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A STUDY ON FINANCIAL PERFORMANCE EVALUATION OF A PUBLIC SECTOR INSURER IN INDIA: A CARAMEL MODEL APPROACH

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1.ABSTRACT
The study examines the financial soundness of The New India Assurance Co. Ltd. using a structured approach based on the CARAMEL framework, which encompasses Capital adequacy, Asset quality, Reinsurance and actuarial issues, Management soundness, Earnings and profitability, and Liquidity. Drawing on audited financial disclosures as of 31st March 2025, fifteen core financial indicators were analyzed to assess operational efficiency, financial resilience, and risk management. The results show strengths in premium retention, equity returns, and asset utilization, while highlighting concerns in combined ratios and liquidity positioning. The study contributes to insurer performance benchmarking and supports stakeholders in evaluating financial health based on regulatory-aligned metrics.

KEY WORDS: *CARAMEL Model, Financial Indicators, Financial Soundness, New India Assurance.*

2. INTRODUCTION
The insurance sector serves as a cornerstone of economic security and risk mitigation in both developed and emerging economies. By enabling risk transfer and capital accumulation, insurance companies contribute significantly to financial stability, economic resilience, and infrastructure investment. In India, the non-life insurance segment plays a vital role in safeguarding businesses, individuals, and public assets against uncertainties, particularly in sectors such as health, agriculture, automotive, and disaster management. Within this landscape, The New India Assurance Company Ltd., a government-owned multinational general insurer, stands as a flagship entity with an extensive domestic and international presence. As the largest public sector general insurance company in India, its financial soundness directly influences systemic stability, policyholder trust, and investor confidence.

In the post-pandemic era, the sector faces growing pressures from evolving risk profiles, climate-related exposures, changing regulatory frameworks, and increased competition from private and tech-driven insurers. Therefore, a timely and structured evaluation of financial health becomes not only relevant but necessary to ensure that institutions like New India Assurance maintain adequate capital buffers, prudent risk-sharing mechanisms, and sustainable earnings capacity. A multidimensional diagnostic tool is essential to capture these nuances beyond traditional profitability measures.

To address this need, the CARAMEL model—a refined framework adapted from the IMF's financial soundness indicators—has emerged as an effective approach. The acronym CARAMEL stands for Capital Adequacy (C), Asset Quality (A), Reinsurance and Actuarial Issues (RA), Management Soundness (M), Earnings and Profitability (E), and Liquidity (L). Unlike one-dimensional assessments, this framework provides a holistic and granular view of an insurer's financial performance across six strategic dimensions. Each component is evaluated using standardized financial ratios, offering clarity to stakeholders—including regulators, analysts, and investors—regarding the institution's strengths, vulnerabilities, and operational efficiency.

In this study, the CARAMEL model is applied to evaluate the financial soundness of New India Assurance Co. Ltd. for the financial year ending March 31, 2025, using fifteen key financial indicators derived from IRDAI-mandated disclosures. The objective is to systematically analyze the company's capital structure, risk management capacity, operational efficiency, profitability, and liquidity standing. By mapping actual results to benchmark norms and rating thresholds, the study aims to identify red flags, green zones, and grey areas in financial performance. The findings provide valuable insights for policy formulation, internal strategy improvement, and external benchmarking within the Indian insurance ecosystem.

3. REVIEW OF LITERATURE
1. **Jansirani & Muthuswamy (2019)** - this study applies the CARAMEL model to assess financial efficiency among Indian public sector non-life insurance companies from 2009 to 2018. It analyzes key ratios such as solvency, liquidity, and profitability. The research reveals that Oriental Insurance performed relatively well, whereas United India struggled across several metrics. The paper concludes that strategic improvements in capital adequacy and efficient claim management are essential for sustainability. It offers valuable insights for regulators aiming to benchmark performance and

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identify weaknesses in public sector insurers through a structured analytical model.

2. **Surya & Sudha (2020)** - the paper introduces the CARAMEL model as a robust tool for evaluating the financial soundness of insurance firms. It emphasizes six critical components—Capital adequacy, Asset quality, Reinsurance, Actuarial liability, Management efficiency, Earnings, and Liquidity. Using real-world data from Indian insurers, the study demonstrates how this model can highlight the strengths and vulnerabilities of companies. The authors advocate for periodic evaluations to ensure financial resilience and regulatory compliance. The paper is well-structured and adds value to academic discourse on insurance performance assessment in emerging markets.

3. **Sureshbhai & Chakrawal (2021**) - the authors conduct a performance evaluation of Indian insurance companies using the CARAMEL framework. The study leverages data from both public and private players and examines critical financial indicators to rank insurers. The findings reveal disparities in asset quality and earnings stability, with private insurers generally outperforming public ones. The study recommends robust financial control, improved claim settlement processes, and sound reinsurance practices. Its concise yet impactful methodology provides a practical approach to stakeholders interested in comparative insurance performance analysis.

4. **Sreeshailam & Naresh Reddy (2021)** - This paper analyzes the financial performance of select Indian private health insurers using the CARAMEL model. Through ANOVA and descriptive statistics on multiple ratios, it highlights the dominance of RHICL and Star Health in capital and operational efficiency metrics. Apollo scored well in asset management and reserves, while MBHICL led in investment income. The study underscores significant performance variations across insurers and advocates for strategic improvements in underperforming firms. It serves as a useful guide for health insurance benchmarking and policy formulation.

5. **Harwani (2021)** - this paper investigates the financial performance of public sector general insurers in India using the CARAMEL model. It evaluates key metrics across five years and identifies a declining trend in profitability and claim settlement efficiency. Oriental and New India showed relative strength in capital and reinsurance adequacy. The paper concludes that to compete with private players, public insurers must enhance their underwriting practices and operational efficiency. It offers policy-level recommendations to strengthen regulatory oversight and risk-based supervision of state-owned insurers.

6. **Sureshbhai (2024)** - Focusing on the COVID-19 period, this study assesses how the pandemic impacted financial health across Indian health insurers. It finds that while claims surged, companies with strong pre-COVID solvency and digital infrastructure managed to withstand the shock. The CARAMEL model is applied to examine capital, liquidity, and earnings resilience. Star Health and Care Health emerged relatively stronger. The study calls for robust crisis preparedness and regulatory support to mitigate future pandemics. It adds timely relevance to the literature on insurance resilience under systemic stress.

7. **Goyal (2024)** - this article evaluates the standalone health insurance sector using a mix of financial ratios and comparative ranking. Star Health and Care Health were top performers in solvency and profitability, whereas newer players lagged in efficiency metrics. The paper employs Grey Relational Analysis alongside CARAMEL components for a multidimensional evaluation. The study underscores the increasing competitiveness of standalone players and their growing market relevance post-COVID-19. It provides actionable insights for insurers looking to strengthen performance through financial prudence and operational focus.

8. **Shihab et al. (2025)** - this research evaluates Jordan's insurance sector using the CARAMEL model, focusing on financial stability, claim adequacy, and asset-liability management. The study finds moderate performance levels, with gaps in solvency margins and reinsurance coverage. The authors recommend regulatory modernization and adoption of risk-based supervision to improve market stability. Comparative insights with global peers help contextualize the challenges. It's a meaningful contribution to regional insurance literature and provides a structured pathway for enhancing financial resilience in developing economies.

4. STATEMENT OF THE PROBLEM

Despite being India's largest public sector general insurer, New India Assurance faces increasing pressure to maintain financial soundness amid growing competition and post-pandemic challenges. Current assessments often lack a unified framework to evaluate its performance comprehensively. This study addresses that gap by applying the CARAMEL model to assess the company's capital adequacy, asset quality, reinsurance, management soundness, earnings, and liquidity using 15 core financial indicators for FY 2024–25.

5. OBJECTIVES OF THE STUDY

1. To assess the financial soundness of New India Assurance Company Ltd. using core indicators categorized under the CARAMEL framework.
2. To calculate and analyze key financial ratios.
3. To evaluate the insurer's performance against standard regulatory thresholds and industry benchmarks.

6. RESEARCH METHODOLOGY

6.1 Research Design

This study follows a quantitative, descriptive research design, aiming to evaluate the financial performance and institutional soundness of a single insurer The New India Assurance Company Ltd. for the financial year ending March 31, 2025.

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The analysis is guided by the CARAMEL model. The source of data is public disclosures of the Selected Company. The data which have been used for the study is specific to Health Insurance Segment wherever it is applicable. The period of the study is 2024-25 financial year.

The study employs the **CARAMEL model**, with 15 financial ratios categorized under six performance dimensions. Each metric was calculated using standard financial formulas and interpreted based on industry norms, regulatory guidelines, and IMF (2016) financial soundness indicators for insurance companies.

6.2 Framework and Variables

Table 2- Non- life Insurance Financial Soundness Indicators

Category	Indicator		Non- Life
1. C-Capital Adequacy	1.	Net premium/Capital	X
	2.	Capital/total assets	X
2. A- Asset quality	3.	(Real estate + unquoted equities + debtors)/total assets	X
	4.	Debtors /(Gross premium + reinsurance recoveries)	X
	5.	Equities/total assets	X
3. RA-Reinsurance and actuarial issues	6.	Risk retention ratio (net premium/gross premium)	X
	7.	Net technical reserves/average of net claims paid in last three years	X
4. M- Management soundness	8.	Gross premium/number of employees	X
	9.	Assets per employee (total assets/number of employees)	X
5. E- Earnings and profitability	10.	Loss ratio (net claims/net premium)	X
	11.	Expense ratio (expense/net premium)	X
	12.	Combined ratio = loss ratio + expense ratio	X
	13.	Investment income/net premium	X
	14.	Return on equity (ROE)	X
6. L- Liquidity	15.	Liquid assets/current liabilities	X

Source: IMF Working paper on Insurance and Issues in Financial Soundness, 2016.
Note: "X" indicates that the corresponding indicator is applied in the analysis

Table 3- Financial metrics data of the New India Assurance Co Ltd as on 31.03.2025

Sl. No	Financial Metrics	Amount (in Lakhs)
1	Net premium(NL-25)*	18,69,936
2	Capital (NL-3)	82,400
3	Total assets(NL-23)	1,08,88,395
4	Debtors (Receivables)	62,123
5	Equities(NL-12)	8,93,589
6	Gross premium(NL-25)*	19,92,817
7	Net Technical Reserves(NL-24)	53,17,670
8	Average of Net Premium paid in Last three years • 2022-23- 15,01,705* • 2023-24- 17,68,020* • 2024-25- 18,04,141*	16,91,288
10	Number of Employees(NL-41)	11,109
11	Net claims*	18,04,141
12	Operating Expenses (NL-7)	1,86,879
13	Investment Income (NL-2-B-PL)	2,29,562
14	Net income	98,807
15	Share holders Equities(NL-12)	8,93,589
16	Liquid Assets	35,42,078
17	Current Liabilities(NL-3-B_BS)	48,07,254

Source: Authors Compiled from Public Disclosures as on 31.03.2025
*Note: *Standalone-Health Insurance Segment Data. ** Consolidate- All segment Data.*

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7. CARMEL ANALYSIS

Table 4 - Capital Adequacy

Sl. No.	Metric	Formula	Value (Lakhs)	Result
C1	Net Premium to Capital	Net Premium / Capital	18,69,936 / 82,400	**22.69**
C2	Capital to Total Assets	Capital / Total Assets	82,400 / 1,08,88,395	**0.76%**

Source: Authors Compiled

Table 5- Asset Quality

Sl. No.	Metric	Formula	Value (Lakhs)	Result
A1	Risk Assets Ratio	Debtors / Total Assets	62,123 / 1,08,88,395	**0.57%**
A2	Debtor Efficiency Ratio	Debtors / Gross Premium	62,123 / 19,92,817	**3.12%**
A3	Equity Investment Ratio	Equities / Total Assets	8,93,589 / 1,08,88,395	**8.21%**

Source: Authors Compiled

Table 6 - Reinsurance & Actuarial Issues

Sl. No.	Metric	Formula	Value (Lakhs)	Result
RA1	Risk Retention Ratio	Net Premium / Gross Premium	18,69,936 / 19,92,817	**93.84%**
RA2	Claims Reserve Adequacy Ratio	Net Tech Reserves / Avg. of Net Claims (3 years)	53,17,670 / 16,91,288	**3.14 Times**

Source: Authors Compiled

Table 7- Management Soundness

Sl. No.	Metric	Formula	Value (Lakhs)	Result
M1	Gross Premium per Employee	Gross Premium / No. of Employees	19,92,817 / 11,109	**179.3**
M2	Assets per Employee	Total Assets / No. of Employees	1,08,88,395 / 11,109	**980.1**

Source: Authors Compiled
(Note: Result unit is in lakhs per employee)

Table 8 - Earnings & Profitability

Sl. No.	Metric	Formula	Value (Lakhs)	Result
E1	Loss Ratio	Net Claims / Net Premium	18,04,141 / 18,69,936	**96.48%**
E2	Expense Ratio	Operating Exp. / Net Premium	1,86,879 / 18,69,936	**10.00%**
E3	Combined Ratio	Loss Ratio + Expense Ratio	96.48% + 10.00%	**106.48%**
E4	Investment Yield on Premium	Investment Income / Net Premium	2,29,562 / 18,69,936	**12.28%**
E5	Return on Equity (ROE)	Net Income / Shareholders' Equity	98,807 / 8,93,589	**11.06%**

Source: Authors Compiled

Table 9 - Liquidity

Sl. No.	Metric	Formula	Value (Lakhs)	Result
L1	Liquidity Ratio	Liquid Assets / Current Liabilities	35,42,078 / 48,07,254	**0.74 Times**

Source: Authors Compiled

8. RESULTS AND DISCUSSION

The financial performance analysis using the CARMEL model reveals a varied outlook across the insurer's operational dimensions.

In terms of capital adequacy, the Net Premium to Capital ratio of 22.69 indicates a moderately high reliance on capital for revenue generation, reflecting capital efficiency but also potential vulnerability to elevated claims. More critically, the Capital to Total Assets ratio is extremely low at 0.76%, signifying a high dependence on liabilities and a weak equity base that could compromise long-term solvency under financial stress.

Asset quality, on the other hand, appears strong, with a low Risk Assets Ratio of 0.57% and a Debtor Efficiency Ratio of 3.12%, pointing to effective credit control and premium collection. However, the Equity Investment Ratio of 8.21% suggests a conservative investment stance, potentially limiting long-term returns due to underutilized growth assets.

The company's reinsurance and actuarial practices show a high Risk Retention Ratio of 93.84%, reflecting confidence in its

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underwriting capabilities but also increasing exposure to large losses. This is balanced by a robust Claims Reserve Adequacy Ratio of 3.14 times, indicating that the company has set aside sufficient reserves to cover potential claims liabilities.

In terms of management soundness, operational efficiency is moderate, with Gross Premium and Assets per Employee recorded at ₹179.3 lakhs and ₹980.1 lakhs respectively—indicative of average workforce productivity with room for improvement through better resource optimization and skill development.

The company's earnings and profitability reveal mixed performance: while the Loss Ratio is high at 96.48%, and the Combined Ratio at 106.48% confirms underwriting losses, strong cost control (Expense Ratio of 10.00%) and a high Investment Yield on Premium of 12.28% help offset these deficits. A Return on Equity (ROE) of 11.06% further affirms efficient capital utilization, driven largely by investment performance. However, the Liquidity Ratio of 0.74 falls below the ideal benchmark of 1.5–2.0, indicating potential short-term liquidity constraints and the need for improved cash flow management. Overall, the insurer demonstrates financial strength in investment returns and reserves, but must address weaknesses in capital adequacy and liquidity to ensure long-term financial resilience

9. FINDINGS

1. Capital Adequacy- The capital-to-asset ratio is critically low (0.76%), indicating weak capital backing and high reliance on liabilities. Although the premium-to-capital ratio (22.69) shows efficient capital utilization, it also points to potential vulnerability in times of financial stress.
2. Asset Quality- Asset quality is strong, with minimal debtor exposure (0.57%) and efficient premium collection (3.12%). However, equity investments form only 8.21% of total assets, suggesting a conservative investment approach with limited growth potential.
3. Reinsurance and Actuarial Strength- The company retains 93.84% of its gross premium, reflecting high confidence in its underwriting ability. This increases risk exposure but is well-supported by a solid claims reserve adequacy (3.14 times), showing preparedness to handle liabilities.
4. Management Soundness- Productivity is moderate, with gross premium per employee at ₹179.3 lakhs and assets per employee at ₹980.1 lakhs, indicating average workforce efficiency and reasonable resource management.
5. Earnings and Profitability- The company incurs underwriting losses (Combined Ratio of 106.48%), but strong investment yield (12.28%) and a healthy ROE (11.06%) sustain overall profitability. Operational expenses remain well-controlled.
6. Liquidity- The liquidity ratio is low (0.74), falling below the ideal threshold, and signals possible short-term financial stress, especially in adverse market conditions.

10.SUGGESTIONS

1. Strengthen Capital Base- The Company should increase its equity capital to improve solvency margins and reduce dependence on external liabilities, enhancing long-term financial stability.
2. Improve Liquidity Management- Liquidity should be improved by increasing short-term liquid investments and optimizing working capital to ensure smooth claim settlements and liability management.
3. Adopt Balanced Reinsurance Strategy- While high retention boosts income, strategic use of reinsurance can mitigate large claim risks. A more balanced risk-sharing approach is advisable.
4. Enhance Investment Portfolio Diversification- The Company should consider increasing exposure to well-managed equity and other growth assets to improve long-term returns without significantly raising risk.
5. Boost Workforce Productivity- Implementing training programs, digital tools, and process automation can enhance operational efficiency and improve per-employee output metrics.
6. Underwriting Reforms- The high loss ratio suggests the need to revise underwriting standards, pricing strategies, or risk selection processes to improve underwriting profitability.

11.CONCLUSION

The financial performance assessment using the CARMEL model highlights both strengths and concerns. The company demonstrates robust investment performance, efficient cost control, and strong claims reserve adequacy, supporting its overall profitability despite underwriting losses. A high risk retention ratio reflects confidence in managing risk internally, though it heightens exposure to claim volatility. However, capital adequacy is critically low, indicating overdependence on liabilities, and the liquidity ratio falls below the safe threshold, raising concerns about short-term solvency. To enhance long-term financial stability, the company should strengthen its capital structure, maintain prudent reinsurance balance, and improve liquidity management while continuing to leverage its investment efficiency.

- **Competing Interest:** The authors declare that they have no competing of interest.
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