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PROFITABILITY ANALYSIS OF HINDUSTAN PETROLEUM CORPORATION LIMITED AND BHARAT PETROLEUM CORPORATION LIMITED: A COMPARATIVE STUDY

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ABSTRACT

The present study makes an attempt to study comparative analysis on profitability of above two public oil and natural gas companies Hindustan Petroleum Corporation of India and Bharat Petroleum Corporation Limited. The objective of the present study is to analyse the profitability of these two companies during the study period of five years from 2012-13 to 2016-17. It has employed statistical tools of non-parametic test i.e. Mann Whitney U test to draw inference on hypotheses framed to compare the profitability of two companies. The study has applied eight ratios to measure profitability of these companies. gross profit ratio, net profit ratio, operating profit ratio, return on gross capital employed ratio, interest coverage ratio, operating ratio, total assets turnover ratio and operating expense ratio, ratios of Bharat Petroleum Corporation Limited is higher as compared to Hindustan Petroleum Corporation Limited during the period of five years. Only the operating ratio of Hindustan Petroleum Corporation Limited is higher than Bharat Petroleum Corporation Limited during the same period.

KEYWORDS: *Operating Profit Ratio, Interest Coverage Ratio, Operating Ratio, Operating Expense Ratio.*

Introduction

Profit is the absolute term which is needed for every business house. A business must earn profit for existence in society. No business can survive without earning adequate profit. Profitability means ability to earn return on investment through business activities of an organisation, company, firm, or an enterprise. It shows how efficiently the management can make profit by using all the resources available in the market. Profitability is the main indicator of the efficiency and effectiveness of a business enterprise in achieving its goal of earning profit (Khatik, S.K. and Thakur,V, 2017).

Brief Profile of the Company

Hindustan Petroleum Corporation Limited is a state owned oil and natural gas company having its headquarter located in Mumbai. The company has more than 18000 employees and a business turnover of 8 million dollar. It was founded in the year 1974. The Government of India owns 51.11 percent in the company and was listed in the Fortune Global 500 list of the world's biggest corporation as of 2016. M.K. Suvarna is the managing director and chairman of the company (www.linkedin.com.) Bharat Petroleum Corporation Limited belongs to category of a publicly-owned industry with its head office located in Mumbai, Maharashtra. With a turnover of 40 billion dollar the company has more than 15000 employees and is well known in the oil, gas and petroleum. The company has two major refineries situated in Mumbai and Cochin. The company was ranked in the Fortune 500 global list. S. Varadarajan is the managing director and chairman of the company (www.linkedin.com.).

Literature Review

Khatik, S.K. and Thakur,V.(2017) in their paper have calculated the profitability position of oil and natural gas corporation limited. It is found that operating profit is worthwhile for the company, management and stakeholders while return on capital employed is worthwhile for outsider's stakeholders.

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Bandinelli R. and Gamberi (2011) in their paper found that oil and gas industries do not use a methodology to develop new PSS. Moreover, a methodology for this specific sector seems not to be necessary, while the application of some tools of the existing methods could improve the servitization process performances of such companies.

Gupta, S. and Sharma, R.K.(2012) in their paper highlighted that the issue related to current practices used by ONGC to determine the prices of crude oil, natural gas and value added products and also the various types of direct and indirect taxes imposed and paid by the company.

The above literature review shows that these studies have been conducted with respect to particulars aspects. There are not many comparative studies on profitability of two public limited oil and natural companies in India. Hence, the present study has been undertaken to fill the research gap.

Statement of the Problem

The oil and natural gas companies produce the oil and natural gas and our country depends on them. There are two categories public sector and private oil and natural gas companies in India. These companies have been ranked based on their performance. Of them, public sector undertakings i.e. Hindustan Petroleum Corporation of India (HPCL) and Bharat Petroleum Corporation Limited (BPCL) are among top ten performers in India. The present study makes an attempt to study comparative analysis on profitability of above two public oil and natural gas companies.

Objectives of the Study

The objective of the present study is to analyse the profitability of Hindustan Petroleum Corporation Limited and Bharat Petroleum Corporation Limited during the study period of five years from 2012-13 to 2016-17.

Hypotheses Framed

H_{o1}: There is no significant difference of gross profit ratio of HPCL and BPCL during the study period of five years.

H_{o2}: There is no significant difference of net profit ratio of HPCL and BPCL during the study period of five years.

H_{o3}: There is no significant difference of operating profit ratio of HPCL and BPCL during the study period of five years.

H_{o4}: There is no significant difference of return on gross capital employed ratio of HPCL and BPCL during the study period of five years.

H_{o5}: There is no significant difference of interest coverage ratio of HPCL and BPCL during the study period of five years.

H_{o6}: There is no significant difference of operating ratio of HPCL and BPCL during the study period of five years.

H_{o7}: There is no significant difference of total assets turnover ratio of HPCL and BPCL during the study period of five years.

H_{o8}: There is no significant difference of operating expense ratio of HPCL and BPCL during the study period of five years.

Research Methodology

The research design in the present study is empirical in nature. The study pertains to secondary sources of data and these have been collected from various sources of annual report of two concerned companies, research article published in journal and article published website. The study is for the period of five years ranging from 2012-13 to 2016-17. It has employed statistical tools of non-parametic test i.e. kruskal wallis test to draw inference on hypotheses framed to compare the profitability of two oil and gas companies. The study has applied eight ratios to measure profitability which was used by Khatik, S.K. and Vandana, T. in their study entitled Profitability Analysis of Public Sector Undertaking: A Case Study of Oil and Natural Gas Corporation of India. The variables used for measuring profitability of the company in this study include gross profit ratio, net profit ratio, operating profit ratio, return on gross capital employed ratio, interest coverage ratio, operating ratio, total assets turnover ratio and operating expense ratio. The formula for calculating key profitability ratios

Gross Profit Ratio= Gross Profit/Net Profit x100

Operating Profit Ratio= Operating Profit/Net Profit x100

Net profit ratio= Net Profit/Net Sales x100

Return on Gross capital Employed Ratio=Profit before Interest and Tax/ Total Assets x100

Interest Coverage Ratio = Earnings before Interest and Tax (EBIT)/Interest Expense x 100

Operating Ratio = Cost of Goods sold + operating Expenses/Net Sales x100

Total Assets Turnover Ratio= Net Sales/Total Assets x100

Operating Expenses Ratio = Operating Expenses/Net Sales x100

Analysis and Result

The portion of study has analysed the profitability of Hindustan Petroleum Corporation Limited is higher than Bharat Petroleum Corporation Limited with the help of financial key ratios to yield result and then drawn inference based on these ratios by using the inferential statistics.

Table 1: Gross Profit Ratio of HPCL and BPCL (Rs. in crore)

	HPCL			BPCL		
Year	**Gross Profit**	**Net Sales**	**Ratio in pc**	**Gross Profit**	**Net Sales**	**Ratio in pc**
2012-13	4821.78	215893.64	2.24	7787	229796	3.39
2013-14	6140.31	232275.82	2.64	9555	253492	3.93
2014-15	6831.86	217061.11	3.15	10515	247552	4.25
2015-16	9083.45	197437.53	4.60	12801	218072	5.87
2016-17	12091.77	213488.95	5.66	13430	243476	5.52

Source: Annual Report of HPCL and BPCL for five years from 2012-13 to 2016-17

Table1 shows that gross profit ratio of HPCL in the initial year 2012-13 is 2.24 percent which continues going up in each year during the whole study period. Whereas this ratio of BPCL is shown as 3.39 percent in 2012-13 and its upward trend is continuing during three succeeding years up to 2015-16, it decreases to 5.52 percent in last year 2016-17 during the period. It is observed that this ratio of BPCL is better as compared to HPCL during five years.

Table 2: Net Profit Ratio of HPCL and BPCL (Rs. in crore)

	HPCL			BPCL		
Year	**Net Profit**	**Net Sales**	**Ratio in pc**	**Net Profit**	**Net Sales**	**Ratio in pc**
2012-13	904.71	215666.45	0.42	2643	229796	1.15
2013-14	1733.77	232275.82	0.75	4061	253492	1.60
2014-15	2733.26	217061.11	1.26	5085	247552	2.05
2015-16	3726.16	197437.53	1.89	7056	218072	3.24
2016-17	6208.80	213488.95	2.91	8039	243476	3.30

Source: Annual Report of HPCL and BPCL for five years from 2012-13 to 2016-17

Table 2 demonstrates that net profit ratio of HPCL is 0.42 percent in the year 2012-13 which is increasing in each year during the period of five years. On the other hand, this ratio of BPCL is 1.15 percent in 2012-13 which goes up in each year over the whole period. The comparative analysis of two companies shows that this ratio of BPCL is greater as compared to HPCL during five years.

Table 3: Operating Profit Ratio of HPCL and BPCL (Rs. in crore)

	HPCL			BPCL		
Year	**Operating Profit**	**Net Sales**	**Ratio in pc**	**Operating Profit**	**Net Sales**	**Ratio in pc**
2012-13	2839.13	215666.45	1.32	9713	229796	4.23
2013-14	3922.21	232275.82	1.69	11802	253492	4.66
2014-15	4704.41	217061.11	2.17	13031	247552	5.26
2015-16	6379.37	197437.53	3.23	14646	218072	6.72
2016-17	8744.08	213488.95	4.10	15321	243476	6.29

Source: Annual Report of HPCL and BPCL for five years from 2012-13 to 2016-17

Table 3 shows that operating profit ratio of HPCL in 2012-13 is 1.32 percent which is going up in each year during the study period. On the other hand, this ratio of BPCL is 4.23 percent in 2012-13 its continuous upward trend is observed during three succeeding years up to 2015-16, it decreases to 6.29

percent in last year 2016-17 The comparative analysis of two companies shows that this ratio of BPCL is higher as compared to HPCL during five years.

Table 4: Return on Gross Capital Employed Ratio of HPCL and BPCL (Rs. in crore)

	HPCL			BPCL		
Year	**EBIT**	**Total Assets**	**Ratio in pc**	**EBIT**	**Total Assets**	**Ratio in pc**
2012-13	2839.13	76244.73	3.72	9713	43282	22.44
2013-14	3922.21	77993.17	5.03	11802	42360	27.86
2014-15	4704.41	67550.64	6.96	13031	38453	33.89
2015-16	6379.37	69579.29	9.17	14646	47090	31.10
2016-17	8744.08	78463.91	11.14	15321	57828	26.49

Source: Annual Report of HPCL and BPCL for five years from 2012-13 to 2016-17

Gross capital employed ratio of HPCL in 2012-13 shows 3.72 percent then is increasing in each year during the period up to 2016-17 (Table 4). This ratio of BPCL is calculated as 22.44 percent in 2012-13 its continuous upward trend is observed during three succeeding years up to 2015-16, it decreases to 26.49 percent in last year 2016-17. It is observed from comparative analysis of two companies that this ratio of BPCL is much higher as compared to HPCL during five years.

Table 5: Interest Coverage Ratio of HPCL and BPCL (Rs. in crore)

	HPCL			BPCL		
Year	**EBIT**	**Interest Expenses**	**Ratio in pc**	**EBIT**	**Interest Expenses**	**Ratio in pc**
2012-13	2839.13	1412.80	200.96	9713	1825	532.21
2013-14	3922.21	1336.36	293.50	11802	1359	868.43
2014-15	4704.41	706.59	665.79	13031	583	2235.16
2015-16	6379.37	653.60	976.04	14646	565	2592.21
2016-17	8744.08	535.65	1632.42	15321	496	3088.91

Source: Annual Report of HPCL and BPCL for five years from 2012-13 to 2016-17

Interest coverage ratio of HPCL shows that it is 200.96 percent in 2012-13 which is increasing in each year during the period up to 2016-17 (Table 5). This ratio of BPCL is calculated as 532.21 percent in 2012-13 and it continues rising up to the period 2016-17. The comparative analysis of two companies has been observed that this ratio of BPCL is much greater as compared to HPCL over the study period.

Table 6: Operating Ratio of HPCL and BPCL (Rs. in crore)

	HPCL			BPCL		
Year	**Expenses**	**Net Sales**	**Ratio**	**Expenses**	**Net Sales**	**Ratio**
2012-13	215604.70	215666.45	99.97	227153	229796	98.85
2013-14	230542.00	232275.82	99.25	249431	253492	98.40
2014-15	214327.90	217061.11	98.74	242467	247552	97.95
2015-16	193711.40	197437.53	98.11	211016	218072	96.76
2016-17	207280.20	213488.95	97.09	235436	243476	96.70

Source: Annual Report of HPCL and BPCL for five years from 2012-13 to 2016-17

The operating ratio of HPCL shows 99.97 percent in 2012-13 and it decreases in next year (Table 6). It rises to 98.74 percent in 2014-15 which goes down in the next two consecutive years. This ratio of BPCL is 98.85 percent in 2012-13 and it decreases to 98.40 percent in 2013-14. It goes up to 97.95 percent in 2014-15 and then declines in the consecutive two years.

Table 7: Total Assets Turnover Ratio of HPCL and BPCL (Rs. in crore)

	HPCL			BPCL		
Year	**Net Sales**	**Total Assets**	**Ratio in pc**	**Net Sales**	**Total Assets**	**Ratio in pc**
2012-13	215666.45	76244.73	282.86	229796	43282	530.93
2013-14	232275.82	77993.17	297.82	253492	42360	598.42
2014-15	217061.11	67550.64	321.33	247552	38453	643.78
2015-16	197437.53	69579.29	283.76	218072	47090	463.10
2016-17	213488.95	78463.91	272.09	243476	57828	421.03

Source: Annual Report of HPCL and BPCL for five years from 2012-13 to 2016-17

Table 7 shows that total Assets turnover ratio of HPCL in 2012-13 is 282.86 percent and is going up three consecutive years. This ratio of BPCL is 530.93 percent in 2012-13 its continuous upward trend is observed during two succeeding years, it decreases to 463.10 percent in 2015-16 and 421.03 percent in the year 2016-17. The comparative analysis of two companies demonstrates that this ratio of BPCL is better as compared to HPCL during five years.

Table 8: Operating Expense Ratio of HPCL and BPCL (Rs. in crore)

	HPCL			BPCL		
Year	**Operating Expenses**	**Net Sales**	**Ratio**	**Operating Expenses**	**Net Sales**	**Ratio**
2012-13	4760.02	215666.45	2.207	5144	229796	2.24
2013-14	4406.54	232275.82	1.90	5494	253492	2.17
2014-15	4098.60	217061.11	1.89	5430	247552	2.19
2015-16	5357.29	197437.53	2.71	5745	218072	2.63
2016-17	5882.97	213488.95	2.76	5390	243476	2.213

Source: Annual Report of HPCL and BPCL for five years from 2012-13 to 2016-17

Operating expense ratio of HPCL in 2012-13 is 2.21 percent and is decreasing during two consecutive years. Then it increases to 2.71 percent in 2015-16 and 2.76 percent in 2016-17. This ratio of BPCL is 2.24 percent in 2012-13 and decreases to 2.17 percent in the next year. It increases in the next two consecutive years 2014-15 and 2015-16 which decreases to 2.213 percent in 2016-17.

Result of Inferential Statistics

H_{o1}: There is no significant difference of gross profit ratio of HPCL and BPCL during the study period of five years.

Table 9: Gross Profit Ratio of HPCL and BPCL

	HPCL		BPCL	
Year	**Ratio in pc**	**Rank**	**Ratio in pc**	**Rank**
2012-13	2.24	01	3.39	04
2013-14	2.64	02	3.93	05
2014-15	3.15	03	4.25	06
2015-16	4.60	07	5.87	10
2016-17	5.66	09	5.52	08
Sum of rank holder		22		33
No. of Data		05		05
U-Value	18			
Z-Value	1.27			

Table 9 demonstrates that the computed value U 18 which is higher than critical value of U (1) at 5 percent significance level. The calculation of z-value further 1.27 is lower than 1.96. There is enough evidence to support the null hypothesis. So, there is no significant difference of gross profit ratio of HPCL and BPCL during the study period of five years under review is accepted.

H_o: There is no significant difference of net profit ratio of HPCL and BPCL during the study period of five years.

Table 10: Net Profit Ratio of HPCL and BPCL

	HPCL		BPCL	
Year	**Ratio in pc**	**Rank**	**Ratio in pc**	**Rank**
2012-13	0.42	01	1.15	03
2013-14	0.75	02	1.60	05
2014-15	1.26	04	2.05	07
2015-16	1.89	06	3.24	09
2016-17	2.91	08	3.30	10
Sum of rank holder		21		34
No. of Data		05	05	
U-Value	18			
Z-Value	1.50			

The computed value U18 which is higher than critical value of U (1) at 5 percent significance level (Table 10).The calculation of z-value 1.50 is less than 1.96. There is enough evidence to support the null hypothesis framed. So, null hypothesis that there is no significant difference of net profit ratio of HPCL and BPCL during the study period of five years under review can be accepted.

H_o: There is no significant difference of operating profit ratio of HPCL and BPCL during the study period of five years.

Table 11: Operating Profit Ratio of HPCL and BPCL

	HPCL		BPCL	
Year	**Ratio in pc**	**Rank**	**Ratio in pc**	**Rank**
2012-13	1.32	01	4.23	06
2013-14	1.69	02	4.66	07
2014-15	2.17	03	5.26	08
2015-16	3.23	04	6.72	10
2016-17	4.10	05	6.29	09
Sum of rank holder		15		40
No. of Data		05		05
U-Value	0			
Z-Value	2.384			

The computed value U 0 which is equal to critical value of U (1) at 5 percent significance level (Table 11).The calculation of z-value 2.384 is higher than 1.96. So, null hypothesis can not be accepted and alternative hypothesis that there is significant difference of operating profit ratio of HPCL and BPCL during the study period of five years under review can be accepted.

H_o: There is no significant difference of return on capital employed ratio of HPCL and BPCL during the study period of five years

Table 12: Return on Capital Employed of HPCL and BPCL

	HPCL		BPCL	
Year	**Ratio in pc**	**Rank**	**Ratio in pc**	**Rank**
2012-13	03.72	01	22.44	06
2013-14	05.03	02	27.86	08
2014-15	06.96	03	33.89	10
2015-16	09.17	04	31.10	09
2016-17	11.14	05	26.49	07
Sum of rank holder		15		40
No. of Data		05		05
U-Value	0			
Z-Value	2.384			

The computed value U 0 which is equal to critical value of U (2) at 5 percent significance level (Table 12).The calculation of z-value 2.384 is higher than 1.96. So, null hypothesis can not be accepted and alternative hypothesis that there is significant difference of return on capital employed ratio of HPCL and BPCL during the study period of five years under review can be accepted.

H_o: There is no significant difference of interest coverage ratio of HPCL and BPCL during the study period of five years.

Table 13: Interest Coverage Ratio of HPCL and BPCL

	HPCL		BPCL	
Year	**Ratio in pc**	**Rank**	**Ratio in pc**	**Rank**
2012-13	200.96	01	532.21	03
2013-14	293.50	02	868.43	05
2014-15	665.79	04	2235.16	08
2015-16	976.04	06	2592.21	09
2016-17	1632.42	07	3088.91	10
Sum of rank holder		20		35
No. of Data		05		05
U-Value	20			
Z-Value	1.73			

The computed value U 20 which is higher than critical value of U (1) at 5 percent significance level (Table13).The calculation of z-value 1.73 is lower than 1.96. There is enough evidence to support the null hypothesis framed. So, null hypothesis that there is no significant difference of interest coverage ratio of HPCL and BPCL during the study period of five years under review can be accepted.

H_o: There is no significant difference of total asset turnover ratio of HPCL and BPCL during the study period of five years.

Table 14: Total Asset Turnover Ratio of HPCL and BPCL

	HPCL		BPCL	
Year	**Ratio in pc**	**Rank**	**Ratio in pc**	**Rank**
2012-13	282.86	02	530.93	08
2013-14	297.82	04	598.42	09
2014-15	321.33	05	643.78	10
2015-16	283.76	03	463.10	07
2016-17	272.09	01	421.03	06
Sum of rank holder		15		40
No. of Data		05		05
U-Value	0			
Z-Value	2.384			

The computed value U 0 which is equal to critical value of U (1) at 5 percent significance level (Table 14).The calculation of z-value 2.384 is higher than 1.96. So, null hypothesis can not be accepted and alternative hypothesis that there is significant difference of total asset turnover ratio of HPCL and BPCL during the study period of five years under review can be accepted.

H_o: There is no significant difference of operating ratio of HPCL and BPCL during the study period of five years.

Table 15: Operating Ratio of HPCL and BPCL

	HPCL		BPCL	
Year	**Ratio**	**Rank**	**Ratio**	**Rank**
2012-13	99.97	10	98.85	08
2013-14	99.25	09	98.40	06
2014-15	98.74	07	97.95	04
2015-16	98.11	05	96.76	02
2016-17	97.09	03	96.70	01
Sum of rank holder		34		21
No. of Data		05		05
U-Value	06			
Z-Value	1.50			

The computed value U 2 which is less than critical value of U (1) at 5 percent significance level (Table 15).The calculation of z-value 1.50 is lower than 1.96. So, as per null hypothesis, there is no significant difference of operating ratio of HPCL and BPCL during the study period of five years under review can be accepted.

H_o: There is no significant difference of operating expense ratio of HPCL and BPCL during the study period of five years.

Table 16: Operating Expense Ratio of HPCL and BPCL

	HPCL		BPCL	
Year	**Ratio**	**Rank**	**Ratio**	**Rank**
2012-13	2.207	05	2.24	07
2013-14	1.90	02	2.17	03
2014-15	1.89	01	2.19	04
2015-16	2.71	09	2.63	08
2016-17	2.76	10	2.213	06
Sum of rank holder		27		28
No. of Data		05		05
U-Value	13			
Z-Value	0.35			

The computed value U which is equal to critical value of U (1) at 5 percent significance level (Table 16).The calculation of z-value 0.35 is lower than 1.96. So, as per null hypothesis, there is no significant difference of operating expense ratio of HPCL and BPCL during the study period of five years under review can be accepted.

Research Implication

The present study has managerial implication. It points out various profitability ratios of two public oil and natural companies about the future policy to be adopted based on the present financial performance. This study will give picture to the government about the sort of deficiency of its present strategy of two companies undertaken. It is also useful for the government for future approach that it will follow to run the other public sector oil and companies.

Conclusion

It is observed that in seven ratios i.e. gross profit ratio, net profit ratio, operating profit ratio, return on gross capital employed ratio, interest coverage ratio, operating ratio, total assets turnover ratio and operating expense ratios of BPCL is higher as compared to HPCL during the period under review in the present study. Only the operating ratio of HPCL is higher than BPCL during the same period. The null hypothesis of the present study shows that there is statistically significant difference of BCPL and HPCL with respect to operating profit ratio, return on capital employed and total asset turnover ratio the period of five years. On the other hand, there is no statistically significant difference of BCPL and HPCL with respect to gross profit ratio, net profit ratio, interest coverage ratio, operating ratio and operating expense ratio over the period of five years. The comparative profitability of two oil and gas companies analysis demonstrates that BPCL is performing better than HPCL during the period of five years in the present study.

Research Limitation

The present study has certain limitations. It is an empirical study between two oil and gas companies only. Secondly, the period of study is limited to five years from 2012-13 to 2016-17. The full dependence on reliability of secondary sources of data poses another limitation of the present study.

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