



# A STUDY ON PROFITABILITY AND CAPITAL STRUCTURE OF SELECT INDIAN PETROLEUM INDUSTRY COMPANIES

**\*M. Vasanthapriya, M. Com, (CA), M.Phil,**

(Ph.D. Scholar (Part-time), PG & Research Department of Commerce,  
Thiruvalluvar Govt. Arts College, Rasipuram and

**\*\*Dr. K. Thamil Pavai**

Associate Professor & Head, PG & Research Department of Commerce,  
Thiruvalluvar Govt. Arts College, Rasipuram)

## ABSTRACT:

*The capital structure of the chosen Indian petroleum industry enterprises was examined in this study. It has been discovered that the chosen IOCL and HPCL enterprises in India's petroleum industry are found to be operating with minimal debt. The study included ratio analysis, mean, standard deviation, coefficient of variation, and compound growth rate, and it used data from sample companies' annual reports for the years 2012–13 to 2021–22. The secondary data obtained from the publicly available financial statements of the sample companies was used for analysis. Essential indicators include the debt-to-equity ratio, and the long-term debt-to-capitalization ratio, return on capital employed ratio, regression analysis and ANOVA.*

**Keywords:** *profitability, long-term debt to capitalization, capital structure, debt equity ratio, and return on capital employed ratio, regression analysis and ANOVA.*

## INTRODUCTION

Over time, there have been amazing changes in the scope of financial management and perspectives on financial capabilities. Since the sole skill associated with finance prior to 1950 was raising money for a business, the conversation focused on funding sources, financial bases, financial reporting, and other relevant subjects. However, in the last thirty to forty years, the ability to use resources efficiently has also come to be regarded as a critical financial management skill. As a result, financial management has expanded, and the contemporary globe has acknowledged this advancement.

Financial management is the process of acquiring enough assets at the lowest possible cost and using them to benefit the company. Financial management is ultimately concerned with the corporate organization's financial health. It is concerned with finding funding to establish, expand, and modernize company units, providing fixed and working capital, transferring salaries, and other similar issues.<sup>1</sup>

## PROFITABILITY

Profit has a relative meaning, while profitability has an absolute one, even though they are intimately related and dependent on each other. Stated differently, each, despite being generic, has a particular purpose in business situations. Profitability is the main indicator of a company's efficacy and efficiency in achieving its profit goal. Analysing the profitability reveals where the earnings are relative to the total number of transactions made over the course of the year.

1. <https://www.psinternationalhrms/oil-and-gas>

## CAPITAL STRUCTURE

The specific mix of debt and equity that a business uses to fund its expansion and general operations is known as its capital structure. Capital structure, as used in corporate finance, represents the combination of various forms of capital and external funds that are used to finance a business. A company's capital structure refers to the specific mix of debt and equity that it uses to fund its overall operations and expansion. Equity might take the shape of common stock, preferred stock, or retained earnings; debt is represented by bond offerings and loans.

## LITERATURE REVIEW

In 2014, **Dr. P.S. Ravindra and Ch. Trinadha Rao** conducted a study titled "An analysis of the financial and capital structure in the oil and gas industry with specific reference to ONGC Videsh Limited (ONGCVL)". In light of the data collected, the researcher concluded that ONGCVL's ability to expand and maintain profitability was less reliant on debt than it was in 2002–2003.

In 2018 a study focused on the capital structure of the selected petroleum industry enterprises in India. The study conducted by **Prof. Nikhil Bhusan Roy and Mr. Ram Chandar Das** showed that all the selected enterprises in the petroleum industry in India are running with low debt funding. As a result of HOECL's substantial investment of shareholder money in its assets, EOL is at high financial risk.

**Jatin Sankar T. Sin (2020)** carried out a study named "The Effect of Working Capital Management on the Profitability of Firms in the Oil and Gas Industry in India". He saw that there was a negative correlation between CCC and profitability, even though the coefficient was not very large. In a similar vein, there is a negative correlation between profitability and both size and debt ratios. This implies that managers should focus on reducing the CCC in order to increase profitability. Similarly, it is critical to eliminate the inverse relationship between size, profitability, and debt ratio in order to improve shareholder wealth.

## OBJECTIVE OF THE STUDY

The objective of this study is to examine the capital structure and profitability of two petroleum companies that were chosen from among Indian government entities such as HPCL and IOCL for 10 year period between 2012–2013 and 2021–2022.

## SCOPE OF THE STUDY

The research was carried out specifically on two public-sector oil corporations in India. The current analysis was conducted from 2012–2013 through 2021–2022. The study's research conclusions may not be applicable in all circumstances. The study was conducted to analyse the capital structure and profitability of sample companies.

## SAMPLE SELECTION

The following sectors of the Indian oil industry were selected for the study: The study focused only on two companies: Indian Oil Corporation Ltd. and Hindustan Petroleum Ltd. It covered a 10-year period from 2012–2013 to 2021–2022.

## DATA COLLECTION

The researcher used secondary data to derive conclusions that can be verified by observation or experimentation. Secondary data from published annual reports that are available on the websites of the companies and financial data that were gathered using CMIE PROWESS database formed the basis for analysis.

## RESEARCH METHODOLOGY

This empirical study examines two representative oil businesses over a ten-year period. Data from the company's annual reports served as the basis for the analysis. The analysis used the debt-to-capitalization ratio,

the debt-equity ratio, and the return on capital employed. Statistical methods such as mean, standard deviation, coefficient of variation, and compound growth rate have assessed calculated ratios.

## ANALYSIS AND DISCUSSION

### DEBT-TO-EQUITY (D/E) RATIO

A corporation's financial leverage is assessed using the debt-to-equity (D/E) ratio, which is computed by dividing a company's total liabilities by its shareholder equity and is used to evaluate a company's financial leverage. In corporate finance, the D/E ratio is a crucial indicator. It is a gauge of how much a company uses debt rather than its own resources to fund its operations. One kind of gearing ratio is the debt-to-equity ratio.

**TABLE NO: 1**  
**DEBT-TO-EQUITY (D/E) RATIO**

(in times)

| Years     | HPCL  | IOCL  |
|-----------|-------|-------|
| 2012-2013 | 2.13  | 3.34  |
| 2013-2014 | 1.51  | 2.29  |
| 2014-2015 | 1.27  | 1.95  |
| 2015-2016 | 1.60  | 2.44  |
| 2016-2017 | 1.54  | 2.23  |
| 2017-2018 | 1.92  | 2.32  |
| 2018-2019 | 2.21  | 2.62  |
| 2019-2020 | 2.78  | 3.42  |
| 2020-2021 | 2.21  | 3.09  |
| 2021-2022 | 1.76  | 2.46  |
| Mean      | 1.89  | 2.62  |
| SD        | 0.45  | 0.50  |
| CV        | 23.67 | 19.06 |
| CGR       | -1.89 | -3.06 |

**SOURCE:** Compiled and Computed from Annual Reports.

In the early years, both the companies displayed a tendency of using debt in their capital structures relative to equity. It began to rise and reached a maximum ratio of 2.78 for HPCL in 2017–2018 and 3.42 for IOCL in 2019–2020, it began to decline after that. Conversely, the mean ratio of IOCL is greater. Over the previous ten years, both companies have negative increase in their debt utilization. On comparison IOCL has utilised more debt in its capital structure.

### LONG-TERM DEBT TO CAPITALIZATION RATIO

The long-term debt to capitalization ratio reveals a company's level of financial leverage. For calculating this ratio long-term debt is divided by the total available capital (long-term debt, preferred stock, and common stock). It is a measure of solvency that reveals the level of financial leverage that a company carries. In order to assess the associated investment risk, investors analyse the financial leverage of various companies. High ratios are indicative of riskier investments because they primarily rely on debt financing, which increases the chance of insolvency.

Long-Term Debt to Capitalization Ratio =  $\frac{\text{Long term debt}}{(\text{Long term debt} + \text{shareholders Equity})} \times 100$

A low long-term debt-to-capitalization ratio suggests that the company uses equity financing more often than debt, which could indicate a lesser degree of risk related to the finances. A higher ratio indicates that long-term debt accounts for a greater amount of the company's capitalization, which may indicate more financial risk and potential difficulties in managing debt. The long-term debt-to-capitalization ratio for the selected public oil companies over the course of the study is displayed in Table 2.

**TABLE NO: 2**  
**LONG-TERM DEBT TO CAPITALIZATION RATIO**  
**(in percentages)**

| Years     | HPCL  | IOCL  |
|-----------|-------|-------|
| 2012-2013 | 64.23 | 79.78 |
| 2013-2014 | 68.39 | 81.59 |
| 2014-2015 | 68.27 | 82.24 |
| 2015-2016 | 74.77 | 69.54 |
| 2016-2017 | 76.86 | 69.71 |
| 2017-2018 | 75.08 | 54.00 |
| 2018-2019 | 63.50 | 38.16 |
| 2019-2020 | 62.19 | 34.34 |
| 2020-2021 | 65.57 | 47.69 |
| 2021-2022 | 77.69 | 63.02 |
| Mean      | 69.66 | 62.01 |
| SD        | 5.92  | 17.73 |
| CV        | 8.50  | 28.60 |
| CGR       | 1.92  | -2.33 |

**SOURCE:** Compiled and Computed from Annual Reports.

The long-term debt to capitalization ratios of both corporations exhibited an upward tendency in the initial years. Both corporations' long-term debt-to-capitalization ratios exhibited an increasing trend up to 2016 to 2017. Following that, both firms' ratios displayed a downward tendency, with a sharp decline for IOCL. There was a rise in the ratios in 2021–2022. The ratios of the IOCL revealed negative growth. The more significant mean ratio of 69.66 is found in HPCL. HPCL has low volatility based on the coefficient of variation.

### Return on Capital Employed (ROCE)

The term Return on Capital Employed refers to a financial ratio that can be used to assess a company's profitability and capital efficiency. This ratio help to understand how well a company is generating profits from its capital as it put to use. Financial managers, stake holders, and potential investors may use ROCE when analysing a company for investment.

**TABLE 3**  
**RETURN ON CAPITAL EMPLOYED (ROCE)**  
**(in percentages)**

| Years     | HPCL  | IOCL  |
|-----------|-------|-------|
| 2012-2013 | 64.23 | 79.78 |
| 2013-2014 | 68.39 | 81.59 |
| 2014-2015 | 68.27 | 82.24 |
| 2015-2016 | 74.77 | 69.54 |
| 2016-2017 | 76.86 | 69.71 |
| 2017-2018 | 75.08 | 54.00 |
| 2018-2019 | 63.50 | 38.16 |
| 2019-2020 | 62.19 | 34.34 |
| 2020-2021 | 65.57 | 47.69 |
| 2021-2022 | 77.69 | 63.02 |
| Mean      | 69.66 | 62.01 |

|     |      |       |
|-----|------|-------|
| SD  | 5.92 | 17.73 |
| CV  | 8.50 | 28.60 |
| CGR | 1.92 | -2.33 |

**SOURCE:** Compiled and Computed from Annual Reports.

Both companies have a growing tendency at the beginning of the study period. In the initial period, the profitability of IOCL was better than that of HPCL. The scenario was reversed from 2015–2016, when IOCL ratios were significantly lower than HPCL ratios. Furthermore, over the course of the investigation, the mean ratio of IOCL was lower than that of HPCL. With a negative growth rate, IOCL's volatility is correspondingly strong.

### Regression Analysis of HPCL:

**TABLE NO: 4**

| Variable  | Coefficient | Std. Error         | t-ratio | p-value | Sign.  |
|---|-------------|--------------------|---------|---------|--------|
| Intercept   | -494.5535   | 177.0785           | -2.7928 | 0.1079  | NS     |
| Log   | 88.2982     | 30.3657            | 2.9078  | 0.1007  | NS     |
| Growth  | -0.2653     | 0.1220             | -2.1747 | 0.1617  | NS     |
| Operating Ratio                                       | -0.6031     | 0.3318             | -1.8175 | 0.2108  | NS     |
| Debt-Equity   | -3.3786     | 1.5174             | -2.2266 | 0.1559  | NS     |
| Current Ratio   | 21.8007     | 5.6513             | 3.8576  | 0.0611  | NS     |
| Inventory Turnover                                    | 0.0760      | 0.2156             | 0.3526  | 0.7581  | NS     |
| Fixed Asset Turnover                                  | 2.1908      | 0.4784             | 4.5791  | 0.0445  | S      |
| R-squared   | 0.9944      | Adjusted R-squared |         |         | 0.9747 |
| F Value   | 50.4373     | Significance (F)   |         |         | 0.0196 |
| Note: * Significant at 5% Level.                      |             |                    |         |         |        |
| Dependent Variable: Return on Capital Employed (ROCE) |             |                    |         |         |        |

**SOURCE:** Compiled and computed from Annual Reports.

In R square value is 0.9944 which means that the liner regression explains 99.44% of the variance among the independent variables. The adjusted R square value is 0.9747. This model F test gives F value of 50.4373 with significance of F value is 0.0196, the result of F-test is highly significant, which proves fit in the random effect model of selected predicting variables.

The p-values of operating ratio, debt-equity ratio, current ratio and inventory ratios proved statistically not significant except fixed assets turnover ratio.

The coefficient of Fixed Asset Turnover 2.1908 exhibits that a significant and positive relationship with the Return on Capital Employed position exists and the result ( $t = 4.5791$ ,  $p \text{ value} = 0.0445$ ) proved statistically significant.

## Regression Analysis of IOCL:

TABLE NO: 5

| Variable  | Coefficient | Std. Error         | t-ratio | p-value | Sign. |
|---|-------------|--------------------|---------|---------|-------|
| Intercept   | -835.9531   | 2923.7969          | -0.2859 | 0.8018  | NS    |
| Log   | 158.1535    | 444.7644           | 0.3556  | 0.7562  | NS    |
| Growth  | -0.2081     | 0.3540             | -0.5880 | 0.6161  | NS    |
| Operating Ratio                                       | -4.3898     | 3.4500             | -1.2724 | 0.3311  | NS    |
| Debt-Equity   | 2.9461      | 21.3514            | 0.1380  | 0.9029  | NS    |
| Current Ratio   | -84.5274    | 50.9578            | -1.6588 | 0.2390  | NS    |
| Inventory Turnover                                    | 2.4683      | 11.5530            | 0.2137  | 0.8506  | NS    |
| Fixed Asset Turnover                                  | 19.1297     | 20.6154            | 0.9279  | 0.4514  | NS    |
| R-squared   | 0.9260      | Adjusted R-squared |         | 0.6672  |       |
| F Value   | 3.5779      | Significance (F)   |         | 0.2358  |       |
| Note: * Significant at 5% Level.                      |             |                    |         |         |       |
| Dependent Variable: Return on Capital Employed (ROCE) |             |                    |         |         |       |

**SOURCE:** Compiled and computed from Annual Reports.

In R square value is 0.9260 which means that the liner regression explains 92.60% of the variance among the independent variables. The adjusted R square value is 0.6672. This model F test gives F value of 3.5779 with significance of F value is 0.2358, the result of F-test is highly significant, which proves fit in the random effect model of selected predicting variables.

The p-values of operating ratio, debt-equity ratio, current ratio and inventory ratios and fixed assets turnover ratios proved statistically significant.

## CONCLUSION

It has been found that firms use different capital structure-forming strategies even when they are in the same industry. The implication is that HPCL is using less debt than IOCL. Both companies' capital structures show that they have a higher proportion of long-term debt. In comparison to IOCL, HPCL has a higher ROCE ratio. Regression analysis results indicate that, for HPCL alone, there is a positive correlation between ROCE and the fixed asset turnover ratio.

## REFERENCE

- 1) **Dr. P. S. Ravindra and Ch. Trinadha Rao (2014)** "An analysis of the financial and capital structure in the oil and gas industry with specific reference to ONGC Videsh Limited (ONGCVL)" EPRA International Journal of Research and Development (IJRD) ISSN 2455-7838 (Online) Volume 5, Issue 3.
- 2) **Ram Chandra Das and Pro. Nikhil Bhusan Dey (2018)** "Capital Structure Analysis of selected Petroleum Companies in India – An Empirical Study" Indian Journal of Applied Research ISSN 2249-555X volume 3 Issue 8.
- 3) **Jatin Sankar T.S (2020)**, the Effect of Working Capital Management on the Profitability of Firms in the Oil and Gas Industry in India, International Journal of Management, 11(11), 2020, pp 128-136.

## WEBLIOGRAPHY

1. [www.iocl.in](http://www.iocl.in)
2. [www.hpcl.in](http://www.hpcl.in)
3. [www.moneycontrol.com](http://www.moneycontrol.com)