

A Multi-Dimensional Financial Performance Review of ONGC and Reliance: Integrating Ratio Analysis, ANOVA, and Advanced Financial Models

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ABSTRACT:

This research presents a comparative analysis of the financial performance of two Leading India's energy giants **Oil and Natural Gas Corporation (ONGC)** and **Reliance Industries Limited (RIL)** over the last five financial years (FY 2020–21 to FY 2024–25). ONGC, a public sector undertaking, primarily operates in upstream oil and gas exploration, while RIL, a private conglomerate, has diversified interests in petrochemicals, refining, telecommunications, and retail.

The research employs a comprehensive analytical framework to assess performance across key dimensions: liquidity, profitability and solvency through traditional ratio analysis. To deepen the investigation, the study integrates advanced financial models. The **DuPont Analysis** is used to deconstruct the Return on Equity (ROE) into its operational, asset management, and financial leverage components, revealing the fundamental drivers of shareholder returns. Furthermore, the **J-UK Model Analysis** is applied to evaluate the overall financial health and strategic positioning of the firms by examining the interplay between liquidity, profitability, and productivity. A **One-Way Analysis of Variance (ANOVA) at a 5% significance level** is utilized to statistically determine if the observed differences in the mean financial ratios of the two companies are significant.

Over the period, RIL consistently posted higher total revenues driven by strong performance in its consumer-facing businesses and robust refining margins. In contrast, ONGC's profitability showed fluctuations due to volatility in global crude oil prices and regulatory constraints, although it benefited from rising prices in FY 2022-23.

RIL exhibited steady growth with significant capital expenditure in its new energy and digital services segments, while ONGC maintained a relatively conservative investment approach. The study also reveals that RIL demonstrated stronger operational efficiency and returns on shareholder funds, whereas ONGC's performance remained closely linked to global commodity cycles.

In conclusion, while both companies performed robustly in their respective domains, RIL showed superior financial stability and growth momentum, largely due to its diversified portfolio and strategic investments in emerging sectors. This comparison underlines the contrast between a diversified private conglomerate and a state-owned energy producer operating in a volatile commodity-driven environment.

Keywords: Current ratio, Quick ratio, Net profit ratio, Debt-equity ratio, EBITDA, Anova and Private and Public Enterprises.

1. INTRODUCTION

“Presently India spends more than Rs 12 trillion annually on energy import. For India’s progress, the country’s energy independence is the need of the hour, necessary to make an Atmanirbhar Bharat. Therefore, today India has to take resolution that it will become energy independent before the completion of 100 years of independence and for this our roadmap is clear.” – **PM NARENDRA MODI**

India’s energy sector plays a critical role in driving the nation’s economic growth, serving as the backbone for industrial development, transportation, and domestic consumption. Within this sector, two major players—**Oil and Natural Gas Corporation (ONGC)** and **Reliance Industries Limited (RIL)**—stand out as leaders due to their scale, influence, and financial performance. However, despite operating in the same broader industry, these organizations represent two distinct business models: **a state-owned upstream oil and gas enterprise** versus **a diversified private-sector conglomerate**.

1.1. Oil and Natural Gas Corporation (ONGC)

ONGC is India’s largest government-owned oil and gas exploration and production company. Incorporated in 1956 and functioning under the administrative control of the Ministry of Petroleum and Natural Gas, ONGC is a public sector undertaking (PSU) that plays a crucial role in ensuring India’s energy security. It primarily engages in upstream activities—exploration, drilling, and production of crude oil and natural gas. With over 70% of India’s crude oil production and around 60% of its natural gas output attributable to ONGC, the company is a vital contributor to the nation’s fossil fuel supply chain.

However, ONGC’s financial performance is heavily influenced by external factors such as international crude oil prices, exchange rate volatility, government regulations, and subsidy sharing burdens. The company’s capital investments are often driven by national policy objectives, which can sometimes limit its agility compared to private-sector peers. Despite

these challenges, ONGC has continued to invest in offshore and onshore oil fields, aiming to maintain production levels and upgrade its technological capabilities.

1.2. Reliance Industries Limited (RIL)

In contrast, RIL is a privately held conglomerate founded by Dhirubhai Ambani in 1966 and currently led by Mukesh Ambani. Originally focused on petrochemicals and refining, RIL has since diversified into telecommunications (Jio), retail (Reliance Retail), digital services, and more recently, renewable energy (Reliance New Energy). This diversification has transformed RIL into one of India's most valuable and globally recognized corporate entities. RIL's agility in responding to market shifts, combined with its forward-looking capital investments, has allowed it to maintain consistent growth. Unlike ONGC, RIL operates with greater strategic independence, enabling it to invest in emerging sectors and scale up operations rapidly. Its focus on consumer-centric businesses and technological integration has further contributed to its resilience and profitability, even when traditional energy markets are volatile.

2. LITERATURE REVIEW

2.1. THE REVIEWS

(Ramya, et al., 2018) The paper analyzes the financial performance of Indian Oil Corporation Limited (IOCL) from 2013 to 2017, focusing on liquidity, solvency, and overall financial position using ratio analysis and common size balance sheets. Key findings indicate that IOCL's current and acid test ratios are below acceptable standards, suggesting liquidity issues. The study highlights fluctuations in profitability and recommends improving liquidity and efficient asset utilization. Overall, while IOCL shows satisfactory operational efficiency, it must address its short-term obligations to enhance financial stability and shareholder value.

(Arockiam, J., 2021) The paper examines the financial performance of Bharat Petroleum through trend and ratio analysis. It highlights the importance of financial management in assessing a firm's stability and profitability. The study identifies weaknesses in liquidity and profitability ratios, noting a significant decline in net profit and earnings per share in 2020. Recommendations include improving income, managing secured loans effectively, and maintaining liquidity ratios. Overall, while performance has declined, the company's financial position remains satisfactory, suggesting potential for future growth.

(Dharshin & Nathan, 2023) The paper titled "A Study on Financial Performance of Reliance Industries Limited" analyzes the financial health of Reliance Industries over five years (2017-2022) using ratio and trend analysis. It identifies weaknesses in liquidity,

profitability, and operational efficiency, while suggesting improvements in cash management and capital structure. The study highlights the company's potential for future growth despite current challenges. Limitations include reliance on secondary data and specific analytical tools. Overall, it provides valuable insights for management decision-making and emphasizes the importance of financial performance analysis.

(Shahwal, 2023) The paper titled "Comparative Profitability Analysis of Public and Private Ltd Companies in India" by Dr. Rana Shahwal examines the profitability of Bharat Petroleum Corporation Limited and Essar Oil Limited using secondary data and ratio analysis. It highlights the significance of profitability for business survival and growth. The study finds that BPCL generally outperforms EOL in profitability ratios, suggesting areas for improvement for both companies. The research emphasizes the importance of profitability analysis for corporate decision-making and competitive positioning in the oil sector. Overall, it provides valuable insights for stakeholders in the industry.

(Parmar, & Sharma, 2023) The paper titled "Financial Statement Analysis of Reliance Industries Limited" provides a comprehensive evaluation of the company's financial health over the past four years. It employs ratio analysis and examines key financial statements, including income statements, balance sheets, and cash flow statements. The study highlights significant trends, such as a decrease in operating income and improvements in net profit. It also discusses liquidity, solvency, and profitability, offering recommendations for enhancing financial performance. Overall, the analysis indicates a strong long-term position, despite challenges in short-term liquidity and profit margins.

(Raju, 2024) The paper titled "A Study on Financial Performance of Indian Oil Corporation Ltd" by Sivaramakrishnan Raju analyzes the financial health of Indian Oil Corporation (IOCL) using secondary data from 2017-2022. It employs ratio analysis to assess liquidity, profitability, and solvency. Key findings indicate a decline in performance during the pandemic, with a notable recovery afterward. The study emphasizes the importance of effective resource utilization and cost management for enhancing profitability. Recommendations include reducing debt and improving asset management to strengthen financial stability. The research contributes valuable insights for policymakers and stakeholders in the energy sector.

(Suguna & Harish, 2024) The paper evaluates the financial performance of Bharat Petroleum Corporation Limited (BPCL) using ratio analysis over five years. It examines profitability, liquidity, and solvency ratios, providing insights for stakeholders and

management. The study highlights BPCL's fluctuating financial health, with recommendations for improving cost management, liquidity, and stakeholder communication. Key findings indicate a need for strategic adjustments to enhance profitability and ensure long-term sustainability. The research is significant for understanding BPCL's role in India's oil and gas sector and its economic contributions. Limitations include reliance on secondary data and a five-year analysis timeframe.

(Pirakatheeswari & Dinesh, 2024) The paper titled "A Study on Financial Performance of Reliance Industries" by Dr. P. Pirakatheeswari and M. Dinesh provides a detailed analysis of Reliance Industries' financial health through financial statements and performance ratios. It identifies strengths, weaknesses, and growth opportunities, benefiting stakeholders and investors. The study employs secondary data from 2019-2023, focusing on profitability, liquidity, and market dynamics. Key findings include a resilient recovery in revenue and profitability post-2021, alongside a conservative debt management strategy. Overall, it emphasizes the company's adaptability and potential for future growth, contributing to informed decision-making in the industry.

2.2. Research Gap

The reviewed studies mainly examine IOCL, BPCL, and RIL individually, but they do not provide a **holistic comparative analysis** of public vs. private sector oil companies across the same financial period. Most papers rely heavily on **ratio analysis**, but they do not integrate advanced analytical tools such as trend decomposition, DuPont analysis, or risk-adjusted performance measures. None of the studies collectively compare IOCL and RIL over the same years to identify structural differences between a public-sector undertaking and a private conglomerate. Therefore, there is a clear opportunity for a **comprehensive comparative study** of financial performance that deliver deeper insights for stakeholders.

3. OBJECTIVES OF THE STUDY

- To analyze and compare the liquidity, profitability and solvency using key financial ratios of selected companies
- To assess the statistical significance of performance differences using ANOVA.
- To apply DuPont Analysis to decompose the ROE of both companies
- To implement the J-UK Model Analysis to develop a composite score for each company

4. RESEARCH METHODS

4.1. Sample Selection

Sample is taken from public and private oil sector companies such as Oil and Natural Gas Corporation (ONGC) and Reliance Industry Limited (RIL). The Selection was made on following basis:

- All the above companies are listed on BSE and NSE.
- These companies are having a huge market share in the Indian Economy.
- These are involved in Sustainability development Practices.

4.2. Sources of Data

The study is supported by secondary data. The data is extracted from annual reports of the selected companies and websites.

4.3. Periods of Study

The data has been extracted for the examination from five financial years i.e. from 2020-21 to 2024-25.

4.4. Analysis of Data

To achieve the objectives a comprehensive financial performance study of ONGC and Reliance Industries, a well-defined set of ratios across the three pillars i.e. Liquidity, Profitability and Solvency plus the components for the DuPont and J-UK models were applied.

4.5. Hypothesis

H₁: There is a significant difference in the mean **Current Ratio** between ONGC and RIL.

H₂: There is a significant difference in the mean **Quick Ratio** between ONGC and RIL

H₃: There is a significant difference in the mean **Gross Profit Ratio** between ONGC and RIL

H₄: There is a significant difference in the mean **Net Profit Ratio** between ONGC and RIL

H₅: There is a significant difference in the mean **Return on Assets Ratio** between ONGC and RIL

H₆: There is a significant difference in the mean **Return on Equity Ratio** between ONGC and RIL

H₇: There is a significant difference in the mean **Return on Capital Employed Ratio** between ONGC and RIL

H₈: There is a significant difference in the mean **Debt to Equity Ratio** between ONGC and RIL

H₉: There is a significant difference in the mean **Interest Coverage Ratio** between ONGC and RIL

4.6. Limitation of the Study

Main limitation of this study is that it is only based on the few Publics and Private Oil Corporation’s annual reports and websites.

5. ANALYSIS AND INTERPRETATION

5.1. Ratio Analysis

Ratio analysis is a method of examining a company's balance sheet and income statement to learn about its liquidity, operational efficiency, and profitability. It doesn't involve a single metric; instead, it is a method of analyzing a range of financial data about a company. Ratio analysis is a cornerstone of fundamental equity analysis. Ratio analysis can track a company's performance over time or compare it to another business in the same industry or sector. Ratio analysis may also be required by external parties that set benchmarks, often tied to risk, such as lenders (Investopedia, 2025).

5.1.1. Liquidity Ratios

Liquidity ratios are being used to measure the company’s ability to meet its short-term obligation with its short-term assets. Liquidity ratios measure a company's ability to pay off short-term debts as they become due, using the company's current or quick assets.

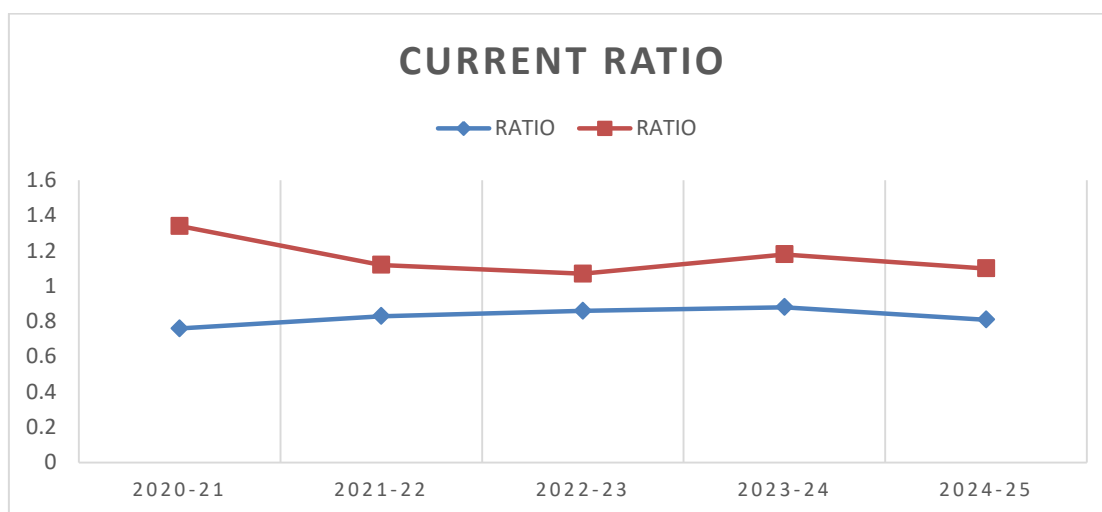
$$\text{Current Ratio} = \frac{\text{Current Assets}}{\text{Current Liabilities}} \quad [\text{Standard} - 2:1]$$

Table 5.1.1.1 showing the analysis of Current Ratio (Rs. In Cr.)

YEAR	ONGC		RIL		RATIO	
	Current Assets	Current Liabilities	Current Assets	Current Liabilities	ONGC	RIL
2020-21	93,184	123,265	373,011	277,568	0.76	1.34
2021-22	106,059	127,424	347,019	308,662	0.83	1.12
2022-23	114,151	132,270	425,296	395,744	0.86	1.07
2023-24	133,341	151,277	470,100	397,367	0.88	1.18
2024-25	134,797	166,842	499,270	453,737	0.81	1.10

Average	116,306	140,216	422,939	366,616	0.83	1.16
Minimum	93,184	123,265	347,019	277,568	0.76	1.07
Maximum	134,797	166,842	499,270	453,737	0.88	1.34

(Source: www.moneycontrol.com)



Interpretation:

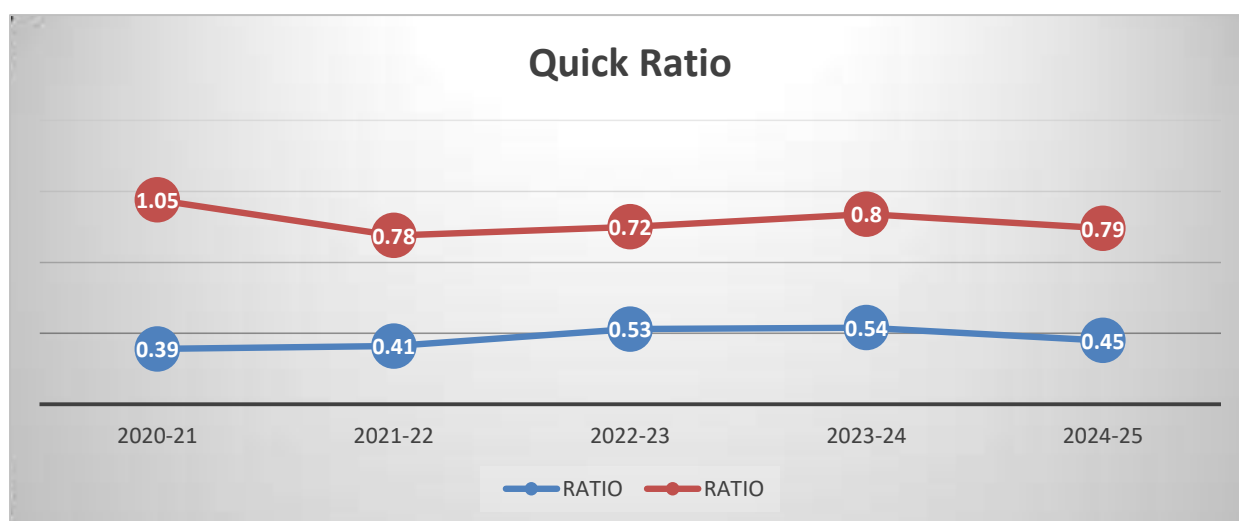
The analysis of liquidity through the current ratio reveals a distinct contrast between ONGC and Reliance Industries Ltd. over the five-year period from FY 2020–21 to 2024–25. ONGC’s current ratio consistently remained below 1.0, with an average of 0.83, indicating relatively weak short-term liquidity and a potential challenge in meeting current liabilities through available current assets. Although there was a gradual improvement up to FY 2023–24, peaking at 0.88, the subsequent decline to 0.81 in 2024–25 suggests persistent working capital constraints. In contrast, RIL maintained a stable and healthy liquidity position, with its current ratio consistently above the benchmark of 1.0 and averaging 1.16 over the same period. Even at its lowest value of 1.07, RIL exhibited sufficient current assets to cover its current obligations, reflecting sound working capital and cash flow management. Overall, the comparative trend underscores that RIL’s liquidity performance is significantly stronger and more resilient than that of ONGC, highlighting structural and operational differences in financial management between the two organizations.

$$\text{Quick Ratio} = \frac{\text{Current Assets} - \text{Inventories}}{\text{Current Liabilities}} \quad [\text{Standard} - 1:1]$$

Table 5.1.1.2 Showing the analysis of Quick Ratio (Rs. In Cr.)

YEAR	ONGC		RIL		RATIO	
	Current Assets- Inventories	Current Liabilities	Current Assets- Inventories	Current Liabilities	ONGC	RIL
2020-21	48,611	123,265	291,339	277,568	0.39	1.05
2021-22	51,896	127,424	239,241	308,662	0.41	0.78
2022-23	69,912	132,270	285,288	395,744	0.53	0.72
2023-24	81,091	151,277	317,330	397,367	0.54	0.80
2024-25	75,841	166,842	353,208	453,737	0.45	0.79
Average	65,470	140,216	297,281	366,616	0.46	0.83
Minimum	48,611	123,265	239,241	277,568	0.39	0.72
Maximum	81,091	166,842	353,208	453,737	0.54	1.05

(Source: www.moneycontrol.com)



Interpretation:

The quick ratio analysis, which measures the firm’s ability to meet short-term obligations without relying on inventory, reveals a notable disparity between ONGC and RIL over the 2020–21 to 2024–25 period. ONGC’s quick ratio remained continuously below 1.0, averaging 0.46, indicating a weaker immediate liquidity position and suggesting that the company may face challenges meeting its current liabilities solely through its most liquid assets. Although ONGC experienced gradual improvement up to 0.54 in 2023–24, the subsequent dip to 0.45 in 2024–25 reinforces ongoing liquidity constraints. Conversely, RIL exhibited relatively stronger quick ratios with a five-year average of 0.83 and a peak of 1.05 in 2020–21, demonstrating a better ability to cover short-term liabilities using liquid assets. However, the decline in RIL’s ratio in later years implies some reliance on inventory holdings and short-term financing. Overall, the comparison indicates that while RIL maintains superior liquidity strength relative to ONGC, both companies display periods of inventory-dependent asset positioning and varying degrees of working capital management efficiency.

5.1.2 Profitability Ratios

These ratios convey how well a company can generate profits from its operations.

$$\text{➤ Gross Profit Margin Ratio} = \frac{\text{Gross Profit}}{\text{Net Sales}} \times 100 \quad \{\text{Ideal- 25\% to 30\%}\}$$

Where, **Gross Profit = Net Sales - Cost of Goods Sold (COGS)**

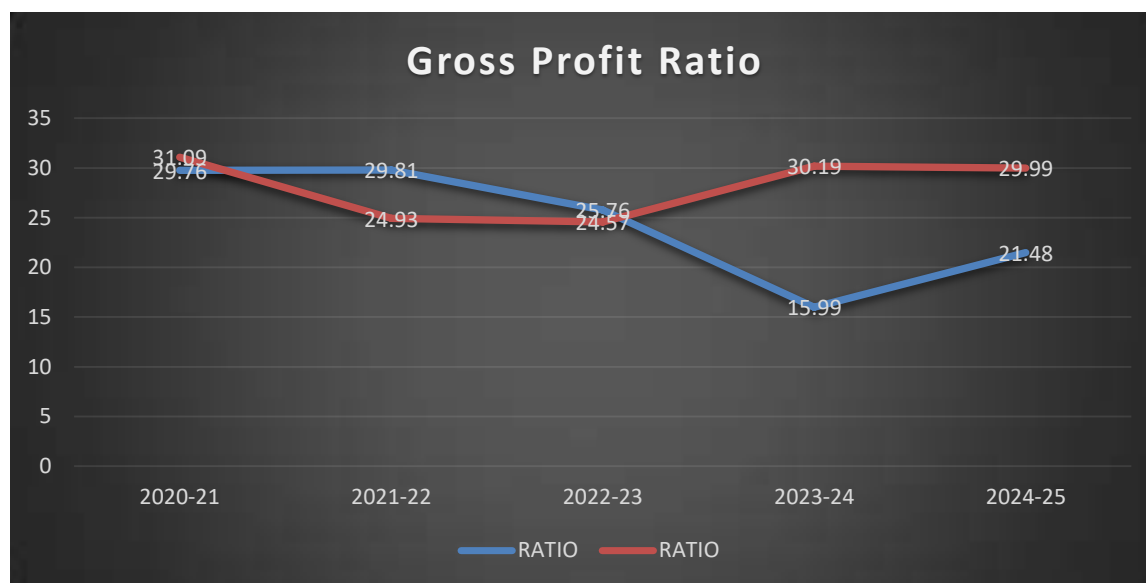
$$\text{COGS} = \text{Raw Materials} + \text{Power \& Fuel Cost} + \text{Other Manufacturing Expenses}$$

Table 5.1.2.1 Showing the analysis of Gross Profit Margin (Rs. In Cr.)

YEAR	ONGC		RIL		RATIO	
	Gross Profit	Net Sale	Gross Profit	Net Sale	ONGC	RIL
2020-21	90,517	304,001	145,181	466,924	29.76	31.09
2021-22	146,431	491,270	174,467	699,962	29.81	24.93
2022-23	162,861	632,326	215,713	877,835	25.76	24.57
2023-24	94,546	591,447	272,016	901,064	15.99	30.19
2024-25	131,470	612,065	279,640	964,693	21.48	29.99

Average	125,165	526,222	217,403	782096	24.56	28.15
Minimum	90,517	304,001	145,181	466,924	15.99	24.57
Maximum	162,861	632,326	279,640	964,693	29.81	31.09

(Source: www.moneycontrol.com)



Comparative Interpretation

- ONGC’s gross profit ratio is more **volatile**, heavily influenced by: crude volume, extraction cost, global oil price fluctuations.
- RIL’s gross profit ratio is **more resilient and stable**, benefiting from: vertical integration, diversified operations, petrochemicals and retail contribution, stronger pricing power.
- At peak years:
 - ONGC max = **29.81%**
 - RIL max = **31.09%**

RIL’s best performance exceeds ONGC’s best.

- Minimum comparison:
 - ONGC min = **15.99%**
 - RIL min = **24.57%**

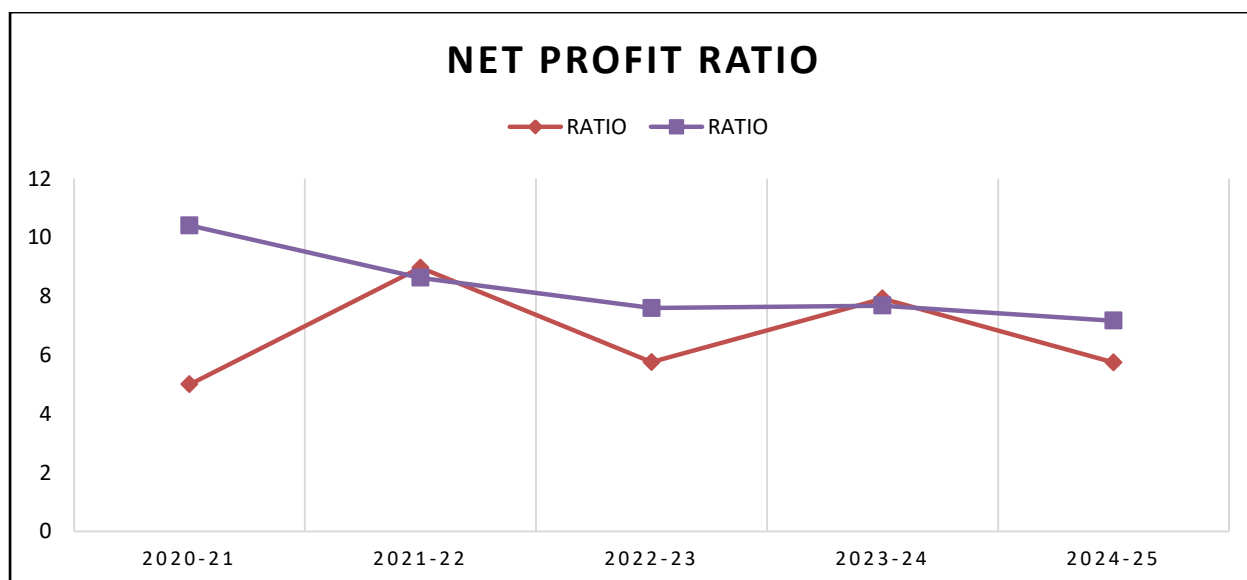
Even RIL’s worst year outperforms ONGC’s worst year by a wide margin.

$$\text{Net Profit Margin Ratio} = \frac{\text{Net Profit}}{\text{Net Sales}} \times 100 \quad \{\text{Ideal-8\% to 15\%}\}$$

Table 5.1.2.2 Showing the analysis of Net Profit Margin Ratio (Rs. In Cr.)

YEAR	ONGC		RIL		RATIO	
	Net Profit	Net Sale	Net Profit	Net Sale	ONGC	RIL
2020-21	15,229	304,001	48,612	466,924	5.00	10.41
2021-22	44,058	491,270	60,425	699,962	8.97	8.63
2022-23	35,406	632,326	66,678	877,835	5.76	7.60
2023-24	46,825	591,447	69,234	901,064	7.92	7.68
2024-25	35,190	612,065	69,126	964,693	5.75	7.17
Average	35,342	526,222	62,815	782,096	6.68	8.30
Minimum	15,229	304,001	48,612	466,924	5.00	7.17
Maximum	46,825	632,326	69,234	964,693	8.97	10.41

(Source: www.moneycontrol.com)



Interpretation:

ONGC

- ONGC’s net profit ratio fluctuates between **5.00% and 8.97%**, with an average of **6.68%**.
- Its lowest margin of **5.00% in 2020–21** indicates weak profit retention due to: lower crude prices, high operating costs, pandemic-related economic effects.
- Margins improved significantly in 2021–22 to **8.97%**, aligning with a global crude price rise.
- However, the following years again show variation between **5.75–7.92%**, reflecting: exposure to commodity price volatility, regulatory constraints, dependence on upstream operations.

RIL

- RIL demonstrates stronger and more stable net profitability, ranging from **7.17% to 10.41%**, averaging **8.30%**.
- In 2020–21, it achieved a peak of **10.41%**, reflecting strong earnings from telecom (Jio), retail, and petrochemicals.
- Although there was a gradual decline in subsequent years, margins remain within a **healthy 7–9% range**, showing: diversified revenue base, stronger pricing control, operational efficiency across segments.

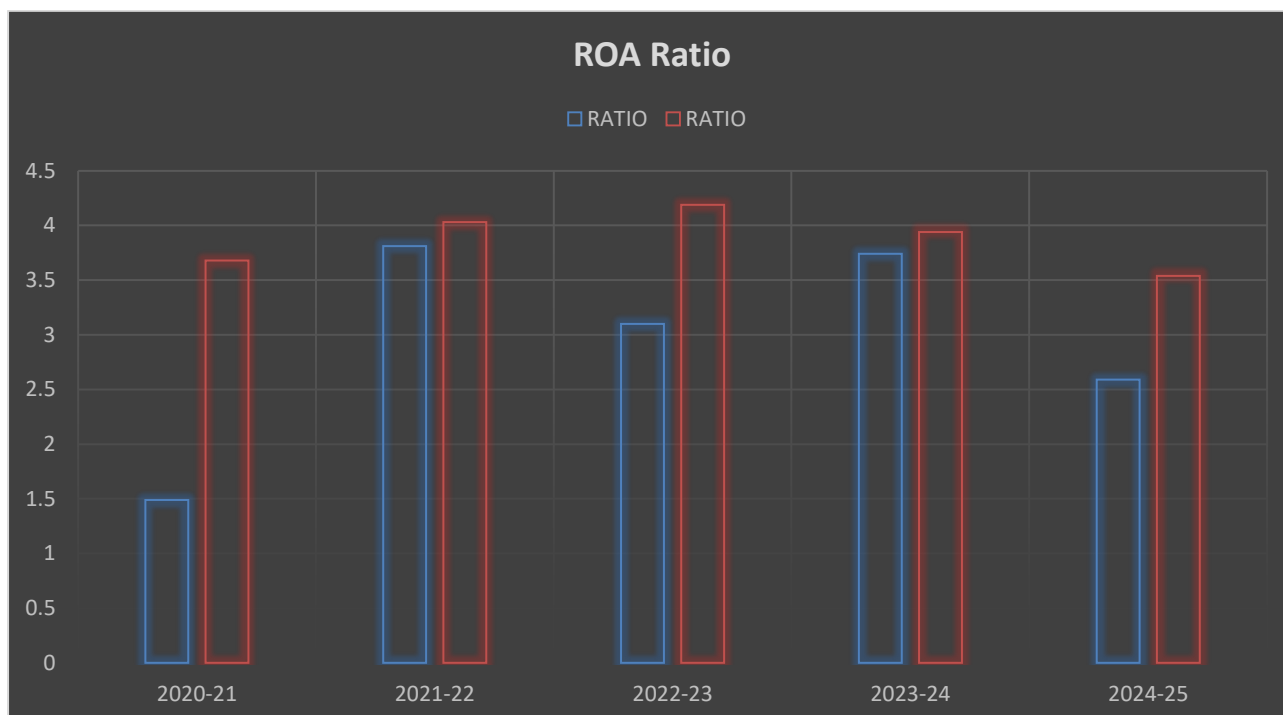
$$\text{Return on Assets(ROA)} = \frac{\text{Net Profit}}{\text{Total Assets}} \times 100 \text{ ----- \{Ideal – 3% to 8%\}}$$

Table 5.1.2.3 Showing the analysis of Return on Assets (Rs. In Cr.)

YEAR	ONGC		RIL		RATIO	
	Net Profit	Total Assets	Net Profit	Total Assets	ONGC	RIL
2020-21	15,229	1,023,196	48,612	1,321,212	1.49	3.68
2021-22	44,058	1,155,289	60,425	1,499,665	3.81	4.03
2022-23	35,406	1,142,846	66,678	1,607,431	3.10	4.19
2023-24	46,825	1,250,410	69,234	1,755,986	3.74	3.94
2024-25	35,190	1,357,156	69,126	1,950,121	2.59	3.54

Average	35,342	1,185,779	62,815	1,626,883	3.49	3.88
Minimum	15,229	1,023,196	48,612	1,321,212	1.49	3.54
Maximum	46,825	1,357,156	69,234	1,950,121	3.81	4.19

(Source: www.moneycontrol.com)



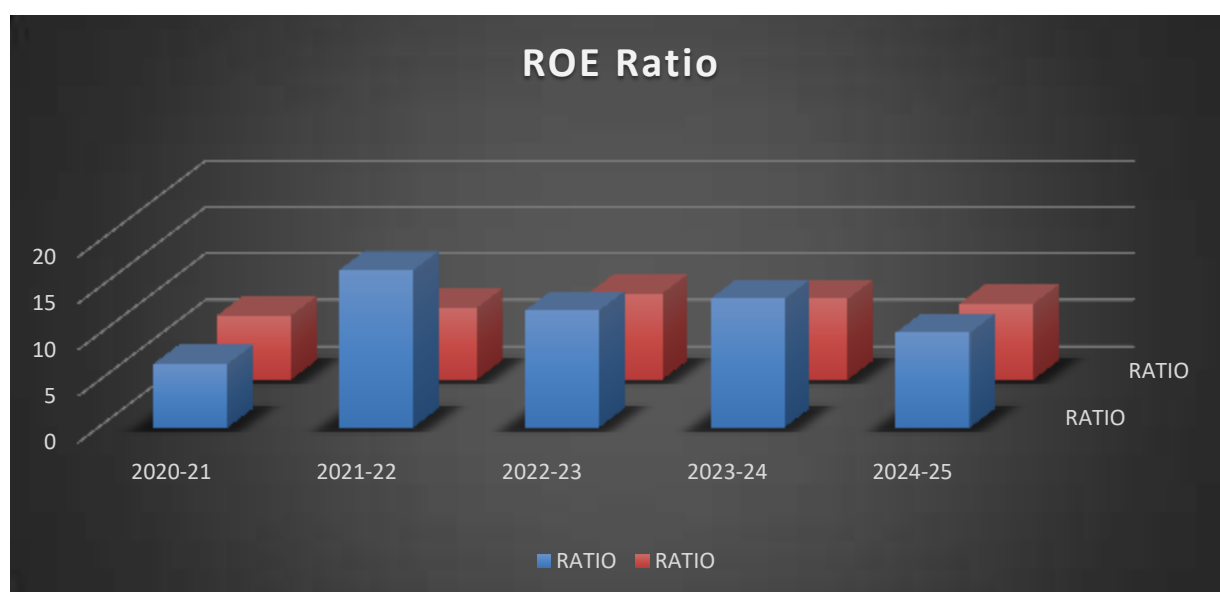
Interpretation: The Return on Assets (ROA) assessment shows that ONGC generates comparatively lower and more volatile returns from its asset base than RIL. ONGC’s ROA ranges from 1.49% to 3.81%, averaging 3.49%, indicating limited asset productivity due to the capital-intensive nature of upstream oil exploration and extraction. While ONGC experiences occasional improvement linked to favorable crude price cycles, its large asset deployment results in modest returns. Conversely, RIL consistently demonstrates stronger asset utilization, with ROA varying between 3.54% and 4.19% and an average of 3.88%, reflecting its diversified portfolio and better monetization of assets across telecommunications, petrochemicals, refining, and retail. This stability suggests that RIL’s business model enables more efficient conversion of asset base into earnings, whereas ONGC’s returns remain more dependent on external commodity price fluctuations and long-term asset commitments.

$$\text{Return on Equity (ROE)} = \frac{\text{Net Profit}}{\text{Shareholder's Funds}} \times 100 \text{ \{Ideal- 12\% to 15\%\}}$$

Table 5.1.2.4 Showing the analysis of Return on Equity (Rs. In Cr.)

YEAR	ONGC		RIL		RATIO	
	Net Profit	Shareholder's Funds	Net Profit	Shareholder's Funds	ONGC	RIL
2020-21	15,229	220,981	48,612	700,172	6.89	6.94
2021-22	44,058	259,503	60,425	779,485	16.98	7.75
2022-23	35,406	280,647	66,678	715,871	12.62	9.31
2023-24	46,825	337,070	69,234	793,481	13.89	8.73
2024-25	35,190	343,440	69,126	843,200	10.25	8.20
Average	35,342	288,328	62,815	766442	12.13	8.19
Minimum	15,229	220,981	48,612	700,172	6.89	6.94
Maximum	46,825	343,440	69,234	843,200	16.98	9.31

(Source: www.moneycontrol.com)



Comparative Insights

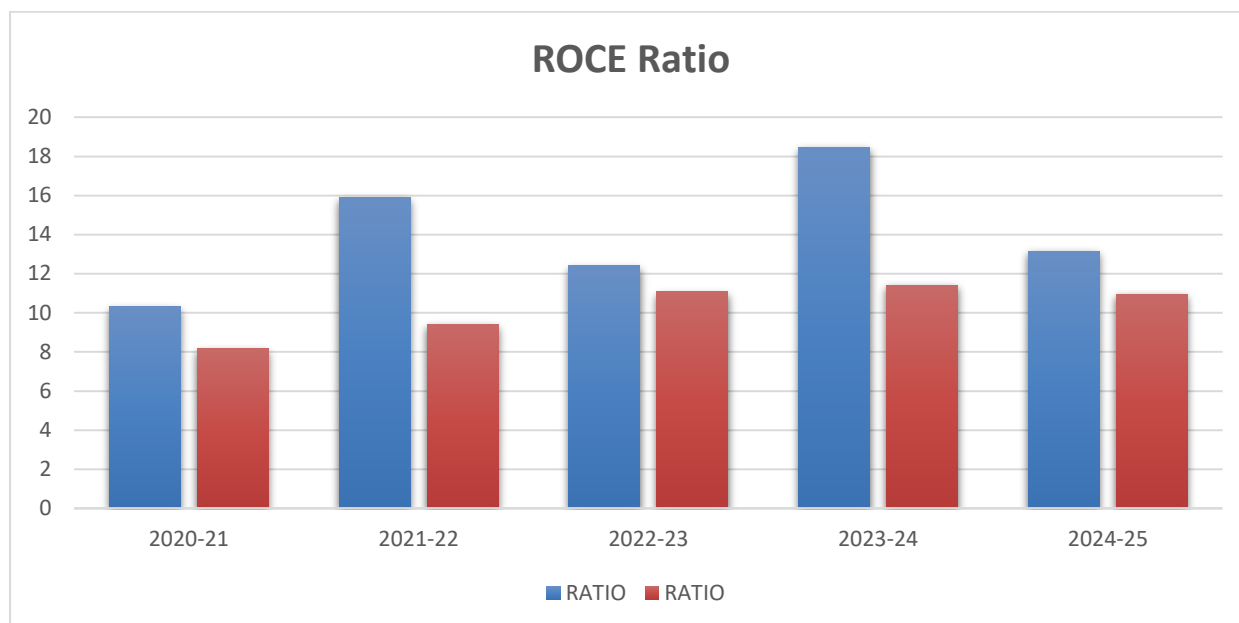
- **Average ROE:**
 - ONGC = **12.13%**
 - RIL = **8.19%**
- ONGC’s ROE is significantly higher than RIL’s, indicating:
 - more efficient return on shareholder capital, OR
 - possibly higher leverage (borrowing) improving equity efficiency.
- RIL’s lower ROE is not a sign of inefficiency—rather:
 - it maintains a stronger equity cushion,
 - invests heavily in long-term assets and expansions,
 - reinvests earnings rather than distributing immediate returns.
- ONGC’s ROE spikes strongly with favourable crude price movements, showing sensitivity to commodity cycles.

$$\text{Return on Capital Employed (ROCE)} = \frac{\text{EBIT}}{\text{Capital Employed}} \times 100 \quad \{\text{Ideal} > 12\%\}$$

Table 5.1.2.5 Showing the analysis of Return on Capital Employed (Rs. In Cr.)

YEAR	ONGC		RIL		RATIO	
	EBIT	Capital Employed	EBIT	Capital Employed	ONGC	RIL
2020-21	34,080	330,801	75,406	923,936	10.30	8.16
2021-22	58,374	367,279	98,446	1,045,790	15.89	9.41
2022-23	50,772	409,833	114,011	1,029,837	12.39	11.07
2023-24	84,280	456,826	127,458	1,118,103	18.45	11.40
2024-25	65,286	496,996	130,286	1,190,730	13.14	10.94
Average	58,559	412,347	109,121	1,06,1679	14.03	10.20
Minimum	34,080	330,801	75,406	923,936	10.30	8.16
Maximum	84,280	496,996	130,286	1,190,730	18.45	11.40

(Source: www.moneycontrol.com)



Interpretation:

The Return on Capital Employed (ROCE) reflects a stronger capital efficiency trend for ONGC relative to RIL over the study period. ONGC’s ROCE fluctuated between 10.30% and 18.45%, with a high average of 14.03%, demonstrating strong returns on invested capital particularly during periods of favourable crude pricing. This indicates efficient utilization of capital in generating operating profits, albeit with notable year-to-year variability. In contrast, RIL’s ROCE ranged from 8.16% to 11.40%, averaging 10.20%, reflecting stable yet comparatively moderate capital productivity due to its sizeable capital base and ongoing reinvestments in expansionary sectors such as Jio telecom and retail. While ONGC’s higher ROCE values indicate stronger short-term profitability relative to capital employed, RIL’s steadier performance suggests a strategic focus on long-term asset building and consistent operational cash flow generation. Overall, the analysis confirms that ONGC exhibits higher responsiveness and return intensity from deployed capital, whereas RIL maintains a balanced, stable, and strategically long-term capital efficiency profile.

5.1.3. Solvency (Leverage) Ratios

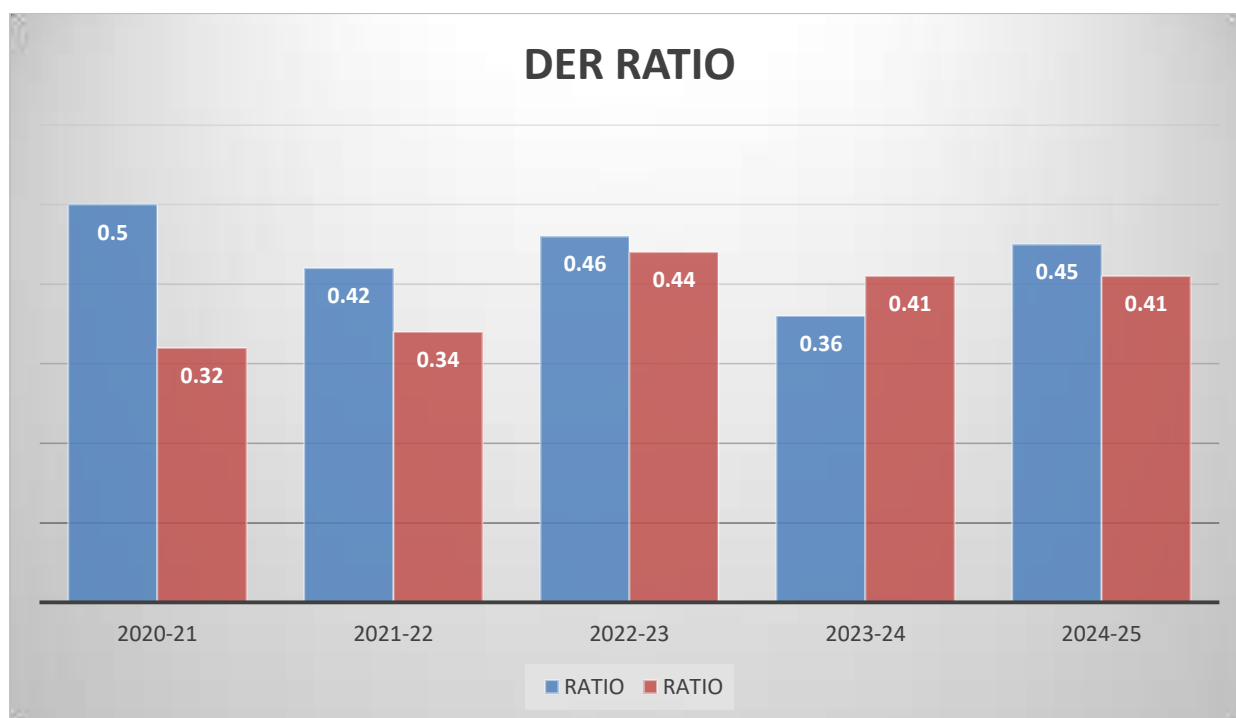
Also called financial leverage ratio, compare a company's debt levels with its assets, equity, and earnings. These are used to evaluate the likelihood of a company staying afloat over the long haul by paying off both long-term debt and the interest on that debt. Examples of solvency ratios include:

$$\text{Debt to Equity Ratio (DER)} = \frac{\text{Total Debt}}{\text{Shareholder's Funds}} \quad \{\text{Standard - 2:1}\}$$

Table 5.1.3.1 Showing the analysis of Debt to Equity Ratio (Rs. In Cr.)

YEAR	ONGC		RIL		RATIO	
	Total Debt	Shareholder's Funds	Total Debt	Shareholder's Funds	ONGC	RIL
2020-21	109,820	220,981	223,764	700,172	0.50	0.32
2021-22	107,776	259,503	266,305	779,485	0.42	0.34
2022-23	129,186	280,647	313,966	715,871	0.46	0.44
2023-24	119,755	337,070	324,622	793,481	0.36	0.41
2024-25	153,556	343,440	347,530	843,200	0.45	0.41
Average	124019	288,328	295237	766442	0.45	0.38
Minimum	107,776	220,981	223,764	700,172	0.36	0.32
Maximum	153,556	343,440	347,530	843,200	0.50	0.44

(Source: www.moneycontrol.com)



Interpretation:

Over the five-year period, **ONGC’s debt–equity ratio fluctuated between 0.36 and 0.50**, averaging **0.45**, while **RIL’s ranged from 0.32 to 0.44**, with a lower average of **0.38**. This indicates that Reliance Industries consistently relied less on debt and maintained a stronger equity base relative to ONGC. Although ONGC showed improvement in 2023–24 (0.36), its ratio rose again in 2024–25 (0.45), suggesting renewed borrowing pressure.

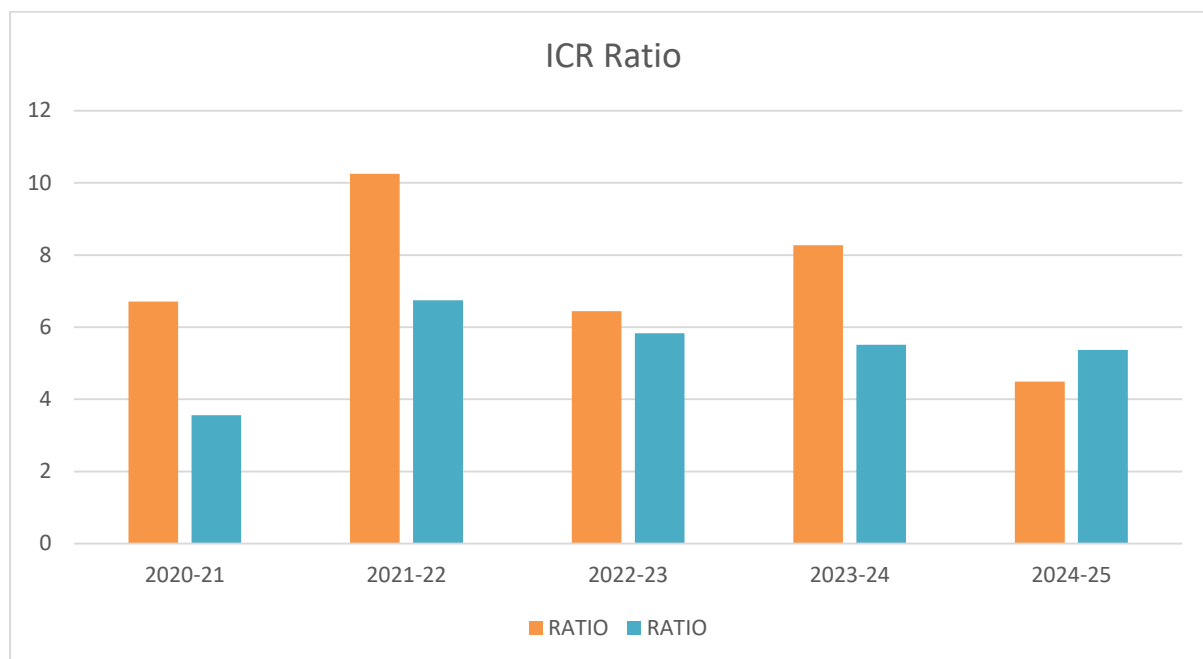
In contrast, RIL displayed greater stability with more modest fluctuations and remained below ONGC in most years, reflecting a more conservative capital structure. The trend suggests that ONGC carries comparatively higher leverage risk, whereas RIL is in a stronger solvency position with greater capacity to withstand financial shocks.

$$\text{Interest Coverage Ratio (ICR)} = \frac{\text{EBIT}}{\text{Interest Expense}} \quad \{\text{Ideal - 1.5 times to 3 times}\}$$

Table 5.1.3.2 Showing the analysis of Interest Coverage Ratio (Rs. In Cr.)

YEAR	ONGC		RIL		RATIO	
	EBIT	Interest Expense	EBIT	Interest Expense	ONGC	RIL
2020-21	34,080	5,079	75,406	21,189	6.71	3.56
2021-22	58,374	5,696	98,446	14,584	10.25	6.75
2022-23	50,772	7,889	114,011	19,571	6.44	5.83
2023-24	84,280	10,194	127,458	23,118	8.27	5.51
2024-25	65,286	14,535	130,286	24,269	4.49	5.37
Average	58,559	8679	109,121	20,546	7.23	5.40
Minimum	34,080	5,079	75,406	14,584	4.49	3.56
Maximum	84,280	14,535	130,286	24,269	10.25	6.75

(Source: www.moneycontrol.com)



Interpretation: Over the analysis period, **ONGC exhibits a stronger interest coverage position**, with values ranging from **4.49 to 10.25**, averaging **7.23**. In contrast, RIL’s ratio remains lower and more stable, between **3.56 and 6.75**, averaging **5.40**. This suggests that ONGC has had a comparatively higher ability to cover interest costs using its operating income in most years, providing a better margin of safety against debt obligations.

Table 5.1.4. Hypothesis Testing:

Ratios	Hypotheses	ANOVA F- statistic	P-value	Result ($\alpha=0.05$)
1. LIQUIDITY RATIOS				
Current Ratio	H₀: No mean difference.	32.31	0.0005	Reject H₀
	H₁: Significant mean difference.			
Quick Ratio	H₀: No mean difference.	55.89	0.0001	Reject H₀
	H₁: Significant mean difference.			

2. PROFITABILITY RATIOS

Gross Profit Margin	H₀: No mean difference. H₁: Significant mean difference.	4.17	0.075	Fail to Reject H₀
Net Profit Margin	H₀: No mean difference. H₁: Significant mean difference.	7.35	0.025	Reject H₀
Return on Assets (ROA)	H₀: No mean difference. H₁: Significant mean difference.	1.27	0.293	Fail to Reject H₀
Return on Equity (ROE)	H₀: No mean difference. H₁: Significant mean difference.	13.86	0.006	Reject H₀
Return on Capital Employed (ROCE)	H₀: No mean difference. H₁: Significant mean difference.	10.57	0.011	Reject H₀

3. SOLVENCY (LEVERAGE) RATIOS

Debt to Equity (D/E)	H₀: No mean difference. H₁: Significant mean difference.	1.75	0.223	Fail to Reject H₀
Interest Coverage Ratio (ICR)	H₀: No mean difference. H₁: Significant mean difference.	5.90	0.041	Reject H₀

(Source: Generated by Author)

Interpretation:

The ANOVA results provide statistical rigor to the initial ratio analysis:

- **Confirmed Strengths of RIL:** Significantly better **liquidity** (Current and Quick Ratios) and **net profitability**.
- **Confirmed Strengths of ONGC:** Significantly higher **returns for equity holders (ROE)** and **overall capital (ROCE)**, backed by a stronger **interest coverage** capability.
- **Areas of Statistical Parity:** Despite observed differences, the average **Gross Profit Margin, ROA, and Debt-to-Equity** ratio are not statistically different between the

two giants when considering the five-year dataset. This often relates to the high volatility in commodity prices affecting ONGC and the massive, similar asset bases in this sector.

5.2. DuPont Analysis:

The DuPont analysis is a framework for analyzing a company's fundamental performance. It was developed decades ago at DuPont de Nemours, Inc., the DuPont analysis breaks out the different drivers of return on equity (ROE), allowing company managers and investors to focus on them individually and identify strengths and weaknesses.

A DuPont analysis goes a step further and allows an investor to determine which financial activities contribute the most to the changes in ROE. An investor can also use the DuPont analysis to compare the operational efficiency of two similar companies, while company managers can use it to identify strengths or weaknesses that should be addressed.

Formula and Calculation of the DuPont Analysis:

$$\text{DuPont Analysis(ROE)} = \text{Net Profit Margin} \times \text{ATR} \times \text{EM (Ideal – 10\% to 20\%)}$$

Where,

$$\text{Net Profit Margin} = \frac{\text{Net Profit}}{\text{Net Sales}}$$

$$\text{Asset Turnover Ratio(ATR)} = \frac{\text{Net sale}}{\text{Average Total Assetts}}$$

$$\text{Equity Multiplier(EM)} = \frac{\text{Average Total Assets}}{\text{Average Shreholder's Funds}}$$

Table 5.2. DuPont Analysis for the FY 2024-25: Rs. In Cr.)

Component	Formula	ONGC		RIL	
		Value	Ratio	Value	Ratio
Net Profit Margin (NPM)	Net Profit / Net Sales	35,190 / 612,065	5.75	69,126 / 964,693	7.17
Asset Turnover Ratio (ATR)	Net Sales / Avg Total Assets	612,065 / 506,318	1.21	964,693 / 1,303,783	0.74
Equity Multiplier	Avg Total Assets /	506,318 / 340,255	1.49	1,303,783 / 818,341	1.59

(EM)	Avg Equity				
DuPont	(NPM × ATR × EM)	(5.75 × 1.21 × 1.49)	10.34%	(7.17 × 0.74 × 1.59)	8.45%
(ROE)					

(Source: Generated by Author)

Interpretation:

The DuPont analysis reveals that **ONGC's ROE is an Asset-Turnover Story, while RIL's ROE is a Profit-Margin Story.**

- If you believe that high operational efficiency (squeezing the most sales from assets) is the key to long-term value, **ONGC's** model is appealing.
- If you believe that pricing power, diversified revenue streams, and value-added processing are the keys to success, **RIL's** model is stronger.

For an investor, this analysis highlights that **RIL's slightly lower ROE is not necessarily inferior.** It reflects a strategic choice to build a diversified conglomerate with higher-margin, more stable businesses, even if it requires a heavier asset base. ONGC's performance, meanwhile, is more directly leveraged to the price of a single commodity.

5.3. J-UK Model Analysis

The J-UK model is a financial distress prediction model that is a modification of the Altman Z-score model, adding a new variable to include the company's cash flow from operations. The model uses the following formula:

J-UK model formula

$$Z = 1.484(J_1) + 0.043(J_2) + 0.390(J_3) + 0.004(J_4) - 0.424(J_5) + 0.74(J_6)$$

Where,

J₁: Working capital / Total Assets

J₂: Retained earnings / Total Assets

J₃: Earnings before interest and tax (EBIT) / Total Assets

J₄: Market value of equity / Total Liabilities

J₅: Sales / Total Assets

J₆: Cash Flow from Operations / Total Liabilities

Table 5.3 J-UK Model Analysis for the FY 2024-25 (Rs. In Cr.)

Component	Formula	ONGC		RIL	
		Value	Ratio	Value	Ratio
J₁	Working capital / Total Assets	-20,361 / 527,791	-0.0386	-146,976 / 1,357,156	-0.1083
J₂	Retained earnings / Total Assets	337,150 / 527,791	0.6388	829,668 / 1,357,156	0.6113
J₃	Earnings before interest and tax (EBIT) / Total Assets	65,286 / 527,791	0.1237	130,286 / 1,357,156	0.0960
J₄	Market value of equity / Total Liabilities	17,612 / 184,351	0.0955	392,439 / 513,956	0.7635
J₅	Sales / Total Assets	612,065 / 527,791	1.1597	964,693 / 1,357,156	0.7108
J₆	Cash Flow from Operations / Total Liabilities	86,423 / 184,351	0.4688	158,192 / 513,956	0.3078
J-UK MODEL (Z)			-0.1260		-0.1675

(Source: Generated by Author)

Interpretation:

The model produces negative scores, **this does not indicate that ONGC or RIL are financially distressed.** It highlights the limitation of applying a generalized distress-prediction model to industry giants with unique financial structures.

For a true comparison, we must rely on the earlier DuPont and standard J-UK analysis, which showed ONGC with a slight edge in operational efficiency and RIL with a stronger margin profile and lower cost of debt. Both companies are financially robust, but their scores here are artifacts of their industry's accounting norms.

6. CONCLUSION

Based on the comprehensive financial analysis, ONGC and RIL demonstrate fundamentally different financial models. **RIL exhibits superior liquidity and stable profitability** driven by its diversified, consumer-facing businesses, making it resilient to market cycles. **ONGC shows higher operational efficiency** with stronger returns on equity and capital employed, but remains vulnerable to commodity price volatility due to its upstream focus.

While ONGC delivers better capital returns during favorable oil prices, RIL offers more consistent performance through its integrated value chain. Both companies maintain moderate leverage and are financially sound, but cater to different investor profiles: RIL for stable, long-term growth and ONGC for cyclical, commodity-driven opportunities.

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