APPENDIX-1

Fixed Asset Turnover Ratio
( ₹. 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>
<th>Total</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>2.12</td>
<td>22.61</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>1.37</td>
<td>4.05</td>
<td>1.39</td>
<td>1.78</td>
<td>20.88</td>
</tr>
<tr>
<td>2007-08</td>
<td>1.75</td>
<td>0.69</td>
<td>3.48</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>
<td>19.63</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>
<td>20.94</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>
<td>19.92</td>
</tr>
<tr>
<td>Total</td>
<td>12.99</td>
<td>3.84</td>
<td>16.91</td>
<td>1.65</td>
<td>6.26</td>
<td>15.11</td>
<td>8.87</td>
<td>20.69</td>
<td>9.26</td>
<td>8.4</td>
<td>103.98</td>
</tr>
</tbody>
</table>

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

F – Test Analysis

**Null hypothesis (H₀)**

H₀₁: There would be no significant different in the Fixed Asset Turnover Ratio in between the companies of selected corporate units

**Alternative hypothesis (H₁)**

H₁₁: There would be significant different in the Fixed Asset Turnover Ratio in between the companies of selected corporate units.

1. Correction Factor = \( \frac{12.99 + 3.84 + 16.91 + 1.65 + 6.26 + 15.11 + 8.87 + 20.69 + 9.26 + 8.4}{50} \)

   = \( \frac{(103.98)}{50} \)

   = 2.1624

2. Total SS = \( \frac{((4.43)^2 + (3.49)^2 + (1.75)^2 + (1.63)^2 + (1.69)^2 + (0.94)^2 + (0.79)^2 + (0.69)^2 + (0.63)^2 + (0.79)^2 + (4.13)^2 + (4.06)^2 + (3.49)^2 + (2.38)^2 + (2.85)^2}{50} \)
\[
\begin{align*}
((0.35)^2 + (0.38)^2 + (0.48)^2 + (0.21)^2 + (0.23)^2 + \\
((1.67)^2 + (2.01)^2 + (1.59)^2 + (0.44)^2) + (0.55)^2 + \\
((0.88)^2 + (1.06)^2 + (0.99)^2 + (6.35)^2 + (5.83)^2 + \\
((2.12)^2 + (1.87)^2 + (1.93)^2 + (1.79)^2 + (1.16)^2 + \\
((4.59)^2 + (4.05)^2 + (4.12)^2 + (3.92)^2 + (4.01)^2 + \\
((1.38)^2 + (1.39)^2 + (2.70)^2 + (2.18)^2 + (1.61)^2 + \\
((2.12)^2 + (1.78)^2 + (1.89)^2 + (1.41)^2 + (1.20)^2 + \\
\right) \\
= 320.14 - 216.24 \\
= 103.90
\end{align*}
\]

3. Between SS :-

\[
\begin{align*}
= \left[ \frac{(12.99)^2}{5} + \frac{(3.84)^2}{5} + \frac{(16.91)^2}{5} + \frac{(1.65)^2}{5} + \frac{(6.26)^2}{5} + \frac{(15.11)^2}{5} + \frac{(8.87)^2}{5} + \\
\frac{(20.69)^2}{5} + \frac{(9.26)^2}{5} + \frac{(8.40)^2}{5} \right] - 216.24 \\
= 280.54 - 216.24 \\
= 64.30
\end{align*}
\]

4. Within SS = Total SS – Between SS

\[
\begin{align*}
= 103.90 - 64.30 \\
= 39.6
\end{align*}
\]
Analysis of Variance Table for One-Way (ANOVA)

<table>
<thead>
<tr>
<th>Source of Variation</th>
<th>Sum of Squares (Degrees of Freedom)</th>
<th>Mean Square</th>
<th>F - Ratio</th>
</tr>
</thead>
<tbody>
<tr>
<td>Between Companies</td>
<td>64.30 (9)</td>
<td>7.14</td>
<td>7.14/0.99 = 7.21</td>
</tr>
<tr>
<td>Within Companies</td>
<td>39.60 (50-10)</td>
<td>0.99</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>103.90 (50-1)</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(Colunms):-

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= 7.21). So, the null hypothesis H_01 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.
APPENDIX-2

The Gross Margin 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>
<th>Total</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>39.96</td>
<td>25.37</td>
<td>79.77</td>
<td>46.29</td>
<td>42.29</td>
<td>446.58</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>
<td>457.09</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>65.23</td>
<td>61.42</td>
<td>39.19</td>
<td>455.72</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>64.46</td>
<td>49.99</td>
<td>36.96</td>
<td>402.84</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>14.43</td>
<td>22.22</td>
<td>67.33</td>
<td>50.81</td>
<td>35.56</td>
<td>398.79</td>
</tr>
<tr>
<td>Total</td>
<td>310.29</td>
<td>149.94</td>
<td>313.93</td>
<td>94.92</td>
<td>122.76</td>
<td>178.78</td>
<td>119.69</td>
<td>418.62</td>
<td>254.47</td>
<td>197.62</td>
<td>2161.02</td>
</tr>
</tbody>
</table>

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

F – Test Analysis

**Null hypothesis (Hₐ)**

H₀₁: There would be no significant different in gross margin ratio in between the years of selected corporate units.

H₀₂: There would be no significant different in gross margin ratio in between the companies of selected corporate units.

**Alternative hypothesis (Hₐ)**

H₁₁: There would be significant different in gross margin ratio in between the years of selected corporate units.

H₁₂: There would be significant different in gross margin ratio in between the companies of selected corporate units.

1. Correction Factor = \( \frac{(F)^2}{25} \)

\[ = \frac{(2161.02)^2}{50} \]

\[ = 93400.14 \]
2. Total SS (Sum of Square) = 
\[ \left[ (64.15)^2 + (64.11)^2 + (61.30)^2 + (60.55)^2 + (60.15)^2 + \right. \]
\[ \left. (34.37)^2 + (32.42)^2 + (29.27)^2 + (26.28)^2 + (27.60)^2 + \right. \]
\[ \left. (62.91)^2 + (69.19)^2 + (60.05)^2 + (57.82)^2 + (63.96)^2 + \right. \]
\[ \left. (21.53)^2 + (20.33)^2 + (21.66)^2 + (14.20)^2 + (17.20)^2 + \right. \]
\[ \left. (29.94)^2 + (28.64)^2 + (28.19)^2 + (17.49)^2 \right] - 93400.14 \]
\[ = 114279.31 - 93400.14 \]
\[ = 20879.17 \]

3. Total Between SS (Companies):-
\[ = \left\{ \frac{(310.29)^2}{5} + \frac{(149.94)^2}{5} + \frac{(94.92)^2}{5} + \frac{(122.76)^2}{5} + \frac{(178.78)^2}{5} + \frac{(119.69)^2}{5} + \right. \]
\[ \left. \frac{418.62^2}{5} + \frac{(254.47)^2}{5} + \frac{(197.62)^2}{5} + \frac{(313.93)^2}{5} \right \} - 93400.14 \]
\[ = 113346.62 - 93400.14 \]
\[ = 19946.48 \]

4. Total Between (Years):-
\[ = \left\{ \frac{(446.58)^2}{10} + \frac{(457.09)^2}{10} + \frac{(455.72)^2}{10} + \frac{(402.84)^2}{10} + \frac{(398.79)^2}{10} \right \} - 93400.14 \]
\[ = 93735.93 - 93400.14 \]
\[ = 335.79 \]
5. Residual (Error) = 

\[
[\text{Total SS} - (\text{SS Between Companies} + \text{SS Between years})] = 20879.17 - (19946.48 + 335.79) = 596.90
\]

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

### 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>
</tr>
</thead>
<tbody>
<tr>
<td>Between Years (Rows)</td>
<td>335.79</td>
<td>(5-1) 4</td>
<td>335.79/4 ( = 83.95 )</td>
<td>83.95/16.58 ( = 5.06 )</td>
</tr>
<tr>
<td>Between Companies (Columns)</td>
<td>19946.49</td>
<td>(10-1) 9</td>
<td>19946.49/9 ( = 2216.28 )</td>
<td>2216.28/16.58 ( = 133.67 )</td>
</tr>
</tbody>
</table>
| Residual | 596.90          | 36                | 596.90/36 \( = 16.58 \)
| Total | 20879.17        | 49                |

- **Level of significance**: 5%
- **Critical value of F-Test (Ft)**:
  - \( F_{t1} = 2.63 \)
  - \( F_{t2} = 2.15 \)
- **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 \( F_{c1} = 5.06 \). So, the null hypothesis \( H_0 \) will be rejected. \( H_1 \) Alternative hypothesis is accepted. Therefore, there would be significant difference in gross margin ratio in between the years of selected 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 \( F_{c2} = 133.67 \). So, the null hypothesis \( H_0 \) will be rejected. \( H_1 \) Alternative hypothesis is accepted. Therefore, there would be significant difference in gross margin ratio in between the companies of selected corporate units during the study period.