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4.1 INTRODUCTION

A financial ratio (or accounting ratio) is a relative magnitude of two selected numerical values taken from an enterprise's financial statements. Often used in accounting, there are many standard ratios used to try to evaluate the overall financial condition of a corporation or other organization. Financial ratios may be used by managers within a firm, by current and potential shareholders (owners) of a firm, and by a firm's creditors. Security analysts use financial ratios to compare the strengths and weaknesses in various companies. If shares in a company are traded in a financial market, the market price of the shares is used in certain financial ratios.

4.2. MEANING & DEFINITION OF VALUE ADDED RATIO

According to ANTHONY, “A ratio is simply one number expressed in terms of another. It is found by dividing one number, the base, into the other. A percentage is a one kind of ratio, in which base is taken as equaling 100 and the quotient is expressed as per hundred of the base.”

“Ratio are simply a means of highlight in the arithmetical terms relationship between figures drawn from financial statements.”

In word of J.BETTY the term ‘accounting ratios’ is used: “ to describe significant relationship which between figures shown on a balance sheet, in a profit and loss account , in a budgetary control system or in any other part of the accounting organization.”

4.3 OBJECTIVE AND UTILITY OF RATIO ANALYSIS

The following are some of the important objectives and utility of Ratio Analysis:

- Expressing Trends-

Financial ratios are usually to show from the past financial records of the cost, sales, profit and other important factors so that quick forecasting can be made for future.
❖ **Showing Changes**-

Financial ratios are useful in highlighting various changes in financial activities during different time periods. They also help the management in effective communication and speedy implementation.

❖ **Setting Standards**-

Certain standards for the concern may be established for various economic activities on the basis of various financial ratios. The actual results are compared with the standards and preventive steps are taken by the management.

❖ **Effective Control**-

Ratio analysis is used to have an effective control over performance and costs. It is useful in locating the weak spots in the business so that management can pay attention to these spots in time and take preventive measures.

❖ **Measuring Efficiency**-

Ratio analysis is used as a tool for measuring the efficiency of the management. By comparing the financial results during various time periods of a concern, trends can be established for future forecasting.

❖ **Knowledge of Liquidity**-

By evaluating liquidity the management can judge the operational efficiency of the concern. Liquidity ratios are also very advantageous for the bankers and short-term creditors.

❖ **Knowledge of Long-Term Solvency**-

Knowledge of long-term solvency is very advantageous for creditors, investors, bankers, customers etc. A concern with good solvency can easily get long-term loan with low increase rate.

❖ **Inter Fine Comparison**-

Inter Fine comparison is made on the basis accounting ratios to compare the performance of the concern with that of other firms within the different units of the
same concern. By comparing the performance result during various time periods of a concern, trend can be established for future forecasting.

4.4. LIMITATION OF RATIO ANALYSIS

Financial ratios, to repeat, are undoubtedly useful tool of conducting financial analysis of a business enterprise. Yet they have certain limitation Which are:

- **Limited use of a single Ratio-**

  A single ratio used without reference to other ratios gives a false picture of the situation while forming an opinion about the financial position or soundness of an enterprise. The combined effect of various ratios must be taken into account.

- **It provide only a media of interpretation-**

  Ratios are simply tool of analyzing and interpreting the financial position of concern, still a great deal of investigation is needed to be done. Hence more importance must be given to those items which require investigation.

- **Affected by Window Dressing-**

  Financial statements may be affected by window dressing thus the ratios based on these financial statements m give misleading picture. Hence an analyst must pay attention towards window dressing.

- **Lack of Qualitative Analysis of the Problem-**

  During ratio analysis no attention is paid towards the qualitative analysis because the ratios are calculated from the figures which can be expressed in monetary terms.

- **Effect of Inherent Limitations of Accounting-**

  Ratios are calculated on the basis of accounting records. These accounting records are prepared on the basis of certain accounting principles. The mistakes made in these records and the accounting principles makes made in these records and the accounting principles make the scope of ratio analysis limited.

- **Lack of Proper Standards-**
There is no single standard ratio against which the calculated ratio can be compared. This is because of change in nature and circumstances found in different firms. Unless they are compared with certain standard ratio they would be useless.

- **Future Estimates on the basis of Fasts-**

  Ratio are based on past records, hence they cannot be used in trend analysis.

- **Effect of Personal Ability and bias of the analyst-**

  Accounting ratio are affected by personal ability and bias of the analyst. Hence they must be used with due care and skill.

- **Do not Reflect Price Level Change-**

  No attention is paid in financial statements on changes in price level. Hence the ratios based on these financial statements are misleading.

- **Only Few Information-**

  Ratios are based on information supplied in financial statements and this information is not sufficient for calculation of ratios.

### 4.5. CLASSIFICATION OF RATIOS

The Ratio can be classified on the basis of requirement of various uses e.g. creditors, bankers, investors, management, government etc.

One way of classifying the ratio is:

(a) **Balance Sheet Ratio-**

  The ratio which deals with the relationship between two item or groups of items appearing in the balance sheet, for example current ratio, acid test ratio etc.

(b) **Profit and loss Account Ratio-**

  The ratios which deal with the relationship two items appearing the profit and loss account, for example, profit margin ratio and operating ratio.

(c) **Combined Ratio-**
The ratio which deals with the relationship between two items or groups of items— one appearing in the profit and loss account and the other in the balance sheet, for example, net profit to net worth ratio, sales to working capital ratio, return on shareholder’s funds ratio etc.

“The above classification, however, is rather crude, since it leads one to think that analysis of the income statement or the balance sheet can be attempted in isolation. While to get a correct idea about the profitability and financial strength of a concern it is necessary that an opinion can be framed after a detailed study of various statements in relation to each other.

The other way of classifying the ratios is as under:

1. Liquidity ratios, which are designed to measure the firm’s ability to meet short-term obligations like current ratio and acid test ratio.
2. Leverage ratio, which measure the extent to which the firm has been financed by debt like ratio, own funds to total borrowed funds ratio etc.
3. Activity ratios measure how effectively a company is using its resources like turnover of fixed assets, turnover of working capital etc.
4. Profitability ratio measure the management’s overall performance and effectiveness as shown by the returns employed net profit to net worth ratio, margin on sales etc.

4.6 VALUE ADDED RATIO

For analyzing the value added trends of the company and to help in intercompany comparison, values added ratios are calculated. It can be easily concluded with help of these ratio that performance of the company from values added point of view is satisfactory or not.

4.7 GROSS MARGIN RATIO

4.7.1 CONCEPT

This ratio shows the contribution of firm’s sales income toward Value Addition. An effective sales management strategy would enable a company to enhance this percentage. It also called The Net Value Added per Rupee of Sale. This ratio can be finding with the help of below given formula.
4.7.1 FORMULA

\[
\text{Gross Margin} = \frac{\text{Value Added}}{\text{Total Sales}} \times 100
\]

Here,

\[\rightarrow \text{Value Added is considered as Net Value Added (NVA)}\]

\[\rightarrow \text{The value of Sales including Excise Duty & service Tax is taken here.}\]

The Gross Margin Ratio in WIPRO, CIPLA, RIL, TCS and TATA Motors, BHEL, IOC, Infosys, SAIL, ONGC, Under study have been analyzed and calculated for the study period which has been represented in Table – 5.1 given below.

**Table – 5.1**

The Gross Margin Ratio in selected Private sector and Public Sector corporate units

(In %)

<table>
<thead>
<tr>
<th>YEARS</th>
<th>WIPRO</th>
<th>CIPLA</th>
<th>TCS</th>
<th>RIL</th>
<th>TATA Motors</th>
<th>BHEL</th>
<th>IOC</th>
<th>Infosys</th>
<th>SAIL</th>
<th>ONGC</th>
</tr>
</thead>
<tbody>
<tr>
<td>2005-06</td>
<td>64.15</td>
<td>34.37</td>
<td>62.91</td>
<td>21.53</td>
<td>29.94</td>
<td>39.12</td>
<td>25.37</td>
<td>79.77</td>
<td>46.29</td>
<td>42.29</td>
</tr>
<tr>
<td>2006-07</td>
<td>64.11</td>
<td>32.42</td>
<td>69.19</td>
<td>20.33</td>
<td>28.64</td>
<td>45.09</td>
<td>26.9</td>
<td>81.83</td>
<td>45.96</td>
<td>42.62</td>
</tr>
<tr>
<td>2007-08</td>
<td>61.3</td>
<td>29.27</td>
<td>60.05</td>
<td>21.66</td>
<td>28.19</td>
<td>44.63</td>
<td>24.78</td>
<td>85.23</td>
<td>61.42</td>
<td>39.19</td>
</tr>
<tr>
<td>2008-09</td>
<td>60.55</td>
<td>26.28</td>
<td>57.82</td>
<td>14.2</td>
<td>17.49</td>
<td>34.67</td>
<td>20.42</td>
<td>84.46</td>
<td>49.99</td>
<td>36.96</td>
</tr>
<tr>
<td>2009-10</td>
<td>60.18</td>
<td>27.6</td>
<td>63.96</td>
<td>17.2</td>
<td>18.5</td>
<td>40.94</td>
<td>22.22</td>
<td>87.33</td>
<td>50.81</td>
<td>36.56</td>
</tr>
<tr>
<td>AVERAGE</td>
<td>62.06</td>
<td>29.99</td>
<td>62.79</td>
<td>18.98</td>
<td>24.55</td>
<td>35.76</td>
<td>23.94</td>
<td>83.72</td>
<td>50.89</td>
<td>39.52</td>
</tr>
</tbody>
</table>

[Source: - Compiled and Calculated From Annual Reports of Selected Units from 2005-06 to 2009-10.]

Table – 5.1 reveal that in **WIPRO Tech. Ltd.** Gross margin ratio recorded decreasing trend during the period of study. It was the highest level at 64.15 percent in 2005-06. It decreased at 64.11 percent in 2006-07. It decreased to 61.30 percent in 2007-08, 60.55 percent in 2008-09 and finally it reached to 60.18 percent in 2009-10.

**In CIPLA,** The Gross Margin Ratio witnessed a decreasing trend during the study period. It ranged between 26.28 percent in 2008-09 to 34.37 percent in 2005-06. It was 32.42 percent in 2006-07, 29.27 percent in 2007-08 and 27.60 percent in 2009-10.
In TATA Consultancy Service Ltd., The Gross Margin Ratio showed that it fluctuating trend during the period of the study. It was 62.91 percent in 2005-06. It increased to 69.19 percent in 2006-07 (highest). It also decreased to 60.05 percent in 2007-08, it reached at 57.82 percent in 2008-09. Finally it was 63.96 percent in the year 2009-10.

In case of Reliance Industries Ltd., The gross margin ratio valid from 14.20 percent in 2008-09 to 21.66 percent in 2007-08. It was 21.53 percent in 2005-06. It decreased to 20.33 percent in 2006-07, 17.20 percent in 2009-10.

It may be noted from gross margin ratio in TATA Motors Ltd. Varies 17.49 percent in 2008-09 to 29.94 percent in 2005-06 on the while the ratio showed a fluctuating trend.

In Bharat Heavy Electricals Ltd., The Gross Margin Ratio witnessed a fluctuating trend during the study period. It ranged between 34.67 percent in 2008-09 to 45.09 percent in 2006-07.

Indian Oil Corp. Ltd. Gross margin ratio recorded fluctuating trend during the study period. It was at 25.37 percent in 2005-06. It was the highest level at 26.90 percent in 2006-07. It decreased to 24.78 percent in 2007-08, 20.42 percent in 2008-09 and finally it reached the highest level at 22.22 percent in 2009-10.

Infosys Ltd. Gross margin ratio recorded continuously increasing trend during the study period. It was at 79.77 percent in 2005-06. It was 81.83 percent in 2006-07. It increased to 85.23 percent in 2007-08, 84.23 percent in 2008-09 and finally it reached the highest level at 87.33 percent in 2009-10.

In Steel Authority of India Ltd., The Gross Margin Ratio witnessed a fluctuating trend during the study period. It ranged between 45.96 percent in 2006-07 to 61.42 percent in 2007-08.

In Oil & Natural Gas Corp. Ltd., The Gross Margin Ratio witnessed a decreasing trend during the study period. It ranged between 36.56 percent in 2009-10 to 42.62 percent in 2006-07. It was 42.29 percent in 2005-06, 39.19 percent in 2007-08 and 36.96 percent in 2008-09.
On the basis of above analysis showed that it may be calculated that the average Gross Margin Ratio in private sector unit as Infosys Ltd. Greater than among selected corporate units, during the study period.

**F – Test Analysis**

- **Null hypothesis (H₀)**

  \( H₀₁ \): There would be no significant different in gross margin ratio in between the years of selected private sector and public sector corporate units.

  \( H₀₂ \): There would be no significant different in gross margin ratio in between the companies’ of selected private sector and public sector corporate units.

- **Alternative hypothesis (H₁)**

  \( H₁₁ \): There would be significant different in gross margin ratio in between the years of selected private sector and public sector corporate units.

  \( H₁₂ \): There would be significant different in gross margin ratio in between the companies’ of selected private sector and public sector corporate units.

To satisfy these hypothesis the F-Test ratio has been calculated and being shown in Table – 5.2 given below.

**Table – 5.2**

Analysis Of Variance Table for Two-Way ANOVA

<table>
<thead>
<tr>
<th>Source of Variation</th>
<th>Sum of Squares</th>
<th>Degree of freedom</th>
<th>MSS</th>
<th>F₁</th>
<th>Fₜ</th>
</tr>
</thead>
<tbody>
<tr>
<td>Between Years (Rows)</td>
<td>213.37</td>
<td>4</td>
<td>53.34</td>
<td>4.43</td>
<td>2.63</td>
</tr>
<tr>
<td>Between Companies (Columns)</td>
<td>19681.86</td>
<td>9</td>
<td>2186.9</td>
<td>181.9</td>
<td>2.15</td>
</tr>
<tr>
<td>Residual</td>
<td>433.45</td>
<td>36</td>
<td>12.04</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>20328.67</strong></td>
<td><strong>36</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

- **Level of significance** : - 5%

- **Critical value of F-Test (Fₜ)** : -
Analysis of Value Added Ratios

\[ F_{t1} = 2.63 \]
\[ F_{t2} = 2.15 \]

**Degree of Freedom**
- Between Years (Rows) = 4
- Between Companies (Columns) = 9

**CONCLUSION**

- **For Years (Rows):**
  
  The critical value of \( F \)-test at 5 percent level of significance is less than the calculated value of \( F \)-test. \( F_{t1} = 2.63 \) is less than \( F_{c1} = 4.63 \). So, the null hypothesis \( H_0 \) will be rejected. \( H_1 \) Alternative hypothesis is accepted.

  Therefore, there would be significant different in gross margin ratio in between the years of selected private sector and public sector corporate units each year during the study period.

- **Between Companies (Columns):**

  The critical value of \( F \)-test at 5 percent level of significance is less than the calculated value of \( F \)-test. \( F_{t2} = 2.15 \) is less than \( F_{c2} = 181.87 \). So, the null hypothesis \( H_0 \) will be rejected. \( H_1 \) Alternative hypothesis is accepted.

  Therefore, there would be significant different in gross margin ratio in between the companies of selected private sector and public sector corporate units during the study period.
4.8 FIXED ASSETS TURNOVER RATIO

4.8.1 CONCEPT

The ratio of fixed Assets will be obtained with the help of Value Added and Fixed Assets of the firm. This ratio shows the relationship between Net Value Added to fixed Assets. If the Net Value Added is more than Fixed Assets, it is considered good. This relationship can be calculated by following formula.

4.8.2 FORMULA

Fixed Assets Turnover Ratio

\[ \text{Fixed Assets Turnover Ratio} = \frac{\text{Value Added}}{\text{Fixed Assets}} \times 100 \]

Here,

1. Value Added is taken as Net Value Added (NVA)
2. Fixed Assets includes Buildings, Plant & Machinery, and Water supply & Drainage system, Furniture & Fixtures, Vehicles, Railway Sidings and Computer Software. All Fixed Assets are taken after the dedication of Depreciation

The fixed assets turnover ratio in selected corporate units under study have been analyzed and calculated for study period which has been represented in Table–5.3 given below.

Table – 5.3

The Fixed Assets Turnover Ratio in selected Private sector and Public Sector corporate units

(₹. In Crore)

<table>
<thead>
<tr>
<th>YEARS</th>
<th>WIPRO</th>
<th>CIPLA</th>
<th>TCS</th>
<th>RIL</th>
<th>TATA Motors</th>
<th>BHEL</th>
<th>IOC</th>
<th>Infosys</th>
<th>SAIL</th>
<th>ONGC</th>
</tr>
</thead>
<tbody>
<tr>
<td>2005-06</td>
<td>4.43</td>
<td>0.94</td>
<td>4.13</td>
<td>0.35</td>
<td>1.67</td>
<td>0.88</td>
<td>2.12</td>
<td>4.59</td>
<td>1.38</td>
<td>1.78</td>
</tr>
<tr>
<td>2006-07</td>
<td>3.49</td>
<td>0.79</td>
<td>4.06</td>
<td>0.38</td>
<td>2.01</td>
<td>1.06</td>
<td>1.87</td>
<td>4.05</td>
<td>1.39</td>
<td>1.78</td>
</tr>
<tr>
<td>2007-08</td>
<td>1.75</td>
<td>0.69</td>
<td>3.49</td>
<td>0.48</td>
<td>1.59</td>
<td>0.99</td>
<td>1.93</td>
<td>4.12</td>
<td>2.7</td>
<td>1.89</td>
</tr>
<tr>
<td>2008-09</td>
<td>1.63</td>
<td>0.63</td>
<td>2.38</td>
<td>0.21</td>
<td>0.44</td>
<td>6.35</td>
<td>1.79</td>
<td>3.92</td>
<td>2.18</td>
<td>1.41</td>
</tr>
<tr>
<td>2009-10</td>
<td>1.69</td>
<td>0.79</td>
<td>2.85</td>
<td>0.23</td>
<td>0.55</td>
<td>5.83</td>
<td>1.16</td>
<td>4.01</td>
<td>1.61</td>
<td>1.2</td>
</tr>
<tr>
<td>AVERAGE</td>
<td>2.6</td>
<td>0.77</td>
<td>3.38</td>
<td>0.33</td>
<td>1.25</td>
<td>3.02</td>
<td>1.77</td>
<td>4.14</td>
<td>1.85</td>
<td>1.68</td>
</tr>
</tbody>
</table>

[Source: - Calculated From Annual Reports of Selected Units from 2005-06 to 2009-10.]
Table – 5.3 reveal that in **WIPRO Tech. Ltd.** Fixed assets turnover ratio recorded a continuous decreasing trend in remaining years. It was **4.43** rupees in 2005-06 which considerably decreased to **3.49** rupees in 2006-07. It decreased to **1.75** rupees in 2007-08. It was **1.63** rupees in 2008-09 and finally it reached to **1.69** rupees.

In **CIPLA Ltd.** the Fixed Assets turnover ratio also showed fluctuating trend during the study period. It was **0.94** rupees in 2005-06 which was decreased to **0.79** rupees in 2006-07. It decreased to **0.69** rupees in 2007-08. It further decreased to **0.63** rupees in 2008-09 and finally it reached to **0.79** rupees in 2009-10.

In **TATA consultancy services Ltd** showed continuously decreasing trend during the period of study. It was **4.13** rupees in 2005-06. It decreased to **4.06** rupees in 2006-07. It decreased to **3.49** rupees in 2007-08. It further decreased to **2.38** rupees in 2008-09 and finally it decreased **2.85** rupees in 2009-10.

In **Reliance Industries Ltd.** The fixed assets turnover ratio marked fluctuating trend during the study period. It ranged between **0.48** rupees in 2007-08 to **0.21** rupees in 2008-09. It was **0.35** rupees in 2005-06, which were **0.38** rupees in 2006-07 and **0.23** in 2009-10.

In **TATA Motors Ltd.** the Fixed Assets turnover ratio noted a fluctuating trend during the period of study. It ranged between **2.01** rupees in the year 2006-07 to **0.44** rupees in 2008-09. It was **1.67** rupees in 2005-06 and **1.59** rupees in 2007-08. Finally it reached at **0.55** rupees in 2009-10.

In **Bharat Heavy Electricals Ltd.** The Fixed Assets turnover ratio marked fluctuating trend during the study period. It ranged between **6.35** rupees in 2008-09 to **0.88** rupees in 2005-06. It was **1.06** rupees in 2006-07, which were **0.99** rupees in 2007-08 and **5.56** in 2009-10.

In **Indian Oil Corp. Ltd** showed continuously decreasing trend during the period of study. It was **2.12** rupees in 2005-06. It decreased to **1.87** rupees in 2006-07. It increased to **1.93** rupees in 2007-08. It further decreased to **1.79** rupees in 2008-09 and finally it decreased **1.16** rupees in 2009-10.
In **Infosys Ltd.**, the Fixed Assets turnover ratio noted a fluctuating trend during the period of study. It ranged between 4.59 rupees in the year 2005-06 to 3.93 rupees in 2008-09. It was 4.05 rupees in 2006-07 and 4.12 rupees in 2007-08. Finally it reached at 4.01 rupees in 2009-10.

In **Steel Authority Of India Ltd.** the Fixed Assets turnover ratio also showed fluctuating trend during the study period. It was 1.38 rupees in 2005-06 which was decreased to 1.39 rupees in 2006-07. It decreased to 2.70 rupees in 2007-08. It further decreased to 2.18 rupees in 2008-09 and finally it reached to 1.61 rupees in 2009-10.

In **Oil & Natural Gas Corporation Ltd.** the Fixed Assets turnover ratio also showed fluctuating trend during the study period. It was 2.12 rupees in 2005-06 which was decreased to 1.78 rupees in 2006-07. It decreased to 1.89 rupees in 2007-08. It further decreased to 1.41 rupees in 2008-09 and finally it reached to 1.20 rupees in 2009-10.

On the basis of the above discussion it can be opined that the fixed turnover ratio in selected rate of this ratio the highest level in private sector as **Infosys Ltd.** at 4.14 (Average) rupees among compare to other units. It showed good condition of this company.

**F – Test Analysis**

- **Null hypothesis (H₀)**
  \[ H₀₁: \text{There would be no significant different in the Fixed Assets turnover ratio in between the companies of selected private sector and public sector corporate units.} \]

- **Alternative hypothesis (H₁)**
  \[ H₁₁: \text{There would be significant different in the Fixed Assets turnover ratio in between the companies of selected private sector and public sector corporate units.} \]

To satisfy these hypothesis the F-Test ratio has been calculated and being shown in Table – 5.4 given below.
Table – 5.4
Analysis Of Variance Table for One-Way ANOVA

<table>
<thead>
<tr>
<th>Source of Variation</th>
<th>Sum of Squares</th>
<th>Degree of freedom</th>
<th>MS</th>
<th>$F_t$</th>
<th>$F_c$</th>
</tr>
</thead>
<tbody>
<tr>
<td>Between Companies</td>
<td>64.31</td>
<td>9</td>
<td>7.15</td>
<td>6.31</td>
<td>2.12</td>
</tr>
<tr>
<td>Within Companies</td>
<td>45.27</td>
<td>40</td>
<td>1.13</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>109.58</td>
<td>49</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

- **Level of significance**: 5%
- **Critical value of F-Test** ($F_t$): $F_t=2.12$
- **Degree of Freedom**
  - Between Companies (Columns): 9
  - Within Companies (Columns): 40

**CONCLUSION**

- Between Companies (Columns):

  The critical value of F-test at 5 percent level of significance is less than the calculated value of F-test. ($F_t=2.12$ is less than $F_c=6.31$). So, the null hypothesis $H_0$ will be rejected. $H_1$ Alternative hypothesis is accepted.

  Therefore, there would be significant different in the fixed assets turnover ratio in between the companies of selected corporate units during the period of the study.
4.10 CAPITAL PRODUCTIVITY RATIO

4.10.1 CONCEPT

This ratio indicates the amount of Value – Added Generated per rupee of capital employed. Greater the ratio higher will be social contribution. Following formula is being used to find out ratio. It also called Value Added per Rupee of Capital Employed.

4.10.2 FORMULA

\[
\text{Capital Productivity} = \frac{\text{Value Added}}{\text{Capital Employed}} \times 100
\]

Here,

- Value Added is (NVA) Net Value Added.
- Capital Employed is the difference between Total Assets and Total Liabilities. Capital employed is the difference between total assets and total liabilities.

Above given formula form ‘Total Assets’ includes all typed of Fixed Assets (Less Depreciation), Investment sundry debtors, cash and bank balance, Inventories, Income accrued to on investment, Loans and Advance. The form ‘Total Liability’ includes secured loans, unsecured loans, Current liabilities and provisions.

The capital productivity in selected corporate units under study have been analyzed and calculated for the study period which has been represented in Table – 5.5 given below

**Table – 5.5**

<table>
<thead>
<tr>
<th>YEARS</th>
<th>WIPRO</th>
<th>CIPLA</th>
<th>TUS</th>
<th>RIL</th>
<th>TATA Motors</th>
<th>BHEL</th>
<th>IOCL</th>
<th>Infosys</th>
<th>SAIL</th>
<th>ONGC</th>
</tr>
</thead>
<tbody>
<tr>
<td>2005-06</td>
<td>1.02</td>
<td>0.39</td>
<td>1.33</td>
<td>0.26</td>
<td>0.82</td>
<td>0.92</td>
<td>0.85</td>
<td>1.08</td>
<td>1</td>
<td>0.45</td>
</tr>
<tr>
<td>2006-07</td>
<td>0.97</td>
<td>0.33</td>
<td>1.35</td>
<td>0.23</td>
<td>0.69</td>
<td>1.22</td>
<td>1.01</td>
<td>1.01</td>
<td>0.75</td>
<td>0.56</td>
</tr>
<tr>
<td>2007-08</td>
<td>0.76</td>
<td>0.27</td>
<td>1.06</td>
<td>0.22</td>
<td>0.54</td>
<td>1.21</td>
<td>0.84</td>
<td>1.03</td>
<td>1.19</td>
<td>0.52</td>
</tr>
<tr>
<td>2008-09</td>
<td>0.81</td>
<td>0.24</td>
<td>0.97</td>
<td>0.11</td>
<td>0.31</td>
<td>1.05</td>
<td>0.74</td>
<td>1</td>
<td>0.74</td>
<td>0.42</td>
</tr>
<tr>
<td>2009-10</td>
<td>0.67</td>
<td>0.27</td>
<td>1.01</td>
<td>0.18</td>
<td>0.42</td>
<td>1.17</td>
<td>0.65</td>
<td>0.86</td>
<td>0.47</td>
<td>0.32</td>
</tr>
<tr>
<td>AVERAGE</td>
<td>0.85</td>
<td>0.3</td>
<td>1.14</td>
<td>0.2</td>
<td>0.56</td>
<td>1.14</td>
<td>0.82</td>
<td>1</td>
<td>0.83</td>
<td>0.45</td>
</tr>
</tbody>
</table>

[Source: - Calculated From Annual Reports of Selected Units from 2005-06 to 2009-10.]
Table – 5.5 reveals that in **Wipro Tech. Ltd.** Capital Productivity Ratio recorded continuous decreasing trend expert 2008-09 during the study period. It was 1.02 crore in 2005-06 which decreased to 0.97 crore in 2006-07. Further decreased to 0.76 crore in 2007-08. It was 0.81 Crore in 2008-09 and finally it achieved to 0.67 crore in 2009-10.

In **CIPLA**, the Capital Productivity Ratio witnessed a fluctuating trend during the period of the study. It was 0.39 crore in 2005-06 which decreased to 0.33 crore in 2006-07. It was lowest level at 0.24 crore in 2008-09. It increased to 0.27 crore in 2007-08 and finally it reached to 0.27 crore in 2009-10.

In **TATA Consultancy Services Ltd.**, The Capital Productivity Ratio marked a fluctuating trend during the period of the study. It was 1.33 crore in 2005-06 which increased to 1.35 crore in 2006-07. It decreased to 1.06 crore in 2007-08. Further decreased to 0.97 crore in 2008-09. and finally it reached at 1.01 crore in 2009-10.

In **Reliance Industries Ltd.**, the Capital Productivity Ratio noted decreasing trend during the first Four years and it showed increased trend in remaining years. It was 0.26 crore in 2005-06 which considerably decreased to 0.23 crore in 2006-07. It decreased to 0.22 crore in 2007-08 after it decreased the lowest level at 0.11 crore in 2008-09 and finally it increased at 0.18 crore in 2009-10.

In **TATA Motors Ltd.**, the Capital Productivity Ratio noted decreasing trend during the first Four years and it showed increased trend in remaining years. It was 0.82 crore in 2005-06 which considerably decreased to 0.69 crore in 2006-07. It decreased to 0.54 crore in 2007-08 after it decreased the lowest level at 0.31 crore in 2008-09 and finally it increased at 0.42 crore in 2009-10.

In **Bharat Heavy Electrical Ltd.**, The Capital Productivity Ratio marked a fluctuating trend during the period of the study. It was 0.92 crore in 2005-06 which increased the highest level at 1.22 crore in 2006-07. It decreased to 1.21 crore in 2007-08. Further decreased to 1.05 crore in 2008-09 and finally it reached at 1.17 crore in 2009-10.

In **Indian Oil Corporation Ltd.**, The Capital Productivity Ratio marked a fluctuating trend during the period of the study. It was 0.85 crore in 2005-06 which
increased to 1.01 crore in 2006-07. It decreased to 0.84 crore in 2007-08. Further decreased to 0.74 crore in 2008-09 and finally it reached at 0.65 crore in 2009-10.

In Infosys Ltd., the Capital Productivity Ratio noted decreasing trend during the first Four years and it showed increased trend in remaining years. It was 1.08 crore in 2005-06 which considerably decreased to 1.01 crore in 2006-07. It decreased to 1.03 crore in 2007-08 after it decreased at 1.00 crore in 2008-09 and finally it increased the lowest level at 0.86 crore in 2009-10.

In Indian Oil Corporation Ltd., The Capital Productivity Ratio marked a fluctuating trend during the period of the study. It was 0.45 crore in 2005-06 which increased to 0.56 crore in 2006-07. It decreased to 0.52 crore in 2007-08. Further decreased to 0.42 crore in 2008-09 and finally it reached at 0.32 crore in 2009-10.

In Steel Authority of India Ltd., The Capital Productivity Ratio marked a fluctuating trend during the period of the study. It was 1.00 crore in 2005-06 which decreased to 0.75 crore in 2006-07. It increased to 1.19 crore in 2007-08. Further decreased to 0.74 crore in 2008-09 and finally it reached at 0.47 crore in 2009-10.

On the basis of above analysis it may be concluded that the capital productivity ratio in selected private sector and public sector corporate units was five years average of this ratio the highest average of in private sector as TATA Consultancy Services Ltd and in Public Sector as Bharat Heavy Electricals Ltd. Both companies at 1.14 crore in above findings Very well that higher social contribution toward society.

**F – Test Analysis**

**Null hypothesis (H₀)**

H₀₁: There would be no significant different in the Capital Productivity Ratio in between the companies of selected corporate units

**Alternative hypothesis (H₁)**

H₁₁: There would be significant different in the Capital Productivity Ratio in between the companies of selected corporate units.

To satisfy these hypothesis the F-Test ratio has been calculated and being shown in Table – 5.6 given below.
Table – 5.6

Analysis Of Variance Table for Two-Way ANOVA

<table>
<thead>
<tr>
<th>Source of Variation</th>
<th>Sum of Squares</th>
<th>Degree of freedom</th>
<th>MS</th>
<th>( F_t )</th>
<th>( F_c )</th>
</tr>
</thead>
<tbody>
<tr>
<td>Between Companies</td>
<td>4.96</td>
<td>9</td>
<td>0.55</td>
<td>24.12</td>
<td>2.12</td>
</tr>
<tr>
<td>Within Companies</td>
<td>0.91</td>
<td>40</td>
<td>0.02</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>5.88</td>
<td>49</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

- **Level of significance**: - 5%
- **Critical value of F-Test** \( (F_t) \):-
  \[ F_t = 2.12 \]
- **Degree of Freedom**
  - Between Companies(Columns)= 9
  - Within Companies (Columns)= 40

**CONCLUSION**

- Between Companies(Columns):-

  The critical value of F- test at 5 percent level of significance is less than the calculated value of F-test. \( (F_t = 2.12 \) is less than \( F_c = 24.12 \)). So, the null hypothesis \( H_0 \) will be rejected. \( H_1 \) Alternative hypothesis is accepted.

Therefore, there would be significant different in the Capital Productivity Ratio in between the companies of selected private sector and public sector corporate units during the period of the study.
4.11 GROSS VALUE ADDED TO TOTAL REVENUE RATIO:-

4.11.1 CONCEPT

The proportion of gross Value Added to Total Revenue shows the relationship between above shown two items which reflects that how much percentage of Total Revenues consist of value generated by the concern meaning there by the remaining percentage that is: Total revenue – Gross Value Added, is contributed by the outside parties. It is must to say that a higher proportion of Gross Value Added in Total Revenue will be considered good and will show better social performance. It will also show the utility added by the concern in the total efforts of the organization and related parties. It may be calculated with the help of following formula.

4.11.2 Formula

Gross Value Added to Total Revenue Ratio

\[
\text{Gross Value Added} = \frac{\text{Gross Value Added}}{\text{Total Revenue}} \times 100
\]

Here,

1. Gross Value Added (GVA) is taken.
2. Total Revenue includes Sales (including Excise Duty) and other income of the company.

The Gross Value Added to Total Revenue in WIPRO, CIPLA, RIL, TCS and TATA Motors, BHEL, IOC, Infosys, SAIL, ONGC. Under study have been analyzed and calculated for the study period which has been represented in Table – 5.7 given below.
Table – 5.7
Gross Value Added to Total Revenue Ratio in selected corporate units (In %)

<table>
<thead>
<tr>
<th>YEARS</th>
<th>WIPRO</th>
<th>CIPLA</th>
<th>TCS</th>
<th>RIL</th>
<th>TATA Motors</th>
<th>BHEL</th>
<th>IOC</th>
<th>Infosys</th>
<th>SAIL</th>
<th>ONGC</th>
</tr>
</thead>
<tbody>
<tr>
<td>2005-06</td>
<td>66.85</td>
<td>34.54</td>
<td>64.28</td>
<td>25.11</td>
<td>31.34</td>
<td>40.63</td>
<td>26.41</td>
<td>83.16</td>
<td>49.73</td>
<td>52.83</td>
</tr>
<tr>
<td>2006-07</td>
<td>65.57</td>
<td>33.22</td>
<td>70.69</td>
<td>24.39</td>
<td>30.39</td>
<td>45.22</td>
<td>27.64</td>
<td>83.27</td>
<td>47.61</td>
<td>52.81</td>
</tr>
<tr>
<td>2007-08</td>
<td>62.67</td>
<td>29.67</td>
<td>61.33</td>
<td>24</td>
<td>29.95</td>
<td>44</td>
<td>25.53</td>
<td>85.22</td>
<td>61.82</td>
<td>50.26</td>
</tr>
<tr>
<td>2008-09</td>
<td>62.58</td>
<td>27.37</td>
<td>61.78</td>
<td>17.73</td>
<td>18.09</td>
<td>34.6</td>
<td>21.52</td>
<td>89.09</td>
<td>50.57</td>
<td>48.82</td>
</tr>
<tr>
<td>2009-10</td>
<td>61.94</td>
<td>29.94</td>
<td>65.61</td>
<td>21.25</td>
<td>21.62</td>
<td>42.18</td>
<td>23.07</td>
<td>87.49</td>
<td>51.27</td>
<td>51.27</td>
</tr>
<tr>
<td>AVERAGE</td>
<td>63.92</td>
<td>30.95</td>
<td>64.54</td>
<td>22.5</td>
<td>26.28</td>
<td>41.33</td>
<td>24.83</td>
<td>85.65</td>
<td>52.2</td>
<td>51.18</td>
</tr>
</tbody>
</table>

[Source: Calculated From Annual Reports of Selected Units from 2005-06 to 2009-10.]

Table – 5.7 reveal that in **WIPRO Tech. Ltd.**. The Gross Value Added to Total Revenue recorded a decreasing trend during the period of study. It was the lowest level at 62.77 percent in 2008-09. It increased to the highest level at 67.44 percent in 2004-05. It decreased to 65.89 percent in 2006-07, 62.79 percent in 2007-08.

In **CIPLA**, the Gross Value Added to Total Revenue witnessed a fluctuating trend during the study period. It ranged between 27.36 percent in 2008-09 to 34.43 percent in 2005-06. It was 34.25 percent in 2004-05. It decreased to 32.20 percent in 2006-07. It further decreased to 29.68 percent 2007-08. And finally it reached to lowest level at 27.36 percent in 2008-09.

In **TATA Consultancy Service Ltd.**, the Gross Value Added to Total Revenue showed that it fluctuating trend during the period of the study. It ranged between 51.71 percent in 2004-05, 70.90 percent in 2006-07. It was 63.64 percent in 2005-06, it decreased up to 62.25 percent in 2007-08 and finally it reached at 59.29 percent in 2008-09.

In case of **Reliance Industries Ltd.**, the Gross Value Added to Total Revenue valid from 22.24 percent in 2008-09 to 29.79 percent in 2004-05. It was 28.74 percent in 2005-06. It decreased to 26.55 percent in 2006-07, 26.58 percent in 2007-08.
It may be noted from The Gross Value Added to Total Revenue in TATA Motors Ltd. Varies 18.09 percent in 2008-09 to 31.56 percent in 2004-05 on the while the ratio showed a fluctuating trend.

**Bharat Heavy Electricals Ltd.** the portion of Gross Value to total Revenue Fluctuating trend during the period of study. It ranged between 34.60 percent in 2008-09 to 45.22 percent in 2006-07.

In case of **Indian Oil Corp. Ltd.**, the Gross value Added showed an fluctuating trend during the study period 2005-06 to 2009-10. The Ratio of ranged between 27.64 percent in 2006-07 to 21.52 percent in 2008-09. It was 26.41 percent in 2005-06, 25.53 percent in 2007-08 and it increased to 23.07 percent in 2008-09.

**Infosys Ltd.** Gross Value Added to Total Revenue ratio recorded continuously increasing trend during the study period. It was at 83.16 percent in 2005-06. It was 83.27 percent in 2006-07. It increased to 85.22 percent in 2007-08, 86.09 percent in 2008-09 and finally it reached the highest level at 87.49 percent in 2009-10.

It may be noted from The Gross Value Added to Total Revenue in **In Steel Authority of India Ltd.**, the Gross value Added showed fluctuating trend during the study period. The ratio of Gross value Added of Total Earning included sales Turnover and other incomes ranged between 49.43 percent in 2005-06 to 61.82 percent in 2007-08. It was 47.61 percent in 2008-09 It increased to 50.57 percent in 2008-09 and finally it achieved at 51.27 percent in 2009-10.

**In Oil & Natural Gas Corp. Ltd.**, The portion of Gross Value Added to Total Revenue Fluctuating trend throughout the period of Study for the year 2005-06 to 2009-10. It ranged between 48.88 percent in 2008-09 to 52.83 percent in 2005-06. It was 52.81 percent in 2006-07. It slightly decreased to 50.26 percent in 2007-08 and It reached to 51.27 percent in 2009-10.

On the basic of above analysis showed that it may be calculated that the average The Gross Value Added to Total Revenue in Infosys Tech.Ltd. Greater than among selected corporate units, during the study period.
**F – Test Analysis**

- **Null hypothesis** \((H_0)\)

\(H_{01}\): There would be no significant different in the Gross Value Added to Total Revenue Ratio in between the years of selected private sector and public sector corporate units.

\(H_{02}\): There would be no significant different in the Gross Value Added to Total Revenue Ratio in between the companies of selected private sector and public sector corporate units.

- **Alternative hypothesis** \((H_1)\)

\(H_{11}\): There would be significant different in the Gross Value Added to Total Revenue Ratio in between the years of selected private sector and public sector corporate units.

\(H_{12}\): There would be significant different in the Gross Value Added to Total Revenue Ratio in between the companies of selected private sector and public sector corporate units.

To satisfy these hypothesis the F-Test ratio has been calculated and being shown in Table – 5.8 given below.

### Table – 5.8

**Analysis Of Variance Table for Two-Way ANOVA**

<table>
<thead>
<tr>
<th>Source of Variation</th>
<th>Sum of Squares</th>
<th>Degree of freedom</th>
<th>MSS</th>
<th>(F_c)</th>
<th>(F_t)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Between Years (Rows)</td>
<td>169.73</td>
<td>4</td>
<td>41.43</td>
<td>3.86</td>
<td>2.63</td>
</tr>
<tr>
<td>Between Companies (Columns)</td>
<td>19693.89</td>
<td>9</td>
<td>2188.2</td>
<td>203.3</td>
<td>2.15</td>
</tr>
<tr>
<td>Residual</td>
<td>387.56</td>
<td>36</td>
<td>10.77</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>20247.18</td>
<td>49</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Level of significance :- 5%

Critical value of F-Test (F_t) :-
  F_{t1} = 2.63
  F_{t2} = 2.15

Degree of Freedom
  ➢ Between Years(Rows)= 4
  ➢ Between Companies(Columns)=9

CONCLUSION
  ➢ For Years(Rows):-

  The critical value of F-test at 5 percent level of significance is less than the calculated value of F-test. (F_{t1} = 2.63 is less than F_{c1} = 3.86). So, the null hypothesis H_{01} will be rejected. H_{11} Alternative hypothesis is accepted.

  Therefore, there would be significant different in the Gross Value Added to Total Revenue ratio in between the years of selected private sector and public sector corporate units each year during the study period.

  ➢ Between Companies(Columns):-

  The critical value of F-test at 5 percent level of significance is less than the calculated value of F-test. (F_{t2} = 2.15 is less than F_{c2} = 203.06). So, the null hypothesis H_{01} will be rejected. H_{11} Alternative hypothesis is accepted.

  Therefore, there would be significant different in the Gross Value Added to Total Revenue ratio in between the companies of selected private sector and public sector corporate units during the study period.
Analysis of Value Added Ratios

Chapter - 5

4.12 NET VALUE ADDED TO TOTAL REVENUE RATIO:-

4.12.1 CONCEPT

This ratio shows the relationship between net Value Added and Total Revenue. It may be said that a higher proportion of Net Value Added in Total Revenue will be considered good and will show better social performance. It can be calculated by dividing the Net Value Added by the amount of Total Revenue. It may be expressed in the shape of formula as follows.

4.12.2 FORMULA

Net Value Added to Total Revenue Ratio

\[ \text{Net Value Added to Total Revenue Ratio} = \left( \frac{\text{Net Value Added}}{\text{Total Revenue}} \right) \times 100 \]

Here,

I. Net Value Added (NVA) is taken
II. Total Revenue includes Sales (including Excise Duty) and other income of the company.

The Net Value Added to Total Revenue in WIPRO, CIPLA, RIL, TCS and TATA Motors, BHEL, IOC, Infosys, SAIL, ONGC. Under study have been analyzed and calculated for the study period which has been represented in Table – 5.9 given below.

Table – 5.9

<table>
<thead>
<tr>
<th>YEARS</th>
<th>WIPRO</th>
<th>CIPLA</th>
<th>TCS</th>
<th>RIL</th>
<th>TATA Motors</th>
<th>BHEL</th>
<th>IOC</th>
<th>Infosys</th>
<th>SAIL</th>
<th>ONGC</th>
</tr>
</thead>
<tbody>
<tr>
<td>2005-06</td>
<td>63.47</td>
<td>31.94</td>
<td>62.91</td>
<td>21.3</td>
<td>29.05</td>
<td>39.12</td>
<td>25.19</td>
<td>78.63</td>
<td>46.08</td>
<td>40.75</td>
</tr>
<tr>
<td>2006-07</td>
<td>62.98</td>
<td>30.34</td>
<td>68.37</td>
<td>20.33</td>
<td>28.52</td>
<td>44.06</td>
<td>26.49</td>
<td>79.67</td>
<td>44.26</td>
<td>40.29</td>
</tr>
<tr>
<td>2007-08</td>
<td>60.08</td>
<td>27.6</td>
<td>58.81</td>
<td>20.66</td>
<td>28.01</td>
<td>42.81</td>
<td>24.48</td>
<td>81.78</td>
<td>59.46</td>
<td>37.68</td>
</tr>
<tr>
<td>2008-09</td>
<td>60.55</td>
<td>24.42</td>
<td>58.73</td>
<td>14.09</td>
<td>16.91</td>
<td>33.54</td>
<td>20.59</td>
<td>82.65</td>
<td>48.23</td>
<td>35.8</td>
</tr>
<tr>
<td>2009-10</td>
<td>60.4</td>
<td>27.08</td>
<td>63.43</td>
<td>16.31</td>
<td>17.87</td>
<td>40.94</td>
<td>21.94</td>
<td>83.68</td>
<td>48.41</td>
<td>35.09</td>
</tr>
<tr>
<td>AVERAGE</td>
<td>61.5</td>
<td>28.28</td>
<td>62.45</td>
<td>18.54</td>
<td>24.07</td>
<td>40.19</td>
<td>23.74</td>
<td>81.28</td>
<td>49.29</td>
<td>37.92</td>
</tr>
</tbody>
</table>

[Source: Calculated data From Annual Reports of Selected Units from 2005-06 to 2009-10]
Table – 5.9 reveal that in **WIPRO Tech. Ltd.** The Net Value Added to Total Revenue Ratio decreasing trend during the period of study. It was the lowest level at **60.08** percent in 2007-08. It was the highest level at **63.47** percent in 2005-06. It decreased to **62.98** percent in 2006-07, **60.55** percent in 2008-09. And finally it was the lowest level **60.40** percent in 2009-10.

In **CIPLA**, The Ratio of Net Value Added to Total Revenue witnessed a decreasing trend during the study period. It ranged between **24.42** percent in 2008-09 to **31.94** percent in 2005-06. It was **30.34** percent in 2006-07, **27.60** percent in 2007-08 and **27.08** percent in 2009-10.

In **TATA Consultancy Service Ltd.**, the Ratio of Net Value Added to Total Revenue showed that it fluctuating trend during the period of the study. It was **62.91** percent in 2005-06. It also increased the highest level at **68.37** percent in 2006-07. It decreased to **58.81** percent in 2007-08, **58.72** percent in 2008-09. Finally it reached at **63.43** percent in 2009-10.

In case of **Reliance Industries Ltd.**, the Net Value Added to Total Revenue Ratio valid from **14.09** percent in 2008-09 to **21.30** percent in 2005-06. It was **20.33** percent in 2006-07. It increased to **20.66** percent in 2007-08, **16.31** percent in 2009-10.

It may be noted from the Net Value Added to Total Revenue Ratio in **TATA Motors Ltd.** Varies**16.91** percent in 2008-09 to **29.05** percent in 2005-06 on the while the ratio showed a fluctuating trend.

**Bharat Heavy Electricals Ltd.** the portion of Net Value to total Revenue fluctuating trend during the period of study. It ranged between **39.12** percent in 2005-06 to **44.06** percent in 2006-07.

**Indian Oil Corp. Ltd.**, Net Value Added to Total Revenue ratio recorded fluctuating trend during the study period. It was at **25.19** percent in 2005-06. It was **26.49** percent in 2006-07. It decreased to **24.48** percent in 2007-08, **20.59** percent in 2008-09 and finally it reached at **21.94** percent in 2009-10.

In case of **Infosys Ltd.**, the Net value Added showed an increasing trend during the period of study 2005-06 to 2009-10. The Ratio of Gross Value Added to Income
from consultancy service, software product and other income ranged between 78.63 percent in 2005-06 to 83.68 percent in 2009-10 (highest). It was 79.67 percent in 2006-07, 81.78 percent in 2007-08 and it increased to 82.65 percent in 2008-09.

It may be noted from The Net Value Added to Total Revenue in **In Steel Authority of India Ltd.**, the Net value Added showed fluctuating trend during the study period. The ratio of Net value Added of Total Earning included sales Turnover and other incomes ranged between 44.26 percent in 2005-06 to 59.46 percent in 2007-08. It was 48.23 percent in 2008-09 It increased to 48.41 percent in 2009-10.

**In Oil & Natural Gas Corp. Ltd.,** The portion of Gross Value Added to Total Revenue derreasing trend throughout the period of Study for the year 2005-06 to 2009-10. It ranged between 35.09 percent in 2009-10 to 40.75 percent in 2005-06. It was 40.29 percent in 2006-07. It slightly decreased to 37.68 percent in 2007-08 and It reached to 35.80 percent in 2008-09.

On the basis of above analysis showed that it may be calculated that the average The Gross Value Added to Total Revenue in private sector **Infosys Tech. Ltd.** Greater than among selected corporate units, during the study period.

**F – Test Analysis**

- **Null hypothesis (H₀)**
  
  H₀₁: There would be no significant different in the Net Value Added to Total Revenue Ratio in between the years of selected in private sector and public sector corporate units.

  H₀₂: There would be no significant different in the Gross Net Value Added to Total Revenue Ratio in between the companies of selected in private sector and public sector corporate units.

- **Alternative hypothesis (H₁)**
  
  H₁₁: There would be significant different in the Net Value Added to Total Revenue Ratio in between the years of selected in private sector and public sector corporate units.
H12:- There would be significant different in the Net Value Added to Total Revenue Ratio in between the companies of selected in private sector and public sector corporate units.

To satisfy these hypothesis the F-Test ratio has been calculated and being shown in Table – 5.10 given below.

Table – 5.10
Analysis Of Variance Table for Two-Way ANOVA

<table>
<thead>
<tr>
<th>Source of Variation</th>
<th>Sum of Squares</th>
<th>Degree of freedom</th>
<th>MSS</th>
<th>Fc</th>
<th>Ft</th>
</tr>
</thead>
<tbody>
<tr>
<td>Between Years(Rows)</td>
<td>180.45</td>
<td>4</td>
<td>45.11</td>
<td>4.13</td>
<td>2.63</td>
</tr>
<tr>
<td>Between Companies (Columns)</td>
<td>19016.78</td>
<td>9</td>
<td>2113</td>
<td>193.5</td>
<td>2.15</td>
</tr>
<tr>
<td>Residual</td>
<td>393.14</td>
<td>36</td>
<td>10.92</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>19590.37</td>
<td>49</td>
<td>19016.78</td>
<td></td>
<td>2113</td>
</tr>
</tbody>
</table>

- **Level of significance** :- 5%
- **Critical value of F-Test (Ft) :-**
  - Ft1 = 2.63
  - Ft2 = 2.15
- **Degree of Freedom**
  - Between Years(Rows)= 4
  - Between Companies(Columns)=9

**CONCLUSION**

- **For Years(Rows):-**

  The critical value of F- test at 5 percent level of significance is less than the calculated value of F-test. (Ft1 = 2.63 is less than Fc1 = 4.63). So, the null hypothesis H01 will is rejected. H11: Alternative hypothesis is be accepted.

  Therefore, there would be significant different in the Net Value Added to Total Revenue Ratio in between the years of selected in private sector and public sector corporate units each year during the study period.
Between Companies (Columns):

The critical value of F-test at 5 percent level of significance is less than the
calculated value of F-test. ($F_{t2} = 2.15$ is less than $F_{c2} = 193.49$) So, the null hypothesis
$H_0$ will be rejected. $H_1$ Alternative hypothesis is accepted.

Therefore, there would be significant different in the Net Value Added to Total
Revenue Ratio in between the companies of selected in private sector and
public sector corporate units during the study period.
4.13. EMPLOYEES BENEFIT TO NET VALUE ADDED RATIO:

4.13.1 CONCEPT

This ratio indicates how much percentage of net value added remained for employees after paying value for other group of society. It useful measuring efficiency and utility of labour power of an enterprise. This ratio calculated as follows:

4.13.2 FORMULA

Employees Benefit to Net Value Added Ratio

\[ \text{Employees Benefit to Net Value Added Ratio} = \left( \frac{\text{Employees Benefit}}{\text{Net Value Added}} \right) \times 100 \]

Here,

Employees Benefit = Wages and salary + MD’s remuneration + Director Fees + contribution to PF and ESI + Staff Welfare.

The Employees Benefit to Net Value Added Ratio in WIPRO, CIPLA, RIL, TCS and TATA Motors, BHEL, IOC, Infosys, SAIL, ONGC. Under study have been analyzed and calculated for the study period which has been represented in Table – 5.11 given below.

Table – 5.11

Employees Benefit to Net Value Added Ratio in selected corporate units

\(\text{(in %)}\)

<table>
<thead>
<tr>
<th>YEARS</th>
<th>WIPRO</th>
<th>CIPLA</th>
<th>TCS</th>
<th>RIL</th>
<th>Tata Motors</th>
<th>BHEL</th>
<th>IOC</th>
<th>Infosys</th>
<th>SAIL</th>
<th>ONGC</th>
</tr>
</thead>
<tbody>
<tr>
<td>2005-06</td>
<td>64.07</td>
<td>15.16</td>
<td>56.56</td>
<td>7.64</td>
<td>22.44</td>
<td>29.32</td>
<td>4.16</td>
<td>63.23</td>
<td>24.28</td>
<td>4.14</td>
</tr>
<tr>
<td>2006-07</td>
<td>64.42</td>
<td>16.87</td>
<td>61.89</td>
<td>10.55</td>
<td>23.07</td>
<td>25.3</td>
<td>4.22</td>
<td>62.58</td>
<td>30.92</td>
<td>6.18</td>
</tr>
<tr>
<td>2007-08</td>
<td>64.18</td>
<td>18.54</td>
<td>57.2</td>
<td>8.84</td>
<td>24.37</td>
<td>24.28</td>
<td>4.57</td>
<td>62.43</td>
<td>24.48</td>
<td>3.19</td>
</tr>
<tr>
<td>2008-09</td>
<td>68.75</td>
<td>21.5</td>
<td>61.57</td>
<td>13.64</td>
<td>57.93</td>
<td>28.32</td>
<td>8.44</td>
<td>62.28</td>
<td>30.89</td>
<td>2.75</td>
</tr>
<tr>
<td>2009-10</td>
<td>65.09</td>
<td>20.18</td>
<td>56.65</td>
<td>7.67</td>
<td>47.32</td>
<td>42.43</td>
<td>8.98</td>
<td>60.88</td>
<td>22.74</td>
<td>3.97</td>
</tr>
<tr>
<td>AVERAGE</td>
<td>66.3</td>
<td>18.45</td>
<td>58.77</td>
<td>9.67</td>
<td>35.03</td>
<td>29.93</td>
<td>6.07</td>
<td>62.88</td>
<td>26.66</td>
<td>4.04</td>
</tr>
</tbody>
</table>

[Source: Calculated From Annual Reports of Selected Units from 2005-06 to 2009-10.]

Table – 5.11 reveals that in WIPRO Tech. Ltd. The percentage of Payment to Employees towards Net Value Added was countinuously increasing trend during the period of study. It ranged between 64.07 percent in 2005-06 to 68.76
percent in 2008-09. It was 64.42 percent in 2006-07. 67.18 and 65.09 percent in the years 2007-08 and 2009-10 respectively.

In CIPLA, As Employees Benefit to Net Value Added Ratio was 15.16 percent in 2005-06 it increased to 16.87 percent in the year 2006-07, 18.54 percent in 2007-08, it further increased the highest level at 21.50 percent in 2008-09. And finally it reached at 20.18 percent in 2009-10.

In TATA Consultancy Service Ltd., the Employees Benefit to Net Value Added Ratio showed that it fluctuating trend during the period of the study, the Payment to Employees towards Net Value Added was 56.56 percent in 2005-06 it increased the highest level at 61.89 percent in 2006-07, 57.20 percent in 2007-08. It further increased to 61.57 percent in 2008-09. And finally it reached and increased to 56.65 percent in 2009-10.

In case of Reliance Industries Ltd., as the Ratio of Payment to Employees towards Net Value Added was fluctuating trend during the period of the study, as the percentage of the Payment to Employeés towards Net Value Added was 7.64 percent in 2005-06. It increased to 10.55 percent in 2006-07, it was 8.84 percent in 2007-08. It further increased to 13.64 percent in 2008-09. Finally it was level at 7.67 percent in 2009-10.

It may be noted from gross margin ratio in TATA Motors Ltd. As the percentage of the Payment to Employees towards Net Value Added was 22.44 percent in 2005-06, it increased to 23.07 in 2006-07, 24.37 percent in 2007-08, the highest level at 57.93 percent in 2008-09. Finally it reached at 47.32 percent in 2009-10.

In Bharat Heavy Electricals Ltd. As the percentage of the payment to Employees towards Net Value Added was 29.32 percent in 2005-06, it decreased to 25.30 percent in 2006-07, 24.28 percent in 2007-08. It further increased to 28.32 percent in 2008-09. And finally it reached and increased to 42.43 percent in 2009-10.

Indian Oil Corp. Ltd., As the percentage of the payment to Employee towards Net value Added was the lowest level at 4.16 percent in 2005-06. It increased to 4.22 percent in 2006-07. It further increased to 4.51 percent and 8.44 percent in 2007-08 and 2008-09 respectively. And finally it reached the highest level at 8.98 percent in 2009-10.
In case of Infosys Ltd., as Employees Benefit to Net Value Added Ratio was decreasing trend during the period of study. It ranged between 63.23 percent in 2005-06 to 60.88 percent in the year 2009-10. It was 62.58 percent in 2006-07, it decreased to 62.43 percent in 2007-08 and It further decreased to 62.28 percent in 2008-09.

It may be noted from Employees Benefit to Net Value Added Ratio In Steel Authority of India Ltd 24.28 percent in 2005-06. It increased the highest level to 30.92 percent in during study period. It was 24.48 crore in 2007-08. It was 30.89 percent in 2008-09. The lowest level 22.74 percent in 2009-10.

In Oil & Natural Gas Corp. Ltd., The percentage of payment to Employees towards Net Value Added was Fluctuating Trend during the period of study. It ranged between 2.75 percent in 2008-09 to 6.18 percent in 2006-07. 4.14 percent and 3.19 percent in the year 2005-06 and 2007-08 respectively. It was 3.77 percent in the year 2009-10.

On the basic of above analysis showed that it may be calculated that the average Employees Benefit to Net Value Added Ratio in private sector as WIPRO Tech. Ltd. Greater than among selected corporate units, during the study period.

**F – Test Analysis**

**Null hypothesis (H₀)**

H₀₁:- There would be no significant different in the Employees Benefit to Net Value Added Ratio in between the years of selected in private sector and public sector corporate units.

H₀₂:- There would be no significant different in the Employees Benefit to Net Value Added Ratio in between the companies of selected in private sector and public sector corporate units.

**Alternative hypothesis (H₁)**

H₁₁:- There would be significant different in the Employees Benefit to Net Value Added Ratio in between the years of selected in private sector and public sector corporate units.
H_{12}:- There would be significant different in the Employees Benefit to Net Value Added Ratio in between the companies of selected in private sector and public sector corporate units.

To satisfy these hypothesis the F-Test ratio has been calculated and being shown in Table – 5.12 given below.

**Table – 5.12**

Analysis Of Variance Table for Two-Way ANOVA

<table>
<thead>
<tr>
<th>Source of Variation</th>
<th>Sum of Squares</th>
<th>Degree of freedom</th>
<th>MSS</th>
<th>( F_c )</th>
<th>( F_t )</th>
</tr>
</thead>
<tbody>
<tr>
<td>Between Years(Rows)</td>
<td>329.9</td>
<td>4</td>
<td>82.47</td>
<td>2.54</td>
<td>2.63</td>
</tr>
<tr>
<td>Between Companies (Columns)</td>
<td>24595.77</td>
<td>9</td>
<td>2732.9</td>
<td>84.49</td>
<td>2.15</td>
</tr>
<tr>
<td>Residual</td>
<td>1164.38</td>
<td>36</td>
<td>32.34</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>26090.04</td>
<td>49</td>
<td>24595.77</td>
<td>9</td>
<td>2732.9</td>
</tr>
</tbody>
</table>

- **Level of significance** :- 5%
- **Critical value of F-Test (\( F_t \))** :-
  - \( F_{t1} = 2.63 \)
  - \( F_{t2} = 2.15 \)
- **Degree of Freedom**
  - Between Years(Rows)= 4
  - Between Companies (Columns)=9

**CONCLUSION**

- For Years(Rows):-

  The critical value of F-test at 5 percent level of significance is greater than the calculated value of F-test. \( F_{t1} = 2.63 \) is greater than \( F_{c1} = 2.54 \). So, the null hypothesis \( H_{01} \) will be accepted. \( H_{11} \) Alternative hypothesis is rejected.
Therefore, there would be significant different in the Employees Benefit to Net Value Added Ratio in between the years of selected in private sector and public sector corporate units each year during the study period.

➢ **Between Companies(Columns):**

The critical value of **F-test** at 5 percent level of significance is less than the calculated value of **F-test**. ($F_{12} = 3.006917$ is less than $F_{c2} = 73.24875$). So, the null hypothesis $H_0$ will be rejected. $H_1$: Alternative hypothesis is accepted.

Therefore, there would be significant different in the Employees Benefit to Net Value Added Ratio in between the companies of selected in private sector and public sector corporate units during the study period.
4.14. GOVERNMENT SHARE TO NET VALUE ADDED RATIO:-

4.14.1 CONCEPT

Every corporate unit pays some value to government in form of taxes. This ratio share how much percentage of government share to net value added. This ratio calculated as follow:

4.14.2 FORMULA

Government Share to Net Value Added Ratio

\[
\frac{\text{Taxes Paid to Government}}{\text{Net Value Added}} \times 100
\]


The The Government Share to Net Value Added Ratio in WIPRO, CIPLA, RIL, TCS and TATA Motors, BHEL, IOC, Infosys, SAIL,ONGC. Under study have been analyzed and calculated for the study period which has been represented in Table – 5.13 given below.

Table – 5.13

Government Share to Net Value Added Ratio in selected corporate units ( In %)

<table>
<thead>
<tr>
<th>YEARS</th>
<th>WIPRO</th>
<th>CIPLA</th>
<th>TCS</th>
<th>RIL</th>
<th>TATA Motors</th>
<th>BHEL</th>
<th>IOC</th>
<th>Infosys</th>
<th>SAIL</th>
<th>ONGC</th>
</tr>
</thead>
<tbody>
<tr>
<td>2005-06</td>
<td>6.67</td>
<td>24.77</td>
<td>7.23</td>
<td>51.53</td>
<td>55.74</td>
<td>14.53</td>
<td>47.68</td>
<td>5.46</td>
<td>51.4</td>
<td>38.93</td>
</tr>
<tr>
<td>2006-07</td>
<td>6.38</td>
<td>23.88</td>
<td>6.47</td>
<td>38.44</td>
<td>51.79</td>
<td>15</td>
<td>44.44</td>
<td>4.93</td>
<td>37.93</td>
<td>38.91</td>
</tr>
<tr>
<td>2007-08</td>
<td>6</td>
<td>22.01</td>
<td>7.46</td>
<td>41.88</td>
<td>48.23</td>
<td>15.79</td>
<td>45.82</td>
<td>7.09</td>
<td>32.57</td>
<td>41.35</td>
</tr>
<tr>
<td>2008-09</td>
<td>5.3</td>
<td>16.79</td>
<td>6.68</td>
<td>34.83</td>
<td>26.71</td>
<td>18.38</td>
<td>40.88</td>
<td>6.26</td>
<td>33.19</td>
<td>41.31</td>
</tr>
<tr>
<td>AVERAGE</td>
<td>6.23</td>
<td>21.56</td>
<td>7.5</td>
<td>38.43</td>
<td>41.13</td>
<td>16.05</td>
<td>44.79</td>
<td>6.68</td>
<td>36.99</td>
<td>41.15</td>
</tr>
</tbody>
</table>

[Source: - Compiled and Calculated From Annual Reports of Selected Units from 2005-06 to 2009-10.]

Table – 5.13 reveal that in WIPRO Tech. Ltd. The Government Share to Net Value Added Ratio recorded fluctuating trend during the period of study. As the percentage of the Contribution to Government towards Net Value Added was 6.67 percent in 2005-06. It increased to 6.38 percent in 2006-07, it was 6.00 percent in
2007-08. It further decreased to 5.30 percent in 2008-09. Finally it was the highest level at 6.81 percent in 2009-10.

In CIPLA, the Government Share to Net Value Added Ratio witnessed decreasing trend during the study period. As the percentage of Net Value Added, The Contribution to Government was 24.77 percent in 2005-06 it decreased to 23.88 percent in the year 2006-07, 22.01 percent in 2007-08, it further decreased to 16.79 percent in 2008-09. And finally it reached level at 20.37 percent in 2009-10.

In TATA Consultancy Service Ltd., the Government Share to Net Value Added Ratio showed that it fluctuating trend during the period of the study. Ratio of Contribution to Government towards Net Value Added was 7.23 percent in 2005-06. It decreased to 6.47 percent in 2006-07. 7.46 percent in 2007-08. It was the highest level 9.68 percent in 2009-10.

In case of Reliance Industries Ltd., as the ratio of the Contribution to Government towards Net Value Added ranged between 25.46 percent in 2009-10 to 51.53 percent in 2005-06. It decreased to 38.44 percent in 2006-07. 41.88 and 34.83 percent in the years 2007-08 and 2008-09 respectively.

It may be noted from in TATA Motors Ltd. The Ratio of Contribution to Government towards Net Value Added decreasing trend during period of study. It was the highest level at 55.74 percent in 2005-06. It decreased to 51.79 percent in 2006-07. It further decreased to 48.23 percent to 2007-08, it was 26.71 percent in 2008-09. And finally it reached the lowest level at 23.16 percent in the year 2009-10.

In Bharat Heavy Electricals Ltd., was utilized for contribution to Government in form of excise duty and taxes the percentage of Contribution to Government towards Net value Added was 14.53 percent in 2005-06. It decreased to 15.00 percent 2006-07. 15.79 percent in 2007-08. It was the highest level at 18.38 percent 2008-09 and finally it reached to 16.57 percent in 2009-10.

Indian Oil Corp. Ltd., was utilized for contribution to Government in form of excise duty and taxes the percentage of contribution to Government towards Net Value Added was 47.68 percent in the year 2005-06 its highest level. It decreased to 44.44 percent in 2006-07. It increased to 45.82 percent in 2007-08. It decreased to 40.88 percent in 2008-09. And finally it was 45.11 percent in 2009-10.
In case of **Infosys Ltd.** was utilized for Ratio of contribution to Government towards Net Value Added was **5.46** percent in 2005-06. It decreased to **4.93** percent in 2006-07. It increased to **7.09** percent in 2007-08. It decreased to **6.26** percent in 2008-09. Finally it achieved the Highest level at **9.67** percent in 2009-10.

It may be noted from **Government Contribution to Net Value Added Ratio In Steel Authority of India Ltd.** It ranged between the lowest level at **29.28** percent in 2009-10 to the highest level of **51.40** percent in 2005-06. It was **37.93** percent in 2006-07. It increased to **32.57** percent in 2007-08 and it was **33.19** percent in 2008-09

**In Oil & Natural Gas Corp. Ltd.,** As the Ratio of the contribution to Government towards Net Value Added was **38.93** percent in 2005-06. It slightly decreased to **38.91** percent in 2006-07. It increased to the highest level at **41.35** percent in 2007-08. It decreased to **41.31** percent in 2008-09 and finally it was slightly decreased to **40.26** percent in 2009-10.

On the basis of above analysis showed that it may be calculated that the average. The Ratio of Contribution to Government towards Net Value Added in public sector as **Indian Oil Corp. Ltd.** Greater than among selected corporate units, during the study period.

**F – Test Analysis**

- **Null hypothesis (H₀)**
  
  \( H_{01} \): There would be no significant different in the Government Share to Net Value Added Ratio in between the years of in private sector and public sector corporate units.

  \( H_{02} \): There would be no significant different in the Government Share to Net Value Added Ratio in between the companies of in private sector and public sector corporate units.

- **Alternative hypothesis (H₁)**
  
  \( H_{11} \): There would be significant different in the Government Share to Net Value Added Ratio in between the years of in private sector and public sector corporate units.
H\textsubscript{12}:- There would be significant different in the Government Share to Net Value Added Ratio in between the companies of selected in private sector and public sector corporate units.

To satisfy these hypothesis the F-Test ratio has been calculated and being shown in Table – 5.14 given below.

Table – 5.14

Analysis Of Variance Table for Two-Way ANOVA

<table>
<thead>
<tr>
<th>Source of Variation</th>
<th>Sum of Squares</th>
<th>Degree of freedom</th>
<th>MSS</th>
<th>( F_c )</th>
<th>( F_t )</th>
</tr>
</thead>
<tbody>
<tr>
<td>Between Years(Rows)</td>
<td>403.48</td>
<td>4</td>
<td>100.87</td>
<td>2.87</td>
<td>2.63</td>
</tr>
<tr>
<td>Between Companies (Columns)</td>
<td>11409.76</td>
<td>9</td>
<td>1267.8</td>
<td>36.09</td>
<td>2.15</td>
</tr>
<tr>
<td>Residual</td>
<td>1264.48</td>
<td>36</td>
<td>35.12</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>13077.72</td>
<td>49</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

- **Level of significance** :- 5%

- **Critical value of F-Test** (\( F_t \)) :-
  - \( F_{t1} = 2.63 \)
  - \( F_{t2} = 2.15 \)

- **Degree of Freedom**
  - Between Years(Rows)= 4
  - Between Companies(Colunms)=9

**CONCLUSION**

- For Years(Rows):

  The critical value of **F-test** at 5 percent level of significance is less than the calculated value of **F-test**. (\( F_{t1} = 2.63 \) is less than \( F_{c1} = 2.87 \)). So, the null hypothesis \( H_{01} \) will be rejected. \( H_{11} \) Alternative hypothesis is accepted.
Therefore, there would be significant different in the Government Share to Net Value Added Ratio in between the years of in private sector and public sector corporate units each year during the study period.

➢ Between Companies(Columns):-

The critical value of F-test at 5 percent level of significance is less than the calculated value of F-test. \( F_{\text{cal}} = 2.15 \) is less than \( F_{\text{crit}} = 36.09 \). So, the null hypothesis \( H_0 \) will be rejected. \( H_1 \) Alternative hypothesis is accepted.

Therefore, there would be significant different in the Government Share to Net Value Added Ratio in between the companies of selected in private sector and public sector corporate units during the study period.
4.15 PAYMENT TO SHAREHOLDERS TO NET VALUE ADDED RATIO:

4.15.1 CONCEPT

Every corporate unit has to pay dividend to its shareholders or providers of capital. This ratio shows the earning management policy of the concern. This relationship creates following formula.

4.15.2 FORMULA

Payment to shareholders to Net Value Added Ratio

\[
\text{Payment to Shareholders to Net Value Added Ratio} = \frac{\text{Dividend}}{\text{Net Value Added}} \times 100
\]

The Payment to shareholders to Net Value Added Ratio in WIPRO, CIPLA, RIL, TCS and TATA Motors, BHEL, IOC, Infosys, SAIL, ONGC. Under study have been analyzed and calculated for the study period which has been represented in Table – 5.15 given below.

Table – 5.15
Payment to Shareholders to Net Value Added Ratio in selected corporate units ( in %)

<table>
<thead>
<tr>
<th>YEARS</th>
<th>WIPRO</th>
<th>CIPLA</th>
<th>TCS</th>
<th>RIL</th>
<th>TATA Motors</th>
<th>BHEL</th>
<th>IOC</th>
<th>Infosys</th>
<th>SAIL</th>
<th>ONGC</th>
</tr>
</thead>
<tbody>
<tr>
<td>2005-06</td>
<td>10.42</td>
<td>15.64</td>
<td>7.92</td>
<td>8.12</td>
<td>6.29</td>
<td>5.54</td>
<td>2.82</td>
<td>16.3</td>
<td>4.85</td>
<td>19.49</td>
</tr>
<tr>
<td>2006-07</td>
<td>8.38</td>
<td>14.2</td>
<td>8.7</td>
<td>6.69</td>
<td>5.52</td>
<td>6.41</td>
<td>3.3</td>
<td>5.71</td>
<td>7.69</td>
<td>17.22</td>
</tr>
<tr>
<td>2007-08</td>
<td>7.18</td>
<td>13.47</td>
<td>9.98</td>
<td>6.16</td>
<td>5.14</td>
<td>6.97</td>
<td>0.96</td>
<td>13.37</td>
<td>4.74</td>
<td>16.44</td>
</tr>
<tr>
<td>2008-09</td>
<td>3.76</td>
<td>12.32</td>
<td>8.56</td>
<td>10.03</td>
<td>2.47</td>
<td>7.87</td>
<td>1.33</td>
<td>7.34</td>
<td>3.9</td>
<td>16.22</td>
</tr>
<tr>
<td>2009-10</td>
<td>5.35</td>
<td>10.18</td>
<td>20.07</td>
<td>6.68</td>
<td>4.64</td>
<td>7.51</td>
<td>4.68</td>
<td>7.22</td>
<td>5.61</td>
<td>17.39</td>
</tr>
<tr>
<td>AVERAGE</td>
<td>7.14</td>
<td>13.16</td>
<td>11.05</td>
<td>7.54</td>
<td>4.81</td>
<td>6.86</td>
<td>2.62</td>
<td>9.99</td>
<td>5.36</td>
<td>17.35</td>
</tr>
</tbody>
</table>

[Source: Calculated data from Annual Reports of Selected Units from 2005-06 to 2009-10.]

Table – 5.15 reveal that in WIPRO Tech. Ltd. The Ratio of Payment to Shareholders to Net Value Added increasing trend during period of study except in the year 2008-09. It was 10.42 percent in 2005-06, 8.98 percent in 2006-07. It decreased to 7.18 percent in 2007-08 and It further decreased to 3.76 percent in 2008-09. Finally it reached level at 5.35 percent in 2009-10.
In CIPLA, the Ratio of Payment to Shareholder towards Net Value Added witnessed a fluctuating trend during the study period. It ranged between 10.18 percent in 2009-10 to 15.64 percent in 2005-06. 14.20 percent and 13.47 percent in the years 2006-07 and 2007-08 respectively. 12.32 percent in 2008-09.

In TATA Consultancy Service Ltd., the Ratio of Payment to Shareholder towards Net Value Added increasing trend during the year 2005-06 to 2009-10. It was the highest level at 20.47 percent in 2009-10. It was the lowest level at 7.92 percent in 2005-06. It was 8.70 percent in 2006-07, which was 9.58 percent in the year 2007-08. And 8.56 percent in 2008-09.

In Reliance Industries Ltd. The Ratio of Payment to Shareholders to Net Value Added increasing trend during period of study It was 8.12 percent in 2005-06, 6.69 percent in 2006-07. It further decreased to 6.16 percent in 2007-08. It reached the highest level at 10.03 percent in 2008-09 and finally it slightly decreased to 6.68 percent in the year 2009-10.

It may be noted from gross margin ratio in TATA Motors Ltd. The ratio of Payment to Shareholder towards Net Value Added decreasing trend during the period of study. It was the highest level at 6.29 percent in 2005-06 after it decreasing remaining year 5.52 percent in 2006-07. It decreased to 5.14 percent and 2.47 (lowest) percent in 2007-08 and 2008-09 respectively.

In Bharat Heavy Electricals Ltd. The percentage of payments to shareholder towards Net Value Added throughout increasing trend during the period of study 2005-06 to 2009-10. It ranged between the lowest level at 5.54 percent in 2005-06 to the highest level at 7.87 Crore in 2008-09. In between 6.41 percent in 2006-07. It increased to 6.97 percent in 2007-08 and finally it reached at 7.51 in 2009-10.

Indian Oil Corp. Ltd., Ratio of Payment to Shareholders towards Net Value Added in fluctuating trend during the period of study the year 2005-06 to 2009-10. It ranged between 0.96 percent in 2007-08 to 4.68 percent in 2009-10. It was 2.82 percent in 2005-06. It was 1.33 percent in 2008-09.

In case of Infosys Ltd., Ratio of Payment to shareholder towards Net Value Added Fluctuating trend during the year 2005-06 to 2009-10. It was the highest level at 16.30 percent in 2005-06. It was the lowest level at 5.71 percent in 2006-07. It was
13.37 percent in 2007-08. It decreased to 7.34 percent in 2008-09 And finally it reached to 7.22 percent in 2009-10.

It may be noted from **Payment to shareholder to Net Value Added Ratio In Steel Authority of India Ltd.** It was 3.90 percent (lowest) in 2008-09 and It was 7.69 percent in 2006-07 (Highest).

**In Oil & Natural Gas Corp. Ltd.,** The portion of payment to Shareholders to Net Value Added continously fluctuating trend during the period of Study. It was the highest level at 19.44 percent in 2005-06. It decreased to 17.22 percent in 2006-07. It further decreased to 16.44 percent in 2007-08. It slightly decreased to 16.22 percent in 2008-09 And finally it was 17.39 percent in 2009-10.

On the basic of above analysis showed that it may be calculated that the average the ratio of **Payment to Shareholder towards Net Value Added** in **Oil & Natural Gas Corp. Ltd.** Greater than among selected corporate units during the study period.

**F – Test Analysis**

- **Null hypothesis (H₀)**
  
  $H₀₁$: There would be no significant different in the Payment to shareholders to Net Value Added Ratioin between the years of in private sector and public sector corporate units.

  $H₀₂$: There would be no significant different in the Payment to shareholders to Net Value Added Ratiion between the companies of selected in private sector and public sector corporate units.

- **Alternative hypothesis (H₁)**
  
  $H₁₁$: There would be significant different in the Payment to shareholders to Net Value Added Ratio in between the years of selected in private sector and public sector corporate units.

  $H₁₂$: There would be significant different in the Payment to shareholders to Net Value Added Ratiion between the companies of selected in private sector and public sector corporate units.
To satisfy these hypothesis the F-Test ratio has been calculated and being shown in Table – 5.16 given below.

Table – 5.16
Analysis Of Variance Table for Two-Way ANOVA

<table>
<thead>
<tr>
<th>Source of Variation</th>
<th>Sum of Squares</th>
<th>Degree of freedom</th>
<th>MSS</th>
<th>F_c</th>
<th>F_t</th>
</tr>
</thead>
<tbody>
<tr>
<td>Between Years(Rows)</td>
<td>29.46</td>
<td>4</td>
<td>7.37</td>
<td>1.06</td>
<td>2.63</td>
</tr>
<tr>
<td>Between Companies(Columns)</td>
<td>961.29</td>
<td>9</td>
<td>95.7</td>
<td>13.77</td>
<td>2.15</td>
</tr>
<tr>
<td>Residual</td>
<td>250.25</td>
<td>36</td>
<td>6.95</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>1141</td>
<td>49</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

- **Level of significance** :- 5%
- **Critical value of F-Test (F_t) :-**
  - \( F_{t1} = 2.63 \)
  - \( F_{t2} = 2.15 \)
- **Degree of Freedom**
  - Between Years(Rows)= 4
  - Between Companies(Columns)= 9

**CONCLUSION**
- For Years(Rows):-  
  The critical value of **F-test** at 5 percent level of significance is greater than the calculated value of **F-test.** \( (F_{t1} = 2.63 \) is greater than \( F_{c1} = 1.06 \)). So, the null hypothesis \( H_01 \) is accepted be rejected.\( H_{11} \) Alternative hypothesis is rejected.
  
  Therefore, there would be no significant different in the Payment to shareholders to Net Value Added Ratio in between the years of in private sector and public sector corporate unit each year during the study period.
Between Companies(Columns):

The critical value of F-test at 5 percent level of significance is less than the calculated value of F-test. \((F_{12}= 2.15)\) is less than \(F_{12}= 13.77\). So, the null hypothesis \(H_0\) will be rejected. \(H_1\) Alternative hypothesis is accepted.

Therefore, there would be significant different in the Payment to shareholders to Net Value Added Ratio in between the companies of selected in private sector and public sector corporate units during the study period.
4.16 THE PAYMENT TO LENDERS TO NET VALUE ADDED RATIO:

4.16.1 CONCEPT

This ratio find out that how much percentage of Net Value Added is cost of capital. This ratio represents efficiency or inefficiency of capital management. This ratio is calculated as follows formula:

4.16.2 FORMULA

Payment to lenders to Net Value Added Ratio

\[
\text{Payment to Lenders to Net Value Added Ratio} = \frac{\text{Interest}}{\text{Net Value Added}} \times 100
\]

The Payment to Lenders to Net Value Added Ratio in WIPRO, CIPLA, RIL, TCS and TATA Motors, BHEL, IOC, Infosys, SAIL, ONGC. Under study have been analyzed and calculated for the study period which has been represented in Table – 5.17 given below.

Table – 5.17

Payment to Lenders to Net Value Added Ratio in selected corporate units (%)

<table>
<thead>
<tr>
<th>YEARS</th>
<th>WIPRO</th>
<th>CIPLA</th>
<th>TCS</th>
<th>RIL</th>
<th>TATA Motors</th>
<th>BHEL</th>
<th>IOC</th>
<th>Infosys</th>
<th>SAIL</th>
<th>ONGC</th>
</tr>
</thead>
<tbody>
<tr>
<td>2005-06</td>
<td>0.51</td>
<td>1.15</td>
<td>0.47</td>
<td>4.84</td>
<td>3.11</td>
<td>0.92</td>
<td>2.77</td>
<td>0.16</td>
<td>2.79</td>
<td>0.49</td>
</tr>
<tr>
<td>2006-07</td>
<td>0.13</td>
<td>0.64</td>
<td>0.4</td>
<td>4.7</td>
<td>6.57</td>
<td>0.46</td>
<td>3.04</td>
<td>0.19</td>
<td>2.07</td>
<td>0.42</td>
</tr>
<tr>
<td>2007-08</td>
<td>1.37</td>
<td>0.98</td>
<td>0.47</td>
<td>4.06</td>
<td>6.6</td>
<td>0.32</td>
<td>3.49</td>
<td>0</td>
<td>0.81</td>
<td>0.32</td>
</tr>
<tr>
<td>2008-09</td>
<td>1.54</td>
<td>2.61</td>
<td>0.52</td>
<td>9.56</td>
<td>15.33</td>
<td>0.29</td>
<td>5.82</td>
<td>0.02</td>
<td>0.94</td>
<td>0.56</td>
</tr>
<tr>
<td>2009-10</td>
<td>0.86</td>
<td>1.77</td>
<td>0.56</td>
<td>5.45</td>
<td>15.94</td>
<td>0.23</td>
<td>3.92</td>
<td>0.01</td>
<td>1.95</td>
<td>1.24</td>
</tr>
<tr>
<td>AVERAGE</td>
<td>0.88</td>
<td>1.43</td>
<td>0.48</td>
<td>5.88</td>
<td>4.39</td>
<td>0.44</td>
<td>3.81</td>
<td>0.08</td>
<td>1.71</td>
<td>0.61</td>
</tr>
</tbody>
</table>

[Source: Calculated data From Annual Reports of Selected Units from 2005-06 to 2009-10.]

Table – 5.17 reveals that in WIPRO Tech. Ltd. Payment to Interest of Lenders marked decreasing trend during the years 2005-06 to 2006-07. After it increased in the years 2007-08 and 2008-09. It was 0.51 percent in 2005-06. It decreased to 0.12 percent in 2006-07, it further increased to the level at 1.37 percent in
2007-08. After then it increased to 1.54 percent in 2008-09. At last it reached at 0.86 in the year 2009-10.

In CIPLA, The Payment to Lender marked a fluctuating trend during the study period. It was 1.15 percent in 2005-06. It decreased to 0.64 percent in 2006-07, after it increased upto during two years it as 0.98 percent in 2007-08 and it reached the highest level at 2.61 percent in 2008-09 and finally it reached at 1.77 percent in the year 2010.

In TATA Consultancy Service Ltd., Payment to interest to lenders marked fluctuating trend during the period of study. It was 0.47 percent in 2005-06, 0.40 percent in 2006-07, 0.47 percent and 0.52 percent in 2007-08 and 2008-09 respectively. And finally it reached at 0.56 percent in 2009-10.

In case of Reliance Industries Ltd., Payment to Interest of Lenders marked fluctuating trend during the year 2005-06 to 2009-10. It was 4.84 percent in 2005-06. It increased to 5.47 percent in 2006-07, 4.06 percent in 2007-08. It increased to the highest level at 9.56 percent in 2008-09 after then it decreased to 5.45 percent in 2009-10.

It may be noted from the Payment to Lenders to Net Value Added Ratio in TATA Motors Ltd Payment to Interest of Lenders marked continuously increasing trend during the period of study and the percentage of Payment to Lender also increased year to year. It was 3.11 percent in 2005-06, 6.57 percent in 2006-07. It further increased to 6.60 percent in 2007-08. It achieved level at 15.33 percent in 2008-09. And finally it achieved the highest level at 15.94 percent in 2009-10.

In Bharat Heavy Electricals Ltd., Payment to interest to Lenders marked decreasing trend during the period of study. It was 0.92 percent in 2005-06, 0.46 percent in 2006-07, 0.32 percent and 0.29 percent in 2007-08 and 2008-09 respectively. And finally it reached at 0.23 percent in 2009-10.

Indian Oil Corp. Ltd., Ratio of The percentage of payment to lender towards Net Value Added. It was 2.77 percent in 2005-06 (lowest), 3.04 percent and 3.49 percent in the year 2006-07 and 2007-08 respectively. It was the highest level at 5.82 percent in 2008-09. And finally it reached 3.92 percent in 2009-10.
In case of **Infosys Ltd.**, Ratio of Payment to interest to Lenders marked Fluctuating trend during the period of study. It was 0.16 percent in 2005-06, 0.19 percent and 0.02 percent in the year 2006-07 and 2008-09 respectively Finally it was 0.01 percent in 2009-10..

It may be noted from the **payment to lender in form of Interest to Net Value Added Ratio In Steel Authority of India Ltd.** First four year decreasing trend last year it’s increased. It was 2.79 percent in 2005-06 2.07 percent in 2006-07. It decreased to 0.81 percent in 2007-08. It further decreased to 0.94 percent in 2008-09. At Last it reached to 1.95 percent in 2009-10.

**In Oil & Natural Gas Corp. Ltd.,** Payment to Interest of Lenders marked first three years decreasing trend during the year 2005-06 to 2007-08. After two year increased and reached the highest level. It was 0.49 percent in 2005-06. It decreased to 0.42 percent in 2006-07. It further decreased to 0.32 (lowest) in 2007-08 after it increased to 0.56 percent in 2008-09 and finally it achieved the highest level at 1.24 percent in 2009-10.

On the basic of above analysis showed that it may be calculated that the average Payment to Lenders to Net Value Added Ratio in private **Infosys Ltd.** Lower than among selected corporate units, during the study period. To compare selected units lowest average figure of Payment to Lenders to Net Value Added Ratio in **Infosys Ltd** is better among companies.

**F – Test Analysis**

- **Null hypothesis (H₀)**

  **H₀₁**: There would be no significant different in the Payment to Lenders to Net Value Added Ratio in between the years of selected in private sector and public sector corporate units.

  **H₀₂**: There would be no significant different in the Payment to Lenders to Net Value Added Ratio in between the companies of selected in private sector and public sector corporate units.
**Alternative hypothesis (H₁)**

**H₁₁**: There would be significant different in the Payment to shareholders to Net Value Added Ratio in between the years of selected in private sector and public sector corporate units.

**H₁₂**: There would be significant different in the Payment to shareholders to Net Value Added Ratio in between the companies of selected in private sector and public sector corporate units.

To satisfy these hypothesis the F-Test ratio has been calculated and being shown in Table – 5.18 given below.

<table>
<thead>
<tr>
<th>Source of Variation</th>
<th>Sum of Squares</th>
<th>Degree of freedom</th>
<th>MSS</th>
<th>F_c</th>
<th>F_t</th>
</tr>
</thead>
<tbody>
<tr>
<td>Between Years(Rows)</td>
<td>33.19</td>
<td>4</td>
<td>8.29</td>
<td>2.27</td>
<td>2.63</td>
</tr>
<tr>
<td>Between Companies (Columns)</td>
<td>421.92</td>
<td>9</td>
<td>46.88</td>
<td>12.82</td>
<td>2.15</td>
</tr>
<tr>
<td>Residual</td>
<td>131.65</td>
<td>36</td>
<td>3.66</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>586.76</td>
<td>49</td>
<td>421.92</td>
<td>9</td>
<td>46.88</td>
</tr>
</tbody>
</table>

- **Level of significance** : - 5%
- **Critical value of F-Test (F_t) :**
  - $F_{t1} = 2.63$
  - $F_{t2} = 2.15$
- **Degree of Freedom**
  - Between Years(Rows) = 4
  - Between Companies (Columns) = 9

**Concussion**

- **For Years(Rows):**

  The critical value of F- test at 5 percent level of significance is greater than the calculated value of F-test. ($F_{t1} = 2.63$ is greater than $F_{c1} = 2.27$). So, the null hypothesis $H_{01}$ is accepted. $H_{11}$ Alternative hypothesis is rejected.
There would be no significant differences in the Payment to Lenders to Net Value Added Ratio in between the years of selected in private sector and public sector corporate units each year during the study period.

- **Between Companies (Columns):**

  The critical value of F-test at 5 percent level of significance is less than the calculated value of F-test. \( F_{t2} = 2.15 \) is less than \( F_{c2} = 12.82 \). So, the null hypothesis \( H_{01} \) will be rejected. \( H_{11} \) Alternative hypothesis is accepted.

Therefore, there would be significant differences in the Payment to Lenders to Net Value Added Ratio in between the companies of selected in private sector and public sector corporate units during the study period.
4.17 RETAINED EARNING TO NET VALUE ADDED RATIO:

4.17.1 CONCEPT

This ratio shows the relationship between Retained Earning and Net Value Added. It is calculated as follows formula:

4.17.2 FORMULA

\[
\text{Retained Earning to Net Value Added Ratio} = \frac{\text{Retained Earning}}{\text{Net Value Added}} \times 100
\]

The Retained Earning to Net Value Added Ratio in WIPRO, CIPLA, RIL, TCS and TATA Motors, BHEL, IOC, Infosys, SAIL, ONGC. Under study have been analyzed and calculated for the study period which has been represented in Table – 5.19 given below.

Table – 5.19

Retained Earnings to Net Value Added Ratio in selected corporate units (in %)

<table>
<thead>
<tr>
<th>YEARS</th>
<th>WIPRO</th>
<th>CIPLA</th>
<th>TCS</th>
<th>RIL</th>
<th>TATA Motors</th>
<th>BHEL</th>
<th>IOC</th>
<th>Infosys</th>
<th>SAIL</th>
<th>ONGC</th>
</tr>
</thead>
<tbody>
<tr>
<td>2005-06</td>
<td>18.33</td>
<td>43.28</td>
<td>27.83</td>
<td>28.01</td>
<td>12.43</td>
<td>49.63</td>
<td>42.61</td>
<td>14.85</td>
<td>16.68</td>
<td>37</td>
</tr>
<tr>
<td>2006-07</td>
<td>20.09</td>
<td>44.42</td>
<td>22.53</td>
<td>38.84</td>
<td>13.05</td>
<td>52.83</td>
<td>45</td>
<td>26.59</td>
<td>21.38</td>
<td>37.27</td>
</tr>
<tr>
<td>2007-08</td>
<td>18.33</td>
<td>44.99</td>
<td>24.89</td>
<td>39.06</td>
<td>15.66</td>
<td>52.65</td>
<td>45.23</td>
<td>31.17</td>
<td>37.04</td>
<td>27.7</td>
</tr>
<tr>
<td>2008-09</td>
<td>20.64</td>
<td>46.78</td>
<td>22.67</td>
<td>31.94</td>
<td>-2.44</td>
<td>45.13</td>
<td>43.53</td>
<td>24.1</td>
<td>31.09</td>
<td>39.15</td>
</tr>
<tr>
<td>2009-10</td>
<td>21.9</td>
<td>47.5</td>
<td>12.65</td>
<td>54.75</td>
<td>8.94</td>
<td>33.27</td>
<td>38.28</td>
<td>22.22</td>
<td>40.22</td>
<td>37.65</td>
</tr>
<tr>
<td>AVERAGE</td>
<td>19.86</td>
<td>45.39</td>
<td>22.11</td>
<td>38.52</td>
<td>9.53</td>
<td>46.7</td>
<td>36.21</td>
<td>23.79</td>
<td>29.28</td>
<td>35.75</td>
</tr>
</tbody>
</table>

[Source: Calculated data from Annual Reports of Selected Units from 2005-06 to 2009-10.]

Table – 5.19 reveals that in WIPRO Tech. Ltd. Ratio of Retained In Business to Net Value Added fluctuating trend during the period of study. It was 18.33 percent 2005-06, 20.09 percent and 18.33 percent in 2006-07 and 2007-08 respectively. It was 20.64 percent in 2008-09. It increased to 21.90 percent in 2009-10.
In **CIPLA**, The Ratio of Retained in Business to Net Value Added Continuously increasing trend throughout period of study. It increased upto **43.28** percent in 2005-06, **44.42** percent in 2006-07, it further increased to **44.99** percent in 2007-08, it reached at **46.78** percent in 2008-09. Finally it reached the highest level at **46.78** percent in 2009-10.

**In TATA Consultancy Service Ltd.**, The Ratio of **Retained In Business** to **Net Value Added** fluctuating trend during the period of study. It was the highest level at **32.24** percent in 2004-05. It decreased to **26.95** percent in 2005-06, **23.75** percent in 2006-07. It further decreased to **22.25** percent in 2007-05. Finally it decreased to **19.87** percent in 2008-09.

**In case of Reliance Industries Ltd.**, The percentage of **Retained In Business** to **Net Value Added** fluctuating trend during the period of study. It was the highest level at **27.83** percent in 2005-06. It decreased to **22.53** percent in 2006-07, **24.89** percent in 2007-08. It further decreased to **22.67** percent in 2008-09. Finally it decreased to **12.65** percent in 2009-10.

It may be noted from The Ratio of **Retained In Business** to **Net Value Added** in **TATA Motors Ltd.** increasing trend during the year 2005-06 to 2009-10, suddenly it came down and made loss in the year 2008-09. It increased to **12.43** percent in 2005-06, **13.05** percent in 2006-07, further increased the highest figure at **15.66** percent in 2007-08, it came down to make was **(-2.44)** percent in 2008-09. The absolute figure to retained in business increasing trend during year to year 2005-06 to 2009-10.

**In Bharat Heavy Electricals Ltd.** Ratio of Retained In Business to Net value Added Fluctuating trend during level at **52.83** percent in 2006-07. It was **49.63** percent in 2005-06, It was **52.65** percent in 2007-08 and **45.13** percent in 2008-09. Finally it reached at **33.27** percent in 2009-10.

**Indian Oil Corp. Ltd.**, Ratio of Retained In Business to Net Value Added fluctuating trend during the period of study. It was **42.61** percent in the year 2005-06. It increased to **45.00** percent in 2006-07. It was the highest level at **45.23** percent in 2007-08. It decreased to **43.53** percent in 2008-09. It reached the lowest level at **38.28** percent in 2009-10.
In case of Infosys Ltd., Ratio of Retained In Business to Net Value Added First Three year increasing trend after ultimately come down in the year 2008-09 and 2009-10. It was 14.85 percent in 2005-06, It increased to 26.59 percent in 2006-07. It further increased to 31.17 percent (Highest Level) in 2007-08. It decreased to 24.1 percent in 2008-09 and, It further decreased to 22.22 percent in 2009-10.

It may be noted from Ratio of Retained in Business to Net value Added in Steel Authority of India Ltd Continuously increasing trend throughout period of study except in year 2008-09. It was 16.68 Percent in 2005-06 (lowest figure). It was 21.38 percent in 2006-07. It increased to 37.04 percent in 2007-08. It slightly decreased to 31.09 percent in 2008-09 and finally it reached the highest level at 40.22 percent in 2009-10.

In Oil & Natural Gas Corp. Ltd., The Ratio of Retained In Business to Net Value Added continuously increasing trend during the period of study except in the year 2009-10. It was the lowest level at 37.00 percent in 2005-06. 37.27 percent and 38.70 percent in the year 2006-07 and 2007-08 respectively. It achieved the highest level at 39.15 percent in 2008-09 and after it slightly came down at 37.68 percent in 2009-10.

On the basic of above analysis showed that it may be concluded that The Ratio of Retained In Business to Net Value Added in public sector as Bharat Heavy Electricals Ltd.(Average is 46.7) Greater than among selected corporate units, during the study period.

**F – Test Analysis**

- **Null hypothesis (H₀)**

  \( \text{H₀₁:} \) There would be no significant different in the Retained Earning to Net Value Added Ratioin between the years of selected in private sector and public sector corporate units.

  \( \text{H₀₂:} \) There would be no significant different in the Retained Earning to Net Value Added Ratioin between the companies of selected in private sector and public sector corporate units.
**Alternative hypothesis (H₁)**

H₁₁:- There would be significant different in the Retained Earning to Net Value Added Ratio in between the years of selected in private sector and public sector corporate units.

H₁₁₂:- There would be significant different in the Retained Earning to Net Value Added Ratio in between the companies of selected in private sector and public sector corporate units.

To satisfy these hypothesis the F-Test ratio has been calculated and being shown in Table – 5.20 given below.

### Table – 5.20

**Analysis Of Variance Table for Two-Way ANOVA**

<table>
<thead>
<tr>
<th>Source of Variation</th>
<th>Sum of Squares</th>
<th>Degree of freedom</th>
<th>MSS</th>
<th>Fᵣ</th>
<th>Fₜ</th>
</tr>
</thead>
<tbody>
<tr>
<td>Between Years(Rows)</td>
<td>126.69</td>
<td>4</td>
<td>31.67</td>
<td>0.72</td>
<td>2.63</td>
</tr>
<tr>
<td>Between Companies (Columns)</td>
<td>6964.33</td>
<td>9</td>
<td>773.81</td>
<td>17.7</td>
<td>2.15</td>
</tr>
<tr>
<td>Residual</td>
<td>1573.78</td>
<td>36</td>
<td>43.72</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>8664.8</td>
<td>49</td>
<td>6964.8</td>
<td>9</td>
<td>17.7</td>
</tr>
</tbody>
</table>

- **Level of significance** :- 5%
- **Critical value of F-Test (Fᵣ)** :-
  - F₁₁ =2.63
  - F₁₂ =2.15

- **Degree of Freedom**
  - Between Years(Rows)= 4
  - Between Companies (Columns)=9
CONCLUSION

➢ For Years (Rows):

The critical value of F-test at 5 percent level of significance is greater than the calculated value of F-test. \( F_{t1} = 2.63 \) is greater than \( F_{c1} = 0.72 \). So, the null hypothesis \( H_{01} \) is accepted be rejected. \( H_{11} \) Alternative hypothesis is rejected.

Therefore, there would be no significant different in the Retained Earning to Net Value Added Ratioin between the years of selected in private sector and public sector corporate units each year during the study period.

➢ Between Companies (Columns):

The critical value of F-test at 5 percent level of significance is less than the calculated value of F-test. \( F_{t2} = 2.15 \) is less than \( F_{c2} = 17.70 \). So, the null hypothesis \( H_{01} \) will be rejected. \( H_{11} \) Alternative hypothesis is accepted.

Therefore, there would be significant different in the Retained Earning to Net Value Added Ratioin between the companies of selected in private sector and public sector corporate units during the study period.
4.18 DEPRECIATION TO GROSS VALUE ADDED RATIO:-

4.18.1 CONCEPT

This ratio shows the relationship between the Depreciation and Total Revenue. This ratio shows the relationship between the depreciation and Total Revenue. It can be calculated by dividing the figure of depreciation by the figure of Total Revenue. This relationship may be expressed in the shape of formula as follows:

This formula is given below.

4.18.2 FORMULA

Depreciation to Total Revenue ratio

\[
\text{Depreciation to Total Revenue ratio} = \frac{\text{Depreciation}}{\text{Total Revenue}} \times 100
\]

The Depreciation to Total Revenue Ratio in WIPRO, CIPLA, RIL, TCS and TATA Motors, BHEL, IOC, Infosys, SAIL, ONGC. Under study have been analyzed and calculated for the study period which has been represented in Table – 5.21 given below. (in %)

Table – 5.21

<table>
<thead>
<tr>
<th>YEARS</th>
<th>WIPRO</th>
<th>CIPLA</th>
<th>TCS</th>
<th>RIL</th>
<th>TATA Motors</th>
<th>BHEL</th>
<th>IOC</th>
<th>Infosys</th>
<th>SAIL</th>
<th>ONGC</th>
</tr>
</thead>
<tbody>
<tr>
<td>2005-06</td>
<td>3.39</td>
<td>2.6</td>
<td>2.1</td>
<td>3.8</td>
<td>2.29</td>
<td>1.5</td>
<td>1.21</td>
<td>4.52</td>
<td>3.35</td>
<td>12.08</td>
</tr>
<tr>
<td>2006-07</td>
<td>2.59</td>
<td>2.88</td>
<td>2.32</td>
<td>4.06</td>
<td>1.87</td>
<td>1.15</td>
<td>1.14</td>
<td>3.6</td>
<td>3.36</td>
<td>12.52</td>
</tr>
<tr>
<td>2007-08</td>
<td>2.61</td>
<td>2.75</td>
<td>2.42</td>
<td>3.34</td>
<td>1.94</td>
<td>1.19</td>
<td>1.05</td>
<td>3.44</td>
<td>2.37</td>
<td>12.57</td>
</tr>
<tr>
<td>2008-09</td>
<td>2.64</td>
<td>2.94</td>
<td>2.06</td>
<td>3.64</td>
<td>1.17</td>
<td>1.06</td>
<td>0.99</td>
<td>3.43</td>
<td>2.33</td>
<td>13.09</td>
</tr>
<tr>
<td>2009-10</td>
<td>2.71</td>
<td>2.86</td>
<td>2.18</td>
<td>4.93</td>
<td>3.75</td>
<td>1.23</td>
<td>1.15</td>
<td>3.81</td>
<td>2.85</td>
<td>16.18</td>
</tr>
<tr>
<td>AVERAGE</td>
<td>2.79</td>
<td>2.81</td>
<td>2.22</td>
<td>3.95</td>
<td>2.22</td>
<td>1.23</td>
<td>1.11</td>
<td>3.76</td>
<td>2.85</td>
<td>13.69</td>
</tr>
</tbody>
</table>

[Source: Calculated data From Annual Reports of Selected Units from 2005-06 to 2009-10.]

It can be observed from the Table –5.21 that the Depreciation to Gross Value Added ratio in WIPRO Tech. Ltd. The Ratio of Dépréciation towards Total Earning
include Sales Turnover and other income. It ranged between 2.63 percent in 2006-07 to 3.42 percent in 2005-06.

In CIPLA, the depreciation to gross value added ratio recorded continuous increasing trend during the study period. The percentage of Depreciation towards Total Earning include Sales Turnover and other income. It ranged between 2.60 percent in 2005-06 to 2.88 percent in 2009-10.

In TATA Consultancy Services Ltd, the Depreciation to Gross Value Added ratio marked trend during the study. The Ratio of Dépréciation showed an increasing trend during year 2005-06 to 2007-08. Later on it decreased in year 2008-09. It ranged between 2.06 percent in 2008-09 to 2.42 percent in 2007-08. It was to 2.10 percent in 2005-06.

In Reliance Industries Ltd, the The Ratio of Dépréciation to Total Revenue continuously increasing trend during the year 2005-06 to 2009-10. It ranged between 4.93 percent in 2009-10 to 3.34 percent in 2007-08.

In TATA Motors Ltd, the Depreciation to Gross Value Added recorded fluctuating trend during the study period. The Ratio of Depriciation to Total Revenue continuously fluctuating trend during the period of study it ranged between 1.17 percent in 2008-09 to 3.75 percent in 2009-10.

In Bharat Heavy Electricals Ltd., the Ratio of Depreciation to Total Revenues trend during the year 2005-06 to 2009-10. It ranged between 1.06 percent in year 2008-09 to 1.50 percent in 2005-06.

Indian Oil Corp. Ltd., The Ratio of Depreciation to Total Revenue showed fluctuating trend during the period of study. It ranged between 0.99 percent 2008-09 to 1.21 percent in the year 2005-06. It was 1.14 percent in 2006-07, 1.05 percent in 2008-09. At last it reached at 1.15 percent in 2009-10.

In case of Infosys Ltd., The Ratio of Depreciation to Total Revenue should a decreasing trend during year 2005-06 to 2008-09. Later on it increased in 2009-10. It ranged between 3.43 percent in 2008-09 to 4.52 percent in 2005-06. It decreased to 3.60 percent in 2006-07. It further decreased to 3.44 percent in 2007-08 and finally it reached at 3.81 percent in 2009-10.
It may be noted from "The Ratio of Depreciation to Total Revenue in Steel Authority of India Ltd." It ranged between 2.33 percent in 2008-09 to 2.36 percent in 2006-07.

In Oil & Natural Gas Corp. Ltd. The Ratio of Depreciation to Total Revenue Continuously increasing trend during the year 2005-06 to 2009-10. It ranged between 12.08 percent in 2005-06 to 16.18 percent in 2009-10 (Highest) in the year 2009-10. In between it was 12.52 percent in 2006-07. It increased to 12.57 percent in 2007-08. It further increased to 13.09 percent in 2008-09.

On the basis of the above analysis it may be concluded that average of the Depreciation to Total Revenue ratio in selected private sector and public sector corporate units showed that highest level at 13.69(Average) percent in Oil & Natural Gas Corp. Ltd. in public sector unit. It showed higher proportion to depreciation in business.

F – Test Analysis

Null hypothesis (H₀)

H₀₁:- There would be no significant different in Depreciation to Revenue ratio in between the years of selected in private sector and public sector corporate units.

H₀₂:- There would be no significant different in the Depreciation to Revenue ratio in between the companies of selected in private sector and public sector corporate units.

Alternative hypothesis (H₁)

H₁₁:- There would be significant different in the Depreciation to Revenue ratio in between the years of selected in private sector and public sector corporate units.

H₁₂:- There would be significant different in the Depreciation to Revenue ratio in between the companies of selected in private sector and public sector corporate units.
To satisfy these hypothesis the F-Test ratio has been calculated and being shown in Table – 5.22 given below.

### Table – 5.22

<table>
<thead>
<tr>
<th>Source of Variation</th>
<th>Sum of Squares</th>
<th>Degree of freedom</th>
<th>MSS</th>
<th>$F_c$</th>
<th>$F_t$</th>
</tr>
</thead>
<tbody>
<tr>
<td>Between Years(Rows)</td>
<td>4.51</td>
<td>4</td>
<td>1.23</td>
<td>2.87</td>
<td>2.63</td>
</tr>
<tr>
<td>Between Companies (Columns)</td>
<td>557.82</td>
<td>9</td>
<td>61.98</td>
<td>157.6</td>
<td>2.15</td>
</tr>
<tr>
<td>Residual</td>
<td>14.16</td>
<td>36</td>
<td>0.39</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>576.49</td>
<td>49</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

- **Level of significance** :- 5%
- **Critical value of F-Test (F_t) :-**
  - $F_{t1} = 2.63$
  - $F_{t2} = 2.15$
- **Degree of Freedom**
  - Between Years(Rows)= 4
  - Between Companies(Columss)= 9

**CONCLUSION**

- **For Years(Rows):**

  The critical value of F-test at 5 percent level of significance is less than the calculated value of F-test. ($F_{t1} = 2.63$ is less than $F_{c1} = 2.87$). So, the null hypothesis $H_{01}$ will be rejected. $H_{11}$ Alternative hypothesis is accepted.

  Therefore, there would be no significant different in the Depreciation to Revenue ratio in between the years of selected in private sector and public sector corporate units each year during the study period.
Between Companies (Columns):

The critical value of F-test at 5 percent level of significance is less than the calculated value of F-test. (F_{12} = 2.15 is less than F_{12} = 157.6). So, the null hypothesis \( H_0 \) will be rejected. \( H_1 \), Alternative hypothesis is accepted.

Therefore, there would be significant different in the Depreciation to Revenue ratio in between the companies of selected in private sector and public sector corporate units during the study period.
References