An Evaluation of Profitability criterion of Petroleum Refinery Industries in India

Abstract
Every company should increase its production as well as plant capacity to get the benefit of economies of scale; larger the refineries, more will be the output and less will be the cost of refining To increase the profitability, there must be reduction in high administrative as well as raw materials cost. High cost of crude at international level may decrease the profitability but by considering and focusing on other cost of production, company can increase its profitability Increase the stock turnover ratio which in return lead towards increase in return on capital employed. Companies are not paying constant or regular dividend which adversely affect the shareholders’ confidence, company should try to make regular dividend by taking proper care of profitability and liquidity position Refinery industry is a capital intensive industry, which requires heavy capital expenditure; all capital expenditure for acquiring the assets should be taken after considering all the probable factors. Use of non-conventional sources of energy can also reduce the cost of refining and even positively help the environmental concern. By the proper use of operating assets, and reduction in non-operative expenses, companies can increase their profitability. Current research work emphasize on the profitability criterion of refinery industry in India.

JEL CODE : M4

Keywords: Profitability, Liquidity

1.1 An Introduction to Oil Industry in India

The origin of oil & gas industry in India can be traced back to 1867 when oil was struck at Makum near Margherita in Assam. At the time of Independence in 1947, the Oil & Gas industry was controlled by international companies. India's domestic oil production was just 250,000 tonnes per annum and the entire production was from one state - Assam.

This small amount of production made the oil experts from different countries predict the future of the oil industry as a dull one and also doubted India's ability to search for new oil reserves. But the Government of India declared the Oil industry in India as the core sector industry under the Industrial Policy Resolution bill in the year 1954, which helped the Oil Industry in India vastly.
1.2 CONCEPT OF PROFITABILITY

The word 'profitability' is composed of two words, namely; profit and ability. The term profit has already been discussed at length in detail. The term ability indicates the power of a firm to earn profits. The ability of an enterprise also denotes its earning power or operating performance. Also, that the business ability points towards the financial and operational ability of the business. So, on this basis profitability may be defined as—the ability of a given instrument to earn a return from its use Weston and Brigham defines profitability as "the net surplus of a large number of policies and decisions.". Profit being an absolute figure fails to indicate the adequacy of income or changes in efficiency resulting from financial and operational performance of an enterprise. Much difficulty and confusion comes home while interpreting the absolute figures of profit in case of historical or inter-firm comparisons due to variation in the size of investment or volume of sales etc. Such problems are handled by relating figures of profit either with the volume of sales or with the level of investment. A quantitative relationship is thereof established either in the form of ratios or percentages. Such ratios are names as profitability ratios. Thus, profitability may be regarded as a relative term measurable in terms of profit and its relation with other elements that can directly influence the profit.

\[
\text{Profitability} = \frac{\text{Operating Income}}{\text{Operating Assets}}
\]

1.3 Literature review

**Walker (1980)** risk means (a) risk of not maintaining adequate liquidity; (b) risk of having too much or too little inventory to maintain production and sales; (c) the risk of not granting adequate credit to support the proper level of sales. Profitability is the prime factor considered for the purpose of wealth maximization objective.

**Khandelwal (1985)** conducted a study on small scale industries in Jodhpur industrial estate for the period 1975-76 to 1979-80 to highlight their working capital management policies. In this study, 40 multi group units were selected on the basis of purposive sampling from 162 small scale units. The relevant data were collected from secondary sources. The study revealed that the immediate liquidity position of the selected unit was not at all satisfactory during the period under study.

**Venkatachalam and Murthy (1986)** made a study to find out the working capital position and its impact on liquidity position of the medium and large public limited companies in India for the period 1973-74 to 1982-83. The data were collected from RBI monthly bulletins. The study concluded that the liquidity status of the medium and large public limited companies was not all impressive.

**Misra and Khan (1990)** undertook a study on working capital management of Electronic Corporation of India Ltd. (ECIL) for the period 1983-84 to 1985-86. The study exhibited that a major portion of funds was invested in current assets. It ultimately generated idle liquid funds in the hands of ECIL, which in turn produced low return in the company.

**Jain (1993)** undertook a study to analyze the working capital management of seven selected paper companies belonging to both public sector and private sector in India. The study showed that the current ratio of the private sector paper companies registered a declining trend during the study period, whereas this ratio was found to be highly fluctuating in the public sector paper companies.
Soenen (1993), examined the relationship between the net trade cycle as a measure of working capital and return on investment in US firms using chi – square test showed a negative relationship between the length of net trade cycle and return on assets.

Lamberson (1995) analyzed the relationship between liquidity and bankruptcy cost by applying linear regression on panel data of 223 US firms for the period 1979 to 1981. This study revealed that the liquidity ratios were positively related to the bankruptcy cost, but negatively related to financial leverage.

Reddy and Rao (1996) in their study made an attempt to examine the working capital management practices in Hindustan Cables Limited (HCL), a public enterprise on the assumption that working capital policies had a great effect on a firm’s liquidity and profitability. The study was based on the data and information obtained from the annual reports of HCL form 1989-90 to 1993-94. The study demonstrated that the company maintained its current ratio and quick ratio above the conventional standard of 2:1 and 1:1 respectively.

Weinarab and Visscher (1998) examined the working capital investment and financing pattern of US industries over a period of ten years, form 1984 to 1993. The sample consisted of 15 to 33 companies from ten diverse industry groups. The study looked at to evaluate the relative relationship between the industries’ aggressive and conservative working capital policies. The study concluded that the aggressive policy registered higher expectation of higher profitability but greater liquidity risk, whereas a mere conservative policy showed a greater proportion of capital in liquid assets but at the sacrifice of profitability.

Ramesh and Patil (1999) conducted a study on Goa Urban Cooperative Bank Limited to evaluate liquidity, productivity and profitability for the period 1985-86 to 7996-97 by analyzing the necessary data and information collected from the annual reports of the bank. The study shows that the bank maintained adequate level of liquid funds to meet its short term obligation during the period of study.

Rajeshwari (2000) undertook an effort to evaluate the liquidity management of Tamilnadu Cement Corporation Ltd. For the period 1993-94 to 1997-98. The study concluded that the liquidity position of the company was highly volatile and also not at all satisfactory during the study period.

Deloof (2003) found significant negative relationship between gross operating income and number of days account receivables, inventories and account payables.

Eljelly (2004) evaluate the relationship between profitability and liquidity measured by the current ratio and cash gap on sample of joint stock companies of Saudi Arabia, using correlation and regression analysis revealed that Cash Conversion Cycle is more important than current ratio

Mukhopadhyay (2004) in his paper reviewed the working capital management of a Kolkatta based century old a heavy engineering company with special reference to its short term liquidity and solvency for the period 1993-94 to 2002-03. In this study, the interpretation of several ratios reflected that the interest of the short term creditors of the company was not at all protected by adequate liquidity.

Vishnani and Shah (2006) empirically examined the relation between liquidity and profitability in Indian Consumer Electronics Industry for a period of ten years from 1994-95 to 2004-05. For this study, 23 listed companies were selected and relevant data were collected from CMIE database. Out of 23 companies, nine
companies showed negative association between liquidity and profitability whereas remaining companies registered a positive association between two variables.

**Zakaria (2009)** made an attempt to measure static and dynamic liquidity of Malaysian small and medium enterprise, this study addressed the issue of examining the relationship between earnings, cash flow and corporate liquidity; the study indicated that both earnings and cash flow had effects on corporate liquidity in small and medium business in Malaysia.

**Garcia – Teruel and Martinez – Solano (2007)** showed that there was an inverse relationship between working capital and firm’s profitability.

### 1.4 RATIONALE OF THE STUDY

As earlier mentioned in the introduction the industry is core industry and it has a very large investment of the country. So it can be said that the large investments are blocked in the refineries undertaken for the study for the research purpose, it has been many reason for the significance of the study. The significance of the study is as follows: 1) If analysis is done in various aspects like liquidity, profitability, assets utilization, the relevant information can be furnished to its various users for their decision making. 2) It is also necessary to find out some important factors which affect internal decision of industry. So this research will be useful to refinery industry itself. 3) As far as many financial and non financial institute and also government affects by its various financial aspects, its various ratios should be analyzed and the most common factors affecting refineries’ financial position should be studied. So researcher feels its necessity and importance and therefore has chosen this subject for her doctoral research purpose. 4) Privatization is taking place in the oil sector. So, there should not be monopolization of any unit and competitiveness should be increased of all the unit. To create this situation, every unit should find out their financial position and various factors which affects to their financial condition. This study will help to create this type of condition. 5) A large mass of the country even from housewife to businessman has started to invest their money in the share markets. So financial analysis will be helpful to them to take proper decision to invest their money in these sectors. 6) Petroleum is a natural product and its sources are very limited. But the demand of petroleum product is increasing day by day. Oil demand grew by an average of 7.7% per year in last few years. For this, government should control his profitability and rate of oil prices. So if the data should be analyses financially. Moreover profitability and other financial aspects can be taken into the notice of this core industry. 7) Energy industry is obviously one of the most critical areas. Improving India’s energy infrastructure requires a massive increase in investment in all the sub sectors. It also requires much greater level of efficiency to ensure low cost and good quality of service. So, to improve the level of efficiency analyzed data of this research will be necessary. 8) The thesis will be a guiding path for the analysis of the study of the units which are not undertaken for this research. 9) Saurashtra University M.phil students has undertaken the research study by taking two refineries and tried to make financial analysis of relevant data. So by undertaking the 7 units for the research purpose it will be the further analysis of the industry.
1.5 SCOPE OF THE STUDY

The scope or area of the study includes the analysis of profitability vis a vis liquidity of oil refinery industry in India for the period of 2007-08 to 2012-13. The research has been focused on top seven refinery companies on the basis of paid up capital as on 31st March 2012.

1.6 UNIVERSE OF THE STUDY

The universe of the study consists of all the limited oil refinery companies working in India and listed in Bombay Stock Exchange.

1.7 SAMPLING DESIGN

There are total numbers of 21 oil refinery companies working in India, out of which 17 are public sector units, 3 are private sectors and 1 is Joint Venture Company. The sample of seven oil refinery were selected considering the following factors:

- Listed on Bombay Stock exchange
- Paid up capital during the year as on year ended 31st March 2012
- For the period form 2007-08 to 2012-13.

1.8 SOURCES AND COLLECTION OF DATA

The main source of data was published financial reports, statistical figures, economic survey; central statistical organization survey etc, for the purpose of research secondary data will be considered.

1.9 SAMPLE SIZE

Out of the 21 oil refinery companies following six companies on the bases of their paid up capital (as on 31st March 2012) were selected for the research work.

Following companies were selected:

<table>
<thead>
<tr>
<th>Sr.no.</th>
<th>Company name</th>
<th>*Paid up capital (Rs.Cr)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>ONGC</td>
<td>4277.76</td>
</tr>
<tr>
<td>2</td>
<td>RIL</td>
<td>3271</td>
</tr>
<tr>
<td>3</td>
<td>IOCL</td>
<td>2427.95</td>
</tr>
<tr>
<td>4</td>
<td>MRPL</td>
<td>1752.60</td>
</tr>
<tr>
<td>5</td>
<td>BPCL</td>
<td>361.54</td>
</tr>
<tr>
<td>6</td>
<td>HPCL</td>
<td>338.63</td>
</tr>
</tbody>
</table>

(*paid up capital as on 31-3-2012)
1.10 OBJECTIVE OF THE STUDY

Objectives of the present study are:

Prime Objectives

1. To study profitability position of refinery industries in India
2. To study profitability of refinery industries in India on the bases of gross profit, net profit, return on capital employed, return on net worth, EPS and DPS

1.11 HYPOTHESIS

- NH1 : There is no significant difference in gross profit ratio of refinery industry in India
- NH2 : There is no significant difference in net profit ratio of refinery industry in India
- NH3 : There is no significant difference in Return on Capital Employed of refinery industry in India
- NH4 : There is no significant difference in Return on Net Worth of refinery industry in India
- NH5 : There is no significant difference in EPS of refinery industry in India
- NH6 : There is no significant difference in DPS of refinery industry in India

1.12 ANALYSIS OF DATA

For the analysis of data, various tools techniques were taken into consideration, for analytical purpose ratio analysis was used. For checking profitability position of the company's gross profit, net profit, return on capital employed, earning per share, dividend per share, return on net worth ratios were used. Further, for verifying significance level F test was used. While to verify liquidity position of the company’s current ratio, quick ratio, inventory turnover, debtors turnover, debt to equity, fixed assets turnover ratio were used, to evaluate significance level, F test was used. While comparing profitability vis a vis liquidity position of companies, liquidity – profitability matrix was constructed, to further evaluating interrelationship multiple correlation was used. To verify interrelationship significance t test was applied.

Gross profit margin ratio

This ratio indicates the relationship between gross profit and sales. It reflects how well cost of goods sold, a major expense item, is being controlled. It shows the profit made on sales before taking account of overheads. Thus the gross profit margin highlights the production efficiency of a concern. It is always preferred to express this ratio in terms of percentage. The gross profit margin is computed by deducting cost of goods sold from the amount of sales as shown under;
Gross profit margin ratio = \frac{\text{sales} - \text{cost of goods sold}}{\text{sales}} \times 100

While interpreting the gross profit margin ratio, it is important to observe any trend, but in making comparisons between companies it is vital to appreciate that gross profit margin vary considerably from industry to industry. However, gross profit margin must be sufficient to meet administrative and distribution expenses, dividend and accumulation of reserves. The ratio is compared with earlier years ratio and important conclusions are drawn from such comparisons to the previous year, it may be concluded that:

a) Price of material purchased, freight, wages and other direct charges may have gone up but selling price may not have gone up in proportion to the increase in cost.
b) The selling prices may have fallen but the prices of materials, freight, wages and other direct charges may not have fallen relatively.
c) There may be misappropriation, theft or pilferage of stocks during the year.
d) There is fall in the sale of more profitable varieties of goods.
e) There is fall in the prices of unsold goods, thereby reducing the value of closing stock.

### TABLE NO. 1.1 GROSS PROFIT RATIO OF THE SELECTED REFINERY INDUSTRY UNDER THE STUDY FOR THE PERIOD OF (2007-08 TO 2012-13)

<table>
<thead>
<tr>
<th></th>
<th>2012-13</th>
<th>2011-12</th>
<th>2010-11</th>
<th>2009-10</th>
<th>2008-09</th>
<th>2007-08</th>
<th>AVG</th>
<th>SD</th>
<th>C.V(%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>BPCL</td>
<td>1.74</td>
<td>0.93</td>
<td>1.24</td>
<td>1.86</td>
<td>2.58</td>
<td>1.86</td>
<td>1.70</td>
<td>0.57</td>
<td>30.71</td>
</tr>
<tr>
<td>HPCL</td>
<td>1.1</td>
<td>1.3</td>
<td>1.43</td>
<td>2</td>
<td>1.84</td>
<td>0.95</td>
<td>1.44</td>
<td>0.41</td>
<td>43.37</td>
</tr>
<tr>
<td>IOCL</td>
<td>1.9</td>
<td>3.09</td>
<td>2.43</td>
<td>4.4</td>
<td>3.46</td>
<td>3.47</td>
<td>3.13</td>
<td>0.88</td>
<td>25.26</td>
</tr>
<tr>
<td>MRPL</td>
<td>-0.46</td>
<td>2.19</td>
<td>4.12</td>
<td>4.39</td>
<td>6.21</td>
<td>5.14</td>
<td>3.60</td>
<td>2.39</td>
<td>46.49</td>
</tr>
<tr>
<td>ONGC</td>
<td>30.34</td>
<td>50.22</td>
<td>47.58</td>
<td>53.87</td>
<td>43.58</td>
<td>42.99</td>
<td>44.76</td>
<td>8.16</td>
<td>18.99</td>
</tr>
<tr>
<td>AVG</td>
<td>6.76</td>
<td>10.76</td>
<td>11.09</td>
<td>12.78</td>
<td>11.84</td>
<td>11.26</td>
<td>10.75</td>
<td>16.06</td>
<td>142.65</td>
</tr>
</tbody>
</table>

Gross profit margin ratio = sales – cost of goods sold/sales \times 100, \text{ = gross profit / sales} \text{ X 100}
The above table no. 1.1 shows gross profit ratio of refinery industries taken under sample. During study period BPCL has maintained average gross profit margin of 1.70%, which was very low compare to industry average of 10.75%, the margin was ranged between 2.58% in 2008-09 to 0.93% in 2011-12, the standard deviation was 0.57 as compared to industry average of 16.06 which means there was a less fluctuation in gross profit margin during period of research. Overall the company has shown satisfactory gross profit margin.

Gross profit margin of HPCL varied between 2% in 2009-10 to 1.1% in 2012-13. Average gross profit margin was 1.44% which was also the lowest among the average of other companies’ as well as industry average of 16.06%. Overall it was clear that company has maintained very poor gross profit margin on sales due to high cost of production and direct expenses.

During period of study gross profit margin of IOCL was showing mix trend, ranged between 3.47% in 2007-08 to 1.9% in 2012-13. The company has maintained average gross profit margin of 3.13% which was less than the industry average of 16.06%. Overall the company has maintained satisfactory gross profit margin.

MRPL was the only exception showing negative return of gross profit on sales. Although company has maintained average return of 3.60%, during last year it was negative. Highest return was in 2008-09 which was 6.21%. Due to heavy cost of production company couldn’t maintain positive return on sales.

ONGC has shown very sound profitability position. It has shown average of 44.76% which was more than the industry average of 10.75%. Gross profit margin was ranged between 53.87% in 2009-10 to 30.34% in 2012-13. Standard deviation of 8.16% compared to industry average of 16.06% which means there was a less fluctuations in gross profit margin during period of research.

RIL has shown downtrend in gross profit during research period, ranged between 13.35% in 2008-09 to 5.91% in 2011-12, during last four years of study, there was a continuous decrease in gross profit margin, which shows negative future profitability position. The company has managed average 9.85% return on gross profit which was also less than the industry average.

### ANOVA

<table>
<thead>
<tr>
<th>Source of Variation</th>
<th>SS</th>
<th>df</th>
<th>MS</th>
<th>F</th>
<th>F crit</th>
</tr>
</thead>
<tbody>
<tr>
<td>SS between companies</td>
<td>8613.7</td>
<td>5</td>
<td>1722.74</td>
<td>150.39</td>
<td>2.60</td>
</tr>
<tr>
<td>SS between years</td>
<td>129.7</td>
<td>5</td>
<td>25.94</td>
<td>2.26</td>
<td>2.60</td>
</tr>
<tr>
<td>Error</td>
<td>286.4</td>
<td>25</td>
<td>11.45</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>9029.8</td>
<td>35</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**ANOVA TEST ON GROSS PROFIT RATIO**

Null Hypothesis: - There is no significant difference in gross profit ratio of selected refinery Industries during study period

Alternative Hypothesis: - There is significant difference in gross profit ratio of selected refinery Industries during the study period.

Level of significance: 5% Level
GROSS PROFIT RATIO:

Calculated F value: 150.39

Table F value: 2.6

Result: Significant

The analysis showed the significant result. It can be seen from the table, that the calculated value of F was found as 150.39, while the table value of F was 2.6, AT 5% level of significance. The calculated value of F, being more than the table value of F, the alternate Hypothesis stood accepted and the null hypothesis got rejected at 5% level of significance. So it proves that the differences among the average of this group were much significant and the average profitability of the groups of the refinery Industries differ much.

Net profit margin ratio

It monitors the net profit made in relation to sales. This ratio, also known as net operating margin, is calculated by dividing the net profit after tax by the amount of sales. While interpreting the net profit margin ratio it is important to bear in mind that such ratios vary considerably from firm to firm. Firms engaged in retailing are likely to have quite rapid turnover and to operate on low margins allied to high volume, while those firms engaged in selling a few large items must make a high profit in relation to the sales value of each one. The net profit margin ratio provides a relatively clear picture of how efficiently the firm maintains control over its total expenses. In addition, the analyst may wish to calculate the relationship between each expense item and sales to determine the extent to which specific expenses are under control or are tending to move out of control. For this purpose, expense ratio is also used. According to Hingorani, Ramanathan and Grewal. “Net profit margin indicates the net margin earned on sales of rs.100.” According to Van Home. “it tells us the relative efficiency of the firm after taking into account all expenses and income – taxes, but not extraordinary charges. It also describes managerial efficiency in the form of administrative, financing and selling. Again the difference between gross profit and net profit shows the proportion of these expenses into total cost.

Net profit ratio (NP ratio) = net profit after tax/net sales x 100

Net profit after tax (profit after tax) = net profit before tax – provision for tax

Net sales = total sales – sales return

Normally, this ratio is expressed in percentage.

This ratio indicates the total profitability of an enterprise. By means of NP ratio, the amount and rate of total profit earned by an enterprise from its all activities including trading activity can be known. The higher ratio exhibits the better profitability.

According to M.Y.Khan and P.K.Jain. “A high net profit margin would ensure adequate return to the owners as well as enable to a firm to withstand adverse economic conditions when the price is declining, cost production is rising and demand for the product is falling.
TABLE NO. 1.2 NET PROFIT RATIO OF THE SELECTED REFINERY INDUSTRY UNDER THE STUDY FOR THE PERIOD OF (2007-08 TO 2012-13)

<table>
<thead>
<tr>
<th></th>
<th>2012-13</th>
<th>2011-12</th>
<th>2010-11</th>
<th>2009-10</th>
<th>2008-09</th>
<th>2007-08</th>
<th>AVG</th>
<th>SD</th>
<th>C.V(%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>BPCL</td>
<td>1.09</td>
<td>0.61</td>
<td>1</td>
<td>1.26</td>
<td>0.54</td>
<td>1.42</td>
<td>0.99</td>
<td>0.35</td>
<td>24.69</td>
</tr>
<tr>
<td>HPCL</td>
<td>0.43</td>
<td>0.5</td>
<td>1.14</td>
<td>1.2</td>
<td>0.45</td>
<td>1.08</td>
<td>0.80</td>
<td>0.38</td>
<td>34.73</td>
</tr>
<tr>
<td>IOCL</td>
<td>1.11</td>
<td>0.98</td>
<td>2.22</td>
<td>3.74</td>
<td>0.95</td>
<td>2.78</td>
<td>1.96</td>
<td>1.15</td>
<td>41.36</td>
</tr>
<tr>
<td>MRPL</td>
<td>-1.15</td>
<td>1.67</td>
<td>3</td>
<td>3.45</td>
<td>3.1</td>
<td>3.89</td>
<td>2.33</td>
<td>1.86</td>
<td>47.78</td>
</tr>
<tr>
<td>ONGC</td>
<td>23.66</td>
<td>31.02</td>
<td>26.37</td>
<td>26.35</td>
<td>23.5</td>
<td>25.93</td>
<td>26.14</td>
<td>2.72</td>
<td>10.5</td>
</tr>
<tr>
<td>RIL</td>
<td>5.7</td>
<td>5.99</td>
<td>8.08</td>
<td>8.35</td>
<td>10.65</td>
<td>14.45</td>
<td>8.87</td>
<td>3.27</td>
<td>22.65</td>
</tr>
</tbody>
</table>

Source: Compiled and computed from ‘Capitalline Corporate Database’ of Capital market Publishers (I) Ltd., Mumbai

The above table no. 1.2 shows net profit ratio of refinery industries taken under sample. Above table shows net profit margin of BPCL. The company has maintained average 0.99% net profit margin which was less than industry average of 6.85%. The margin was ranged between 1.26% in 2009-10 to 0.54% in 2008-09. It was fluctuating during research period. Standard deviation was 0.35% which was less than the industry average of 9.36%. Overall it shows very low net profit margin as compared to other industry players of research sample.
HPCL had the lowest average of net profit margin among other companies, i.e. 0.80% whereas average industry net profit margin was 6.85%, the margin was ranged between 1.2% in 2009-10 to 0.43% in 2012-13. During research period, the net profit margin has shown mix trend. In short the company had maintained poor net profit margin during research period.

During study period, net profit margin of IOCL was ranged between 3.74% in 2009-10 to 0.95% in 2008-09. Average net profit margin was 1.96% which was below industry average of 6.85%. Overall it shows satisfactory net profit margin.

MRPL had shown good net profit margin during the first three years of research, ranged between 3.89% in 2007-08 to 3% in 2010-11, but during last two years of study there was a downtrend in net profit margin, moreover it was negative 1.15% in 2012-13. Due to high cost of production company couldn’t maintain net profit margin.

ONGC has shown better net profit margin during research period. The company was having the highest average of net profit margin i.e. 26.14% far better than the industry average of just 6.85%, margin was ranged between 31.02% in 2011-12 to 23.5% in 2008-09. The company is having very strong profitability prospectus.

RIL had maintained average 8.67% net profit margin slightly more than industry average of 6.85%, the margin was ranged between 14.45% in 2007-08 to 5.7% in 2012-13. The company was having very sound profitability position, except the constraint that negative trend of net profit margin will lead to adverse profitability condition in future.

ANOVA TEST ON NET PROFIT RATIO

<table>
<thead>
<tr>
<th>ANOVA</th>
<th>Source of Variation</th>
<th>SS</th>
<th>df</th>
<th>MS</th>
<th>F</th>
<th>F crit</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>SS between companies</td>
<td>2948.650</td>
<td>5</td>
<td>589.73</td>
<td>175.71</td>
<td>2.60</td>
</tr>
<tr>
<td></td>
<td>SS between years</td>
<td>31.920</td>
<td>5</td>
<td>6.38</td>
<td>1.90</td>
<td>2.60</td>
</tr>
<tr>
<td></td>
<td>Error</td>
<td>83.910</td>
<td>25</td>
<td>3.35</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td>3064.470</td>
<td>35</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Null Hypothesis: - There is no significant difference in net profit ratio of selected refinery Industries during study period

Alternative Hypothesis: - There is significant difference in net profit ratio of selected refinery Industries during the study period.

Level of significance: 5% Level

NET PROFIT RATIO:-

Calculated F value: 175.71

Table F value: 2.6

Result: Significant

The analysis showed the significant result. It can be seen from the table, that the calculated value of F was found as 175.71, while the table value of F was 2.6, AT 5% level of significance. The calculated value of F, being more than the table value of F, the alternate Hypothesis stood accepted and the null hypothesis got rejected at 5% level of significance. So it proves that the differences among the average of this group were much significant and the average profitability of the groups of the refinery Industries differ much.
Return on capital employed

One of the most widely used ratios is the return on assets. Since assets are used to generate income, the higher the income, the more productive assets were during the period. In computing the return on assets, the analyst must bear in mind that both borrowed as well as owned funds are used by the business for the acquisition of assets, therefore, the return on assets should be computed before accounting for the interest on borrowed funds/ capital. At the same time, income tax too is not considered while calculating this ratio because taxes are calculated on income after interest deductions. Consequently, earnings before interest and tax (EBIT) is usually used to measure return on capital employed.

The term assets is also somewhat complex to understand, in simple terms the funds used net current assets are considered as capital employed, where net current assets is a difference between current assets and current liabilities. While there are some debatable points which require clarification.

Valuation of fixed assets: there are mainly three methods for the valuation of fixed assets i.e gross value, book value and replacement value or market value. Gross value is the historical cost of an assets, whereas book value is a value of assets after deducting depreciation. Replacement value can be found out with the help of index numbers or market price.

Intangible assets: Intangible assets like goodwill, copyright, patent, franchise etc. should be considered at their realizable value unless they should be written off as soon as possible.

Non performing Assets: Non performing assets are also known as idle assets. As return on capital employed is a test of efficiency, one should not consider the assets which doesn’t generate any income or do not contribute towards profitability of an enterprise.

Fictitious assets: Preliminary expenses, Underwriting commission, advertisement suspense, misc. expenditure not written off etc. are not assets at all. Fictitious assets are those items of balance sheet which pretended to be assets, but actually they are expenses not written off and therefore shouldn’t be considered while calculating capital employed.

Return on capital employed (ROCE) = EBIT/ capital employed x 100

It is normally expressed as a percentage

It indicates the rate of return earned by an enterprise form its total capital employed in the business. It is also an indicator of the profit earning capacity of an enterprise. A higher return reveals a better profitability on the total capital employed in the business.

Earning Before Interst and Tax = net profit ascertained after comparing all the revenue incomes with all the revenue expenses except interest on loan and provision for income tax.

Capital employed = propriors’fund+ long terms fund

Propriors’ fund = share capital + reserve and surplus – fictitious assets
TABLE NO. 1.3 RETURN ON CAPITAL EMPLOYED OF THE SELECTED REFINERY INDUSTRY UNDER THE STUDY FOR THE PERIOD OF (2007-08 TO 2012-13)

<table>
<thead>
<tr>
<th></th>
<th>2012-13</th>
<th>2011-12</th>
<th>2010-11</th>
<th>2009-10</th>
<th>2008-09</th>
<th>2007-08</th>
<th>AVG</th>
<th>SD</th>
<th>C.V(%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>BPCL</td>
<td>14.57</td>
<td>10.18</td>
<td>11.5</td>
<td>11.11</td>
<td>14.88</td>
<td>11.37</td>
<td>12.27</td>
<td>1.96</td>
<td>0.16</td>
</tr>
<tr>
<td>HPCL</td>
<td>7.31</td>
<td>8.27</td>
<td>7.93</td>
<td>9.91</td>
<td>9.48</td>
<td>6.23</td>
<td>8.19</td>
<td>1.36</td>
<td>0.17</td>
</tr>
<tr>
<td>IOCL</td>
<td>8.64</td>
<td>13.08</td>
<td>10.32</td>
<td>15.83</td>
<td>14.64</td>
<td>14.06</td>
<td>12.76</td>
<td>2.75</td>
<td>0.22</td>
</tr>
<tr>
<td>MRPL</td>
<td>-1.43</td>
<td>11.76</td>
<td>21.86</td>
<td>23.07</td>
<td>38.15</td>
<td>29.91</td>
<td>20.55</td>
<td>13.90</td>
<td>0.68</td>
</tr>
<tr>
<td>ONGC</td>
<td>24.6</td>
<td>28.56</td>
<td>28.38</td>
<td>34.54</td>
<td>34.29</td>
<td>36.3</td>
<td>31.11</td>
<td>4.59</td>
<td>0.15</td>
</tr>
<tr>
<td>RIL</td>
<td>12.5</td>
<td>12.18</td>
<td>12.6</td>
<td>11.35</td>
<td>10.96</td>
<td>15.68</td>
<td>12.55</td>
<td>1.67</td>
<td>0.13</td>
</tr>
<tr>
<td>AVG</td>
<td>11.03</td>
<td>14.01</td>
<td>15.43</td>
<td>17.64</td>
<td>20.40</td>
<td>18.93</td>
<td>16.24</td>
<td>9.6</td>
<td>0.59</td>
</tr>
</tbody>
</table>

Source: Compiled and computed from ‘Capitalline Corporate Database’ of Capital mark et Publishers (I) Ltd., Mumbai

The above table no. 1.3 shows Return on Capital Employed of refinery industries taken under sample. The above table shows return on capital employed of BPCL average return was 12.27% which was less than industry average of 16.24%. Standard deviation of 1.96 means there was a less fluctuations during research period of study. The average was between 14.86% in 2008-09 to 10.18% in 2011-12.

Return on capital employed of HPCL was satisfactory at an average of 8.19% with industry average of 16.24% almost half of the industry average, which shows poor return on capital employed as compare to other companies, ratio was ranged between 9.91% in 2009-10 to 6.23% in 2007-08. Standard deviation of 1.36, less than the industry average means less fluctuation in return on capital employed during study period.
Ratio of return on capital employed of IOCL was ranged between 15.83% in 2009-10 to 8.64% in 2012-13. The ratio has shown mixed trend. The average return was 12.76% which was also less than industry average of 16.24%. Overall the company has maintained satisfactory return on capital employed.

MRPL was the only company which had given negative return to capital employed due to heavy loss after tax and high expenses to revenue. In 2012-13, it has shown negative return of 1.43%, however company could maintain average ratio of 20.55% which was unexpectedly higher than the industry average of 16.24%.

ONGC has given the highest average return on capital employed i.e. 31.11%, ranged between 36.3% in 2007-08 to 24.6% in 2012-13. Standard deviation was 4.59 which was also less than the industry average of 9.6 which means there was less uncertainty in return on capital employed during study period. Overall the company is having good prospects in return on capital employed.

RIL has maintained 12.55% average return on capital employed. The ratio was ranged between 15.68% in 2007-08 to 10.96% in 2008-09, however during last two years of research period, company has maintained upward trend in return on capital employed. Standard deviation was 1.67 compared to industry average of 9.6 means less deviation in return on capital employed.

ANOVA TEST ON RETURN ON CAPITAL EMPLOYED

<table>
<thead>
<tr>
<th>ANOVA</th>
<th>SS</th>
<th>df</th>
<th>MS</th>
<th>F</th>
<th>F crit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Source of Variation</td>
<td>SS between companies</td>
<td>2076.76</td>
<td>5</td>
<td>415.35</td>
<td>13.05</td>
</tr>
<tr>
<td></td>
<td>SS between years</td>
<td>355.42</td>
<td>5</td>
<td>71.08</td>
<td>2.23</td>
</tr>
<tr>
<td></td>
<td>Error</td>
<td>795.67</td>
<td>25</td>
<td>31.83</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td>3227.85</td>
<td>35</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Null Hypothesis: - There is no significant difference in return on capital employed of selected refinery Industries during study period

Alternative Hypothesis: - There is significant difference in return on capital employed of selected refinery Industries during the study period.

Level of significance: 5% Level Calculated F value: 13.05 Table F value: 2.6 Result: Significant

The analysis showed the significant result. It can be seen from the table, that the calculated value of F was found as 13.05, while the table value of F was 2.6, AT 5% level of significance. The calculated value of F, being more than the table value of F, the alternate Hypothesis stood accepted and the null hypothesis got rejected at 5% level of significance. So it proves that the differences among the average of this group were much significant and the average profitability of the groups of the refinery Industries differs much.

Return on share holders’ fund or net worth

Return on net worth = net profit after interest and tax / net worth x 100

It is normally expressed in percentage
It indicates the rate of return earned by an enterprise on the capital invested by its owners. This is an indicator of the rate of return on the share holders’ fund invested in the business. A high rate of return shows the efficiency of management in employment of owners’ funds in an effective way, whereas low rate of return shows misappropriate handling of owners’ fund. It also indicates low profitability or over investment in fixed assets. **According to Clifton, “the return on equity relates net to stockholders’ equity.”**

The higher return reveals better profitability position to the shareholders of the company.

Net worth = Proprietors’ fund = share capital + reserve and surplus – fictitious assets

### TABLE NO. 1.4 RETURN ON NET WORTH OF THE SELECTED REFINERY INDUSTRY UNDER THE STUDY FOR THE PERIOD OF (2007-08 TO 2012-13)

<table>
<thead>
<tr>
<th></th>
<th>2012-13</th>
<th>2011-12</th>
<th>2010-11</th>
<th>2009-10</th>
<th>2008-09</th>
<th>2007-08</th>
<th>AVG</th>
<th>SD</th>
<th>C.V(%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>BPCL</td>
<td>15.88</td>
<td>8.79</td>
<td>11</td>
<td>11.74</td>
<td>6.06</td>
<td>13.53</td>
<td>11.17</td>
<td>3.46</td>
<td>30.99</td>
</tr>
<tr>
<td>HPCL</td>
<td>6.59</td>
<td>6.94</td>
<td>12.26</td>
<td>11.25</td>
<td>5.35</td>
<td>10.74</td>
<td>8.86</td>
<td>2.90</td>
<td>32.72</td>
</tr>
<tr>
<td>IOCL</td>
<td>8.18</td>
<td>6.83</td>
<td>13.45</td>
<td>20.22</td>
<td>6.71</td>
<td>16.99</td>
<td>12.06</td>
<td>5.72</td>
<td>47.45</td>
</tr>
<tr>
<td>MRPL</td>
<td>-11.7</td>
<td>12.57</td>
<td>18.04</td>
<td>19.9</td>
<td>25.26</td>
<td>33.71</td>
<td>16.30</td>
<td>15.47</td>
<td>94.95</td>
</tr>
<tr>
<td>RIL</td>
<td>11.66</td>
<td>12.29</td>
<td>13.88</td>
<td>12.64</td>
<td>13.36</td>
<td>24.66</td>
<td>14.75</td>
<td>4.92</td>
<td>33.35</td>
</tr>
<tr>
<td>AVG</td>
<td>7.90</td>
<td>11.61</td>
<td>14.67</td>
<td>15.86</td>
<td>12.90</td>
<td>20.58</td>
<td>13.92</td>
<td>7.79</td>
<td>55.96</td>
</tr>
</tbody>
</table>

**Source:** Compiled and computed from ‘Capitalline Corporate Database’ of Capital market Publishers (I) Ltd., Mumbai

The above table no. 1.4 shows Return on Net Worth of refinery industries taken under sample. The above table shows ratio of return on net worth of BPCL. The ratio showed mix trend during research period. The average was 11.17% which was little less than industry average of 13.92%. The ratio was ranged between 15.88% in 2012-13 to 6.06% in 2008-09. The standard deviation was 3.46 which also less than the industry average of 7.79 showing less fluctuation in return on net worth of company. In short the company has maintained good ratio of return on net worth.

The ratio of return on net worth of HPCL shows fluctuating trend. The company had given average return of 8.86% as compared to industry average of 13.92%, which was the lowest return compare to other companies included in research study. The ratio was ranged between 12.26% in 2010-11 to 5.35% in 2008-09. Overall the company has given satisfactory return on net worth during period of study.

The ratio of return on net worth of IOCL has also shown mix trend, ranged between 20.22% in 2009-10 to 6.71% in 2008-09. Overall the company has maintained average return of 12.06% which was little less than
industry average of 13.92. Overall the company could maintain satisfactory return on net worth during period of study.

The ratio of return on net worth of MRPL has shown exceptionally negative return in 2012-13 i.e. 11.7% due to negative profit after tax. However the company has managed average return of 16.30% on net worth which was more than the industry average of 13.92%, but as far as company is showing negative trend it was adverse for future profitability.

ONGC has given the highest return on net worth at an average of 20.39% compared to industry average of 13.92%, ratio was ranged between 22.24% in 2011-12 to 16.81% in 2012-13. Standard deviation was mere 2.47 which mean less fluctuation in return. Overall the company has performed well and given good returns to shareholders.

RIL has maintained return on net worth with an average of 14.75% which was better than industry average of 13.92%, although the ratio has shown decreasing trend during last three years of study period. The ratio was ranged between 24.66% in 2007-08 to 11.66% in 2012-13. Overall the company has given satisfactory return to their shareholders.

### ANOVA TEST ON RETURN ON NET WORTH

<table>
<thead>
<tr>
<th>Source of Variation</th>
<th>SS</th>
<th>df</th>
<th>MS</th>
<th>F</th>
<th>F crit</th>
</tr>
</thead>
<tbody>
<tr>
<td>SS between companies</td>
<td>509.530</td>
<td>5</td>
<td>101.91</td>
<td>2.39</td>
<td>2.60</td>
</tr>
<tr>
<td>SS between years</td>
<td>547.780</td>
<td>5</td>
<td>109.56</td>
<td>2.57</td>
<td>2.60</td>
</tr>
<tr>
<td>Error</td>
<td>1066.560</td>
<td>25</td>
<td>42.66</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>2123.860</td>
<td>35</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Null Hypothesis: - There is no significant difference in return on net worth ratio of selected refinery Industries during study period

Alternative Hypothesis: - There is significant difference in return on net worth of selected refinery Industries during the study period.
Level of significance: 5% Level

RETURN ON NET WORTH :

Calculated F value: 2.39

Table F value: 2.6

Result: Insignificant

The analysis showed the insignificant result. It can be seen from the table, that the calculated value of F was found as 2.39, while the table value of F was 2.6, AT 5% level of significance. The calculated value of F, being less than the table value of F, the alternate Hypothesis will be rejected and the null hypothesis stood accepted at 5% level of significance. So it proves that the differences among the average of this group were not much significant and the average profitability of the groups of the refinery Industries does not differ much.

DIVIDEND PER SHARE

Dividend policy of the firm greatly determines the dividend payment and retained earning ratio of enterprise. Company may adopt conservative, liberal or stable dividend policy. It should be selected carefully as it may affect the market value of a firm. According to Weston and Brigham, “when dividend of a firm is widely fluctuating, the shareholders can never say what they get in any particular year from their holding in such a company. Investment in the shares of such company becomes a sort of speculation which only a few can afford.” Dividend per share are the amount of dividend that public or listed company pays per share of common stock, over their reporting period, that they have issued. The remainder of company’s net income, which is not paid out as dividends, is retained by the company for growth and is known as retained earnings.

The proportion of earning used to pay out as dividend to investors by the company is called dividend payout ratio.

\[ \text{DPS} = \frac{\text{Dividend paid}}{\text{number of equity shares outstanding (withheld with public)}} \]

**TABLE NO. 1.5 DIVIDEND PER SHARE OF THE SELECTED REFINERY INDUSTRY UNDER THE STUDY FOR THE PERIOD OF (2007-08 TO 2012-13)**

<table>
<thead>
<tr>
<th></th>
<th>2012-13</th>
<th>2011-12</th>
<th>2010-11</th>
<th>2009-10</th>
<th>2008-09</th>
<th>2007-08</th>
<th>AVERAGE</th>
<th>STD DEV</th>
<th>C.V(%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>BPCL</td>
<td>11</td>
<td>11</td>
<td>14</td>
<td>14</td>
<td>7</td>
<td>4</td>
<td>10.17</td>
<td>3.97</td>
<td>39.04</td>
</tr>
<tr>
<td>HPCL</td>
<td>8.5</td>
<td>8.5</td>
<td>14</td>
<td>12</td>
<td>5.25</td>
<td>3</td>
<td>8.54</td>
<td>4.08</td>
<td>47.8</td>
</tr>
<tr>
<td>IOCL</td>
<td>6.2</td>
<td>5</td>
<td>9.5</td>
<td>13</td>
<td>7.5</td>
<td>5.5</td>
<td>7.78</td>
<td>3.02</td>
<td>38.86</td>
</tr>
<tr>
<td>MRPL</td>
<td>0</td>
<td>1</td>
<td>1.2</td>
<td>1.2</td>
<td>1.2</td>
<td>1.2</td>
<td>0.97</td>
<td>0.48</td>
<td>49.51</td>
</tr>
<tr>
<td>ONGC</td>
<td>9.5</td>
<td>9.75</td>
<td>8.75</td>
<td>33</td>
<td>32</td>
<td>32</td>
<td>20.83</td>
<td>12.61</td>
<td>60.52</td>
</tr>
<tr>
<td>RIL</td>
<td>9</td>
<td>8.5</td>
<td>8</td>
<td>7</td>
<td>13</td>
<td>13</td>
<td>9.75</td>
<td>2.60</td>
<td>26.7</td>
</tr>
</tbody>
</table>
The above table no. 1.5 shows Dividend Per Share of refinery industries taken under sample. The Dividend Per Share of BPCL has shown increasing trend during first four years of study period, whereas during last two years company could maintain DPS of Rs.11 per share. Average DPS of BPCL was 10.17 Rs. per share, which was little more than the industry average of Rs.9.67 per share. Overall it shows positive and satisfactory dividend per share.

HPCL, has maintained increasing trend of DPS during first four years, whereas during last two years, company had shown constant DPS of Rs. 8.5 per share. The average DPS was Rs. 8.54, which was less than the industry average of Rs.9.67 per share. Standard deviation of 4.08 shows less fluctuations in dividend per share of a company.

During study period, IOCL has maintained the average DPS of Rs. 7.78 per share, ranged between 13 in 2009-10 to Rs. 5 per share in 2011-12. Standard deviation was 3.02 which is less than industry average of 8.05 which means less changes in dividend payment during research period.

MRPL has shown average DPS of 0.97 per share, which was far below than the industry average of Rs.9.67 per share. During first four years of research company had constant DPS of Rs. 1.2, gradually it decreased to 1 re. per share and nil. Due to negative earnings after tax, company couldn’t maintain proper dividend policy.

ONGC has shown the highest average of Rs. 20.83 per share, as compared to industry average of Rs. 9.67 per share, it was ranged between 33 Rs. Per share in 2009-10 to 8.75 per share in 2010-11. But dividend during last two years of study were near to industry average. Moreover the standard deviation is 12.61 which is also more than the industry average of 8.05, which means inconsistency in payment of dividend during study period.

During period of study, Dividend Per Share of RIL was ranged between Rs.13 per share in 2007-08 to Rs.8 per share in 2010-11. Company has maintained average DPS of 9.75, which was also more than the industry average of Rs.9.67 per share. Standard deviation was 2.60, less than the industry average of 8.05, which means less changes in dividend payment during study period. Overall the company has maintained satisfactory dividend payment policy.
Null Hypothesis: - There is no significant difference in dividend per share of selected refinery industries during study period.

Alternative Hypothesis: - There is significant difference in quick dividend per share of selected refinery industries during the study period.

Level of significance: 5% Level

DIVIDEND PER SHARE :-

<table>
<thead>
<tr>
<th>Source of Variation</th>
<th>SS</th>
<th>df</th>
<th>MS</th>
<th>F</th>
<th>F crit</th>
</tr>
</thead>
<tbody>
<tr>
<td>SS between companies</td>
<td>1232.72</td>
<td>5</td>
<td>246.54</td>
<td>7.01</td>
<td>2.60</td>
</tr>
<tr>
<td>SS between years</td>
<td>159.42</td>
<td>5</td>
<td>31.88</td>
<td>0.91</td>
<td>2.60</td>
</tr>
<tr>
<td>Error</td>
<td>878.16</td>
<td>25</td>
<td>35.12</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>2270.30</td>
<td>35</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Calculated F value: 7.01

Table F value: 2.6

Result: Significant

The analysis showed the significant result. It can be seen from the table, that the calculated value of F was found as 7.01, while the table value of F was 2.6, AT 5% level of significance. The calculated value of F, being more than the table value of F, the alternate hypothesis stood accepted and the null hypothesis got rejected at 5% level of significance. So it proves that the differences among the average of this group were much significant and the average profitability of the groups of the refinery industries differ much.
Earnings per share (EPS)

EPS = Net profit after tax & preference dividend / number of equity shares

The ratio is an indicator of the amount of revenue profit of the concern that goes to each share. It indicates the quantum of earning of the company that is received by each equity share. Along with return on investment, shareholders are also interested in knowing EPS. According to Herald and Alien, “The earning per share simply shows the profitability of the firm on per share basis, it does not reflect how much is paid as dividend and how much is retained by the business.”

Sometimes when denomination of shares is different, EPS is calculated on the basis of percentage instead of per share. It measures the profit to equity share holders on per share basis.

<table>
<thead>
<tr>
<th>TABLE NO. 1.6 EARNING PER SHARE OF THE SELECTED REFINERY INDUSTRY UNDER THE STUDY FOR THE PERIOD OF (2007-08 TO 2012-13)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Year</strong></td>
</tr>
<tr>
<td>---------</td>
</tr>
<tr>
<td>2012-13</td>
</tr>
<tr>
<td>2011-12</td>
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<tr>
<td>2010-11</td>
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<tr>
<td>2009-10</td>
</tr>
<tr>
<td>2008-09</td>
</tr>
<tr>
<td>2007-08</td>
</tr>
<tr>
<td>AVERAGE</td>
</tr>
<tr>
<td>STD DEV</td>
</tr>
<tr>
<td>C.V (%)</td>
</tr>
</tbody>
</table>

Source: Compiled and computed from ‘Capitalline Corporate Database’ of Capital market Publishers (I) Ltd., Mumbai

The above table no. 1.6 shows Earning Per Share of refinery industries taken under sample. The above table shows fluctuating trend in EPS of BPCL with an average of rs. 41.78 per share, which was more than the industry average of rs. 39.90 per share. EPS was ranged between rs. 65.05 per share in 2012-13 to 36.27 rs. Per share in 2011-12, standard deviation is 14.40 which was also less than the industry average of 29.18. Overall EPS of company was satisfactory.

HPCL has shown average EPS of rs. 31.34 per share, which was less than industry average of rs.39.90 per share. The highest EPS was rs.45.45 in 2010-11, where as it was minimum in 2008-09 i.e. rs.16.98. standard deviation was 10.01, less than the industry average showing less changes in EPS.

IOCL has shown average EPS of 32.13, which was lower than the industry average of rs.39.90 per share. EPS was ranged between 58.39 in 2007-08 to 16.29 in 2011-12. Standard deviation of 15.68, below the industry average shows consistency in EPS.
MRPL has shown negative EPS in the year 2012-13 i.e. -4.32 rs. Per share. Moreover, the company has shown the lowest average of rs.4.66 per share which was far below than the industry average of rs.39.90. EPS was ranged between 7.26 per share in 2007-08 to -4.32 per share in 2012-13. Overall it was very dissatisfactory.

ONGC has maintained EPS of rs.78 to rs.75 during first three years then after it was ranged between rs.22.12 per share to rs.29.36 per share during last three years. The average was rs.51.30 per share which was more than the industry average of rs.39.90 per share. Standard deviation was 28.59 slightly less than the industry average of rs.29.18 per share.

RIL, has performed well during research period showing average EPS of rs.78.18 per share, which was almost double than the industry average of 39.90 per share. The EPS was ranged between 133.86 per share in 2007-08, which was also the highest among all companies to rs.49.64 per share in 2009-10, overall the company has given good EPS.

ANOVA TEST ON EARNING PER SHARE

Null Hypothesis: - There is no significant difference in quick ratio of selected refinery Industries during study period

<table>
<thead>
<tr>
<th>ANOVA</th>
<th>SS</th>
<th>df</th>
<th>MS</th>
<th>F</th>
<th>F crit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Source of Variation</td>
<td>SS</td>
<td>df</td>
<td>MS</td>
<td>F</td>
<td>F crit</td>
</tr>
<tr>
<td>SS between companies</td>
<td>17843.9</td>
<td>5</td>
<td>3568.79</td>
<td>10.43</td>
<td>2.60</td>
</tr>
<tr>
<td>SS between years</td>
<td>3399.6</td>
<td>5</td>
<td>679.91</td>
<td>1.99</td>
<td>2.60</td>
</tr>
<tr>
<td>Error</td>
<td>8553.3</td>
<td>25</td>
<td>342.13</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>29796.8</td>
<td>35</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Alternative Hypothesis: - There is significant difference in quick ratio of selected refinery Industries during the study period.

Level of significance: 5% Level

EARNING PER SHARE:-

Calculated F value: 10.43

Table F value: 2.6

Result: Significant

The analysis showed the significant result. It can be seen from the table, that the calculated value of F
was found as 10.43, while the table value of F was 2.6, AT 5% level of significance. The calculated value of F, being more than the table value of F, the alternate Hypothesis stood accepted and the null hypothesis got rejected at 5% level of significance. So it proves that the differences among the average of this group were much significant and the average profitability of the groups of the refinery Industries differs much.

BIBLIOGRAPHY


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