

## ORIGINAL ARTICLE

## Exploring Financial Factors in Oil and Gas Companies across Emerging Markets

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## ABSTRACT

This study examines the key financial factors affecting oil and gas firms in emerging markets, focusing on ROCE and Net Profit Ratio. Using data from Indian companies (2013–2023), it applies regression analysis to assess how these metrics influence corporate efficiency and growth. The findings indicate that ROCE plays a crucial role in driving capital efficiency, while NPR reflects profitability dynamics that influence financial sustainability. Other variables, such as Growth Opportunities (GO), Liquidity Ratio (LR), Leverage Ratio (LER), Interest Coverage Ratio (ICR), and Price Earnings Ratio (P/E), exhibit varying degrees of influence on financial performance. The study shows that managing capital and profits is vital in capital-intensive industries. Managing capital and profits is very important in big industries. Future studies could look at other industries and countries to learn more about the oil and gas sector.

## KEYWORDS

- NSE-Listed Oil and Gas Companies in India • Financial Performance Indicators
- Financial Factors • JEL classification: L71: M41: G32

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## INTRODUCTION

The global economy has undergone significant transformations due to economic reforms, technological advancements, and policy shifts. Emerging economies, in particular, have experienced rapid industrialization, influencing key sectors such as oil and gas. The financial performance of companies in this sector is shaped by various factors, including capital investments, financial market dynamics, and global energy demand. As capital-intensive enterprises, oil and gas firms rely heavily on efficient financial management to maintain stability, ensure profitability, and sustain long-term growth.

Corporate financial decisions, particularly those related to capital utilization, leverage, and profitability, play a crucial role in determining firm value. The ability of oil and gas firms to generate returns on capital employed, maintain liquidity, and manage debt obligations significantly impacts their financial sustainability. This study investigates key financial determinants that influence the performance of publicly listed oil and gas companies in emerging markets, with India serving as a case study. By analyzing factors such as Return on Capital Employed (ROCE), Net Profit Ratio (NPR), Growth Opportunities (GO), Liquidity Ratio (LR), Leverage Ratio (LER), Interest Coverage Ratio (ICR), and Price Earnings Ratio (P/E), this research provides insights into how these metrics shape financial outcomes in the sector.

Using panel data from 2013 to 2023, this study employs econometric models, including cross-sectional random effects and fixed effects, to assess the relationship between financial performance and key corporate metrics. The findings highlight that ROCE plays a crucial role in driving capital efficiency, while NPR reflects profitability trends that influence financial sustainability. Other financial indicators exhibit varying degrees of influence on firm performance, underscoring the complexity of financial decision-making in the oil and gas industry.

As a major player in the global energy market, India's oil and gas sector contributes significantly to the country's Gross Domestic Product (GDP). However, the industry faces challenges such as fluctuations in crude oil prices, supply chain disruptions, regulatory changes, and geopolitical uncertainties. For

instance, petroleum product exports declined from 65.7 MMT in FY 2021 to 56.8 MMT, while crude oil imports surged to USD 94.3 billion in FY 2022 as global markets stabilized. These trends highlight the importance of financial resilience and strategic decision-making in sustaining growth and competitiveness.

Given the capital-intensive nature of the industry, firms must balance profitability with investment opportunities. Strategic financial planning involves optimizing capital allocation, maintaining adequate liquidity, and managing leverage to ensure long-term stability. Understanding the financial determinants influencing corporate performance in oil and gas companies is crucial for policymakers, investors, and corporate managers aiming to enhance financial efficiency and shareholder value.

Future research could extend this analysis by exploring cross-industry and cross-country comparisons, integrating macroeconomic and global factors to provide a broader perspective on financial performance in the oil and gas sector.

## Brief Silhouette of the Selected Companies

**1. Oil and Natural Gas Corporation Limited (ONGC):** ONGC is a multinational oil and gas company headquartered in Dehradun, India. It is one of the largest companies globally involved in the exploration and production of crude oil and natural gas.

**2. Indian Oil Corporation Limited (IOC):** IOC is a government-owned oil and gas company headquartered in New Delhi, India. It is the largest commercial oil enterprise in the country and operates some of Asia's largest refineries.

**3. Reliance Industries Limited (RIL):** RIL is a conglomerate headquartered in Mumbai, India. Although it operates across various sectors, it has significant interests in the oil and gas industry through its subsidiary, Reliance Petroleum.

**4. Oil India Limited (OIL):** OIL is public sector oil and gas company headquartered in Duliajan, Assam, India. The company specializes in the exploration, production, and transportation of crude oil and natural gas.

**5. Bharat Petroleum Corporation Limited (BPCL):** BPCL is a state owned oil and gas company headquartered in Mumbai, India.

It is actively involved in the refining and marketing of petroleum products.

## REVIEW OF LITERATURE

The notable empirical studies on the determinants of financial factors are summarized chronologically below:

1. **Gupta and Banga (2010):** Gupta and Banga found that, among leverage, liquidity, profitability, growth, and ownership structure variables, only leverage and liquidity emerged as the main predictors of financial performance for Indian corporations.
2. **Rant (2013):** Rant investigated the financial factors of 50 listed firms in the Nigerian Stock Exchange market. The study revealed that financial performance, firm size, and board independence were significant and positively associated with financial decisions.
3. **Vo and Nguyen (2014):** Vo and Nguyen examined 81 listed firms on the Ho Chi Minh City Stock Exchange (HOSE) to study the interrelationship between managerial ownership, leverage, and financial performance. Their results indicated a negative relationship between managerial ownership and leverage, supporting the Agency Theory. The findings also provided strong evidence for the Pecking Order Theory.
4. **Azhagaiah and Gejalakshmi (2014):** This study analysed the financial factors for 20 selected IT sector companies listed on the NSE. The results showed that the price-to-earnings ratio and debt-to-equity ratio were statistically significant indicators of earnings per share (EPS) and useful for financial performance in the IT sector.
5. **Baker and Kapoor (2015):** Baker and Kapoor studied the factors influencing financial performance using primary data collected from 500 firms listed on the NSE. They found that earnings were the most significant financial factors of a company's financing decision.
6. **Pandey et al. (2017):** This study examined the financial factors in the FMCG sector in India. It concluded that the financial factors (NPR/ROCE), debt-to-equity ratio (DER), earnings (ERN), and current

tax (CT) significantly impacted EPS and served as reliable indicators of financial performance.

7. **Brahmaiah et al (2018):** Brahmaiah and colleagues investigated the financial factors for 95 NSE-listed firms in India. Their findings indicated that profitability, liquidity, leverage, risk, firm size, and inflation were key factors influencing financing decisions.
8. **Basri (2019):** Basri studied 15 listed government-owned companies in Indonesia and found that institutional ownership and financial leverage negatively and significantly affected financial decision, while profitability had a positive and significant impact. Asset growth, however, was found to have an insignificant effect on financing decision.
9. **Damayanti and Palinggi (2023):** This study analysed the impact of corporate governance, profitability, and Tobin's Q ratio on the of financial factors financial sector companies listed on the Indonesia Stock Exchange. It found that the board of directors, the proportion of independent commissioners, and the return on assets had a significant negative effect on the financial decision. In contrast, institutional ownership, return on equity, and Tobin's Q ratio had a positive and significant impact on financial decisions.

## RESEARCH GAP

Existing literature has extensively examined the financial factors of corporate performance across various industries. While prior research has focused on profitability, liquidity, leverage, and capital efficiency in different sectors, limited studies have specifically analyzed these financial factors in the oil and gas industry within emerging markets. Given the capital-intensive nature of this sector, understanding the key financial indicators that influence firm performance is crucial for corporate decision-making and investor confidence.

Most available studies either adopt a broad industry approach or focus on developed economies, leaving a gap in understanding the financial dynamics of oil and gas firms operating in emerging markets. Specifically, there is a lack of comprehensive research investigating how key financial factors such

as Return on Capital Employed (ROCE), Net Profit Ratio (NPR), liquidity, leverage, and market valuation metrics impact the financial sustainability of companies in this sector.

To address this gap, the present study aims to analyze the financial determinants affecting the performance of selected oil and gas companies in emerging economies, using India as a representative case study. This research contributes to the broader understanding of corporate financial management in capital intensive industries and provides insights applicable to global energy markets.

## OBJECTIVES OF THE STUDY

### Objectives of the Study

The primary objective of this study is to analyze the impact of selected financial factors on the financial performance of oil and gas companies in emerging markets.

### Secondary Objectives:

1. To identify key financial determinants influencing corporate performance in the oil and gas sector.
2. To examine the relationship between liquidity, leverage, and financial sustainability in selected companies.
3. To evaluate trends in financial performance and capital efficiency across selected firms over a specified period.
4. To provide empirical recommendations for optimizing financial decision-making, with broader implications for global oil and gas markets.

## HYPOTHESIS OF THE STUDY

### The study tests the following hypotheses:

**H<sub>01</sub>:** Selected financial factors have no significant impact on the financial performance of oil and gas companies in emerging markets.

**H<sub>A1</sub>:** Selected financial factors have a significant impact on the financial performance of oil and gas companies in emerging markets.

**H<sub>02</sub>:** Liquidity does not significantly influence the financial performance of the selected companies.

**H<sub>A2</sub>:** Liquidity significantly influences the financial performance of the selected companies.

**H<sub>03</sub>:** Leverage has no negative and significant relationship with the financial performance of oil and gas firms.

**H<sub>A3</sub>:** Leverage has a negative and significant relationship with the financial performance of oil and gas firms.

**H<sub>04</sub>:** Firm size does not significantly affect the financial performance in the oil and gas sector.

**H<sub>A4</sub>:** Firm size significantly affects the financial performance in the oil and gas sector.

**H<sub>05</sub>:** Trends in financial factors are not significantly influenced by external factors such as market conditions and economic policies.

**H<sub>A5</sub>:** Trends in financial factors are significantly influenced by external factors such as market conditions and economic policies.

## RESEARCH METHODOLOGY

### Sample Selection

This study focuses on major publicly listed oil and gas companies in emerging markets, using India as a representative case study. The selected companies are among the industry leaders based on market capitalization, revenue, and industry influence. The sample includes:

1. Oil & Natural Gas Corporation Ltd. (ONGC)
2. Indian Oil Corporation Ltd. (IOC)
3. Reliance Industries Ltd. (RIL)
4. Oil India Ltd. (OIL)
5. Bharat Petroleum Corporation Ltd. (BPCL)

While the study primarily focuses on these Indian firms, the findings and insights aim to contribute to the broader understanding of financial performance in oil and gas companies across emerging markets.

### Data and Study Period

The study relies on secondary data collected from publicly available financial sources, including company annual reports and reputable stock market research platforms such as moneycontrol.com and topstockresearch.com. The research covers a 10-year period, from the financial year 2013–14 to 2022–23, ensuring a comprehensive analysis of trends in financial factors over time.

This methodological approach enables a deeper exploration of the financial and economic factors influencing financial decisions in capital-intensive industries, with implications beyond India for other oil and gas markets in emerging economies.

## Description on Dependent and Independent Variables

The study examines the relationship between various financial determinants on oil and gas companies in emerging markets. The variables used in this study are described as follows:

**Table 1:** Description of Variables

| Selected Variables                                          | Description                                                         |
|-------------------------------------------------------------|---------------------------------------------------------------------|
| <i>Independent Variables</i>                                |                                                                     |
| Growth Opportunities                                        | (Current year Assets - Previous year Assets) / Previous year Assets |
| Liquid Ratio                                                | Current Assets / Current Liabilities                                |
| Leverage Ratio                                              | Total Debt / Total Equity                                           |
| Interest Coverage Ratio                                     | Earnings before Interest & Taxes / Interest Expenses                |
| Price Earnings Ratio                                        | Market value per Share / Earnings per Share                         |
| <i>Dependent Variable (Financial Performance Indicator)</i> |                                                                     |
| Return on Capital Employed                                  | Earnings before Interest & Taxes / Capital Employed                 |
| Net Profit Ratio                                            | (Net Profit / Sales) × 100                                          |

**Data Analysis:** The data have been analyzed using STATA version 14.2, employing panel regression analysis, including Ordinary Least Squares (OLS), fixed effects, and random effects models. Additionally, descriptive statistics and a correlation matrix have been utilized to summarize and interpret the relationships among the variables in a meaningful way.

This econometric approach ensures robust analysis, making the findings relevant for oil and gas firms in other emerging markets beyond India.

## Panel Regression Model:

The panel regression models are expressed as follows:

$$ROCE_{it} = \alpha + \beta_1 GO_{it} + \beta_2 LR_{it} + \beta_3 LER_{it} + \beta_4 ICR_{it} + \beta_5 P/E_{it} + \varepsilon \dots \dots \dots (i)$$

$$NPR_{it} = \alpha + \beta_1 GO_{it} + \beta_2 LR_{it} + \beta_3 LER_{it} + \beta_4 ICR_{it} + \beta_5 P/E_{it} + \varepsilon \dots \dots \dots (ii)$$

Where:

ROCE = Return on Capital Employed

NPR = Net Profit Ratio

GO = Growth Opportunities

LR = Liquid Ratio

LER = Leverage Ratio

ICR = Interest Coverage Ratio

P/E = Price Earnings Ratio

$\alpha$  = constant

$\beta_1, \beta_2, \beta_3, \beta_4, \beta_5$  = coefficients of the variables

$\varepsilon$  = Error term

## FINDINGS AND ANALYSIS

**Descriptive Statistics:** The descriptive statistics of the selected variables are presented in Table 2 below.

**Table 2:** Descriptive Statistics of Selected Variables from 2013-14 to 2022-23

| Variables | Observations | Mean    | Standard Deviation | Min.    | Max.  |
|-----------|--------------|---------|--------------------|---------|-------|
| GO        | 50           | 0.1074  | 0.0976627          | -0.12   | 0.38  |
| LR        | 50           | 1.0938  | 0.708574           | 0.59    | 5.05  |
| LER       | 50           | 0.6666  | 0.3123225          | 0.23    | 1.69  |
| ICR       | 50           | 3.9712  | 23.47334           | -138.97 | 63.31 |
| P/E       | 50           | 8.4566  | 15.31436           | -85.95  | 34.4  |
| ROCE      | 50           | 12.9576 | 5.561225           | 3.79    | 23.97 |
| NPR       | 50           | 8.7764  | 7.481808           | -0.67   | 30.28 |

Source: Authors' own calculation

The descriptive statistics reveal significant insights into the selected variables over the study period (2013-14 to 2022-23). Growth Opportunities (GO) show a modest mean of 0.1074, with values spanning from -0.12 to

0.38 and a low standard deviation of 0.0977, reflecting limited variability in asset growth. The Net Profit Ratio (NPR) has a mean of 8.78, ranging from -0.67 to 30.28, with a standard deviation of 7.48, suggesting moderate dispersion in profitability levels. Liquidity, as measured by the Liquid Ratio (LR), has a mean of 1.09, ranging from 0.59 to 5.05, with a standard deviation of 0.71, indicating variability in firms' short-term financial health. The Leverage Ratio (LER) exhibits a mean of 0.67, ranging from 0.23 to 1.69, with a standard deviation of 0.31, highlighting differing debt-equity structures across the sample. The Interest Coverage Ratio (ICR) has a mean of 3.97, with an exceptionally wide range from -138.97 to 63.31 and a standard deviation of 23.47, pointing to significant differences in firms' ability to meet interest obligations. The Price Earnings Ratio (P/E) shows high volatility, with a mean of 8.46, ranging from -85.95 to 34.40, and a standard deviation of 15.31, suggesting fluctuating investor perceptions of firm valuation. Lastly, Return on Capital Employed (ROCE), a measure of capital efficiency, has a mean of 12.96%, with values ranging from 3.79% to 23.97% and a standard deviation of 5.56.

The findings emphasize that financial performance of oil and gas firms are influenced by a complex interplay of profitability, capital structure, and liquidity dynamics. While this study focuses on Indian firms, the insights can be extended to other emerging markets where similar sectoral challenges such as capital-intensive operations, volatile energy prices, and regulatory constraints.

**Multi-Co Linearity:** Multi-collinearity was tested using the Variance Inflation Factor (VIF) and tolerance values. Since all tolerance values are above 0.25 and VIF values are below 5, there is no indication of multi-collinearity among the independent and control variables. This confirms that the variables can be reliably used in regression analysis without concerns of excessive correlation.

**Table 3:** Test of Multi-Co Linearity

| Variables | Tolerance | VIF  |
|-----------|-----------|------|
| GO        | 0.931741  | 1.07 |
| LR        | 0.884595  | 1.13 |
| LER       | 0.931645  | 1.07 |
| ICR       | 0.927190  | 1.08 |
| P/E       | 0.970835  | 1.03 |

Source: Authors' own calculation

**Table 4:** Correlation Matrix

|      | GO                 | NPR                | LR                  | LER               | ICR               | P/E              | ROCE  |
|------|--------------------|--------------------|---------------------|-------------------|-------------------|------------------|-------|
| GO   | 1.000              |                    |                     |                   |                   |                  |       |
| NPR  | 0.256**<br>(0.072) | 1.000              |                     |                   |                   |                  |       |
| LR   | -0.087<br>(0.545)  | 0.501*<br>(0.000)  | 1.000               |                   |                   |                  |       |
| LER  | -0.033<br>(0.816)  | -0.519*<br>(0.000) | -0.254**<br>(0.075) | 1.000             |                   |                  |       |
| ICR  | -0.166<br>(0.249)  | -0.344*<br>(0.014) | -0.197*<br>(0.169)  | 0.066<br>(0.645)  | 1.000             |                  |       |
| P/E  | 0.162<br>(0.259)   | 0.078<br>(0.591)   | -0.058<br>(0.690)   | -0.022<br>(0.876) | -0.015<br>(0.915) | 1.000            |       |
| ROCE | 0.192<br>(0.182)   | 0.063<br>(0.661)   | -0.292*<br>(0.040)  | 0.215<br>(0.133)  | 0.118<br>(0.415)  | 0.009<br>(0.948) | 1.000 |

Source: Authors' own calculation

Table 4 presents the correlation matrix, showing relationships among the selected variables. GO positively correlates with NPR ( $r = 0.256$ ,  $p = 0.072$ ), suggesting that firms with higher growth prospects tend to have improved profit margins. NPR is negatively correlated with LER ( $r = -0.519$ ,  $p = 0.000$ ) and ICR ( $r = -0.344$ ,  $p = 0.014$ ), indicating that more profitable firms use lower leverage and have better interest coverage. ROCE is negatively correlated with LR ( $r = -0.292$ ,  $p = 0.040$ ), implying that firms with better capital utilization may face liquidity constraints.

The correlation analysis underscores the influence of profitability, leverage, and capital efficiency on firms' financial decisions.

**Regression Analysis:** Regression analysis was conducted to examine the impact of financial variables on firm performance.

**Table 5:** Regression Analysis (Dependent Variable: ROCE)

| Model/Independent Variables | Fixed Effect Model Coefficients (p-value) | Random Effect Model Coefficients (p-value) | Hausman Test Chi2 (p-value) | Preferred Model                                        |
|-----------------------------|-------------------------------------------|--------------------------------------------|-----------------------------|--------------------------------------------------------|
| Constant                    | 20.769 (0.000)                            | 18.388 (0.000)                             |                             |                                                        |
| GO                          | 20.652 (0.0002)                           | 10.035 (0.205)                             |                             |                                                        |
| LR                          | -2.630 (0.016)                            | -2.636 (0.019)                             |                             |                                                        |
| LER                         | -11.134 (0.001)                           | -5.377 (0.030)                             |                             |                                                        |
| ICR                         | 0.028 (0.278)                             | 0.023 (0.472)                              | 2.74 (0.740)                | Random Effect Model<br>(As the p-value of Chi2 > 0.05) |
| P/E                         | 0.018 (0.647)                             | -0.015 (0.747)                             |                             |                                                        |
| R <sup>2</sup>              | 0.172                                     | 0.208                                      |                             |                                                        |
| F / Chi2                    | 5.80 (0.000)                              | 11.57 (0.041)                              |                             |                                                        |

\*Significant at 5% level.

**Source:** Authors' own calculation

The Hausman test indicates that the Random Effect Model is preferred because the Chi2 value is 2.74 with a p-value greater than 0.05 (p = 0.740). This suggests that the Random effect model is a better fit for this data than the random effect model.

LR (Liquidity Ratio) has a significant negative relationship with ROCE (Return on Capital Employed) in the Random effect model (coefficient = -2.636, p = 0.019), meaning that higher liquidity ratio tends to result in lower Return on Capital Employed. Similarly, LER (Leverage Ratio) has a significant negative relationship with ROCE (coefficient = -5.377, p = 0.030), indicating that as leverage ratio increases, companies tend to decrease their ROCE. The other variables, including GO (Growth Opportunities), ICR (Interest Coverage Ratio), and P/E (Price Earnings Ratio), do not show significant effects on ROCE in the random effect model, as their p-values are higher than 0.05.

The R<sup>2</sup> value of the random effect model is 0.208, meaning the model explains 20.80% of the variation in the Return on Capital Employed. Additionally, the F-statistic (2.74) with a p-value of 0.740 further confirms that the random effect model is statistically significant and a good fit for this study.

The regression analysis highlights that Liquidity Ratio (LR) and Leverage Ratio (LER) are significant factors in determining the financial performance of the oil and gas industry. While both the variables like liquidity & leverage growth opportunities negatively influence ROCE. Other variables such as Growth Opportunities (GO), Interest Coverage Ratio (ICR), and market valuation (P/E) appear to have a lesser influence on Return on Capital Employed in the oil and gas sector, both in India and globally.

**Table 6:** Regression Analysis (Dependent Variable: NPR)

| Model/Independent Variables | Fixed Effect Model Coefficients (p-value) | Random Effect Model Coefficients (p-value) | Hausman Test Chi2 (p-value) | Preferred Model                                       |
|-----------------------------|-------------------------------------------|--------------------------------------------|-----------------------------|-------------------------------------------------------|
| Constant                    | 11.158 (0.000)                            | 8.846 (0.001)                              |                             |                                                       |
| GO                          | 11.921 (0.023)                            | 18.004 (0.028)                             |                             |                                                       |
| LR                          | 0.087 (0.916)                             | 4.045 (0.000)                              |                             |                                                       |
| LER                         | -5.623 (0.026)                            | -9.566 (0.000)                             |                             |                                                       |
| ICR                         | -0.027 (0.194)                            | -0.064 (0.058)                             | 25.27 (0.002)               | Fixed Effect Model<br>(As the p-value of Chi2 < 0.05) |
| P/E                         | -0.011 (0.713)                            | 0.024 (0.635)                              |                             |                                                       |
| R <sup>2</sup>              | 0.319                                     | 0.533                                      |                             |                                                       |
| F / Chi <sup>2</sup>        | 2.70 (0.034)                              | 50.27 (0.000)                              |                             |                                                       |

\*Significant at 5% level.

**Source:** Authors' own calculation

The Hausman test indicates that the Fixed Effect Model is preferred because the Chi2 value is 25.27 with a p-value less than

0.05 ( $p = 0.002$ ). This suggests that the fixed effect model is a better fit for this data than the random effect model.

GO (Growth Opportunities) has a significant positive relationship with NPR (Net Profit Ratio) in the fixed effect model (coefficient = 11.921,  $p = 0.023$ ), meaning that higher growth opportunities tend to result in higher net profit ratio. In contrast, LER (Leverage Ratio) has a significant negative relationship with NPR (coefficient = -5.623,  $p = 0.026$ ), indicating that as leverage ratio increases, companies tend to decrease their net profit ratio. The other variables, including LR (Liquidity Ratio), ICR (Interest Coverage Ratio), and P/E (Price Earnings Ratio), do not show significant effects on NPR in the fixed effect model, as their  $p$ -values are higher than 0.05.

The  $R^2$  value of the fixed effect model is 0.319, meaning the model explains 31.90% of the variation in the net profit ratio. Additionally, the F-statistic (2.70) with a  $p$ -value of 0.034 further confirms that the fixed effect model is statistically significant and a good fit for this study.

The regression analysis highlights that GO and LER are significant factors in determining the net profit ratio in the oil and gas industry. While Growth Opportunities (GO) positively influences NPR, Leverage Ratio (LER) has a negative impact on NPR. Other variables such as liquidity, Interest Coverage Ratio (ICR) and market valuation (P/E) appear to have a lesser influence on financial performance in the oil and gas sector, both in India and globally.

## FINDINGS OF THE STUDY

The study finds a positive relationship between growth opportunities and net profit ratio (NPR), indicating that firms with higher growth prospects tend to report better profit margins. Leverage Ratio (LER) has a significant negative impact on both Return on Capital Employed (ROCE) and Net Profit Ratio (NPR), suggesting that higher debt levels reduce financial performance in the oil and gas sector. Liquidity Ratio (LR) negatively affects ROCE, implying that firms with higher liquidity may struggle with efficient capital utilization. While ICR does not show a significant impact on profitability, its wide range indicates substantial variability in firms' ability to cover interest obligations. The Price-to-Earnings (P/E) ratio does not exhibit a strong influence on profitability, reflecting investor uncertainty and sector specific challenges.

The findings suggest that financial performance in the oil and gas industry is shaped by a complex interplay of liquidity, leverage, and capital structure.

## CONCLUSION

The study underscores the critical role of financial structure in determining the performance of oil and gas firms. While growth opportunities positively impact profitability, excessive leverage and high liquidity

levels negatively affect capital efficiency. The findings suggest that firms in capital-intensive industries must strike a balance between growth and financial prudence. Furthermore, the regression results highlight that liquidity and leverage management are key determinants of financial sustainability in the sector. The preference for the Fixed or Random Effect Model further strengthens the robustness of the analysis.

## LIMITATIONS OF THE STUDY

The study is limited to the oil and gas industry, restricting the generalizability of results to other sectors. The study covers the period from 2013-14 to 2022-23, and findings may be influenced by economic fluctuations during this time. The research primarily relies on quantitative data and does not account for qualitative aspects like management efficiency and regulatory changes. The study focuses on Indian firms, and results may not be fully applicable to other emerging or developed economies. External factors such as global oil prices, inflation, and policy interventions were not explicitly included in the analysis.

## RECOMMENDATIONS

- **Optimizing Leverage:** Firms should adopt prudent debt management strategies to ensure leverage remains at an optimal level without compromising profitability.
- **Enhancing Liquidity Management:** Companies should aim for an optimal liquidity ratio to improve capital efficiency and avoid idle cash holdings.
- **Investment in Growth Opportunities:** Firms with higher profitability should reinvest earnings into expansionary projects to sustain long-term growth.

- **Monitoring Interest Coverage:** Given the variability in interest coverage ratios, companies should focus on maintaining a healthy balance between debt servicing and profitability.
- **Strategic Capital Allocation:** Policymakers and financial managers should align investment decisions with long-term financial sustainability goals.
- **Sector-Wide Policy Recommendations:** Government and regulatory bodies should provide support mechanisms for capital-intensive industries to mitigate financial risks.
- **Future Research Directions:** Further studies can incorporate macroeconomic variables and qualitative insights to provide a more comprehensive understanding of financial performance in the sector.

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