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## Profitability Analysis: An Empirical Study of BSE Oil and Gas Index Companies

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### **Abstract:**

*The Indian oil and gas sector is of strategic importance and it has a pivotal role in influencing decisions in all other spheres of the economy. The annual growth of this sector has been commendable and will accelerate in future consequently it encouraging all round growth and development of the economy. The Indian oil and gas (O&G) sector is projected to touch US\$ 139,814.7 million by 2015 from US\$ 117,562.9 million in 2012. This sector provides ample opportunities for investor's .Profitability is the profit earning capacity, which is a crucial factor contributing to the survival of the firms. The objective of this study is to analyse the profitability position of the companies listed with BSE Oil and Gas index from the year 2003-04 to 2012-13. It was found from the analysis that Oil India Ltd. maintained first position in terms of profitability while BPCL stood last. It is suggested that companies should reduce their operating cost, efficient utilization of their asset base and increase in operational efficiency for enhancing the further profitability in future.*

**Key words:** profitability, Return on Assets, Ratio, oil companies, operational efficiency

### **1. Introduction**

Every firm or business unit is established with a view of earning profits from the business operations. It may be regarded as a mirror of the operating performance of the business activities. But in the real and competitive business environment of today, profit is not the sole objective, but one among the most important objectives of the business which gives direction to the business operations. The owners and management of the company interested in knowing the long term as well as short term financial soundness of the company. Management of the firm is eager to know the operational efficiency of the business. Similarly, investors invest their funds in the expectations of good returns. The operating efficiency of the firm and adequate returns to the investors ensured only through profits. Profits are required by every business for its survival, expansion and diversification and for meeting social responsibilities of the business. One of the most frequently used tools of financial ratio analysis is profitability ratios which are used to conclude the company's operational efficiency and its return to its investors. The perpetual existence of the firms depends on the profitability of the firm, which is also considered to be an important factor in influencing the reputation of the firm.

### **2. Oil and Gas Industry in India**

The Indian oil and gas sector is of strategic importance and it has a pivotal role in influencing decisions in all other spheres of the economy. The annual growth of this sector has been commendable and will accelerate in future consequently it encouraging all round growth and development of the economy. The Indian oil and gas sector is one of the six core industries in India. This would translate into India's energy needs growing many times in the coming years. The Indian oil and gas (O&G) sector is projected to touch US\$ 139,814.7 million by 2015 from US\$ 117,562.9 million in 2012. This sector provides ample opportunities for investors. The New Exploration Licensing Policy (NELP) in 1997-98 has successfully attracted both foreign and domestic investment in India. The government has adopted several policies, such as allowing 100 per cent foreign direct investment (FDI) in petroleum products, natural gas, pipelines, and refineries. In 2011, India's O&G sector witnessed one of the biggest FDI deals in the country, with British Petroleum (BP) formalizing a US\$ 7.2 billion partnership with Reliance Industries, for exploring offshore gas reserves. Analysis of the profitability reveals the financial soundness as well as profit position of this industry.

### 3. Review of Literature

- Sampath (1990) examined the factors influencing profitability of commercial banks. Profitability was measured through rate of return on working funds. It depends on certain factors like interest income, interest expenses and manpower expenses, other expenses and non-interest income.
- Venkatesan and Nagarajan (2012) found that profitability position of companies depend on direct and indirect expenses. It was found there is significant difference in the level of returns on investment of different companies and Bhushan steel and JSW have got second better performer in the area of overall earning power.
- Jain and Mehta (2013) have analysed the profitability position of the five selected automobile companies for a period of five years (2009-2013). Profitability position was analysed by using different profitability ratios and two ways ANOVA of ROCE of selected automobile companies. They have found the difference in ROCE of the sampled automobile companies due to different factors. The highest degree of positive correlation found between NP ratios of Maruti Suzuki & Tata Motors. All selected companies have different level of return on their investment. It was suggested that Mahindra & Mahindra, Maruti Suzuki and Ashok Leyland should retain their profitability position by making efficient employment of their available resources.
- Koradia (2013) examined the profitability position of three public sector companies i.e. BPCL, HPCL and IOCL. Profitability ratios considered for the purpose of analysis were Operating Profit Margin Ratio, Gross Profit Margin Ratio, Net Profit Ratio and Return on Capital employed. The results suggested that there was significant difference between Profitability Ratios between companies. There were significant differences found between profitability ratios of different years except Return on Capital employed. It was found that profitability position of all sampled companies were satisfactory.
- Joshi, Alpa (2013) analysed the profitability position of HUL, COLGATE, ITC for a period of 2008-09 to 2011-2012 with the help of some profitability ratios. It was found that there was a vast difference in net operating profit ratio, net profit ratio, PAT to net worth ratio and cash profit to net worth ratio of selected companies.

### 4. Need and Objectives of the Study

The primary objective of every business undertaking is to earn profits. Profit earning is considered essential for the survival, expansion and diversification of the business. Investors want an adequate return on their investment as well as workers and creditors interested in financial soundness of the business. A business enterprise can fulfill its corporate responsibilities only through earnings profits. An investor's decision is always based on the information provided by financial statements, past and future performance of the business enterprises, companies, industries and the economy as a whole therefore, the present study attempts to analyze the impact of various financial ratios on profitability of oil companies in India. The main purpose of the study is to evaluate the profitability of the selected oil and Gas companies in India.

### 5. Research Methodology

#### 5.1. Sample Size and Data Collection

In this study an initial sample of 10 oil and gas companies listed with BSE oil and gas index has been derived from PROWESS database maintained by CMIE. But a final sample includes only 7 companies due to non availability of financial data for a complete period of 10 years. The study is based on the secondary data which are taken from the financial statements of sample companies through prowest from 2003-04 to 2012-2013 to find out the profitability of oil and gas companies. For more information different journals, News papers and Websites are also taken into consideration. Following is the list of sampled oil and gas companies:

- Bharat Petroleum Corporation Ltd (BPCL)
- Gail India Ltd. (GAIL)
- Hindustan Petroleum Corpn. Ltd.(HPCL)
- Indian Oil Corpn. Ltd. (IOCL)
- Oil & Natural Gas Corpn. Ltd (ONGC)
- Oil India Ltd.(OIL)
- Reliance Industries Ltd. (RIL)

#### 5.2. Tools of Analysis

For the analysis of data various accounting and statistical tools and techniques relating to Profitability are used. Ratio analysis is used as an accounting technique in which major profitability ratios are used for analysis and interpretation such as gross profit (GP) ratio, Net Profit (NP) ratio, Operating Profit (OP) ratio, Return on assets (ROA) ratio, Return on capital employed (ROCE) ratio. Moreover Statistical tools such as mean, standard deviation and variance are used to ascertain the average position of profitability ratios. To determine operating and financial performance six profitability ratios have been calculated:

Variables	Code	Definitions
Gross Profit Ratio	GP Ratio	GP/Net Sales x 100
Net Profit Ratio	NP Ratio	NP/ Net Sales x100
Operating Profit Ratio	OP Ratio	PBIT/ Net Sales x100
Return on Assets	ROA	PAT/Total Assets x100
Return on capital Employed	ROCE	PAT/ Capital employed x 100

Table 1: Profitability Ratios

## 6. Data Analysis and Interpretation

### 6.1. Profitability analysis

Profitability ratios are based on the premises that a firm should earn sufficient profit on each rupee of sales. If adequate profits are not earned on sales, there will be difficulty in meeting the operating expenses and no returns will be available to the owners. The following profitability ratios have been calculated:

### 6.2. Gross Profit Ratio

The difference between net sales and cost of goods sold is termed as gross profit margin. It reflects the efficiency with which management produces each unit of product. This ratio indicates the average spread between cost of goods sold and sales. This ratio is of vital importance of analyzing the business results. A firm should have reasonable gross profit to ensure adequate coverage for operating expenses of the firm and sufficient return to the owners of the business.

Company Name / Year	BPCL	GAIL	HPCL	IOCL	ONGC	OIL	RIL
2004	9.57	29.12	9.59	13.61	54.56	47.51	19.30
2005	3.85	26.72	6.76	9.17	48.66	44.63	18.76
2006	4.08	26.17	-0.14	7.46	47.20	50.25	19.29
2007	6.19	22.12	1.27	8.07	42.93	39.86	19.40
2008	5.13	25.54	5.00	7.78	37.29	36.21	17.86
2009	5.63	20.91	5.48	7.50	32.94	63.14	16.01
2010	5.73	22.52	7.06	9.49	28.78	56.33	13.78
2011	5.06	19.01	6.16	7.57	18.99	71.70	13.55
2012	4.52	17.20	5.53	8.55	40.14	61.09	9.74
2013	5	15.81	5.04	6.97	31.76	57.91	9.28
MEAN	5.47	22.51	5.17	8.61	38.32	52.86	15.69
S.D	1.61	4.37	2.79	1.92	10.60	11.13	3.92
Variance	2.59	19.11	7.81	3.71	112.41	123.92	15.41

Table 2: Gross Profit Ratios

Source: Secondary Data

### 6.3. Interpretation

Table 2 shows that there is a variation in the gross profit of all the oil companies. In case of ONGC there is continuous fall in profits till 2011. In case of GAIL the GP ratio falls for first 4 years and then it increase in 2008 and 2010 but after 2010 it continues to fall. The above results reveal that the highest mean value of GP ratio is observed for OIL which is 52.86% and the lowest mean value of GP ratio is 5.17% for HPCL and 5.47% for BPCL. Other oil companies which are selected for the study had moderate GP ratios such as GAIL (22.51), IOCL (8.61) ONGC (38.32) RIL (15.69). It is clear from the results that the degree of variability is the highest in case of OIL which is shown by the highest variance of 123.92 of GP ratio followed by ONGC (112.41). The lowest variability as shown by BPCL and IOCL through the variance of GP ratio which is 2.59 and 3.71 respectively. The GP ratio of all companies has declined in 2013 as compared to 2004 except OIL Company. It is clear that GP ratio of all companies is highly inconsistent during the study period.

### 6.4. Net Profit Ratio

The Net Profit ratio is indicative of management's ability to operate the business with sufficient success not only to recover from the revenues of the period, the cost of merchandise or services, the expenses of operating the business and the cost of the borrowed funds, but also to leave a margin of reasonable compensation to the owners for providing their capital at risk

Company Name year	BPCL	GAIL	HPCL	IOCL	ONGC	OIL	RIL
2004	3.50	17.27	3.72	5.93	32.61	37.49	10.10
2005	1.67	16.05	2.13	3.45	32.43	33.12	11.60
2006	0.39	16.54	0.57	2.73	33.55	35.03	11.62
2007	1.87	15.81	1.75	3.47	30.47	36.48	10.82
2008	1.43	15.08	1.08	2.83	31.19	34.73	14.64
2009	0.55	12.14	0.46	0.96	28.34	23.48	10.80
2010	1.27	13.10	1.20	3.80	31.00	31.28	8.48
2011	1.02	11.11	1.14	2.25	30.84	27.10	8.20
2012	0.62	9.20	0.51	0.98	36.15	39.14	6.09
2013	1.11	8.63	0.43	1.11	29.16	43.65	5.85
MEAN	1.34	13.49	1.29	2.75	31.57	34.15	9.82
S.D	0.89	3.12	1.02	1.54	2.24	5.82	2.70
Variance	0.80	9.74	1.05	2.39	5.01	33.96	7.30

Table 3: Net Profit Ratios

Source: Secondary Data

### 6.5. Interpretation

There is a variation in the net profit of all the oil industries. In case of ONGC there are wide variations in net profits. There is continuous fall in the net profits of GAIL Company. Table 3 reveals that the highest mean value of NP ratio is observed for OIL and ONGC which is 34.15% and 31.57% respectively. The lowest mean value of NP ratio is 1.29 for HPCL and 1.34 for BPCL. Other sampled companies had average NP ratios such as GAIL (13.49), IOCL (2.75) and RIL (9.82). It is clear from table 3 that the degree of variability is the highest in case of OIL which is shown by the highest variance of 33.96 of NP ratio. The lowest variability as shown by BPCL and HPCL through variance of NP ratio, which is 0.80 and 1.05 respectively.

### 6.6. Operating Profit Ratio

This ratio indicates the average spread between the cost of goods sold and sales. A high Operating Profit Ratio is the sign of managerial effectiveness. Operating profit is also known as PBIT. The OP ratio is a measure of overall operating efficiency, incorporating all of the expenses of ordinary, daily business activity.

Company Name year	BPCL	GAIL	HPCL	IOCL	ONGC	OIL	RIL
2004	5.64	27.3	5.92	8.61	51.44	59.76	15.18
2005	2.65	24.69	3.12	4.57	49.22	50.89	16.16
2006	0.9	24.29	0.99	4.26	50.66	55.59	14.85
2007	3.41	21.9	3.15	5.52	46.14	55.54	14.24
2008	2.89	22.81	2.33	4.7	47.96	53.34	18.12
2009	2.21	18.48	2.41	2.61	43.32	36.89	14.25
2010	2.74	19.36	2.83	5.78	46.25	46.67	11.77
2011	2.13	16.71	2.46	3.93	45.8	40.6	11.07
2012	1.39	13.87	1.64	2.19	53.67	58.03	8.43
2013	2.1	14.15	1.88	2.46	43.58	64.28	7.93
MEAN	2.60	20.35	2.67	4.46	47.80	52.15	13.20
S.D	1.29	4.58	1.32	1.91	3.41	8.57	3.31
Variance	1.66	21.03	1.75	3.67	11.66	73.58	10.98

Table 4: Operating Profit Ratio

Source: Secondary Data

### 6.7. Interpretation

The above Table 4 shows the Mean, Variance and SD values to OP ratio of selected companies. The OP ratio of all the companies except ONGC and OIL ranged from 0.9% to 28% approximately. ONGC and OIL have shown higher values of OP ratio with wide variations. The OP ratio of ONGC ranges from 43.58% to 53.67% in the period of 10 years, whereas that of OIL ranges from 36.89% to 64.28%. It is observed from the table that the highest mean value of OP ratio is found for OIL and ONGC, which is 52.15 and 47.80 respectively and the lowest mean value of OP ratio is 2.6 for BPCL and other companies which are selected for the study had average OP ratios such as GAIL (20), HPCL (2.67) IOCL (4.67) and RIL (13.20). The Results shows that the degree of variability is the highest in case of OIL which is determined by the highest variance of 73.58 of OP ratio. The lowest variability as shown by 1.66 variance of OP ratio of BPCL.

### 6.8. Return on Assets

The single best indicator used to gauge earnings is the ROA. It measures how efficiently a company has generated profits with its available assets. Higher the ROA better will be the profitability position of the company and it reflects the company is earning higher returns with less investment.

Company Name /Year	BPCL	GAIL	HPCL	IOCL	ONGC	OIL	RIL
2004	9.58	11.69	10.55	11.3	11.64	17.75	7.89
2005	4.97	10.6	6.77	7.01	14.89	16.59	10.26
2006	1.18	11.07	1.85	5.87	13.82	20.82	10.88
2007	5.74	11.68	5.54	7.7	12.47	16.98	11.73
2008	4.08	12.8	3.09	6.11	12.66	16.97	14.76
2009	1.61	11.78	1.29	2.23	11.53	17.74	7.99
2010	2.99	11.19	2.63	6.88	10.47	16.36	6.81
2011	2.77	11.28	2.72	4.32	10.75	14.53	7.77
2012	2.12	9.8	1.37	1.96	12.74	15.41	7.01
2013	3.93	8.64	1.22	2.23	9.7	14.7	6.89
MEAN	3.89	11.05	3.70	5.56	12.06	16.78	9.19
S.D	2.46	1.15	3.03	2.95	1.57	1.81	2.63
Variance	6.08	1.33	9.22	8.71	2.48	3.30	6.92

Table 5: Return on Assets Ratio

Source: Secondary Data

### 6.9. Interpretation

The above table shows the ROA of RIL rises continuously from the year 2004 to 2008 but afterwards it shows decreasing trend. The ROA of all companies ranges from 1.22% to 16.98% during the period of 10 years. It is observed from the table 5 that the highest mean value of ROA is found for OIL and ONGC which is 16.78 and 12.06 respectively and the lowest mean value of ROA is 3.70 for HPCL and other companies have mean ROA which ranges from 3.89 to 12.06. It is clear that the degree of variability is the highest in case of HPCL which is determined by the highest variance of 9.22 of ROA ratio. The lowest variability as shown by GAIL is 1.33 of ROA.

### 6.10. Return on Capital Employed

The ROCE ratio is an important profitability ratio because it Measures the efficiency with which the company is managing its investment in assets and using them to generate profit. Here the profits are related to the total capital employed. The comparison of this ratio with the ratio of similar business organizations will reveal the relative operating efficiency of a business enterprise. A comparison of this ratio with similar firms, with the industry average and over time would provide sufficient insight into how efficiently the long term funds of owners and lenders are being used.

Company Name /Year	BPCL	GAIL	HPCL	IOCL	ONGC	OIL	RIL
2004	20.45	20.81	21.77	20.46	19.73	23.26	10.27
2005	10.27	19.34	12.73	12.47	26.08	22.7	13.88
2006	2.1	20.52	3.12	9.94	28.34	30.14	14.69
2007	9.35	19.39	8.85	12.77	27.09	23.69	15.3
2008	6.61	19.27	4.78	10.07	25.35	22.68	18.92
2009	2.45	18.54	1.89	3.57	21.78	24.71	10.02
2010	4.48	18.34	3.92	11.11	20.38	22.53	8.56
2011	4.53	17.88	4.37	7.33	20.66	18.99	10.03
2012	3.7	15.06	2.27	3.28	23.59	20.06	9
2013	6.74	13.35	2	3.64	17.49	18.89	8.7
MEAN	7.06	18.25	6.57	9.46	23.04	22.76	11.93
S.D	5.42	2.34	6.34	5.32	3.58	3.26	3.52
Variance	29.48	5.51	40.27	28.40	12.82	10.65	12.44

Table 6: Return on Capital employed Ratio

Source: Secondary Data

The ROCE of RIL rises continuously from the year 2004 to 2008 but afterwards it shows decreasing trend. There are wider variations have been noticed in BPCL and HPCL that was supported by variance of 29.48 and 40.27 respectively. It is observed from the table 6 that the highest mean value of ROCE is found for ONGC and OIL which is 23.04 and 22.76 respectively and the lowest mean value of ROA is 6.57 for HPCL and other companies have moderate ROA such as BPCL (7.06), GAIL (18.25), IOCL (9.46) and RIL (11.93).

### 7. Findings and Observations

- The GP ratio of OIL is on the higher side when compared with other organizations. . In case of ONGC there is continuous fall in profits till 2011. The GP ratios of all companies had shown a decreasing trend except OIL. These companies have chances of improvement in GP by reducing their operating cost expenses.
- The highest mean value of NP ratio is observed for OIL and ONGC, which is 34.15 and 31.57 respectively indicates better performance in terms of financial and operational efficiency.
- The mean operating profit ratios of BPCL, HPCL and IOCL are quite low as compared to other companies which may be due to poor sales and higher administrative expenses.
- The ROA ratio and ROCE is the highest for OIL and ONGC respectively. This shows that these firms are maintaining a good level of return on investment and efficiently uses their assets and capital. HPCL shows the poor ROA and ROCE ratios which shows inefficient utilization of long term resources.
- Degree of variability is the highest in case of OIL and the lowest for BPCL.

### 8. Conclusion

Profitability analysis is considered as a measure of the company's operational efficiency, creditworthiness of the owners, proper usage of resources and its return to its investors. The objective of this study is to analyse the profitability position of companies listed with BSE Oil and Gas index from the year 2003-04 to 2012-13. The profitability of the selected companies measured through Operating Profit Margin Ratio, Gross Profit Margin Ratio, Net Profit Ratio and Return on Capital Employed. To the extent that high oil prices can be expected to continue, these major oil companies are likely to remain profitable and able to carry out their business plans. It is clear that profitability more or less depends upon the better utilization of resources, operating expenses, efficiency of management towards customer services, manpower and goodwill and market share. It was found from the analysis that Oil India Ltd. maintained first position in terms of profitability while BPCL stood last. From the above whole analysis and findings, we determined that OIL maintained first position in terms of profitability while BPCL stood last. It is suggested that companies should reduce their operating cost, efficient utilization of their asset base and increase in operational efficiency for enhancing the further profitability in future.

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