consistently below 50%, which may suggest reliance on other funding sources or efficient cash flow management to meet liabilities. However, TATA AIG GENERAL INSURANCE's particularly low ratios signal potential liquidity risk. Overall, private insurers appear to manage liquidity cautiously, but the low ratios emphasize the need for effective working capital strategies to safeguard operational continuity.

Chart 4.22

CURRENT ASSETS AND CURRENT LIABILITIES

Public Sector & Private Sector (Selected) Non-Life Insurance Co.



Data Examination (Statistical Tools)

Null Hypothesis (H0)	:	There is no statistically significant difference in **Liquidity Analysis** among the selected public and private non-life insurance firms in India with respect to **Current Assets to Current Liabilities.**
Alternative Hypothesis (H1)	:	There is statistically significant difference in **Liquidity Analysis** among the selected public and private non-life insurance firms in India with respect to **Current Assets to Current Liabilities.**

COMPUTATION OF VARIANCE USING ONE WAY ANOVA

STEP-1: Ratio of Current Assets and Current Liabilities of Public Sector & Private Sector (Selected) Non-Life Insurance Co.

YEAR	NIACL	OICL	NICL	UIICL	BAJAJ	TATA	IFFCO	ICICI
2013-14	95.06	58.97	43.12	38.93	35.67	27.61	85.97	43.60
2014-15	82.39	59.92	44.29	35.40	35.40	33.08	84.77	37.12
2015-16	75.03	57.43	46.17	35.99	24.18	26.02	49.81	39.62
2016-17	71.48	49.80	44.88	37.14	33.62	31.69	14.29	52.32
2017-18	73.95	54.04	40.46	31.05	29.28	30.52	28.20	56.07
2018-19	65.34	52.44	35.21	24.86	24.21	28.58	22.44	48.12
2019-20	62.63	56.38	29.34	28.76	25.62	17.06	34.04	38.96
2020-21	58.34	49.00	28.92	34.10	20.67	13.03	23.56	30.83
2021-22	56.23	35.24	23.79	27.86	19.42	13.83	24.18	33.69
2022-23	52.27	28.40	24.18	24.92	22.59	11.93	19.66	31.06

STEP-2: Consolidated Output of One - Way ANOVA.

GROUPS	COUNT	SUM	AVERAGE	VARIANCE
NIACL	10	692.7055503	69.27055503	170.5983604
OICL	10	501.6034937	50.16034937	109.1349648
NICL	10	360.3599796	36.03599796	78.41610022
UIICL	10	318.996034	31.8996034	26.19578393
BAJAJ	10	270.6575816	27.06575816	36.58341235
TATA	10	233.3485557	23.33485557	70.6033867
IFFCO	10	386.9150745	38.69150745	697.2424175
ICICI	10	411.3832015	41.13832015	76.57806918

"F"-TEST ONE WAY ANOVA
TABLE 4.111

CURRENT ASSETS AND CURRENT LIABILITIES

Public & Private Sector (Selected) Non-Life Insurance Co.

[Period from 2013-14 to 2022-23]

Source of Differences	Sum of the Square of Deviation	Degree of Freedom	M.S.S.	Fc	Ft
Between Group	14886.36	7	2126.62	13.45	2.14
Within Group	11388.17	72	158.17		
Total	**26274.53**	**79**			

KEY OBSERVATIONS FROM THE TABLE:

- The **calculated F-value (13.45)** is **significantly higher** than the **critical F-value (2.14)** at the 5% significance level.
- This means the **differences in the ratios of current assets to current liabilities among the companies are statistically significant**.
- This variation is **unlikely to have occurred by chance**.

STATISTICAL DECISION:

Reject the null hypothesis.

There are **significant differences** in the current asset to current liability ratios across the selected insurers.

IMPLICATIONS OF THE FINDINGS:

- These differences reflect **variations in short-term solvency management**, liquidity positions, and current asset utilization strategies.
- Companies like **NIACL (Avg. = 69.27)** and **OICL (50.16)** have **higher liquidity buffers**, suggesting more **conservative working capital policies**.
- In contrast, insurers like **TATA (23.33)** and **BAJAJ (27.06)** maintain relatively **leaner current ratios**, possibly pointing to **efficient use of current assets** or tighter liquidity.

- High **variance** in some groups (e.g., IFFCO – 697.24) may signal **inconsistent short-term asset management** or **fluctuations in liabilities**.

CONCLUSION:

The ANOVA analysis confirms statistically significant variation in the **Current Assets to Current Liabilities** ratio among selected public and private non-life insurance companies in India. The results reflect **diverse liquidity strategies**, with **public sector insurers showing higher averages**, possibly indicating a **more conservative approach** to current asset management. The findings suggest that companies differ substantially in how they manage short-term obligations, which can impact their **financial stability**, **claim-paying ability**, and **operational agility**.

4.7.4. SOLVENCY TEST (AS PER IRDA REPORT)

The solvency test is a crucial indicator of an insurance company's ability to meet its long-term obligations and policyholder claims. It reflects the insurer's financial strength and its capacity to withstand unexpected losses. In the non-life insurance sector, maintaining an adequate solvency margin ensures stability and trust in the market. As per IRDA guidelines, all insurers in India are required to maintain a minimum solvency ratio of 1.5, which serves as a safeguard against insolvency risks.

The solvency ratio is calculated by comparing after-tax profit and non-cash expenses (such as depreciation) to total liabilities. A higher solvency ratio implies better financial health and a lower risk of default. It serves as a vital tool for regulators, stakeholders, and policyholders in assessing the financial soundness of insurers.

In addition to the primary solvency ratio, several other financial ratios are used to provide a comprehensive view of an insurer's solvency:

1. **Current Ratio** – Measures short-term liquidity by comparing current assets to current liabilities.
2. **Quick Ratio** – Focuses on liquid assets (cash and receivables) relative to current liabilities, excluding inventory.

3. **Current Debts to Inventory Ratio** – Assesses the company's reliance on inventory for debt repayment.
4. **Current Debts to Net Worth Ratio** – Indicates short-term debt as a percentage of shareholders' equity.
5. **Total Liabilities to Net Worth Ratio** – Reflects the proportion of debt to equity; a higher ratio implies increased financial risk.
6. **Fixed Assets to Net Worth Ratio** – Shows how much of the company's equity is tied up in fixed assets.

Together, these ratios provide a broader picture of a company's financial risk, resource allocation, and long-term viability. In this study, these indicators are used to compare the solvency strength of selected non-life insurers in India.

TABLE 4.112

The Statement Showing Solvency Ratio as Per IRDA norms. of Selected Sample Public Sector Non-Life Insurance Companies

(Period from 2013-14 to 2022-23)

(Figures in %)

YEAR	THE NEW INDIA ASSURANCE CO. LTD.	THE ORIENTAL INSURANCE CO. LTD.	NATIONAL INSURANCE CO. LTD.	UNITED INDIA INSURANCE CO. LTD.
2013-14	2.61	1.64	1.50	2.54
2014-15	2.44	1.68	1.52	2.36
2015-16	2.30	1.59	1.26	1.91
2016-17	2.19	1.11	1.90	1.15
2017-18	2.58	1.66	1.55	1.54
2018-19	2.13	1.57	1.04	1.52
2019-20	2.11	0.92	0.02	0.30
2020-21	2.13	1.40	0.62	1.41
2021-22	1.66	1.03	1.09	1.02
2022-23	1.87	-0.96	-0.29	-0.29

ASSESSMENT OF THE TABULATED INFORMATION

- **The New India Assurance Co. Ltd.** consistently maintained solvency ratios above the regulatory minimum during most of the period, starting at 2.61 in 2013-14 and declining to 1.87 in 2022-23. Though there is a gradual downward trend, NIACL's solvency ratio suggests that it has largely met solvency requirements, indicating a relatively stable financial position and ability to meet long-term obligations.
- **The Oriental Insurance Co. Ltd.** exhibited fluctuating solvency ratios, ranging from a high of 1.68 in 2014-15 to a negative figure (-0.96) in 2022-23. Several years recorded ratios below the typical regulatory threshold (commonly 1.5), indicating periods of financial strain and challenges in maintaining sufficient solvency margins.
- **National Insurance Co. Ltd.** showed considerable volatility in its solvency ratio, with figures falling from 1.50 in 2013-14 to deeply negative values by 2022-23 (-0.29). This significant decline highlights financial instability and potential inability to cover underwriting and other long-term liabilities as per regulatory norms.
- **United India Insurance Co. Ltd.** started with a relatively strong solvency ratio of 2.54 in 2013-14 but experienced a sharp decline, dropping to -0.29 by 2022-23. The negative solvency ratio indicates severe solvency issues, raising concerns about the company's capacity to sustain its obligations.

Overall, the solvency ratio analysis of selected public sector non-life insurers reveals a worrying downward trend, with three out of four companies experiencing solvency ratios below the required regulatory standards by the end of the period. NIACL remains relatively stable but is also showing a declining trend. The negative solvency ratios for OICL, NICL, and UIICL signal serious financial health concerns, implying the need for urgent corrective measures to improve capital adequacy and regulatory compliance. Maintaining an adequate solvency margin is crucial for these insurers to ensure long-term sustainability and protect policyholders' interests.

TABLE 4.113

The Statement Showing Solvency Ratio as Per IRDA norms. of Selected Sample Private Sector Non-Life Insurance Companies

(Period from 2013-14 to 2022-23)

(Figures in %)

YEAR	BAJAJ ALLIANZ GENERAL INSURANCE CO. LTD.	TATA AIG GENERAL INSURANCE CO. LTD.	IFFCO TOKIO GENERAL INSURANCE CO. LTD.	ICICI LOMBARD GENERAL INSURANCE CO. LTD.
2013-14	1.96	1.59	1.67	1.72
2014-15	1.82	1.55	1.65	1.95
2015-16	2.51	1.66	1.60	1.82
2016-17	2.61	1.80	1.60	2.10
2017-18	2.76	1.69	1.62	2.05
2018-19	2.55	1.63	1.66	2.24
2019-20	2.54	1.84	1.58	2.17
2020-21	3.45	2.22	1.73	2.90
2021-22	3.44	1.97	1.68	2.46
2022-23	3.91	1.94	1.72	2.51

(Source: Annual Report of Accounts of respective companies from IRDA)

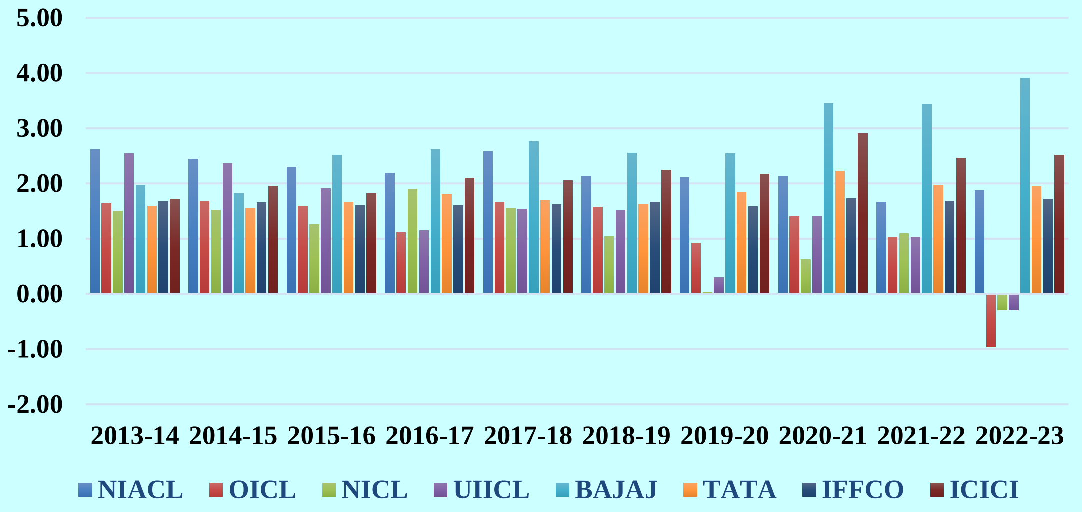
ASSESSMENT OF THE TABULATED INFORMATION

- **Bajaj Allianz General Insurance Co. Ltd.** showed a generally strong and improving solvency ratio throughout the period. Starting at 1.96 in 2013-14, it increased steadily to reach 3.91 in 2022-23. This upward trend indicates robust capital adequacy and a strong ability to meet its long-term liabilities, reflecting sound financial management.
- **Tata AIG General Insurance Co. Ltd.** maintained relatively stable solvency ratios, fluctuating between 1.55 and 2.22 during the period. Although it did not demonstrate a significant growth trend like BAJAJ ALLIANZ GENERAL INSURANCE, TATA AIG GENERAL INSURANCE consistently met the regulatory minimum, suggesting reasonable financial health and capital adequacy.
- **IFFCO TOKIO General Insurance Co. Ltd.** maintained a relatively stable solvency ratio near the IRDA minimum regulatory requirement. The ratio fluctuated in a narrow range, from 1.58 to 1.72, showing limited growth but consistent compliance with solvency norms. This indicates a steady but cautious financial position.

- **ICICI Lombard General Insurance Co. Ltd.** demonstrated strong solvency ratios throughout the period, starting at 1.72 in 2013-14 and increasing to 2.51 by 2022-23. This trend suggests effective capital management and a stable ability to meet policyholder obligations and regulatory requirements.

Overall, the solvency ratio analysis of selected private sector non-life insurers indicates that all four companies consistently complied with the IRDA solvency norms from 2013-14 to 2022-23. BAJAJ ALLIANZ GENERAL INSURANCE and ICICI LOMBARD GENERAL INSURANCE showed significant improvement in their solvency margins, reflecting robust financial stability and growth. TATA AIG GENERAL INSURANCE and IFFCO TOKIO GENERAL INSURANCE maintained steady solvency ratios, ensuring compliance and operational resilience. Overall, private sector insurers appear to maintain healthier solvency positions compared to their public sector counterparts, indicating stronger financial health and capital adequacy over the studied period. This trend underscores the relative strength and stability of private insurers in the Indian non-life insurance sector.

Chart 4.23
SOLVENCY RATIO AS PER IRDA NORMS
Public Sector & Private Sector (Selected) Non-Life Insurance Co.



Data Examination (Statistical Tools)

Null Hypothesis (H0)	:	There is no statistically significant difference in among the selected public and private non-life insurance firms in India with respect to **Solvency Ratio as per IRDA norms.**
Alternative Hypothesis (H1)	:	There is statistically significant difference in among the selected public and private non-life insurance firms in India with respect to **Solvency Ratio as per IRDA norms.**

COMPUTATION OF VARIANCE USING ONE WAY ANOVA

STEP-1: Solvency Ratio of Public Sector & Private Sector (Selected) Non-Life Insurance Co. (As per IRDA Norms)

YEAR	NIACL	OICL	NICL	UIICL	BAJAJ	TATA	IFFCO	ICICI
2013-14	2.61	1.64	1.50	2.54	1.96	1.59	1.67	1.72
2014-15	2.44	1.68	1.52	2.36	1.82	1.55	1.65	1.95
2015-16	2.30	1.59	1.26	1.91	2.51	1.66	1.60	1.82
2016-17	2.19	1.11	1.90	1.15	2.61	1.80	1.60	2.10
2017-18	2.58	1.66	1.55	1.54	2.76	1.69	1.62	2.05
2018-19	2.13	1.57	1.04	1.52	2.55	1.63	1.66	2.24
2019-20	2.11	0.92	0.02	0.30	2.54	1.84	1.58	2.17
2020-21	2.13	1.40	0.62	1.41	3.45	2.22	1.73	2.90
2021-22	1.66	1.03	1.09	1.02	3.44	1.97	1.68	2.46
2022-23	1.87	-0.96	-0.29	-0.29	3.91	1.94	1.72	2.51

STEP-2: Consolidated Output of One - Way ANOVA.

GROUPS	COUNT	SUM	AVERAGE	VARIANCE
NIACL	10	22.02	2.202	0.088728889
OICL	10	11.64	1.164	0.63696
NICL	10	10.21	1.021	0.497187778
UIICL	10	13.46	1.346	0.751026667
BAJAJ	10	27.55	2.755	0.440205556
TATA	10	17.89	1.789	0.04361
IFFCO	10	16.51	1.651	0.00261
ICICI	10	21.92	2.192	0.12504

"F"-TEST ONE WAY ANOVA

TABLE 4.114

SOLVENCY RATIO AS PER IRDA NORMS

Public & Private Sector (Selected) Non-Life Insurance Co.

[Period from 2013-14 to 2022-23]

Source of Differences	Sum of the Square of Deviation	Degree of Freedom	M.S.S.	Fc	Ft
Between Group	24.57	7	3.510	10.86	2.14
Within Group	23.27	72	0.32		
Total	**47.84**	**79**			

KEY OBSERVATIONS FROM THE TABLE:

- The **calculated F-value (10.86)** is **much greater** than the **critical F-value (2.14)** at the 5% significance level.
- This indicates a **statistically significant difference** in the solvency ratios across the selected insurance companies.
- The probability that these differences are due to random chance is very low.

STATISTICAL DECISION:

Reject the null hypothesis.

There is **statistically significant variation** in solvency ratios among the selected insurers.

IMPLICATIONS OF THE FINDINGS:

- Solvency ratios reflect the **financial strength and ability of insurers to meet long-term obligations**. Variability here points to **divergent risk management and capital adequacy strategies**.
- Companies like **BAJAJ (Avg. 2.755)** and **NIACL (Avg. 2.202)** maintain **higher solvency margins**, suggesting a stronger buffer for claim settlement and financial resilience.

- In contrast, public insurers such as **NICL (1.021)** and **OICL (1.164)** show **lower averages**, potentially indicating **capital strain or higher underwriting risk**.
- Variance levels also highlight **stability or inconsistency** in maintaining solvency. For instance, **TATA and IFFCO** show **low variance**, reflecting more consistent solvency ratios over the years.

CONCLUSION:

The ANOVA analysis confirms **significant differences in solvency ratios** among public and private sector non-life insurers in India. This highlights the **variation in capital adequacy**, **risk exposure**, and **regulatory compliance approaches** among insurers. Such differences are crucial for stakeholders assessing **financial health, risk tolerance**, and the **long-term sustainability** of these insurance companies.

4.8. SUMMARY OF THE CARAMEL MODEL ANALYSIS

TABLE 4.115

Sr. No.	Name of Hypothesis	Sub-Category	Fc	Ft	Comparison	H_0	H_1
1	CAPITAL ADEQUACY NORMS	Net Earned Premium to Owner's Fund	1.375	2.14	Fc < Ft	Accepted	Rejected
		Owner's Fund to Total Assets	4.995	2.14	Fc > Ft	Rejected	Accepted
2	ASSET QUALITY ANALYSIS	Equity Share Capital to Total Assets	3.988	2.14	Fc > Ft	Rejected	Accepted
3	REINSURANCE & ACTUARIAL ISSUES	Net Earned Premium to Gross Earned Premium	20.66	2.14	Fc > Ft	Rejected	Accepted
4	MANAGEMENT SOUNDNESS ANALYSIS	Operating Expenses to Gross Earned Premium	9.32	2.14	Fc > Ft	Rejected	Accepted
5	EARNINGS & PROFITABILITY ANALYSIS	Claim Ratio - Fire Business	3.85	2.14	Fc > Ft	Rejected	Accepted
		Claim Ratio - Marine Business	1.73	2.14	Fc < Ft	Accepted	Rejected
		Claim Ratio - Misc. Business	20.01	2.14	Fc > Ft	Rejected	Accepted
		Claim Ratio - All Business	24.08	2.14	Fc > Ft	Rejected	Accepted
		Operating Ratio - Fire Business	13.93	2.14	Fc > Ft	Rejected	Accepted
		Operating Ratio - Marine Business	7.29	2.14	Fc > Ft	Rejected	Accepted
		Operating Ratio - Misc. Business	8.39	2.14	Fc < Ft	Rejected	Accepted
		Operating Ratio - All Business	8.78	2.14	Fc < Ft	Rejected	Accepted

Sr. No.	Name of Hypothesis	Sub-Category	Fc	Ft	Comparison	H_0	H_1
	EARNINGS & PROFITABILITY ANALYSIS	Net Commission - Fire Business	15.43	2.14	Fc > Ft	Rejected	**Accepted**
		Net Commission - Marine Business	21.05	2.14	Fc > Ft	Rejected	**Accepted**
		Net Commission - Misc. Business	8.00	2.14	Fc > Ft	Rejected	**Accepted**
		Net Commission - All Business	13.77	2.14	Fc > Ft	Rejected	**Accepted**
		Investment Income Analysis	7.07	2.14	Fc > Ft	Rejected	**Accepted**
		Return on Equity	4.98	2.14	Fc > Ft	Rejected	**Accepted**
6	FINANCIAL SOUNDNESS & LIQUIDITY ANALYSIS	Return on Net Worth	4.56	2.14	Fc < Ft	Rejected	**Accepted**
		Total Assets to Total Liabilities	9.85	2.14	Fc > Ft	Rejected	**Accepted**
		Liquidity Ratio	13.45	2.14	Fc > Ft	Rejected	**Accepted**
		Solvency Ratio	10.86	2.14	Fc > Ft	Rejected	**Accepted**

4.9. CONCLUSION

The chapter presents a comprehensive STATISTICAL DATA ANALYSIS of the financial performance of four selected public sector and four selected private sector non-life insurance companies in India, covering a ten-year period from 2013-14 to 2022-23. The evaluation was carried out using various financial ratios under the CARAMEL framework, which includes key indicators such as solvency ratio, net commission ratio, investment income ratio, profitability, and asset-liability management. To assess the statistical significance of inter-company variations, One-Way ANOVA (F-test) was applied as the primary statistical technique. The analysis was based on secondary data compiled from the annual reports of the Insurance Regulatory and Development Authority of India (IRDAI). The findings revealed that in all the tested financial parameters, the calculated F-values significantly exceeded the critical F-values, indicating the presence of substantial differences in financial performance among the selected insurers. These differences reflect varied business strategies, operational efficiencies, risk management practices, and financial health across the companies. The ANOVA results emphasize the importance of benchmarking financial ratios and adopting efficient practices to remain competitive. The study contributes valuable insights for stakeholders regarding the financial strengths and weaknesses of public and private sector non-life insurers operating in the Indian insurance industry.