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PROFITABILITY ANALYSIS:
A COMPARATIVE STUDY OF SELECTED PETROLEUM COMPANIES IN INDIA

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ABSTRACT

Business is considered to be good only when there is profit because it is the best measurement of efficiency. Every business has the objective that profit is to be maximized. In real estate the investments are made which involves huge risk but also huge return. Real estate is that activity which if done with patience it will maximize the profit. Profit will be the measurement of successful real estate decision. Profit is the indicator of efficient real estate business whereas loss is the indicator of bad real estate decision. The measure corporate houses involved in real estate have earned satisfactory amount of profit in recent years but its fluctuations are still unanswerable. The main objective of a company is to earn profits because profits are necessary to survive and grow over a long period of time. Profit is the ultimate output of a company, and it will have no future if it fails to make sufficient profits. The word profitability, a composite of two words 'profit' and 'ability', signifies the ability of a business to earn profits on its investments. In this paper a comparative study of profitability analysis of selected petroleum companies in India is discussed.

KEYWORDS: *Profitability Analysis, Investments, Operational Efficiency, Profit Margin .*

Introduction

Profit is the prima facie object of every business. It has been said that the profit is the engine that drives the business enterprise. A business needs profit not only for its existence but also for the expansion and diversification. "Profit is the barometer of the success of the business. It is indeed, a magic eye that mirrors all aspects of entire business operations including the quality of output." If an enterprise fails to make profit, capital invested is eroded and if this situation prolongs, the enterprise ultimately ceases to exist. Profits are the soul of the business without which it is lifeless. In fact, profits are useful intermediate beacon towards which a firm's capital should be directed. A financial benefit that is realized when the amount of revenue gained from a business activity exceeds the expenses, costs and taxes needed to sustain the activity. Any profit that is gained goes to the business's owners, who may or may not decide to spend it on the business.

The ultimate task of management is to maximize the profits. The operational efficiency of a business is measured through the amount of profits earned. The greater the profit, the more efficient is the business. Profit is the positive gain remaining for a business after all costs and expenses have been deducted from total sales. Profit is also referred to as the bottom line, net profit or net earnings. *Profit* is one of the most important measurements in determining the health and success of a business. However, the measurement of profit can vary and should be considered with other factors. For example, profit varies greatly from company to company and from industry to industry. Because companies vary in size, it is often more appropriate to consider profit as a percentage of sales (profit margin) when comparing

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one company to another. As well, varying accounting methods can greatly influence profit, and these changes may have little to do with a company's actual operations. Changes in profit are the subject of much analysis. In general, high or rising profits are indicative of a successful business while low profits could suggest a myriad of problems, including inadequacies in customer or expense management.

Meaning and Concept of Profitability

The firm's ability to earn maximum profit by the best utilization of its resources is called profitability. Profit refers to the absolute quantity of profit, whereas profitability refers to the ability to earn profit. Profit is an absolute measure of earning capacity and profitability is the relative measure of earning capacity. Profitability depends on quantum of sales, cost of production and use of financial resources etc. The profitability of a firm can easily be measured by its profitability ratios. These ratios indicate overall managerial efficiency. The word 'profit' can be defined in a number of ways. Actually the meaning of profit differs according to the use and purpose of the figure. For accounting purpose, the excess of total revenues over the total expenses for a given period is called as profit for that period. The word 'ability' shows the power of a concern to earn profits. In financial circles its precise connotation is 'earning power', 'earning capacity' or 'operating performance' of the concerned investment. The term profitability may be defined as ability of a given investment to earn a return from its use. Profitability is a relationship of the earnings to the total resources of the corporation. It may be noted that profit is an absolute term while profitability is a relative term, where profit is described in relation to capital invested. **Stanley** mentioned that "Profitability is the strength and weakness of an enterprise." Profitability ratios are generally based on sales and capital employed.

Research Methodology

For the purpose of present study, two leading petroleum companies operating in India have been selected. This study is fully based on secondary data obtained from the published annual reports and accounts. The time period covered is from 2012-13 to 2016-17.The other journals, magazines and books have also been referred. On the basis of the annual reports and accounts, the financial statements have been redrafted. For the purpose of analysis, 'Ratio Analysis' the technique of Financial Management has been used. Statistical tools such as average, standard deviation and coefficient of variation have been used. The hypothesis has been tested by using the technique of't test'.

Profitability Analysis of the Companies under Study

These ratios are intended to measure the end result of business operations i.e. profitability. Profitability is a measure of the ability to make a profit expressed in relation to the sales of investment, and as such the following ratios are computed in this category:

õ **Profitability Based on Sales**
- Gross Profit Ratio
- Operating Profit Ratio
- Net Profit Ratio

õ **Profitability Bases on Investment**
- Return on Capital Employed
- Return on Owner's Equity
- Return on Total Assets

Profitability Based on Sales

Gross Profit Ratio

This profit establishes a relationship between gross profit and net sales, and is generally expressed in percentage. This ratio is calculated to find the profitability of business. A high gross profit margin ratio is a symbol of good management. If the actual gross profit ratio is lower than expectation then it provides that profit in the business is not sufficient in comparison to sales. This situation is not healthy for the business. Hence a low gross profit margin ratio should be carefully investigated. This may be due to higher cost of production, inefficient utilization of plant and machinery etc. The gross profit ratio has been calculated by using the following formula:

Gross Profit Ratio = $\frac{Gross\ Profit}{Net\ sales} \times 100$

The following table shows the gross profit ratio of selected petroleum companies:

Table 1: Gross Profit Ratio of Selected Petroleum Companies Under Study
(From: 2012-13 to 2016-17)
(Ratio in Percentage)

Years	BPCL	HPCL
2012-13	8.57	5.53
2013-14	9.55	5.54
2014-15	10.68	5.20
2015-16	15.30	8.82
2016-17	14.83	9.88
Mean	11.79	6.99
S.D	2.76	1.96
C.V	0.23	0.28

Source: Annual Reports and Accounts of selected companies for study.

The above table shows that the gross profit ratio of BPCL showed an increasing trend during the period of study. It was mainly because of increasing cum decreasing trend of sales of the company which affected the gross profit of the company also. The gross profit ratio of the company during the year 2012-13 was 8.57 percent which increased to 9.55 percent in 2013-14. This ratio further increased to 10.68 percent in 2014-15 but decreased to 15.30 percent in 2015-16 and marginally decreased to 14.83 percent in 2016-17. The average of the gross profit ratio for the period of study was 11.79 percent which can be regarded quite satisfactory as the higher gross profit ratio provides the safety to the company to cover the indirect expenses. The coefficient of variation was 0.23 percent denoting a consistent trend of the ratio which should be maintained in future also. It can be suggested that the management of the company should continue the same policy in future.

HPCL

It can be noted from the above table that the gross profit ratio of HPCL Ltd. showed an increasing trend throughout the period of study except in the year 2014-15. It should be noted that the sales and gross profit of the company showed an increasing cum decreasing trend during the period of study. The increasing trend of the gross profit ratio denotes that the management of the company has kept the cost of goods sold under control despite decrease in the sales. The gross profit ratio of the company varied within the range of 9.88 percent in 2016-17 to 5.53 percent in 2012-13. The average of the gross profit ratio was 6.99 percent which cannot be regarded satisfactory and it can be suggested that to increase the gross profit ratio either the management should try to increase the sales or reduce or control the cost of goods sold. The coefficient of variation was 0.28 percent showing a consistent trend should be maintained in future.

Test of Hypothesis

õ **Null Hypothesis**

H_0: "There is no significant difference in the gross profit ratio of the companies under study".

Critical Value of t: 3.16

Table Value on d.f. 8 at 5% level: 2.306

Inference: the critical value of t (3.16) is more than the table value (2.306) at 5% level of significance. Hence, the null hypothesis is rejected and it can be concluded that the difference in the gross profit ratio of the companies under study is significant.

Net Profit Ratio

This ratio measures the relationship between net profit and sales of a firm. Net profit is the excess of revenue over expenses during a particular accounting period. “It is also called net profit to sales ratio. The profit margin is indicative of management’s ability to operate the business with sufficient success not only to recover from revenues of the period, cost of merchandise or services, the expenses of operating the business and cost of borrowed fund, but also to leave a margin of reasonable compensation to the owners for providing their capital at risk. Higher the ratio of net operating profit to sales better is the operational efficiency of the concern.”

The net profit ratio is determined by dividing the net profit by sales and expressed as percentage the formula used is as follows:

$$\frac{Net\ Profit\ (after\ tax)}{Net\ Sales} \times 100$$

The following table shows the net profit ratio of selected petroleum companies:

Table 2: Net Profit Ratio of Selected Petroleum Companies under Study

(From: 2012-13 to 2016-17)

(Ratio in Percentage)

Years	BPCL	HPCL
2012-13	0.8	0.23
2013-14	1.48	0.46
2014-15	1.98	0.69
2015-16	4.04	2.63
2016-17	4.33	4.39
Mean	2.53	1.68
S.D	1.41	1.60
C.V	0.56	0.95

Source: Annual Reports and Accounts of selected companies for study.

The above table shows that the net profit ratio of **BPCL** showed a increasing trend during the period of study. It was mainly because of increasing trend of sales and decreasing trend of operating expenses of the company which affected the net profit of the company also. The net profit ratio of the company during the year 2012-13 was 0.80 percent which increased to 1.48 percent in 2013-14. This ratio further increased to 1.98 percent in 2014-15 and 4.04 percent in 2015-16 and increased to 4.33 percent in 2016-17. The average of the net profit ratio for the period of study was 2.53 percent which can be regarded quite satisfactory as per the trend of petroleum industry. Sufficient amount of net profit ratio provides the safety to the company to distribution of dividend to the shareholders and making sufficient reserves for the company. However, the coefficient of variation was 0.56 percent denoting a consistent trend of the ratio which should be maintained in future also. It can be suggested that the management of the company should continue the same policy in future.

HPCL

It can be noted from the above table that the net profit ratio of HPCL showed a increasing trend throughout the period of study. It should be noted that the sales are rising and the non-operating expenses including interest are altogether falling making net profit moving upwards. The net profit ratio of the company varied within the range of 0.23 percent in 2012-13 to 4.39 percent in 2014-15. The average of the net profit ratio was 1.68 percent which cannot be regarded satisfactory and it can be suggested that to increase the net profit ratio either the management should try to increase the sales or reduce or control the indirect cost and non-operating expenses. The coefficient of variation was 0.95 percent showing a consistent trend but this consistency is not sufficient with regard to amount of profit. It can be suggested that company should control the increasing inventory by investing less in new projects and trying to make an effort to sale its existing projects. Because its depreciation cost is rising of the assets which become its fixed assets.

Test of Hypothesis

Null hypothesis

H_0: There is no significant difference between net profit ratio of the companies under study.

Critical Value of t: 0.89

Table Value on d.f. 8 at 5% level: 2.306

Therefore, the critical value of t (0.89) is less than the table value (2.306) at 5% level of significance. Hence, there is no significant difference between net profit ratio of selected companies and null hypothesis is accepted for the study of the company.

Operating Profit Ratio

Operating Profit Ratio establishes relationship of operating profit and net sales of a firm. This ratio is also known as “Net Operating Income ratio”. Operating profit refers to the amount of profit which is left after deducting all direct and indirect expenses relating to the business. It is expressed through a percentage. Higher percentage indicates good business performances. Actually it indicates overall efficiency of the business. Operating profit is “the net profit arising from the normal operations and activities of an enterprise without taking account of extraneous transactions and expenses of a purely financial nature.” It is calculated as follows:

$$= \frac{\textbf{Operating profit or Earning before interest and taxes (EBIT)}}{\textbf{Net Sales}} \times \textbf{100}$$

This ratio indicates the net profitability of the main business i.e. operating efficiency of a firm. in some firms, the profit form main business is very low, while the profit from secondary functions such as interest on bank deposits and dividend on share etc. is so much that the net profit of the firm at the end is enhanced. In such a case, the operating profit ratio explains that the efficiency of the firm is very low. The following table shows the operating profit ratio of selected petroleum companies:

Table 3: Operating Profit Ratio of Selected Petroleum Companies under Study

(From: 2012-13 to 2016-17)

(Ratio in Percentage)

Years	BPCL	HPCL
2012-13	7.56	4.43
2013-14	8.56	4.25
2014-15	9.43	4.05
2015-16	14.20	7.22
2016-17	13.78	8.40
Mean	10.71	5.67
S.D	2.75	1.79
C.V	0.26	0.32

Source: Annual Reports and Accounts of selected companies for study.

The above table shows that the operating profit ratio of **BPCL** showed a increasing trend during the period of study. It was mainly because of increasing trend of sales and decreasing trend of operating expenses of the company which affected the operating profit of the company also. The operating profit ratio of the company during the year 2012-13 was 7.56 percent which increased to 8.56 percent in 2013-14. This ratio increased to 9.43 percent in 2014-15 and 14.20 percent in 2015-16. This ratio further decreased to 13.78 percent in 2016-17. The average of the operating profit ratio for the period of study was 10.71 percent which can be regarded quite satisfactory as per the trend of petroleum industry. High amount of operating profit ratio provides the safety to the company to cover non-operating expenses and cost of debt for the company. However, the coefficient of variation was 0.26 percent denoting a consistent trend of the ratio which should be maintained in future also. It can be suggested that the management of the company should continue the same policy in future.

HPCL

It can be noted from the above table that the operating profit ratio of HPCL showed an increasing cum decreasing trend throughout the period of study. It should be noted that the sales are falling and the operating expenses showed an increasing cum decreasing trend. The operating profit ratio of the company varied within the range of 8.40 percent in 2016-17 to 4.05 percent in 2014-15. The average of the operating profit ratio was 5.67 percent which is low satisfactory and it can be suggested that to increase the operating profit ratio either the management should try to increase the sales or reduce or control the cost of goods sold and operating expenses. The coefficient of variation was 0.32 percent showing a consistent trend but this consistency is not sufficient with regard to amount of profit. It can be suggested that company should control the increasing inventory by investing less in new projects and trying to make an effort to sale its existing projects.

Test of Hypothesis

Null hypothesis

H_0: "There is no significant difference between operating profit ratio of the companies under study".

Critical Value of t: 3.43

Table Value on d.f. 8 at 5% level: 2.306

Therefore, the critical value of t (3.43) is more than the table value (2.306) at 5% level of significance. Hence, there is significant difference between operating profit ratio of selected companies and null hypothesis is rejected for the study of the company.

Profitability Based on Investment

Return on Investment or Capital Employed Ratio: Return on capital employed ratio establishes the relationship of profit (profit means profit before interest and tax) with capital employed. The net result of operation of a business is either profit or loss. The primary object of making investment in any business is to obtain adequate return on capital invested. Therefore, to measure the overall profitability of the firm, it is essential to compare profit with capital employed. With this objective, return on capital employed is calculated. The sources, i.e., funds used by the business to earn this (profit or loss) are proprietor's (shareholders) funds and loans. This ratio is computed by dividing the net profit before interest, tax and dividends by capital employed. In the form of formula, this ratio may be expressed as follows:

$$\frac{NetProfit\ After\ Interest\ \&Tax}{Capital\ Employed} \times 100$$

Since profit is the overall objective of a business enterprise, this ratio is a barometer of the overall performance of the enterprise. It measures how efficiently the capital employed in the business is being used. In other words, it is also measure of the earning power of the net assets of the business. Even the performance of two dissimilar firms may be compared with the help of this ratio. Furthermore, the ratio can be used to judge the borrowing policy of the enterprise. If an enterprise having the ratio of return on investment of 15%, borrows at 16%, it would indicate that it is borrowing at a rate higher than its earning rate. The comparisons of this ratio with that of similar firms and with industry average over a period of time would disclose as to how effectively the long-term funds provided by owners and creditors have been used.The following table shows the return on investment profit ratio of selected petroleum companies:

Table 4: Return on Capital Employed Ratio of Selected Petroleum Companies Under Study (From: 2012-13 to 2016-17) (Ratio in Percentage)

Years	BPCL	HPCL
2012-13	5.89	1.20
2013-14	8.64	2.10
2014-15	10.28	2.75
2015-16	13.68	10.96
2016-17	14.11	23.84
Mean	10.52	8.17
S.D	3.10	8.58
C.V	0.29	1.05

Source: Annual Reports and Accounts of selected companies for study.

The above table shows that the return on capital employed ratio of BPCL showed a increasing trend during the period of study. It was mainly because of increasing trend of net profit of the company. The return on capital employed ratio of the company during the year 2012-13 was 5.89 percent which increased to 8.64 percent in 2013-14. This ratio further increased to 10.28 percent in 2014-15, 13.68 percent in 2015-16 and 14.11 percent in 2016-17. The average of the return on capital employed ratio for the period of study was 10.52 percent which is quite satisfactory. The return on capital employed ratio shows the relationship between profit and capital employed of the company and it is essential to compare this relationship because the primary object of making investment in any business is to obtain adequate return on capital invested. The coefficient of variation was 0.29 percent denoting a consisted trend of the ratio which should be maintained in future.

HPCL

It can be observed from the table that the return on capital employed ratio of HPCL showed an increasing trend throughout the period of study. It should be noted that the long term borrowings of the company showed an increasing cum decreasing trend and fixed assets of the company showed an increasing trend during the period of study. The return on capital employed ratio of the company was 1.20 percent in 2012-13 which increased to 2.10 percent in 2013-14. This ratio further increased to 2.75 percent in 2014-15 and increased to 10.96 percent in 2015-16 and 23.84 percent in 2016-17. The average of the return on capital employed ratio was 8.17 percent which can be regarded satisfactory. The coefficient of variation was 1.05 percent showing a consisted trend which should be maintained in future.

Test of Hypothesis

Null hypothesis

H_0: "There is no significant difference between return on capital employed ratio of the companies under study".

Critical Value of t: 0.58

Table Value on d.f. 8 at 5% level: 2.306

Therefore, the critical value of t (0.58) is less than the table value (2.306) at 5% level of significance. Hence, there is no significant difference between return on capital employed ratio of selected companies and null hypothesis is accepted for the study of the company.

Return on Equity Ratio

This ratio expresses the percentage relationship between net profit (after interest and tax) and net worth. This is also known as return on proprietor's fund. It is used to ascertain the rate of return on resources provided by the shareholders. The ratio is calculated by using the following formula:

$$= \frac{\textbf{Net profit (after tax and interest)}}{\textbf{Net worth or shareholder's fund}} \times \textbf{100}$$

This ratio measures the amount of earning for each rupee that the shareholders have invested in the company. The higher the ratio the move favourable is the interpretation of the company use of its resources contributed by the shareholders. This ratio can be composed with that of other units engaged in similar activities as also with the industry on average. The following table shows the return on equity ratio of selected petroleum companies:

Table 5: Return on Equity Ratio of Selected Petroleum Companies Under Study

(From: 2012-13 to 2016-17)

(Ratio in Percentage)

Years	BPCL	HPCL
2012-13	10.85	3.69
2013-14	19.00	7.71
2014-15	20.15	10.67
2015-16	25.73	28.05
2016-17	26.61	39.09
Mean	20.47	17.84
S.D	5.66	13.49
C.V	0.28	0.76

Source: Annual Reports and Accounts of selected companies for study.

The above table shows that the return on owner's equity ratio of **BPCL** showed a increasing trend during the period of study. It was mainly because of increasing trend of net profit of the company but the owner's equity showed an increasing trend during the period of study. The return on owner's equity ratio of the company during the year 2012-13 was 10.85 percent which increased to 19.00 percent in 2013-14. This ratio further increased to 20.15 percent in 2014-15, 25.73 percent in 2015-16 and 26.61 percent in 2016-17. The average of the return on owner's equity ratio for the period of study was 20.47 percent which is quite satisfactory. The return on owner's equity ratio shows the relationship between profit and owner's equity of the company. The coefficient of variation was 0.28 percent denoting a constant trend of the ratio which should be maintained in future.

HPCL

It can be noted from the table that the return on owner's equity ratio of HPCL showed a increasing trend throughout the period of study. It should be noted that the long term borrowings of the company showed an increasing cum decreasing trend. The return on owner's equity ratio of the company was varied from 3.69 percent in 2012-13 which increased to 39.09 percent in 2016-17. The average of the return on owner's equity ratio was 17.84 percent which can be regarded satisfactory and it can be suggested that to maintain the profit for maintained the return on owner's equity ratio. The coefficient of variation was 0.76 percent showing a constant trend. It is suggested that the company should try to maintain the same policy.

Test of Hypothesis

Null hypothesis

H_0: "There is no significant difference between return on owner's equityratio of the companies under study".

Critical Value of t: 0.40

Table Value on d.f. 8 at 5% level: 2.306

Therefore, the critical value of t (0.40) is less than the table value (2.306) at 5% level of significance. Hence, there is no significant difference between return on owner's equity ratio of selected companies and null hypothesis is accepted for the study of the company.

Return on Total Assets

Profitability can also be measured by establishing relationship between net profit and total assets. this ratio measures the relationship between total funds invested i.e total asset and net profit after tax. Total assets mean all net fixed assets, current assets and non- trading investments. Fictitious assets are excluded but intangible assets are included only when they have realizable value. expressed as formula, the ratio is:

This ratio measures the profitability of investments which reflects managerial efficiency. The higher the ratio, the better is the profit earning capacity of the firm or vice versa. But this ratio does not reveal the profitability of different sources of funds used in purchasing the total assets.

Objective

The objective of calculating this ratio is to find out how efficiently the total assets have been used by the management. This ratio reveals the profitability of total assets, hence it throws light on how efficiently the assets are utilized by the management. Higher the ratio the more beneficial for the concern.

Computation Formula – This ratio is computed as follows:

$$\text{Return on Total Assets} = \frac{\textit{Net Profit after Tax} + \textit{Interest}}{\textit{Total Assets excluding Fictitious Assets}} \times 100$$

The following table shows the return on total assets ratio of selected petroleum companies:

Table 6: Return on Total Assets of Selected Petroleum Companies under Study

(From: 2012-13 to 2016-17)

(Ratio in Percentage)

Years	BPCL	HPCL
2012-13	5.60	3.12
2013-14	5.74	3.01
2014-15	5.60	3.12
2015-16	6.89	3.89
2016-17	8.63	11.01
Mean	6.49	4.83
S.D	1.17	3.11
C.V	0.18	0.64

Source: Annual Reports and Accounts of selected companies for study

The above table shows that the return on total assets ratio of **BPCL** showed an increasing trend during the period of study. It was mainly because of increasing trend of net profit of the company and the total assets showed an increasing trend during the period of study. The return on total assets ratio of the company during the year 2012-13 was 5.60 percent which increased to 5.74 percent in 2013-14. This ratio decreased to 5.60 percent in 2014-15 but it again increased to 6.89 percent in 2015-16 and increased to 8.63 percent in 2016-17. The net profit of BPCL is continuously increasing while the amount of investment in total assets is consistently increasing leaving return on total assets increased. The average of the return on total assets ratio for the period of study was 6.49 percent which is quite satisfactory. The coefficient of variation was 0.18 percent denoting a constant trend of the ratio which should be maintained in future.

HPCL

It can be noted from the table that the return on total assets ratio of HPCL showed a increasing trend during the period of study. The return on total assets ratio of the company was varied from 3.12 percent in 2012-13 which increased to 11.01 percent in 2016-17. The net profit of HPCL showed an increasing cum decreasing trend while its assets are rising at a rapid pace. The average of the return on total assets ratio was 4.83 percent which cannot be regarded satisfactory and it can be suggested that it should increase the profit for increasing the return on total assets. The coefficient of variation was 0.64 percent showing a constant trend. It is suggested that the company should try to maintained the variation regarding return on total assets ratio of the company.

Test of Hypothesis

Null hypothesis

H_0: "There is no significant difference between return on total assets ratio of the companies under study".

Critical Value of t: 1.12

Table Value on d.f. 8 at 5% level: 2.306

Therefore, the critical value of t (1.12) is less than the table value (2.306) at 5% level of significance. Hence, there is no significant difference between return on total assets ratio of selected companies and null hypothesis is accepted for the study of the company.

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