



Profitability, Sustainability and Underwriting Performance of Indian Private Non-Life Insurers: A Linear Trend Approach

Bardhan A^{1*}

DOI:10.54741/MJAR/6.1.2026.279

^{1*} Ashirbani Bardhan, State Aided College Teacher - 1, Department of Commerce, Seth Anandram Jaipuria College, Kolkata, West Bengal, India.

The profitability performance of non-life insurance companies is a critical indicator of financial stability, underwriting discipline, and long-term sustainability in a competitive and regulated market environment. This paper reports the trend behaviour of profitability ratios prescribed by IRDAI of fifteen Indian based general insurance companies, which have a working profitability of above of twelve years, in the period between 2012-2023. The six profitability indicators on which the analysis will be based include Net Incurred Claims to Net Earned Premium Ratio (NCNP), Combined Ratio (CB), Underwriting Balance Ratio (UB), Operating Profit Ratio (OP), Net Earnings Ratio (NE), and Return on Net Worth (RNW).

The research approximates alpha and beta values and significant values and R-square values using linear time-series regression model in order to determine the direction, magnitude and consistency of profitability trends with time. The results indicate that there are diverse pattern of profitability by the insurers. The companies that have statistically significant changes in the key profitability parameters include Niva Bupa Health insurance, Raheja QBE general insurance, Reliance general insurance and SBI general insurance, which show the improvement in both the underwriting performance and operational efficiency. On the contrary, some insurers have mixed or weak performances, which is evidence of volatility in claims management, expense control and generation of returns.

The study contributes to the existing literature by providing a systematic trend-based profitability assessment using regulatory-prescribed ratios, offering insights into the evolving financial resilience of India's private non-life insurance sector.

Keywords: profitability ratios, non-life insurance, IRDAI, linear trend analysis, combined ratio, return on net worth

Corresponding Author	How to Cite this Article	To Browse
Ashirbani Bardhan, State Aided College Teacher - 1, Department of Commerce, Seth Anandram Jaipuria College, Kolkata, West Bengal, India. Email: ashirbani.mou@gmail.com	Bardhan A, Profitability, Sustainability and Underwriting Performance of Indian Private Non-Life Insurers: A Linear Trend Approach. Manag J Adv Res. 2026;6(1):27-39. Available From https://mjar.singhpublication.com/index.php/ojs/article/view/279	

Manuscript Received 2026-01-10	Review Round 1 2026-01-27	Review Round 2	Review Round 3	Accepted 2026-02-23
Conflict of Interest None	Funding Nil	Ethical Approval Yes	Plagiarism X-checker 3.46	Note
© 2026 by Bardhan A and Published by Singh Publication. This is an Open Access article licensed under a Creative Commons Attribution 4.0 International License https://creativecommons.org/licenses/by/4.0/ unported [CC BY 4.0].				

1. Introduction

The non-life insurance business has a critical role in the redistribution of economic risks, financial redistribution, and development of the capital market. The growth of the private involvement after liberalization in the emerging economies such as India has enhanced the competition, innovation and benchmarking performance in the insurance sector. Profitability becomes paramount in this dynamic environment because it embodies underwriting discipline, claims productivity, investment performance as well as financial sustainability. Compared to manufacturing or trading businesses, the profitability framework of non-life insurers is by nature complicated, since it relies at the same time upon premium growth, claims experience, underwriting management, expense control, as well as the investment income.

The standard financial ratios that are recommended by regulatory bodies like the Insurance Regulatory and Development Authority of India (IRDAI) are used to assess the performance and solvency of the insurers. Among them, profitability ratios, including Net Incurred Claims to Net Earned Premium Ratio, Combined Ratio, Underwriting Balance Ratio, Operating Profit Ratio, Net Earnings Ratio, and Return on Net Worth are such that offer complete information about claims management efficiency, underwriting viability, and operating profitability and returns to shareholders.

The Indian non-life insurance industry operating privately has experienced considerable structural changes over the last decade (2012-2023) in terms of higher claim penetration with health insurance, digitization, regulatory changes, the volatile nature of claims during the pandemic, and the changes in risk underwriting practices.

Such developments have led to the need to support these with a systematic empirical evaluation of long-term trends in profitability as opposed to year by year analysis. Although the study has already explored financial performance on the basis of cross-sectional or short-period analysis, there are still few studies on the issue of longitudinal trend behaviour on the basis of regulatory-prescribed profitability ratios based on unified time-series analysis. To fill this gap, the current study aims at conducting linear trend analysis of fifteen private general insurance firms with a service period of over twelve years.

The research quantifies direction, consistency, and strength of the changes in profitability over time, through the estimation of regression-based alpha and beta coefficients and measurement of statistical significance and the explanatory power (R^2). In this way, the research offers evidence-based and systematic review of profitability sustainability among the already established private insurers in India to inform the policy debate, strategic decision-making, and scholarly debate on the performance dynamics of the insurance industry.

2. Review of Literature

2.1 Review of Literature in India

The initial research concerning the Indian insurance industry mainly addressed the financial performance analysis and the effects of the liberalization. Sharma (2005) investigated the financial performance and management effectiveness of the general insurers of the public sector applying the conventional financial ratios. The idea of increasing competitive pressure brought about by the private players was pointed out in the study but limited to the short-term comparisons of ratios without a longitudinal trend modelling.

Fredrick (2007) and Bhatia (2008) gave structural and policy based reviews of the insurance sector with emphasis on liberalization, regulation and market growth. Although these studies reported sectoral growth and privatization effects, no statistical assessment of sustainability of the profitability using standardized regulatory ratios was carried out. It was later that comparative studies with regards to public and private insurers gained notice.

Darzi (2009), Kumar (2010), and Bhattacharya (2012) assessed the performance based on financial ratios and CAMEL parameters and found that in some segments the liberalization increased competition and enhanced efficiency. Nevertheless, their research approach did not heavily depend on the trend evaluation with regression but mostly on the descriptive data and the comparative average. Research by Sivakamy (2009), Baanu (2011), and Rao (2010) also explored financial performance using ratio analysis and revealed that there were problems with claims management, expense management, and the outcome of underwriting.

Though these findings viewed profitability as a fundamental factor of sustainability, they failed to scrutinize the statistical consistency of profitability ratios in the long term.

As methodology improved, subsequent research commenced to single out determinants of profitability. Sasidharan et al. (2020) implemented panel regression methods and discovered that the ratio of claims, the increase in the premium, and the results of underwriting have a significant effect on profitability. In their study that concentrated on private non-life insurers, Upadhyay and Sitlani (2022) found claims ratio, expense ratio, retention ratio, and technical reserves to be significant factors of Return on Assets. On the same note, Kumar and Verma (2021) noted that underwriting discipline and cost-efficiency are key to maintaining profitability. Recent research including Sharma and Sharma (2023) has compared operational efficiency and profitability through DEA and regression model and has come to the conclusion that administrative efficiency and claims control have a significant influence on the profitability.

The IRDAI Annual Report (2023-24) also adds to the fact that the financial soundness is based on claims management, premium improvement, and underwriting discipline.

Irrespective of these contributions, the majority of Indian studies either:

- Pay attention to the determinant analysis by panel regression,
- Compare and/or contrast public sector and private sector.
- Measure efficiency and not trend stability.

Little research has been conducted to conduct systematic analysis of IRDAI-prescribed profitability ratios (NCNP, Combined Ratio, Underwriting Balance Ratio, Operating Profit Ratio, Net Earnings Ratio, Return on Net Worth) in the context of a linear time-series regression model that measures direction and statistical significance of the long-term trend and predominantly studies were carried out on relatively large and well-established independent insurance firms with a duration of operation of more than ten years.

2.2 Review of Literature Abroad

The same is indicated in a study carried out by international researchers on determinants of,

profitability and financial stability in non-life-insurance markets. The Kenya studies by Murigu (2014) and Morara and Sibindi (2021) have observed that the leverage, capital adequacy, growth in premiums, and claims ratio have a very strong impact on the profitability in terms of ROA. These studies emphasize the significance of underwriting discipline and capital structure as being significant contributors to the financial sustainability.

Oner Kaya (2016) in Turkey used the Grey Relational Analysis to rank the non-life insurers according to various financial ratios and found that profitability indicators are the most powerful drivers of performance. In the same way, Erdemir (2023) employed panel data analysis to establish that underwriting performance and investment income are important determinants of profitability.

South Korean studies by Lee and Lee (2019) and Chinese studies by Chen and Wong (2020) determined that there is a direct correlation between profitability sustainability and operational efficiency and claims management. Camino-Mogro et al. (2019) established in Ecuador that underwriting metrics proved more critical than the investment income in defining non-life profitability.

Multi-country evidence released recently by Opoku (2024) determined that claims ratio, retention ratio, cost control and governance mechanisms are consistent predictors of insurer performance with investment income as a secondary stabilizing factor. Even though the use of panel regression, stochastic frontier analysis, and multi-criteria decision models are well known to international literature, there are very few literature which choose to examine exclusively the long-term time-series trends behaviour of ratio of regulatory prescribed profitability to examine the statistic stability and sustainability of the results through time.

3. Research Gap

Despite the growing body of literature on financial performance and efficiency of the Indian insurance sector, several important gaps remain in the context of profitability analysis of private non-life insurers. First, much of the existing research has focused either on overall financial performance indicators or on operational efficiency measures such as Data Envelopment Analysis (DEA) and ratio-based comparative rankings.

Limited attention has been given to a systematic, ratio-specific trend evaluation of profitability using the standardized profitability indicators prescribed by the Insurance Regulatory and Development Authority of India (IRDAI). Consequently, the longitudinal behaviour of key profitability ratios such as Net Incurred Claims to Net Earned Premium Ratio, Combined Ratio, Underwriting Balance Ratio, Operating Profit Ratio, Net Earnings Ratio, and Return on Net Worth remains underexplored within a unified analytical framework.

Second, prior studies often rely on cross-sectional or short-period analyses, which fail to capture the structural shifts and cyclical fluctuations experienced by the industry over extended periods, particularly during transformative phases such as regulatory reforms, digitalization, and the COVID-19 pandemic. There is a scarcity of long-term (decade-plus) time-series investigations that statistically test the direction, magnitude, and significance of profitability trends rather than merely presenting descriptive comparisons.

Third, comparative studies of public and private insurers have been made, but the analysis of the existing active private insurers that have over twelve years of operations has received limited attention to analyze their sustainability in profitability and discipline in underwriting. Lack of regression-based trend modelling with beta coefficients, significance, and explanatory power (R^2) restricts the empirical strength of the existing conclusion about the stability of profitability.

Consequently, this research paper fills in these gaps by presenting a linear time-series regression model of IRDAI-regulated profitability ratios of the sample of long-established, privately-owned non-life insurance companies between the years 2012 and 2023. The combination of statistically significant testing and interpretation of trends will make the study complement the literature and provide a more rigorous and longitudinal view of the insurance profitability dynamics in India.

4. Research Objective

1. To analyse the trend behaviour of IRDAI-prescribed profitability ratios of selected Indian private general insurance companies during 2012–2023.

2. To examine the statistical significance and stability of these trends in order to assess long-term financial sustainability and operational soundness.

5. Research Methodology

5.1. Nature and Design of the Study

The current research is explanatory as it attempts to analyze the trend and comparative performance of profitability ratios of private non-life insurance firms that operate in India. The study is a quantitative study which is founded solely on secondary data. The analytical model is organized on comparative analysis, reconciliation and ranking methods in an attempt to assess the inter-company performance differences with time. A period of 12 years, 2012–2023, will be included in the study and it will be possible to conduct the evaluation of financial performance based on a Time-series.

The sample will include 15 Indian based private non life insurance companies that are over 12 years old and have shown consistent financial disclosures over the period of study. Firms whose reporting was not finished or relied on incomplete reports were eliminated to present uniformity and comparability.

5.2 Data Sources and Collection

The study relies exclusively on secondary data collected from authenticated and publicly available sources. These include:

- Annual Reports of the respective insurance companies
- Regulatory disclosures and Master Circulars issued by the Insurance Regulatory and Development Authority of India (IRDAI)
- Financial time-series data obtained from Moneycontrol

All financial data were systematically compiled, verified, and standardized for ratio computation to maintain consistency across companies and years.

5.3 Data Selection Criteria

To ensure reliability and comparability of results, the following criteria were adopted:

- Only years with complete, consistent, and audited financial data were included.

- Introductory years of operation with missing or inconsistent disclosures were excluded.
- Companies lacking uninterrupted financial data for the entire study period were omitted.
- All financial figures were standardized prior to ratio computation to maintain methodological uniformity.

5.4 Variables and Profitability Ratios (PR)

The study evaluates profitability using seven IRDAI-prescribed ratios:

Section I: Profitability Ratio (PR) Analysis

Profitability Ratio	Formula	Interpretation
Net Incurred Claims to Net Earned Premium(NCNP)	Net Incurred Claims / Net Earned Premium	Lower or declining ratio is better.
Combined Ratio(CB)	Claims paid + Expenses of management + Commission / Net Written Premium	Below 100% or declining trend is favourable.
Underwriting Balance Ratio(UB)	Underwriting profit / Net Premium	Positive and increasing values are ideal.
Operating Profit Ratio(OP)	Underwriting profit (loss) + Investment income / Net Premium	Higher and rising values indicate efficiency.
Net Earnings Ratio(NE)	Profit after tax / Net Premium	Higher values show strong profitability.
Return on Net Worth(RNW)	Profit after tax / Net Worth	Positive and increasing trend is preferred.

Source: Compiled and Computed from the Data Collected from Various Sources as Mentioned in the Methodology

5.5 Statistical Tools and Analytical Framework

5.5.1 Software Used

All statistical computations and graphical visualizations were performed using Microsoft Excel (Advanced Statistical Functions).

5.5.2 Analytical Techniques Applied

1. Time-Series Trend Analysis: Trend lines were plotted for each operating efficiency ratio for all selected companies to visually examine performance patterns over time.

2. Linear Regression Model: A linear trend model was employed to measure the direction and strength of change in each ratio:

$$Y_t = a + bt$$

Where:

- Y_t = Value of the ratio in year t
- a = Intercept (Alpha coefficient)
- b = Slope (Beta coefficient) indicating trend direction
- t = Time period

5.5.3 Estimated Parameters

For each ratio and company, the following were computed:

- **Alpha (a)** – Base level of the ratio
- **Beta (b)** – Trend coefficient (positive or negative direction)
- **R-square (R²)** – Goodness-of-fit measure
- **p-value (Significance level)** – Statistical significance of the trend

5.5.4 Interpretation Framework

- **Positive Beta (b > 0)** → Increasing trend
- **Negative Beta (b < 0)** → Declining trend
- **p-value < 0.05** → Statistically significant trend
- **Higher R² value** → Stronger explanatory power of time over ratio movement.

6. Analysis and Findings

6.1 Trend Analysis of Profitability Ratios (PR) for Selected Private Sector Non-Life Insurance Companies

This section will be a detailed time-series and linear trend analysis of the profitability ratios that were prescribed by IRDAI in the selected non-life insurance companies of the private sectors in India during the period 2012-2023. This analysis aims at analyzing whether the changes in the main profitability indicators are in the direction, their magnitude, and their statistical significance to evaluate the financial sustainability and operational soundness in the long run. The study employs a linear regression model to assess the alpha (intercept), beta (trend coefficient), significance levels, and R-square of each ratio between companies. This analysis starts with the specific analysis of the company, Bajaj Allianz General Insurance and the second analysis will be based on

the comparison analysis of the sector and all the chosen insurers that have been in operation above a period of twelve years. Collectively, these findings make systematic observations on claims efficiency, underwriting discipline, operational profitability, net earnings performance, and shareholder returns trends in the Indian-based non-life insurance industry (classified as a private firm).

Part A: Trend Line Analysis for Time-series of Profitability Ratios of Bajaj Allianz General Insurance

Figure 1: Trend Line for Profitability Ratios of Bajaj Allianz General Insurance

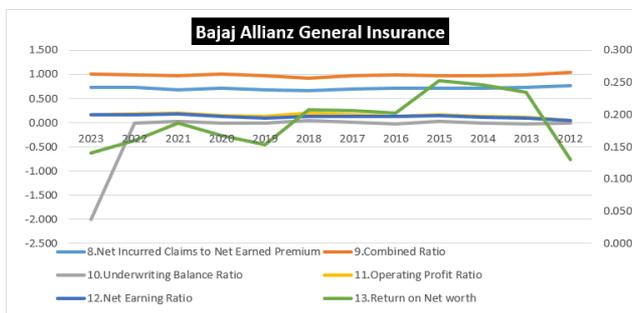


Table 2: Bajaj Allianz General Insurance - Linear Trend Analysis for Time-series of Profitability Ratios

Bajaj Allianz General Insurance- Linear Trend Analysis for Time-series Comparative Balance Sheet					
	a	b	Sig.	R-square	Remark
Net Incurred Claims to Net Earned Premium(NCNP)	0.7339	-0.0031	0.186	0.1704	Low Negative trend(-)
Combined Ratio(CB)	0.9963	-0.0017	0.535	0.0395	Low Negative trend(-)
Underwriting Balance Ratio(UB)	0.327	-0.0752	0.125	0.2189	Low Negative trend(-)
Operating Profit Ratio(OP)	0.0913	0.0083	0.009	0.51	Low Positive trend(+)
Net Earning Ratio(NE)	0.075	0.0081	0.002	0.6337	Low Positive trend(+)
13.Return on Net worth(RNW)	0.2258	-0.0054	0.122	0.2235	Low Negative trend(-)

The time-series trend analysis of profitability ratios of Bajaj Allianz General Insurance reveals mixed but gradually strengthening financial performance over the study period. The Net Incurred Claims to Net Earned Premium ratio shows a slight negative slope (b = -0.0031), indicating a marginal decline in claim expenses relative to earned premiums.

However, the trend is statistically insignificant (p = 0.186) with low explanatory power (R² = 0.1704), suggesting that the improvement in claims management is not strong or consistent over time. Similarly, the Combined Ratio exhibits a very mild negative trend (b = -0.0017), but it is statistically insignificant (p = 0.535) with negligible explanatory power (R² = 0.0395), implying that overall underwriting efficiency has remained relatively stable without substantial structural improvement. The Underwriting Balance Ratio also reflects a low negative trend (b = -0.0752), though statistically insignificant (p = 0.125), indicating fluctuations in underwriting profitability rather than a consistent upward movement.

In contrast, the Operating Profit Ratio demonstrates a statistically significant positive trend (b = 0.0083, p = 0.009) with moderate explanatory power (R² = 0.51), suggesting a steady and meaningful improvement in operational profitability over time. Likewise, the Net Earning Ratio records a strong and highly significant positive trend (b = 0.0081, p = 0.002) with relatively high explanatory power (R² = 0.6337), indicating consistent enhancement in overall net profitability. However, Return on Net Worth shows a mild negative trend (b = -0.0054) that is statistically insignificant (p = 0.122), reflecting fluctuations in shareholder returns without a stable long-term upward trajectory. Overall, while underwriting-related ratios exhibit weak and statistically insignificant movements, the significant positive trends in operating and net earnings ratios indicate that the company’s profitability performance has strengthened over the period, driven primarily by improved operational efficiency rather than underwriting gains.

Bardhan A. Profitability, Sustainability and Underwriting Performance

Part B: Linear Trend Analysis for Time-series of Profitability Ratios (All the Selected Private Sector Non- Life Insurance Companies)

Table 3: PR Analysis for More than 12 years Insurance Companies								
Sl. No	Company		NCNP Ratio	CB Ratio	UB Ratio	OP Ratio	NE Ratio	RNW Ratio
1	Bajaj Allianz General Insurance	a	0.7339	0.9963	0.327	0.0913	0.075	0.2258
		b	-0.0031	-0.0017	-0.0752	0.0083	0.0081	-0.0054
		Sig.	0.186	0.535	0.125	0.009	0.002	0.122
		R-square	0.1704	0.0395	0.2189	0.51	0.6337	0.2235
2	Care Health Insurance Limited	a	0.2661	1.1818	-1.6261	-1.5048	-0.6091	-0.5048
		b	0.0346	-0.0164	0.162	0.1609	0.0649	0.0551
		Sig.	0.086	0.682	0.064	0.066	0.025	0.034
		R-square	0.2657	0.0175	0.3025	0.2979	0.40800	0.3758
3	Cholamandalam Insurance	a	0.7811	0.9062	0.037	0.024	0.05604	0.1525
		b	-0.0058	0.018	-0.0136	0.0128	-0.00001	-0.0035
		Sig.	0.006	0.021	0.008	0.00000	0.998	0.451
		R-square	0.5434	0.4288	0.5177	0.7532	0.00000	0.0579
4	Future Generali India Insurance	a	0.7623	1.0926	-0.0795	0.078	0.0817	0.1695
		b	-0.015	-0.0021	-0.0074	-0.011	-0.0081	-0.0169
		Sig.	0.441	0.737	0.017	0.002	0.014	0.028
		R-square	0.0605	0.0118	0.4519	0.623	0.46900	0.3966
5	ICICI LOMBARD General	a	0.5829	0.9553	0.1074	0.0108	0.0345	0.0367
		b	0.0193	0.0087	0.0068	0.0155	0.01010	0.0165
		Sig.	0.334	0.203	0.142	0.005	0.061	0.151
		R-square	0.0933	0.1564	0.2027	0.569	0.3085	0.1951
6	IFFCO Tokio General Insurance	a	0.4683	1.0244	-0.0469	0.0888	0.0701	0.1695
		b	0.0453	0.0059	-0.0049	-0.006	-0.00250	-0.0082
		Sig.	0.02	0.254	0.33	0.276	0.473	0.317
		R-square	0.4348	0.1294	0.0945	0.1168	0.0511	0.0993
7	MAGMA HDI General Insurance	a	0.3546	0.6077	-0.6258	-0.6423	-0.0247	0.013
		b	0.0469	0.0671	0.041	0.069	-0.0002	-0.0082
		Sig.	0.07	0.024	0.436	0.15	0.972	0.374
		R-square	0.2915	0.4137	0.0617	0.1957	0.00010	0.0795
8	NIVA BUPA Health Insurance	a	0.2179	1.6198	-0.9933	-0.9398	-0.7945	0.3314
		b	0.0381	-0.0628	0.0973	0.1143	0.083	-0.0567
		Sig.	0.030	0.000	0.002	0.001	0.004	0.263
		R-square	0.3899	0.7968	0.6372	0.6688	0.57600	0.1235
9	Raheja QBE General Insurance	a	0.057	0.9133	-0.3404	-0.2475	0.6382	0.2187
		b	0.0765	0.0437	-0.0112	0.0156	-0.09	-0.054
		Sig.	0.001	0.008	0.425	0.296	0.000	0.000
		R-square	0.7051	0.5235	0.0646	0.1083	0.81650	0.7684
10	Reliance General Insurance	a	0.3977	1.0571	-0.2781	-0.1448	-0.0988	-0.1694
		b	0.0488	0.008	0.0158	0.0262	0.017	0.032
		Sig.	0.083	0.417	0.073	0.000	0.035	0.021
		R-square	0.2702	0.067	0.2862	0.7321	0.37220	0.4256
11	Royal Sundaram General Insurance	a	0.4982	0.9084	-0.043	-0.0446	0.0159	0.061
		b	0.0357	0.0232	-0.0087	0.0087	0.0032	0.0021
		Sig.	0.062	0.014	0.049	0.713	0.098	0.567
		R-square	0.3065	0.4694	0.3348	0.0142	0.25040	0.0339

Bardhan A. Profitability, Sustainability and Underwriting Performance

12	SBI General Insurance	a	0.5506	1.4829	-1.8949	-1.7205	-0.9508	-0.2704
		b	0.0258	-0.0504	0.2071	0.2036	0.1176	0.0419
		Sig.	0.198	0.015	0.036	0.036	0.049	0.006
		R-square	0.1594	0.4596	0.3692	0.3699	0.33430	0.5421
13	Shriram General Insurance	a	2.1701	0.4053	-0.0647	0.099	0.0525	0.2633
		b	-0.1564	0.0699	0.0033	0.0237	0.0229	0.0002
		Sig.	0.006	0.042	0.685	0.006	0.003	0.963
		R-square	0.5495	0.3532	0.0172	0.5495	0.60540	0.0002
14	Star Health and Allied Insurance	a	0.0141	1.0091	-0.1283	-0.1029	-0.1298	-0.5018
		b	0.0768	0.0004	0.0058	0.0078	0.0134	0.0527
		Sig.	0.001	0.971	0.659	0.554	0.142	0.121
		R-square	0.7063	0.0001	0.0203	0.0361	0.20260	0.2228
15	Universal Sampo General Insurance	a	0.4442	0.9914	0.0583	-0.1295	-0.071	-0.0733
		b	0.0353	0.0024	-0.0041	0.0262	0.0175	0.0239
		Sig.	0.056	0.852	0.786	0.031	0.056	0.087
		R-square	0.3181	0.0037	0.0077	0.3845	0.31740	0.265

Source: Compiled and Computed from the Data Collected from Various Sources as Mentioned in the Methodology

Findings

Time-series and linear trend analysis of the IRDAI-stipulated profitability ratios of the chosen 15 non-life insurance companies of the privately owned 15 companies during 2012-2023 indicate that there was a great anatomical disparity in financial performance of the companies and their financial stability. The Net Incurred Claims to Net Earned Premium (NCNP) ratio is not increasing positively among all insurers. The reduction in the trend of claims management, which demonstrates improvement, is statistically significant in the case of Cholamandalam Insurance and Shriram General Insurance, and companies like Raheja QBE General Insurance and Star Health and Allied Insurance show a significant upward trend, which indicates an increase in the burden of claims. The trend in the case of well-known insurers, such as Bajaj Allianz General Insurance or ICICI Lombard General Insurance, is not a statistically significant one, but an indication of relative stability, but not of structural change.

The Combined Ratio (CB), which is a major indicator of the efficiency of the underwriting process, also exhibits varying movement. There is a strong trend of reducing Niva Bupa Health Insurance and SBI General Insurance, which is a good sign of cost control and underwriting discipline. On the other hand, Cholamandalam Insurance, Raheja QBE General Insurance and Shriram General Insurance portray high growth tendencies,

which means that there is a rise in the pressure on underwriting. In the case of a few companies, such as the Bajaj Allianz General Insurance, the ratio can be considered as being under the control of the company with no significant long-term changes in the costs.

The results of Underwriting Balance Ratio (UB) demonstrate significant differences in the profitability of underwriting. There are both positive trends that are significant in SBI General Insurance, Niva Bupa Health Insurance and Future Generali India Insurance, which indicates the strengthening of underwriting positions in the long run. Conversely, there is a very poor negative trend with both Cholamandalam Insurance and Royal Sundaram General Insurance with weak underwriting margins. Most insurers such as Bajaj Allianz General Insurance have statistically insignificant trends, and this means underwriting performance is varying, and does not show any structural improvement.

Operating Profit Ratio (OP) shows relative better and more consistent improvement in the sector. Bajaj Allianz General Insurance, ICICI Lombard General Insurance, Reliance General Insurance, and SBI General Insurance, Shriram General Insurance, Niva Bupa Health Insurance, and Universal Sampo General Insurance have observed significant positive trends and it is likely that these companies have had improved operational efficiency as evidenced by increased investment income and cost management.

Nevertheless, Future general India insurance demonstrates a major negative trend, which indicates operation difficulties within the study time frame.

The Net Earnings Ratio (NE) is another indicator that adds to the data of the increasing overall profitability of various insurers. Bajaj Allianz General Insurance, Reliance General Insurance, SBI General Insurance, Shriram General Insurance, and Niva Bupa Health Insurance show statistically significant positive trends which shows that there is a constant growth in post-tax profitability. Raheja QBE General Insurance on the other hand portrays a heavy negative trend and is showing poor net earnings performance. In certain businesses, including ICICI Lombard General Insurance, the tendency is positive though the statistics are not significant meaning the moderate but steady progress.

The most positive move is in the Return on Net Worth (RNW) or shareholder value creation that indicates that Reliance General Insurance and SBI General Insurance are moving towards better returns to equity holders. Contrarily, the negative trend of Raheja QBE General Insurance is very strong implying shareholder returns are being eroded. The trend is statistically insignificant to most other insurers, such as Bajaj Allianz general insurance, and this is to mean that its equity performance fluctuates but relatively stable over time. The R-square values show different degrees of explanatory capability of time in the movements of profitability.

The higher values of R-Square in the companies like Raheja QBE General Insurance, Niva Bupa Health Insurance, Reliance General Insurance, Shriram General insurance, and Cholamandalam Insurance indicate that there are better structural changes in patterns of profitability. Conversely, the values of R-square of some ratios were lower in Bajaj Allianz General Insurance and also with some other established insurers which suggests that the difference in profitability is more likely to be due to an operational or market factor than due to time.

On the whole, the results indicate that underwriting efficiency ratios show mixed and frequently fluctuating trends within the industry, but operating and net profitability ratios show greater positive movement of most companies, which is statistically significant.

This shows that, in 2012-2023, long-term financial sustainability of the private non-life insurers is being enhanced more by operational efficiency and investment returns, than by pure underwriting gains. Demonstrating consistent and improving profitability trends are established insurers, whereas others are more volatile, in the transitional growth processes and competitive changes within the industry.

7. Conclusion

The current paper analyzed profitability sustainability and underwriting performance of the fifteen traditional private non-life insurance companies in India during the period of 2012-2023 based on the profitability ratios prescribed by IRDAI in a linear time-series regression model. The analysis of the trend coefficients, statistical significance, and the explanatory power (R^2) furnishes the study with the systematic evaluation of the long-term financial sustainability and operational healthiness within the industry.

The empirical data indicate non homogeneous profitability behaviour among the insurers. Although the underwriting ratios (Net Incurred Claims to Net Earned Premium (NCNP), Combined Ratio (CB), and Underwriting Balance Ratio (UB) show mixed and not always statistically significant trends of several companies, the trends in operating and net profitability measures show a higher positive movement. It means that overall profitability improvement has not been enhanced by structural strengthening of underwriting margins alone, but more by operational efficiency and cost management and investment income.

The statistically significant positive trends in major parameters of profitability of such companies as Niva Bupa Health Insurance, SBI General Insurance, Reliance General Insurance, and Shriram General Insurance indicate increased operational discipline and gradual improvement of financial sustainability. Conversely, some insurers are volatile in terms of claims ratios and underwriting margins because of competitive conditions, accelerated growth stages, or some in-between changes in risk treatment procedures.

The values of R-squared also demonstrate that the change of profitability among certain insurers is structurally determined by time, which means the existence of long-term changes, and, conversely,

there are fluctuation-driven changes in others which are more eventual and are affected by the market or the firm. This diversity highlights the dynamism and competitiveness of the Indian non-life insurance industry that is privately owned.

On the whole, the research arrives at the conclusion that despite the fact that underwriting performance is not even among firms, overall, the sector is characterized by a slow improvement in both operating and net profitability over the period of the study. The trend in the profitability of established private insurers is quite consistent and sustainable which indicates financial resilience in the post-liberalization and post-pandemic setting. On policy and managerial level, the findings reiterate apparent importance on underwriting discipline, claims management efficiency and expense rationalization in order to guarantee sustainable profitability. Enhancing the underwriting basics and operational effectiveness will be critical to the sustainability of financial stability of operations in the changing non-life insurance environment in India.

References

1. Adesina, K. (2012). A comparative performance evaluation of the Nigerian banking sector in the post-2005 consolidation: Through the CAMEL rating system. *International Journal of Business and Social Science*, 3(13), 259–268.
2. Ahmed, I. (2013). A study on performance evaluation of life insurance corporation of India and selected private life insurance companies in Tamilnadu. *Madurai Kamaraj University, Tamil Nadu, India*, pp. 160-172.
3. Alamelu, K. (2011). Evaluation of financial soundness of life insurance companies in India. *The IUP Journal of Risk and Insurance*, 8(1), 39–49.
4. Almajali, A. (2012). Factors affecting the financial performance of Jordanian insurance companies listed at Amman Stock Exchange. *Journal of Management Research*, 4(2), 266–289.
5. Assocham India. (2022). *Prospects of private non-life insurers in India*. New Delhi.
6. Banerjee, S., & Dutta, P. (2020). Determinants of profitability in Indian general insurers. *Asia Pacific Journal of Management Research and Innovation*, 16(3), 192–203.
7. Bannu, R. (2011). *A study on the performance of public sector general insurance companies in salem division, Tamilnadu*, pp. 131.165.
8. Bawa, S., & Ruchita. (2011). Efficiencies of health insurance business in India: An application of DEA. *American Journal of Social and Management Sciences*, 2(2), 237–247.
9. Bhatia, K. (2008). Emerging trends in Insurance Industry: A comparative study on urban and rural sector. *Institute of Bundelkhand University, Jhansi*, pp. 222-228.
10. Bhattacharya, M. (2012). A study on Financial performances of general insurance Companies in Indian the post-reform period, *The Department of Commerce, University of Kalyani.*, pp. 5.6, 5.25
11. Borah, R., & Saikia, S. (2024). Underwriting quality, claims analytics, and capital efficiency in the Indian non-life insurance market: An empirical assessment. *Journal of Insurance and Financial Risk Studies*, 12(1), 33–52
12. Business Standard. (2024, November 8). *Private general insurers expand health insurance portfolios amid rising claims*. Business Standard.
13. Chakraborty, S., & Rao, P. (2025). Solvency and financial health analysis of emerging private insurers. *Asia-Pacific Insurance Review*, 19(1), 14–29.
14. Chatterjee, B., & Sinha, R. (2009). Are Indian life insurance companies cost efficient?. *SSRN Working Paper*.
15. Chaudhary, A. K. (2025, July 22). *Which non-life insurers received the highest premium in April–June 2025*. Cafemutual.
16. CRISIL Ratings. (2025, January 22). *Solvency challenges in Indian non-life insurers*. Retrieved from: <https://www.crisil.com>
17. Dar, S. A., & Thaku, I. A. (2014). A comparative analysis of financial performance of public and private non-life insurers in India. *International Journal of Management*, 6(1), 507–526.
18. Darzi, A. T. (2010). Financial performance of insurance industry in post-liberalization era in India. *Thesis of Commerce and Management Studies of the University of Kashmir*, pp. 82, 102- 105.

19. Das, K. K. (2023). Financial performance and solvency analysis of private general insurers in India. *Journal of Insurance and Risk Management*, 7(2), 45–68.
20. Das, S. C. (2007). *Cost management practices in non-life insurance companies: A comparative study*. Retrieved from: <http://www.insurance.com>
21. Das, S. Udabir, N., Davies, R., & Podpiera, R. (2003). Insurance and issues in financial soundness. *IMF Working Paper 03/138*, 1–5.
22. Daswani, P. (2020). *Foreign direct investment inflow and performance of private general insurers in India (2010–2019)*. Unpublished Report.
23. Drury, S. (2000). Latin American insurance: An emerging giant in the insurance market. *Reuters Business Insight*.
24. Eamonn, R. (2001). The future of the insurance market—Do insurers need crystal balls? *Balance Sheet*, 9(1), 14–16.
25. Enz, R. (2000). The S-curve relation between per capita income and insurance penetration. *Geneva Papers on Risk and Insurance*, 25(3), 396–406.
26. Erdemir, A. (2023). Selection of financial performance determinants for non-life insurance companies using panel data analysis. *Journal of Risk and Financial Management*, 16(10), Article 427. <https://doi.org/10.3390/jrfm16100427>
27. Fatima.S (2017). Impact of the entry of private insurance companies on the performance of life insurance corporation of India, *Institute of Management Sciences, University of Lucknow*, pp. 36-43.
28. Fredrick. O (2007). Growth and performance of general insurance sector in India. *University Business School Guru Nanak Dev University, Amritsar*, 16, 18-20.
29. General Insurance Corporation of India (GIC Re). (2023, December 11). Retrieved from <https://www.gicre.in>
30. Generali Central Insurance. (2025, February 14). *Financial information*. Retrieved from: <https://www.generalicentralinsurance.com/about-us/financial-information#annualReport>
31. Ghai. D (2008). The Indian insurance industry transition & prospects. *H.N.B. Garhwal University, Srinagar, Uttarakhand*, pp. 89-94.
32. Ghosh, A., & Sengupta, B. (2023). Underwriting efficiency of Indian non-life insurers: A panel data approach. *Indian Journal of Finance*, 17(4), 45–59.
33. Goswami, S., & Sarkar, A. (2011). Grievance redressal mechanism—A case study of Indian insurance sector. *The Management Accountant*, 46(6), 499–503.
34. Gulati, R., & Kumar, S. (2008). Examination of TE, PT and SE in Indian public sector banks using DEA. *Eurasian Journal of Business and Economics*, 1(2), 33–69.
35. Gupta, O. P. (2015). *Principles and practice of non-life insurance*. Himalaya Publishing House.
36. Gupta, R., & Rao, P. (2018). Liberalization and growth of insurance in India. *Journal of Insurance Studies*, 5(2), 33–49.
37. Harrington, S. E., & Niehaus, G. (2003). *Risk management and insurance*. (2nd ed.). McGraw-Hill.
38. Ilyas, A. M., & Kumar, S. (2019). Productivity of the Indian non-life insurance sector: Evidence from total factor productivity. *Journal of Productivity Analysis*, 51(3), 633–651.
39. Insurance Regulatory and Development Authority of India (IRDAI). (2024). *Handbook on Indian insurance statistics 2023–24*. Hyderabad: IRDAI Publications.
40. Insurance Regulatory and Development Authority of India. (2023). *Handbook on Indian insurance statistics*. IRDAI.
41. International Association of Insurance Supervisors (IAIS). (2024). *Insurance core principle report*. Basel.
42. International Monetary Fund (IMF). (2024). *Insurance market stability report*. Washington, D.C.
43. Jarraya, B. (2013). Technical efficiency and productivity in European non-life insurance companies. *Working Paper Series*.
44. Joo, B. (2013). Analysis of the financial stability of Indian non-life insurance companies. *Asian Journal of Finance & Accounting*, 5(1), 306–319.
45. Karki, S. (2025). Factors influencing the profitability of non-life insurance companies in Nepal. *Asian Journal of Business Management*, 13(1), 1–15.

46. Karthik, P., & Ahmed, M. (2016). Impact of reinsurance on performance of non-life insurers in India. *Journal of Risk Finance*, 17(4), 369–383.
47. Kaur, N. (2014). Growth and performance of general Insurance in India a Comparative Study of public and private companies, *University Business School Guru Nanak Dev University, Amritsar*.
48. KPMG India. (2024, September 11). *Cost efficiency in general insurance sector*. Retrieved from: <https://www.kpmg.com>
49. Kumar, S., & Kumar, R. (2022). Financial performance determinants of general insurance companies in India: An empirical analysis. *Journal of Risk and Financial Management*, 15(6), 310–325.
50. Kumar, R. (2010). Performance evaluation of general insurance companies: A study of post-reform period. *Thesis Paper from Department of Commerce Punjabi University, Patiala*, pp. 85-91.
51. Mikes, A., & Kaplan, R. S. (2013). *Managing risk in insurance: Models, frameworks and practice*. Oxford University Press.
52. Mint. (2023, September 14). Profitability squeeze in general insurers: Underwriting losses and investment pressures. *Mint*.
53. Morgan Stanley Research. (2025, February 02). *Investment returns and solvency trends in Asia's general insurers*.
54. Msomi, N. (2023). *Underwriting determinants of profitability in publicly traded South African non-life insurers*. Unpublished Academic Paper.
55. Murigu, J. (2014). *The determinants of financial performance in general insurance companies in Kenya (2009–2012)*. Unpublished Research Study.
56. Nanda Gopal, R., Arul Rajan, K., & Vivek, N. (2008). *Research methods in business*. Excel Books Publications.
57. OECD. (Dec.2023). Retrieved 15 Feb 2024, *Global-insurance-market-trends-2023*. https://www.oecd.org/en/publications/global-insurance-market-trends-2023_e141d5ff-en.html
58. Opoku, D. (2024). *Determinants of non-life insurer performance: A multi-country panel and meta-analysis approach*. Unpublished Academic Article.
59. Parida, T. K. (2018). *The life insurance industry in India: Growth, performance and prospects*. Springer.
60. PricewaterhouseCoopers (PwC) India. (2021). *India insurance outlook 2021*. Retrieved December 13, 2024, from: <https://www.pwc.in/research-and-insights-hub/bridging-gaps-in-the-india-insurance-sector.html>
61. Rahman, M., & Islam, T. (2020). Profitability and solvency analysis of non-life insurers in South-East Asia. *Asian Economic and Financial Review*, 10(9), 928–945.
62. Ramanathan, K. (2023). Product diversification and operating efficiency in general insurance. *Financial Markets and Risk Review*, 12(1), 21–38.
63. Rao, K., & Srinivas, V. (2020). Private participation in Indian insurance: Opportunities and challenges. (3), 145–168.
64. Rao, M. (2010). Performance evaluation of general Insurance Companies: a case study of National Insurance Company Ltd. *Department of Commerce, Sri Krishnadevaraya University, Andhra Pradesh*, pp. 78-93.
65. Rejda, G. E. (2019). *Insurance: Concepts and practices*. (Rev. ed.). Cengage Learning.
66. Roy, S. (2025). Pricing inefficiency and loss ratios in India's health insurance market. *Indian Journal of Actuarial Studies*, 9(1), 67–82.
67. S&P Global Market Intelligence. (2025, April 08). *Risk-adjusted capital trends in Asian insurers*.
68. Sachan, A. (2023). *Grey relational analysis of Indian general and health insurers (2019–2022)*. Unpublished Research Study.
69. Sahu, S., & Dixena, S. (2019). Role of insurance sector in economic development of India. *International Journal for Scientific Research & Development*, 6(11).
70. Septina, F., Morara, K., & Sibindi, A. B. (2021). Determinants of financial performance of insurance companies: Evidence from Kenya. *Journal of Risk and Financial Management*, 14(12), 566.
71. Septina, S. (2022). *Determinants of financial performance for general insurance companies in Indonesia*. Unpublished Research Paper.

72. Sharma, M. (2005). *Financial performance vis-à-vis managerial effectiveness of insurance sector of India*. Doctoral Thesis, Saurashtra University.
73. Sharma, S. (2012). *Impact of reforms in general insurance sector in India*. Doctoral Thesis, Gauhati University.
74. Sharma, M. (2005). *A study of financial performance vis a vis managerial effectiveness of insurance sector of India*. Saurashtra University, Rajkot.
75. Singh, A., & Sharma, R. (2018). Efficiency and profitability in Indian general insurance companies: A DEA and ratio analysis. *Global Business Review*, 19(4), 1002–1018.
76. Sinha, R. (2007). The Indian insurance industry: Challenges and prospects. *Yojana*, 51(3), 80–85.
77. Sinha, R. R. (2011). Cost efficiency in Indian insurance companies. *Indian Journal of Finance*, 5(9), 12–24.
78. Sinha, T. (2005). The Indian insurance industry: Challenges and prospects. *Insurance Chronicle*, 12(4), 25–39.
79. Sivakamy, (2009). *A comparative study on the financial performance of public sector general insurance companies*. The Department of Management Studies, Madurai Kamaraj University, Tamil Nadu, India.
80. Subramani, M. (2013). *General insurance business in India: Features and prospects*. Department of Commerce, Madurai Kamaraj University.
81. Varma.S. (2012). A comparative study of public and private sector in general insurance. *A Thesis Paper of the Department of Economics & Research Centre, Mahatma Gandhi University, Kottayam Kerala, India*.
82. Veerakumar, K. (2024). Evaluating the financial performance of public and private general insurers in India. *Journal of Financial Studies*, 50(5), 1023–1045.
83. Yadav, A. K. (2023). Market liberalization and FDI in India's non-life insurance sector: Trends and challenges. *International Journal of Innovative Research in Technology*. Retrieved from: https://ijirt.org/publishedpaper/IJIRT174869_PAPER.pdf
84. Zinyoro, T. (2024). Performance determinants of non-life insurance firms: A systematic review. *Cogent Economics & Finance*, 12(1), Article 2345045.

Disclaimer / Publisher's Note: The statements, opinions and data contained in all publications are solely those of the individual author(s) and contributor(s) and not of Journals and/or the editor(s). Journals and/or the editor(s) disclaim responsibility for any injury to people or property resulting from any ideas, methods, instructions or products referred to in the content.