CHAPTER – V
FINANCIAL PERFORMANCE - COMPARATIVE ANALYSIS

Financial management is concerned mainly with procuring funds in the most economical and prudent manner and deploying these funds in most profitable way. This requires application of appropriate financial methods or tools. The term financial method or financial tool refers to any logical method or techniques to be employed for the purpose of accomplishing the following two goods:

1. Measuring the effectiveness of firm’s actions and decisions.

2. Measuring the validity of the decisions regarding accepting or rejecting future projects.

Financial performance evaluation is based on examination of the financial statements periodically prepared by a firm. The financial performance comparative analysis is made in this chapter.
### TABLE - 5.1
OWNERS' FUNDS

<table>
<thead>
<tr>
<th>YEAR</th>
<th>MFL</th>
<th>SPIC</th>
<th>PARRY</th>
<th>MFL</th>
<th>SPIC</th>
<th>PARRY</th>
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<td>52.26</td>
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(Source: Annual Reports of Sample units)

Analysis of Table 5.1 reveals that in MFL the mean owner's fund is Rs.683.78 million; in SPIC it is Rs.7866.77 million and in PARRY it is Rs.4016.32 million. This shows that mean owners’ fund is more in SPIC, then comes PARRY and the third one is MFL among the sample companies.

The standard deviation of owners' fund in MFL is Rs.1041.21 million; in SPIC it is Rs.3724.35 million and in PARRY it is Rs.2098.89. This shows that standard deviation of owners’ fund is higher in SPIC than that of the other two companies. Co-efficient of variation of owners’ fund in MFL is 152.27 per cent; in SPIC 47.34 per cent, and in PARRY 52.26 per cent. This shows that co-efficient of variation of owners’ fund is maximum in MFL than that of the other two companies.
Fig. 5.1
OWNERS' FUNDS

Rs. in million

Year

MFL  SPIC  PARRY
Index analysis reveals that in 2003, the index for owners’ fund in MFL is -91.40; in SPIC 2.08 and in PARRY 396.48. Negative Index is something serious and is to be carefully studied. This shows that there are significant losses in MFL and in SPIC during the study period. This has created huge accumulated losses and had affected the position of owners’ fund in MFL as well as in SPIC.

**TABLE - 5.2**

**SECURED LOANS**

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<thead>
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<th>YEAR</th>
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<th>Index</th>
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<td>44.52</td>
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</table>

(Source: Annual Reports of Sample units)
Analysis of Table 5.2 reveals that in MFL the mean secured loan is Rs.3739.10 million; in SPIC it is Rs.10423.21 million and in PARRY it is Rs.1972.02 million. This shows that mean secured loans is more in SPIC, then comes MFL and the third one is PARRY among the sample companies. The standard deviation of secured loans in MFL is Rs.1465.48 million; in SPIC it is Rs.4640.16 million and in PARRY it is Rs.1521.12. This shows that standard deviation of secured loan is higher in SPIC than that of the other two companies. Co-efficient of variation of secured loans in MFL is 39.19 per cent; in SPIC it is 44.52 per cent and in PARRY it is 77.13 per cent. This shows that co-efficient of variation of secured loan is maximum in PARRY than that of other two companies.

Index analysis reveals that in 2003, the index for secured loan in MFL is 249.67; SPIC is 349.97 and is 2318.84. This shows that the increase in secured loans is higher in the case of PARRY; then comes SPIC. It can be said that increase in secured loans shows that the companies are going in for outsiders fund for business activities as the rate of interest is getting cheaper in the environment. Further almost all financial institutions are insisting for security for providing loans at present.
### TABLE - 5.3

**UNSECURED LOANS**

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</thead>
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(Source: Annual Reports of Sample units)
Analysis of Table 5.3 reveals that in MFL the mean unsecured loan is Rs.3102.51 million; in SPIC it is Rs.6311.30 million and in PARRY it is Rs.1075.82 million. This shows that mean unsecured loan is more in SPIC, then comes MFL and the third one is PARRY among the sample companies.

The standard deviation of unsecured loans in MFL is Rs.2630.73 million; in SPIC it is Rs.2204.37 million and in PARRY it is Rs.644.39. This shows that standard deviation of Secured loan is higher in MFL than that of the other two companies.

Co-efficient of variation of unsecured loans in MFL is 84.79 per cent; in SPIC it is 34.93 per cent and in PARRY it is 59.90 per cent. This shows that co-efficient of variation of unsecured loan is maximum in MFL than that of the other two companies. Index analysis reveals that in 2003, the index for unsecured loan in MFL is 460.22; in SPIC it is 575.38 and in PARRY it is 291.53. This shows that the increase in unsecured loans is higher in the case of SPIC; then comes MFL.

It can be said that the increase in unsecured loans shows that the companies are going in for outsiders fund for business activities as the rate of interest is getting cheaper in the environment. It is also important to note that the companies are able to get loans on unsecured basis.
TABLE - 5.4
TOTAL LOAN FUNDS

<table>
<thead>
<tr>
<th>YEAR</th>
<th>Rs. In million</th>
<th>Index</th>
</tr>
</thead>
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<td>SPIC</td>
</tr>
<tr>
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<td>36.32</td>
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</table>

(Source: Annual Reports of Sample units)
Analysis of Table 5.4 reveals that in MFL the mean total loan is Rs.5947.23 million; in SPIC it is Rs.16734.51 million and in PARRY it is Rs.6374.22 million. This shows that mean total loan is more in SPIC, then comes PARRY and the third one is MFL among the sample companies.

The standard deviation of total loans in MFL is Rs.2466.43 million; in SPIC it is Rs.6077.72 million and in PARRY it is Rs.2466.33. This shows that standard deviation of secured loan is higher in SPIC than that of the other two companies. Co-efficient of variation of total loans in MFL is 41.47 per cent; in SPIC it is 36.32 per cent and in PARRY it is 38.69 per cent. This shows that co-efficient of variation of total loan is maximum in MFL than that of the other two companies.

Index analysis reveals that in 2003, the index for Total loan in MFL is 322.23; in SPIC it is 393.76 and in PARRY it is 518.88. This shows that the increase in total loans is higher in the case of PARRY; then comes SPIC. It can be said that the increase in Total loans shows that the companies are going in for outsiders fund for business activities as the rate of interest is getting cheaper in the environment. It is also important to note that the companies are able to get loans on Total basis.
Fig. 5.2
TOTAL LOAN FUNDS

Rs. in million

Year


MFL SPIC PARRY
<table>
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<tr>
<th>YEAR</th>
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<th>PARRY</th>
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<th>SPIC</th>
<th>PARRY</th>
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(Source: Annual Reports of Sample units)
Analysis of Table 5.5 shows that the mean capital employed in MFL is Rs.6631.01 million; in SPIC it is Rs.24601.28 million and in PARRY it is Rs.10390.54 million. This shows that the mean is more in the case of SPIC than that of MFL and PARRY. The standard deviation in MFL is Rs.2205.31 million; in SPIC is Rs.7936.77 million; in PARRY is Rs.3141.98 million. The standard deviation is more in SPIC than in MFL and PARRY. The co-efficient of variation in MFL is 33.26 per cent; in SPIC is 32.26 per cent and in PARRY it is 30.24 per cent. The co-efficient of variation is more in MFL than in SPIC and PARRY.

Index Analysis reveals that the index in 2003 in MFL is 182.35 in SPIC it is 208.80 and in PARRY it is 468.34. The increase in MFL is 82.35 per cent; in SPIC it is 168.80 per cent and in PARRY it is 368.34 per cent.

It is found that

(i) Fluctuations in capital employed is there in all the sample companies.

(ii) Slight decline in capital employed is in 2003.

(iii) Increase in capital employed is more in PARRY than in the other companies.

This may be due to the reason that PARRY may be getting more profits in this industry and the others may not have gains much in this field.
### TABLE - 5.6

**GROSS FIXED ASSETS**

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<th>YEAR</th>
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(Source: Annual Reports of Sample units)
Analysis of Table 5.6 shows that the mean gross fixed assets in MFL is Rs.5670.88 million; in SPIC it is Rs.19151.08 million and in PARRY it is Rs.5354.43 million. This shows that the mean is more in the case of SPIC than that of MFL and PARRY.

The standard deviation in MFL is Rs.3404.52 million; in SPIC it is Rs.5859.58 million; in PARRY it is Rs.2290.29 million. The standard deviation is more in SPIC than in MFL and PARRY. The co-efficient of variation in MFL is 60.04 per cent; in SPIC it is 30.60 per cent and in PARRY it is 42.77 per cent. The co-efficient of variation is more in MFL than in SPIC and PARRY. Index analysis reveals that the index in 2003 in MFL is 506.29; in SPIC it is 249.70 and in PARRY it is 589.76. The increase in MFL is 406.29 per cent; in SPIC it is 149.70 per cent and in PARRY it is 489.76 per cent.

It is found that

(i) Gross fixed assets is more in SPIC than PARRY and MFL.

(ii) Standard deviation is more in SPIC and

(iii) Increase is more in PARRY

This may be due to the fast expansion in PARRY than that of SPIC and MFL during the study period.
### TABLE - 5.7

#### ACCUMULATED DEPRECIATION

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<td>38.62</td>
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<td>49.72</td>
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</table>

(Source: Annual Reports of Sample units)
Analysis of Table 5.7 shows that the mean accumulated depreciation in MFL is Rs.1590.67 million; in SPIC it is Rs.10066.97 million and in PARRY it is Rs.1550.01 million. This shows that the mean is more in the case of SPIC than that of MFL and PARRY.

The standard deviation in MFL is Rs.790.95 million; in SPIC it is Rs.3888.17 million; in PARRY it is Rs.854.84 million. The standard deviation is more in SPIC than in MFL and PARRY. The co-efficient of variation in MFL is 49.72 per cent; in SPIC it is 38.62 per cent and in PARRY it is 55.15 per cent. The co-efficient of variation is more in MFL than in SPIC and PARRY. Index analysis reveals that the index in 2003 in MFL is 343.14; in SPIC it is 328.13 and in PARRY it is 553.59. The increase in MFL is 243.14 per cent; in SPIC it is 228.13 per cent and in PARRY it is 453.59 per cent.

It is found that

(i) Increase in depreciation is more in PARRY

(ii) Co-efficient of variation is more in PARRY and

(iii) Standard deviation is more in SPIC

This may be due to fast expansion in activities in PARRY than other sample companies.
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<td>SPIC</td>
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(Source: Annual Reports of Sample units)
Analysis of Table 5.8 shows that the mean net fixed assets in MFL is Rs.4061.41 million; in SPIC it is Rs.9084.08 million and in PARRY it is Rs.3803.39 million. This shows that the mean is more in the case of SPIC than that of MFL and PARRY. The standard deviation in MFL is Rs.2864.95 million; in SPIC it is Rs.3526.87 million; in PARRY it is Rs.1558.29 million. The standard deviation is more in SPIC than in MFL and PARRY. The co-efficient of variation in MFL is 70.54 per cent; in SPIC it is 38.82 per cent and in PARRY it is 40.97 per cent. The co-efficient of variation is more in MFL than in SPIC and PARRY. Index analysis reveals that the index in 2003 in MFL is 680.94; in SPIC it is 137.98 and in PARRY it is 615.26. The increase in MFL is 580.94 per cent; in SPIC it is 37.98 per cent and in PARRY it is 515.26 per cent.

It is found that

(i) Co-efficient of variation is more in PARRY

(ii) Increase in rate of net fixed assets is more in PARRY and

(iii) Standard deviation is more in SPIC

This may be due to the increase in Fixed Assets in PARRY during the study period which is more than that of MFL and SPIC.
### TABLE - 5.9

**CAPITAL WORK IN PROGRESS**

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(Source: Annual Reports of Sample units)

Analysis of Table 5.9 shows that the mean capital work in progress in MFL is Rs.928.38 million; in SPIC it is Rs.1524.02 million and in PARRY it is Rs.70.80 million. This shows that the mean is more in the case of SPIC than that of MFL and PARRY.

The standard deviation in MFL is Rs.1745.25 million; in SPIC it is Rs.611.22 million; in PARRY it is Rs.53.79 million. The standard deviation is
more in MFL than in SPIC and PARRY. The co-efficient of variation in MFL is 187.99 per cent; in SPIC it is 40.11 per cent and in PARRY it is 75.97 per cent. The co-efficient of variation is more in MFL than in SPIC and PARRY. Index Analysis reveals that the index in 2003 in MFL is 15.29; in SPIC it is 20.35 and in PARRY it is 77.78. There is overall decline in capital work in progress in all the sample firms in 2003.

**TABLE - 5.10**

**TOTAL NET FIXED ASSETS**

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(Source: Annual Reports of Sample units)
Analysis of Table 5.10 shows that the mean total net fixed assets in MFL is Rs.5009.45 million; in SPIC it is Rs.10608.09 million and in PARRY it is Rs.3974.21 million. This shows that the mean is more in the case of SPIC than that of MFL and PARRY. The standard deviation in MFL is Rs.2176.68 million; in SPIC it is Rs.3631.40 million; in PARRY it is Rs.1670.56 million. The standard deviation is more in SPIC than in MFL and PARRY. The co-efficient of variation in MFL is 43.45 per cent; in SPIC it is 34.23 per cent and in PARRY it is 42.03 per cent. The co-efficient of variation is more in MFL than in SPIC and PARRY. Index analysis reveals that the index in 2003 in MFL is 467.76; in SPIC it is 106.07 and in PARRY it is 601.91. The increase in MFL is 367.76 per cent; in SPIC it is 6.07 per cent and in PARRY it is 501.91 per cent.

It is found that

(i) The increase in Net Fixed Assets is more in PARRY

(ii) The rate of increase is the least in SPIC

This may be due to increased activities in PARRY and due to higher loss in SPIC in the later years of study period in SPIC.
Fig. 5.3
TOTAL NET FIXED ASSETS

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(Source: Annual Reports of Sample units)
Analysis of Table 5.11 shows that the mean investment in MFL is Rs.10.42 million; in SPIC it is Rs.2533.45 million and in PARRY it is Rs.920.46 million. This shows that the mean is more in the case of SPIC than that of MFL and PARRY.

The standard deviation in MFL is Rs.7.92 million; in SPIC it is Rs.1410.00 million; in PARRY it is Rs.1112.44 million. The standard deviation is more in SPIC than in MFL and PARRY. The Co-efficient of variation in MFL is 75.99 per cent; in SPIC it is 55.66 per cent and in PARRY it is 120.86 per cent. The co-efficient of variation is more in MFL than in SPIC and PARRY. Index analysis reveals that the index in 2003 in MFL is 4125.00; in SPIC it is 836.77 and in PARRY it is 995.19.

It is found that

(i) There are vast fluctuations of investments in MFL;

(ii) Fluctuations are less in SPIC than in PARRY and

(iii) Co-efficient of variation is higher in PARRY.

This may be due to modified investment pattern in PARRY during the study period.
## TABLE - 5.12

**CURRENT ASSETS**

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<tr>
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</tr>
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<td>5193.05</td>
</tr>
<tr>
<td>CV</td>
<td>31.01</td>
<td>31.52</td>
</tr>
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</table>

(Source: Annual Reports of Sample units)
Analysis of Table 5.12 shows that the mean current assets in MFL is Rs.5204.54 million; in SPIC it is Rs.16473.13 million and in PARRY it is Rs.4214.23 million. This shows that the mean is more in the case of SPIC than that of MFL and PARRY. The standard deviation in MFL is Rs.1614.08 million; in SPIC it is Rs.5193.05 million; in PARRY it is Rs.1269.31 million. The standard deviation is more in SPIC than in MFL and PARRY. The co-efficient of variation in MFL is 31.01 per cent; in SPIC it is 31.52 per cent and in PARRY it is 30.12 per cent. The co-efficient of variation is more in SPIC than in MFL and PARRY.

Index analysis reveals that the index in 2003 in MFL is 181.96; in SPIC it is 260.30 and in PARRY it is 301.70. The increase in MFL is 81.90 per cent; in SPIC it is 160.30 per cent and in PARRY it is 201.70 per cent.

It is found that

(i) The rate of increase in current assets is more in PARRY;

(ii) The increase in current assets is the least in MFL

(iii) Variation is more in MFL

This may be due to the increasing current assets in PARRY during the study period.
Fig. 5.4
CURRENT ASSETS

Year

Rs. in million


MFL SPIC PARRY
TABLE - 5.13

CURRENT LIABILITIES

<table>
<thead>
<tr>
<th>YEAR</th>
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<th></th>
<th>Index</th>
<th></th>
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<td>SPIC</td>
<td>PARRY</td>
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<td>SPIC</td>
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<td>1625.10</td>
<td>234.91</td>
<td>347.99</td>
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<td>1999-00</td>
<td>4821.20</td>
<td>7112.50</td>
<td>2033.70</td>
<td>291.03</td>
<td>330.45</td>
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<td>5480.80</td>
<td>3089.60</td>
<td>321.01</td>
<td>254.64</td>
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<td>332.60</td>
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<td>5548.30</td>
<td>4028.60</td>
<td>310.92</td>
<td>257.77</td>
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<td>901.88</td>
<td>90.14</td>
<td>79.98</td>
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<td>CV</td>
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<td>33.54</td>
<td>38.40</td>
<td>39.65</td>
<td>33.54</td>
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</table>

(Source: Annual Reports of Sample units)
Analysis of Table 5.13 shows that the mean current liabilities in MFL is Rs.3765.67 million; in SPIC it is Rs.5132.14 million and in PARRY it is Rs.2348.89 million. This shows that the mean is more in the case of SPIC than that of MFL and PARRY. The standard deviation in MFL is Rs.1493.25 million; in SPIC it is Rs.1721.52 million; in PARRY it is Rs.901.88 million. The standard deviation is more in SPIC than in MFL and PARRY. The co-efficient of variation in MFL is 39.65 per cent; in SPIC it is 33.54 per cent and in PARRY it is 38.40 per cent. The co-efficient of variation is more in MFL than in SPIC and PARRY. Index Analysis reveals that the index in 2003 in MFL is 310.92; in SPIC it is 257.77 and in PARRY it is 295.31. The increase in MFL is 210.92 per cent; in SPIC it is 157.77 per cent and in PARRY it is 195.31 per cent.

It is found that

(i) The rate of increase in current liabilities is more in MFL;

(ii) Co-efficient of variation is the least in SPIC.

This may be due to unmodified current liability management aspects in MFL and SPIC.
## TABLE - 5.14

### NET CURRENT ASSETS

<table>
<thead>
<tr>
<th>YEAR</th>
<th>Rs. In million</th>
<th>Index</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>MFL</td>
<td>SPIC</td>
</tr>
<tr>
<td>1993-94</td>
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<td>346.10</td>
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<td>2020.30</td>
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<tr>
<td>CV</td>
<td>42.12</td>
<td>32.61</td>
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</table>

(Source: Annual Reports of Sample units)
Analysis of Table 5.14 shows that the mean net current assets in MFL is Rs.1438.78 million; in SPIC it is Rs.11341.19 million and in PARRY it is Rs.1865.34 million. This shows that the mean is more in the case of SPIC than that of MFL and PARRY. The standard deviation in MFL is Rs.606.00 million; in SPIC it is Rs.3698.88 million; in PARRY it is Rs.700.76 million. The standard deviation is more in SPIC than in MFL and PARRY. The co-efficient of variation in MFL is 42.12 per cent; in SPIC it is 32.61 per cent and in PARRY it is 37.57 per cent. The co-efficient of variation is more in MFL than in SPIC and PARRY. Index analysis reveals that the index in 2003 in MFL is 70.31; in SPIC it is 261.37 and in PARRY it is 318.65.

It is found that

(i) There is decline in net current assets in MFL

(ii) Increase in net current assets is more in PARRY

(iii) Rate of increase in net current assets is more in PARRY.

This may be due to changing net current assets management in PARRY. Decline in net current asset is not a favorable sign in MFL.
## TABLE - 5.15

MISCELLANEOUS EXPENSES NOT WRITTEN OFF

<table>
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<th>Rs. In million</th>
<th>Index</th>
</tr>
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<td>SPIC</td>
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<tr>
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</table>

(Source: Annual Reports of Sample units)
Analysis of Table 5.15 shows that the mean miscellaneous expenses Not Written Off in MFL is Rs. 578.49 million; in SPIC it is Rs. 123.87 million and in PARRY it is Rs. 26.16 million. This shows that the mean is more in the case of MFL than that of SPIC and PARRY. The standard deviation in MFL is Rs. 434.33 million; in SPIC it is Rs. 73.30 million; in PARRY it is Rs. 46.03 million. The standard deviation is more in MFL than in SPIC and PARRY. The co-efficient of variation in MFL is 75.08 per cent; in SPIC it is 59.18 per cent and in PARRY it is 175.97 per cent. The co-efficient of variation is more in PARRY than in SPIC and MFL. Index analysis reveals that the index in 2003 in MFL is 90.56; in SPIC it is 198.67 and in PARRY it is 566.67. The increase in SPIC it is 98.67 per cent and in PARRY it is 466.67 per cent.

It is found that

(i) Miscellaneous expenses are now being written off in MFL and SPIC;

(ii) Some more miscellaneous expenses are added in PARRY

This may be due to the modified restructuring policies in MFL and SPIC during the last the three years of the study period.
<table>
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<tr>
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<th>Rs. In million</th>
<th>Index</th>
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<td>SPIC</td>
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<td>CV</td>
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(Source: Annual Reports of Sample units)
Analysis of Table 5.16 shows that the mean total assets in MFL is Rs.7036.63 million; in SPIC it is Rs.24601.44 million and in PARRY it is Rs.6374.12 million. This shows that the mean is more in the case of SPIC than that of MFL and PARRY.

The standard deviation in MFL is Rs.2361.03 million; in SPIC it is Rs.7936.40 million; in PARRY it is Rs.2466.28 million. The standard deviation is more in SPIC than in MFL and PARRY. The co-efficient of variation in MFL is 33.55 per cent; in SPIC it is 32.26 per cent and in PARRY it is 38.69 per cent. The co-efficient of variation is more in PARRY than in SPIC and MFL. Index analysis reveals that the index in 2003 in MFL is 208.12; in SPIC it is 208.76 and in PARRY it is 518.92. The increase in MFL is 108.12 percent; in SPIC it is 108.76 per cent and in PARRY it is 418.92 per cent.

It is found that

(i) Total assets has significantly increased in SPIC.

(ii) Slight decline in total assets in all the companies.

(iv) Co-efficient of variation is more in PARRY.

This may be due to slow progress of fertiliser industry in the later part of study period.
## TABLE - 5.17
OPERATING INCOME

<table>
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<td>SPIC</td>
<td>PARRY</td>
<td>MFL</td>
<td>SPIC</td>
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(Source: Annual Reports of Sample units)

Analysis of Table 5.17 shows that the mean operating income in MFL is Rs.9044.84 million; in SPIC it is Rs.19183.10 million and in PARRY it is Rs.9807.68 million. This shows that the mean is more in the case of SPIC than that of MFL and PARRY. The standard deviation in MFL is Rs.3338.22 million; in SPIC it is Rs.4173.20 million; in PARRY it is Rs.3600.76 million. The standard deviation is more in SPIC than in MFL and PARRY. The co-efficient of variation in MFL is 36.91 per cent; in SPIC it is 21.75 per cent.
and in PARRY it is 36.71 per cent. The co-efficient of variation is more in MFL than in SPIC and PARRY.

Index analysis reveals that the index in 2003 in MFL is 238.99; in SPIC it is 130.88 and in PARRY it is 288.34. The increase in MFL is 138.99 per cent; in SPIC it is 30.88 per cent and in PARRY it is 188.34 per cent.

It is found that

(i) Operating income has significantly increased in PARRY
(ii) Increase in operating income is the least in SPIC.

This may be due to modifications that are being carried out in SPIC. PARRY seems to expand its market base. To analyse the variations in operating income of the study period 1993-94 to 2002-03, a null hypothesis 

\[ H_0 : \text{There is no variation in operating income among the selected companies,} \]

is framed and tested with the help of F-test statistic.

<table>
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<tr>
<th>Source</th>
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<th>df</th>
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* Significant at 1% level

The result of oneway ANOVA shows the mean operating income differs significantly among the selected units at 1 per cent level.
Bonferroni Multiple Comparison Test

<table>
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<th>(I) Company name</th>
<th>(J) company name</th>
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<th>Std. Error</th>
<th>Sig.</th>
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<td>PARRY</td>
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<td>MFL</td>
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<td>.000</td>
</tr>
<tr>
<td>PARRY</td>
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<td>1663.82698</td>
<td>1.000</td>
</tr>
<tr>
<td>SPIC</td>
<td>-9375.4220 (*)</td>
<td>1663.82698</td>
<td>.000</td>
<td></td>
</tr>
</tbody>
</table>

The above table shows the result of Bonferroni multiple comparison test for the significance of the mean difference of operating income among the three companies. It is inferred that the mean operating income significantly differs between the companies MFL and SPIC, SPIC and PARRY at 1% level respectively. Hence it is included that the null hypothesis for the pair of companies MFL – SPIC, SPIC – PARRY is rejected. Thus the mean operating income of MFL – SPIC – PARRY is significantly differing. Mean operating income of MFL – PARRY combination is not significant.
<table>
<thead>
<tr>
<th>YEAR</th>
<th>Rs. In million</th>
<th>Index</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>MFL</td>
<td>SPIC</td>
</tr>
<tr>
<td>1993-94</td>
<td>-163.90</td>
<td>1348.90</td>
</tr>
<tr>
<td>1994-95</td>
<td>439.40</td>
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</tr>
<tr>
<td>1995-96</td>
<td>492.60</td>
<td>2109.60</td>
</tr>
<tr>
<td>1996-97</td>
<td>504.90</td>
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</tr>
<tr>
<td>1997-98</td>
<td>103.80</td>
<td>2594.00</td>
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<tr>
<td>1998-99</td>
<td>1404.30</td>
<td>2630.80</td>
</tr>
<tr>
<td>1999-00</td>
<td>1825.70</td>
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</tr>
<tr>
<td>2000-01</td>
<td>1367.50</td>
<td>2777.40</td>
</tr>
<tr>
<td>2001-02</td>
<td>886.20</td>
<td>312.30</td>
</tr>
<tr>
<td>2002-03</td>
<td>150.10</td>
<td>-1764.02</td>
</tr>
<tr>
<td>TOTAL</td>
<td>7010.60</td>
<td>16393.38</td>
</tr>
<tr>
<td>MEAN</td>
<td>701.06</td>
<td>1639.34</td>
</tr>
<tr>
<td>SD</td>
<td>649.50</td>
<td>1422.77</td>
</tr>
<tr>
<td>CV</td>
<td>92.64</td>
<td>86.79</td>
</tr>
</tbody>
</table>

(Source: Annual Reports of Sample units)
Analysis of Table 5.18 shows that the mean gross profit in MFL is Rs.701.06 million; in SPIC it is Rs.1639.34 million and in PARRY it is Rs.1030.41 million. This shows that the mean is more in the case of SPIC than that of MFL and PARRY. The standard deviation in MFL is Rs.649.50 million; in SPIC it is Rs.1422.77 million; in PARRY it is Rs.478.76 million. The standard deviation is more in SPIC than in MFL and PARRY.

The co-efficient of variation in MFL is 92.64 per cent; in SPIC it is 86.79 per cent and in PARRY it is 46.46 per cent. The co-efficient of variation is more in MFL than in SPIC and PARRY. Index analysis reveals that the index in 2003 in MFL is -91.58; in SPIC it is -130.77 and in PARRY it is 276.02.

It is found that

(i) Profit is not earned in SPIC and MFL during 2003
(ii) PARRY has got a profit of 176.02 percent more than that of base year.

This may be due to the losses incurred by MFL and SPIC in some years. PARRY has managed to maintain profit during the period of study.
TABLE - 5.19

DEPRECIATION

<table>
<thead>
<tr>
<th>YEAR</th>
<th>Rs. In million</th>
<th></th>
<th></th>
<th>Index</th>
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<td>SPIC</td>
<td>PARRY</td>
<td>MFL</td>
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<tr>
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<td>83.30</td>
<td>100.00</td>
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<td>1994-95</td>
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<td>100.30</td>
<td>111.96</td>
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<tr>
<td>1995-96</td>
<td>57.50</td>
<td>360.90</td>
<td>129.40</td>
<td>99.65</td>
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<td>1996-97</td>
<td>68.30</td>
<td>472.80</td>
<td>193.10</td>
<td>118.37</td>
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<tr>
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<td>567.00</td>
<td>308.50</td>
<td>158.58</td>
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<td>1998-99</td>
<td>401.00</td>
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<td>375.00</td>
<td>694.97</td>
</tr>
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<td>561.60</td>
<td>355.20</td>
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<tr>
<td>2000-01</td>
<td>415.00</td>
<td>474.00</td>
<td>418.70</td>
<td>719.24</td>
</tr>
<tr>
<td>2001-02</td>
<td>456.10</td>
<td>443.80</td>
<td>436.90</td>
<td>790.47</td>
</tr>
<tr>
<td>2002-03</td>
<td>392.00</td>
<td>433.41</td>
<td>450.20</td>
<td>679.38</td>
</tr>
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<td>4259.91</td>
<td>2850.60</td>
<td>4179.20</td>
</tr>
<tr>
<td>MEAN</td>
<td>241.14</td>
<td>425.99</td>
<td>285.06</td>
<td>417.92</td>
</tr>
<tr>
<td>SD</td>
<td>183.57</td>
<td>126.30</td>
<td>145.02</td>
<td>318.15</td>
</tr>
<tr>
<td>CV</td>
<td>76.13</td>
<td>29.65</td>
<td>50.87</td>
<td>76.13</td>
</tr>
</tbody>
</table>

(Source: Annual Reports of Sample units)
Analysis of Table 5.19 shows that the mean depreciation in MFL is Rs.241.14 million; in SPIC it is Rs.425.99 million and in PARRY it is Rs.285.06 million. This shows that the mean is more in the case of SPIC than that of MFL and PARRY. The standard deviation MFL is Rs.183.57 million; in SPIC it is Rs.126.30 million; in PARRY it is Rs.145.02 million. The standard deviation is more in MFL than in SPIC and PARRY. The co-efficient of variation in MFL is 76.13 per cent; in SPIC it is 29.65 per cent and in PARRY it is 50.87 per cent. The co-efficient of variation is more in MFL than in SPIC and PARRY. Index Analysis reveals that the index in 2003 in MFL is 679.38; in SPIC it is 211.52 and in PARRY it is 540.46. The increase in MFL is 539.38 per cent; in SPIC it is 111.52 per cent and in PARRY it is 440.46 per cent.

It is found that

(i) Depreciation charge has significantly increased in MFL and PARRY

(ii) Consistent increase is noticed in PARRY

This may be due to the increased fixed assets employed in MFL and PARRY during the period of study.
### TABLE - 5.20

#### INTEREST

<table>
<thead>
<tr>
<th>YEAR</th>
<th>Rs. In million</th>
<th></th>
<th>Index</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>MFL</td>
<td>SPIC</td>
<td>PARRY</td>
</tr>
<tr>
<td>1993-94</td>
<td>421.00</td>
<td>636.40</td>
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</tr>
<tr>
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<tr>
<td>1996-97</td>
<td>373.90</td>
<td>975.40</td>
<td>227.40</td>
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<tr>
<td>1997-98</td>
<td>598.80</td>
<td>1192.40</td>
<td>378.00</td>
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<tr>
<td>1998-99</td>
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<tr>
<td>1999-00</td>
<td>1168.20</td>
<td>1806.80</td>
<td>419.00</td>
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<td>2000-01</td>
<td>-1285.70</td>
<td>2144.70</td>
<td>658.50</td>
</tr>
<tr>
<td>2001-02</td>
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<tr>
<td>2002-03</td>
<td>1128.40</td>
<td>1780.27</td>
<td>393.40</td>
</tr>
<tr>
<td>TOTAL</td>
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<td>13704.67</td>
<td>3439.50</td>
</tr>
<tr>
<td>MEAN</td>
<td>422.67</td>
<td>1370.47</td>
<td>343.95</td>
</tr>
<tr>
<td>SD</td>
<td>744.51</td>
<td>570.52</td>
<td>209.84</td>
</tr>
<tr>
<td>CV</td>
<td>176.14</td>
<td>41.63</td>
<td>61.01</td>
</tr>
</tbody>
</table>

(Source: Annual Reports of Sample units)
Analysis of Table 5.20 shows that the mean interest in MFL is Rs.422.67 million; in SPIC it is Rs.1370.47 million and in PARRY it is Rs.343.95 million. This shows that the mean is more in the case of SPIC than that of MFL and PARRY. The standard deviation in MFL is Rs.744.51 million; in SPIC it is Rs.570.52 million; in PARRY it is Rs.209.84 million. The standard deviation is more in MFL than in SPIC and PARRY. The co-efficient of variation in MFL is 176.14 per cent; in SPIC it is 41.63 per cent and in PARRY it is 61.01 per cent. The co-efficient of variation is more in MFL than in SPIC and PARRY. Index Analysis reveals that the index in 2003 in MFL is 268.03; in SPIC it is 279.74 and in PARRY it is 239.15. The increase in MFL is 168.03 per cent; in SPIC it is 179.74 per cent and in PARRY it is 138.15 per cent.

It is found that

(i) Significant increase in interest charge is noted in all the companies.

(ii) Increase is higher in the case of SPIC and PARRY except 2003.

This may be due to the employment of more loan funds in the sample companies during the study period.
Fig. 5.6
INTEREST

Rs. in million

Year

- MFL
- SPIC
- PARRY
## TABLE - 5.21

**PROFIT BEFORE TAX**

<table>
<thead>
<tr>
<th>YEAR</th>
<th>Rs. In million</th>
<th>Index</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>MFL</td>
<td>SPIC</td>
</tr>
<tr>
<td>1993-94</td>
<td>-584.90</td>
<td>712.50</td>
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<tr>
<td>1994-95</td>
<td>75.30</td>
<td>902.40</td>
</tr>
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<td>1995-96</td>
<td>218.70</td>
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<td>1996-97</td>
<td>131.80</td>
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<td>1401.60</td>
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<td>1998-99</td>
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<td>1999-00</td>
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<td>2000-01</td>
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</tr>
<tr>
<td>2002-03</td>
<td>41.20</td>
<td>-3977.70</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td><strong>929.60</strong></td>
<td><strong>775.80</strong></td>
</tr>
<tr>
<td><strong>MEAN</strong></td>
<td><strong>92.96</strong></td>
<td><strong>77.58</strong></td>
</tr>
<tr>
<td><strong>SD</strong></td>
<td><strong>534.43</strong></td>
<td><strong>1757.16</strong></td>
</tr>
<tr>
<td><strong>CV</strong></td>
<td><strong>574.91</strong></td>
<td><strong>2264.97</strong></td>
</tr>
</tbody>
</table>

*(Source: Annual Reports of Sample units)*
Analysis of Table 5.21 shows that the mean profit before tax in MFL is Rs.92.96 million; in SPIC it is Rs.77.58 million and in PARRY it is Rs.394.29 million. This shows that the mean is more in the case of PARRY than that of MFL and SPIC. The standard deviation in MFL is Rs.534.43 million; in SPIC it is Rs.1757.16 million; in PARRY it is Rs.150.50 million. The standard deviation is more in SPIC than in MFL and PARRY. The co-efficient of variation in MFL is 574.91 per cent; in SPIC it is 2264.97 per cent and in PARRY it is 38.17 per cent. The co-efficient of variation is more in SPIC than in MFL and PARRY. Index analysis reveals that the index in 2003 in MFL is -7.04; in SPIC it is -558.27 and in PARRY it is 177.13.

It can be said that

(i) A slight increase in profit before tax is noticed in MFL;

(ii) Consistent increase in profit before tax is seen and

(iii) Loss is sustained by SPIC in late years of study period.

This may be due to the increase structural charges in SPIC. PARRY has been consistently increasing its market share.
### TABLE - 5.22

**PROFIT AFTER TAX**

<table>
<thead>
<tr>
<th>YEAR</th>
<th>Rs. In million</th>
<th>Index</th>
</tr>
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<tbody>
<tr>
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<td>MFL</td>
<td>SPIC</td>
</tr>
<tr>
<td>1993-94</td>
<td>-584.90</td>
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<td>218.70</td>
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<tr>
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<td>-257.40</td>
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<td>249.80</td>
<td>283.70</td>
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<td>2000-01</td>
<td>117.40</td>
<td>158.70</td>
</tr>
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<td>-204.90</td>
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<tr>
<td>TOTAL</td>
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<td>SD</td>
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<tr>
<td>CV</td>
<td>-898.47</td>
<td>-957.46</td>
</tr>
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</table>

(Source: Annual Reports of Sample units)
Analysis of Table 5.22 shows that the mean profit after tax in MFL is Rs.-38.45 million; in SPIC it is Rs.-167.23 million and in PARRY it is Rs.341.66 million. This shows that the mean is more in the case of PARRY than that of MFL and SPIC. The standard deviation in MFL is Rs.345.46 million; in SPIC it is Rs.1601.16 million; in PARRY it is Rs.118.88 million. The standard deviation is more in SPIC than in MFL and PARRY. The co-efficient of variation in MFL is -898.47 per cent; in SPIC it is -957.46 per cent and in PARRY it is 34.80 per cent. Index analysis reveals that the index in 2003 in MFL is -74.06; in SPIC it is -783.63 and in PARRY it is 170.35.

It is found that

(i) There is significant increase in profit after tax in PARRY.

(ii) SPIC has incurred a loss in 2003 and it has impact on profit after tax.

This may be due to the modified managerial activities in SPIC. PARRY is maintaining a controlled profit after tax during the study period.
### TABLE - 5.23

**MATERIAL EXPENSE**

<table>
<thead>
<tr>
<th>YEAR</th>
<th>Rs. In million</th>
<th></th>
<th>Index</th>
<th></th>
</tr>
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<td>SPIC</td>
<td>PARRY</td>
<td>MFL</td>
</tr>
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</tr>
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<td>16479.55</td>
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<td>10256.60</td>
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</tr>
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<td>9235.10</td>
<td>183.44</td>
</tr>
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<td>64801.30</td>
<td>1694.50</td>
</tr>
<tr>
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</tr>
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<tr>
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<td>30.82</td>
<td>43.49</td>
<td>35.20</td>
<td>30.82</td>
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</table>

(Source: Annual Reports of Sample units)
Analysis of Table 5.23 shows that the mean material expenses in MFL is Rs.5547.63 million; in SPIC it is Rs.12745.58 million and in PARRY it is Rs.6480.13 million. This shows that the mean is more in the case of SPIC than that of MFL and PARRY. The standard deviation in MFL is Rs.1709.94 million; in SPIC it is Rs.5543.23 million; in PARRY it is Rs.2281.23 million. The standard deviation is more in SPIC than in MFL and PARRY. The co-efficient of variation in MFL is 30.82 per cent; in SPIC it is 43.49 per cent and in PARRY it is 35.20 per cent. The co-efficient of variation is more in SPIC than in MFL and PARRY. Index analysis reveals that the index in 2003 in MFL is 183.44; in SPIC it is 93.39 and in PARRY it is 293.18. The increase in MFL is 83.44 per cent; PARRY is 193.18 per cent.

It is found that

(i) There is slight decline in material expenses in SPIC

(iii) These in high increase in material expenses in PARRY.

This may be due to the decline in usage of material in SPIC and increased sales in PARRY during the study period.
Analysis of Table 5.24 shows that the mean manufacturing expenses in MFL is Rs.1358.42 million; in SPIC it is Rs.4937.02 million and in PARRY it is Rs.691.83 million. This shows that the mean is more in the case of SPIC than that of MFL and PARRY. The standard deviation in MFL is Rs.847.33 million; in SPIC it is Rs.2131.71 million; in PARRY it is Rs.226.93 million. The standard deviation is more in SPIC than in MFL and PARRY. The co-efficient of variation in MFL is 62.38 per cent; in SPIC is 43.18 per cent and in PARRY is 32.80 per cent. The co-efficient of variation is more in MFL than
in SPIC and PARRY. Index Analysis reveals that the index in 2003 in MFL is 433.50; in SPIC it is 42.93 and in PARRY it is 137.93. The increase in MFL is 33.50 per cent; in SPIC it is 179.74 per cent and in PARRY it is 37.93 per cent.

It is found that

(i) There is decline in manufacturing expenses in SPIC;
(ii) There is high increase in manufacturing expense in MFL
(iii) Moderate increase is noticed in PARRY.

This may be due to the outsourcing activities in SPIC. PARRY *consistently controlling manufacturing expenses*. To analyse the variations in manufacturing expenses of the study period 1993-94 to 2003-04, a null hypothesis, $H_0$: There is no variation in manufacturing expenses among the selected companies is framed and tested with the help of F-test statistic.

### ANOVA TABLE

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<tr>
<th>Source</th>
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<th>df</th>
<th>Mean sum of Squares</th>
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<td>1771218.964</td>
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<td>Total</td>
<td>152063949.954</td>
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<td></td>
<td></td>
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</table>

* Significant at 1% level

The result of oneway ANOVA shows the mean manufacturing expenses differs significantly among the selected units at 1 per cent level.
Bonferroni Multiple Comparison Test

<table>
<thead>
<tr>
<th>(I) Company name</th>
<th>(J) Company name</th>
<th>Mean Difference (I-J)</th>
<th>Std. Error</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>MFL</td>
<td>SPIC</td>
<td>-3578.5970 (*)</td>
<td>595.18383</td>
<td>.000</td>
</tr>
<tr>
<td></td>
<td>PARRY</td>
<td>666.5900</td>
<td>595.18383</td>
<td>.818</td>
</tr>
<tr>
<td>SPIC</td>
<td>MFL</td>
<td>3578.5970 (*)</td>
<td>595.18383</td>
<td>.000</td>
</tr>
<tr>
<td></td>
<td>PARRY</td>
<td>4275.1870 (*)</td>
<td>595.18383</td>
<td>.000</td>
</tr>
<tr>
<td>PARRY</td>
<td>MFL</td>
<td>-666.5900</td>
<td>595.18383</td>
<td>.818</td>
</tr>
<tr>
<td></td>
<td>SPIC</td>
<td>-4245.1870 (*)</td>
<td>595.18383</td>
<td>.000</td>
</tr>
</tbody>
</table>

The above table shows the result of Bonferroni multiple comparison test for the significance of the mean difference of the manufacturing expenses among the three components. It is inferred that the mean manufacturing expenses significantly differs between the components MFL and SPIC, SPIC and PARRY at 1% level respectively. Hence it is concluded that the null hypothesis for the pairs of companies MFL – SPIC, SPIC – PARRY is rejected. Thus the mean manufacturing expenses of MFL – SPIC, and SPIC – PARRY is significantly differing. The mean manufacturing expenses of MFL – PARRY combination is not significant.
<table>
<thead>
<tr>
<th>YEAR</th>
<th>Rs. In million</th>
<th>Index</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>MFL</td>
<td>SPIC</td>
</tr>
<tr>
<td>1993-94</td>
<td>194.50</td>
<td>1311.50</td>
</tr>
<tr>
<td>1994-95</td>
<td>204.60</td>
<td>1026.40</td>
</tr>
<tr>
<td>1995-96</td>
<td>359.30</td>
<td>1215.40</td>
</tr>
<tr>
<td>1996-97</td>
<td>382.80</td>
<td>1283.50</td>
</tr>
<tr>
<td>1997-98</td>
<td>246.80</td>
<td>1163.40</td>
</tr>
<tr>
<td>1998-99</td>
<td>398.53</td>
<td>1016.96</td>
</tr>
<tr>
<td>1999-00</td>
<td>419.07</td>
<td>1027.06</td>
</tr>
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<td>2000-01</td>
<td>513.90</td>
<td>911.11</td>
</tr>
<tr>
<td>2001-02</td>
<td>626.90</td>
<td>903.44</td>
</tr>
<tr>
<td>2002-03</td>
<td>477.60</td>
<td>943.82</td>
</tr>
<tr>
<td>TOTAL</td>
<td>3824.00</td>
<td>10802.59</td>
</tr>
<tr>
<td>MEAN</td>
<td>382.40</td>
<td>1080.26</td>
</tr>
<tr>
<td>SD</td>
<td>138.88</td>
<td>152.09</td>
</tr>
<tr>
<td>CV</td>
<td>36.32</td>
<td>14.08</td>
</tr>
</tbody>
</table>

(Source: Annual Reports of Sample units)
Analysis of Table 5.25 shows that the mean personal expenses in MFL is Rs.382.40 million; in SPIC it is Rs.1080.26 million and in PARRY it is Rs.440.40 million. This shows that the mean is more in the case of SPIC than that of MFL and PARRY. The standard deviation in MFL is Rs.138.88 million; in SPIC it is Rs.152.09 million; in PARRY it is Rs.154.18 million. The standard deviation is more in PARRY than in MFL and SPIC. The co-efficient of variation in MFL is 36.32 percent; in SPIC it is 14.08 percent and in PARRY it is 35.01 percent. The co-efficient of variation is more in MFL than in SPIC and PARRY. Index analysis reveals that the index in 2003 in MFL is 245.55 in SPIC it is 71.96 and in PARRY it is 328.28 the increase in MFL is 15 percent; and in PARRY is 228.28.

It is found that

(i) Slight decline in personal expenses in SPIC;

(ii) Higher increase in personal expenses in PARRY and

(iii) Moderate increase in this in MFL

This may be due to the outsourcing activities in SPIC and PARRY in expanding its market. MFL is continuing the same practices during the study period.
### TABLE - 5.26

**COST OF SALES**

<table>
<thead>
<tr>
<th>YEAR</th>
<th>Rs. In million</th>
<th>Index</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>MFL</td>
<td>SPIC</td>
</tr>
<tr>
<td></td>
<td>MFL</td>
<td>SPIC</td>
</tr>
<tr>
<td>1993-94</td>
<td>7766.20</td>
<td>11932.90</td>
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<td>9458.60</td>
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<td>18106.50</td>
</tr>
<tr>
<td>1997-98</td>
<td>8384.90</td>
<td>20609.70</td>
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<tr>
<td>1998-99</td>
<td>10047.33</td>
<td>21700.56</td>
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<tr>
<td>1999-00</td>
<td>10558.87</td>
<td>24325.73</td>
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<tr>
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<td>12442.00</td>
<td>20122.72</td>
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<tr>
<td>2001-02</td>
<td>10493.20</td>
<td>16454.37</td>
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<tr>
<td>2002-03</td>
<td>9778.60</td>
<td>15671.66</td>
</tr>
<tr>
<td>TOTAL</td>
<td>98460.10</td>
<td>179628.14</td>
</tr>
<tr>
<td>MEAN</td>
<td>9846.01</td>
<td>17962.81</td>
</tr>
<tr>
<td>SD</td>
<td>1262.87</td>
<td>3928.88</td>
</tr>
<tr>
<td>CV</td>
<td>12.83</td>
<td>21.87</td>
</tr>
</tbody>
</table>

(Source: Annual Reports of Sample units)
Analysis of Table 5.26 shows that the mean cost of sales in MFL is Rs.9846.01 million; in SPIC it is Rs.17962.81 million and in PARRY it is Rs.8385.14 million. This shows that the mean is more in the case of SPIC than that of MFL and PARRY. The standard deviation in MFL is Rs.1262.87 Million; in SPIC it is Rs.3928.88 Million; in PARRY it is Rs.3036.67 million. The standard deviation is more in SPIC than in MFL and PARRY. The co-efficient of variation in MFL is 12.83 percent; in SPIC it is 21.87 percent and in PARRY it is 36.21 percent. The co-efficient of variation is more in PARRY than in MFL and SPIC.

Index analysis reveals that the index in 2003 in MFL is 125.91; in SPIC it is 131.33 and in PARRY it is 318.40 the increase in MFL is 25.91 percent; in SPIC it is 31.33 percent and in PARRY it is there is 218.40.

It is found that

(i). Higher increase in cost of sales in PARRY.

(ii). Moderate increase in cost of sales in MFL and SPIC.

This may be due to the fact that PARRY is consistently increasing its market. MFL and SPIC are trying only to mountain their markets.
Fig. 5.7
COST OF SALES

<table>
<thead>
<tr>
<th>Year</th>
<th>MFL</th>
<th>SPIC</th>
<th>PARRY</th>
</tr>
</thead>
<tbody>
<tr>
<td>1993-94</td>
<td></td>
<td></td>
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</tr>
<tr>
<td>1994-95</td>
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<td></td>
</tr>
<tr>
<td>1999-00</td>
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<td></td>
</tr>
<tr>
<td>2000-01</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2001-02</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2002-03</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
TABLE - 5.27
EQUITY DIVIDEND

<table>
<thead>
<tr>
<th>YEAR</th>
<th>MFL</th>
<th>SPIC</th>
<th>PARRY</th>
</tr>
</thead>
<tbody>
<tr>
<td>1993-94</td>
<td>0.00</td>
<td>0.00</td>
<td>26.90</td>
</tr>
<tr>
<td>1994-95</td>
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<tr>
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<td>105.66</td>
<td>124.70</td>
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<tr>
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<td>88.05</td>
<td>125.00</td>
</tr>
<tr>
<td>2001-02</td>
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<td>0.00</td>
<td>125.00</td>
</tr>
<tr>
<td>2002-03</td>
<td>0.00</td>
<td>0.00</td>
<td>107.10</td>
</tr>
</tbody>
</table>

(Source: Annual Reports of Sample units)

Analysis of Table 5.27 reveals that MFL has not paid any dividend during the study period. SPIC has given dividend in four out of ten years. However dividend is paid in PARRY in all the years. This may be due to the accumulated losses in MFL; occurring loss in SPIC and increased profitability in PARRY.
### TABLE - 5.28

PREFERENCE DIVIDEND

<table>
<thead>
<tr>
<th>YEAR</th>
<th>Rs. In million</th>
</tr>
</thead>
<tbody>
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<td>MFL</td>
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<tr>
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<tr>
<td>2001-02</td>
<td>0.00</td>
</tr>
<tr>
<td>2002-03</td>
<td>0.00</td>
</tr>
</tbody>
</table>

(Source: Annual Reports of Sample units)

Analysis of Table 5.28 shows that MFL has not spent for preference dividend. SPIC has paid it for five out of ten years and PARRY has paid in eight out of ten years.
Relationship between Operating Income and Expenses

The efficiency of the firm can be understood with the help of finding out the relationship between operating come, material, manufacturing expenses, personnel expenses, selling and administrative expenses.

A null hypothesis framed and tested in this study.

\( H_0 \): There is no significant influence of material, manufacturing expenses, personnel expenses, selling and administrative expenses towards operating income of selected fertiliser units. Regression co-efficients and autocorrelation co-efficient are calculated and analysis is done.
### TABLE - 5.29

**MFL - RELATIONSHIP BETWEEN OPERATING INCOME AND EXPENSES**

<table>
<thead>
<tr>
<th>YEAR</th>
<th>MATERIAL</th>
<th>MANUFACTURING EXPENSES</th>
<th>PERSONNEL EXPENSES</th>
<th>SELLING &amp; ADMINISTRATIVE EXPENSES</th>
<th>OPERATING INCOME</th>
</tr>
</thead>
<tbody>
<tr>
<td>1993-94</td>
<td>12346.30</td>
<td>531.70</td>
<td>194.50</td>
<td>542.50</td>
<td>4766.20</td>
</tr>
<tr>
<td>1994-95</td>
<td>16320.50</td>
<td>658.50</td>
<td>204.60</td>
<td>798.60</td>
<td>6450.60</td>
</tr>
<tr>
<td>1995-96</td>
<td>18428.80</td>
<td>733.40</td>
<td>359.30</td>
<td>826.40</td>
<td>6863.20</td>
</tr>
<tr>
<td>1996-97</td>
<td>18328.80</td>
<td>716.60</td>
<td>382.80</td>
<td>707.30</td>
<td>6660.20</td>
</tr>
<tr>
<td>1997-98</td>
<td>21331.70</td>
<td>291.60</td>
<td>246.80</td>
<td>1028.20</td>
<td>5384.90</td>
</tr>
<tr>
<td>1998-99</td>
<td>23583.00</td>
<td>1674.40</td>
<td>398.53</td>
<td>1011.27</td>
<td>11611.70</td>
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<td>12300.40</td>
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<td>883.70</td>
<td>10976.30</td>
</tr>
<tr>
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<td>16159.40</td>
<td>2304.90</td>
<td>477.60</td>
<td>990.60</td>
<td>11390.60</td>
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</table>

<table>
<thead>
<tr>
<th></th>
<th>Regression co-efficients</th>
<th>Standard Errors</th>
<th>t-values</th>
<th>% contribution of ( x_i )</th>
<th>Autocorrelation co-efficient</th>
<th>Durbin – Watson d-test statistic</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>0.2231</td>
<td>3.657</td>
<td>-0.773</td>
<td>-1.1184</td>
<td>( \rho = -0.6565 )</td>
<td>( d = 3.2220 )</td>
</tr>
</tbody>
</table>

(Source: Annual Reports of MFL)
The correlation matrix based on \((y: x_1, x_2, x_3, x_4)\)

<table>
<thead>
<tr>
<th></th>
<th>(y)</th>
<th>(x_1)</th>
<th>(x_2)</th>
<th>(x_3)</th>
<th>(x_4)</th>
</tr>
</thead>
<tbody>
<tr>
<td>(y)</td>
<td>1</td>
<td>0.5575</td>
<td>0.9662*</td>
<td>0.797*</td>
<td>0.7123*</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(1.8994)</td>
<td>(10.6008)</td>
<td>(3.7323)</td>
<td>(2.8704)</td>
</tr>
<tr>
<td>(x_1)</td>
<td>0.5575</td>
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<td>0.3606</td>
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<td>0.8191*</td>
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<tr>
<td></td>
<td>(1.8994)</td>
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<td>(1.0935)</td>
<td>(0.7676)</td>
<td>(3.9336)</td>
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<td>(x_2)</td>
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<td>0.3606</td>
<td>1</td>
<td>0.8443*</td>
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<tr>
<td></td>
<td>(10.6008)</td>
<td></td>
<td></td>
<td>(4.4564)</td>
<td>(2.1368)</td>
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<tr>
<td>(x_3)</td>
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<td>0.2619</td>
<td>0.8443*</td>
<td>1</td>
<td>0.46277</td>
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<tr>
<td></td>
<td>(3.7323)</td>
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<td>(4.4564)</td>
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<td>(1.4767)</td>
</tr>
<tr>
<td>(x_4)</td>
<td>0.7123*</td>
<td>0.8119*</td>
<td>0.6028</td>
<td>0.46277</td>
<td>1</td>
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<tr>
<td></td>
<td>(2.8704)</td>
<td>(3.9356)</td>
<td>(2.1368)</td>
<td>(1.4767)</td>
<td></td>
</tr>
</tbody>
</table>

+ values in paranthesis indicate their corresponding t-values

* Significant at 5% level

From above study the following conclusions are drawn:

(1) The contribution of \(X_2\): manufacturing expenses towards \(y\): operating income is significant.

(2) The correlation calculated between operating income and explanatory factors are all positive.

(3) There exists high multicollinart between \((x_2, x_3)\) and \((x_1, x_4)\) since

\[ r(x_2, x_3) = 0.8443 \quad r(x_1, x_4) = 0.8119 \]

(4) There exists negative autocorrelation coefficient and it is significant.
<table>
<thead>
<tr>
<th>YEAR</th>
<th>MATERIAL</th>
<th>MANUFACTURING EXPENSES</th>
<th>PERSONNEL EXPENSES</th>
<th>SELLING &amp; ADMINISTRATIVE EXPENSES</th>
<th>OPERATING INCOME</th>
</tr>
</thead>
<tbody>
<tr>
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<td>18428.80</td>
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<tr>
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<td>16851.01</td>
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<td>9097.59</td>
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<td>943.82</td>
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<td>16159.40</td>
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<td>0.5937</td>
<td>-</td>
</tr>
<tr>
<td>t-values</td>
<td>2.642</td>
<td>2.158</td>
<td>1.213</td>
<td>3.115</td>
<td>-</td>
</tr>
<tr>
<td>% contribution of x1</td>
<td>25%</td>
<td>20%</td>
<td>10%</td>
<td>45%</td>
<td>100%</td>
</tr>
<tr>
<td>Autocorrelation co-efficient</td>
<td>ρ = -0.0395</td>
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</tr>
<tr>
<td>Durbin – Watson d-test statistic</td>
<td>d = 2.03909</td>
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<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

(Source: Annual Reports of SPIC)
The correlation matrix based on \((y: x_1, x_2, x_3, x_4)\)

<table>
<thead>
<tr>
<th></th>
<th>(y)</th>
<th>(x_1)</th>
<th>(x_2)</th>
<th>(x_3)</th>
<th>(x_4)</th>
</tr>
</thead>
<tbody>
<tr>
<td>(y)</td>
<td>1</td>
<td>0.5543</td>
<td>-0.5239</td>
<td>-0.3208</td>
<td>0.7600*</td>
</tr>
<tr>
<td>(x_1)</td>
<td></td>
<td>0.5543</td>
<td>1</td>
<td>0.3587</td>
<td>0.6334</td>
</tr>
<tr>
<td>(x_2)</td>
<td>-0.5239</td>
<td>-0.4294</td>
<td>1</td>
<td>0.585</td>
<td>-0.3520</td>
</tr>
<tr>
<td>(x_3)</td>
<td>-0.3208</td>
<td>0.3587</td>
<td>0.585</td>
<td>1</td>
<td>-0.00241</td>
</tr>
<tr>
<td>(x_4)</td>
<td>0.7600*</td>
<td>0.6334</td>
<td>-0.352</td>
<td>-0.0024</td>
<td>1</td>
</tr>
</tbody>
</table>

* Significant at 5% level

+ values in parenthesis indicate their corresponding t-values

From the above study the following conclusions are drawn:

1. The contribution of \(x_4\): selling and administrative expenses towards \(y\): operating income is significant.

2. The correlation calculated between \((y, x_1); (x_1, x_3); (x_1, x_4)\) and \((x_2, x_3)\) are all positive.

3. There is no multicollinearity between explanatory factors.

4. There exists negative autocorrelation efficient and it is insignificant.
### TABLE - 5.31

**PARRY - RELATIONSHIP BETWEEN OPERATING INCOME AND EXPENSES**

<table>
<thead>
<tr>
<th>YEAR</th>
<th>MATERIAL</th>
<th>MANUFACTURING EXPENSES</th>
<th>PERSONNEL EXPENSES</th>
<th>SELLING &amp; ADMINISTRATIVE EXPENSES</th>
<th>OPERATING INCOME</th>
</tr>
</thead>
<tbody>
<tr>
<td>1993-94</td>
<td>3150.00</td>
<td>433.70</td>
<td>203.70</td>
<td>933.60</td>
<td>4662.90</td>
</tr>
<tr>
<td>1994-95</td>
<td>4746.50</td>
<td>777.20</td>
<td>271.30</td>
<td>1459.10</td>
<td>5394.10</td>
</tr>
<tr>
<td>1995-96</td>
<td>5201.20</td>
<td>947.50</td>
<td>311.90</td>
<td>805.00</td>
<td>7348.10</td>
</tr>
<tr>
<td>1996-97</td>
<td>5084.20</td>
<td>1159.30</td>
<td>388.90</td>
<td>829.80</td>
<td>7813.80</td>
</tr>
<tr>
<td>1997-98</td>
<td>5345.40</td>
<td>786.40</td>
<td>407.30</td>
<td>902.10</td>
<td>9238.70</td>
</tr>
<tr>
<td>1998-99</td>
<td>5843.60</td>
<td>477.10</td>
<td>449.00</td>
<td>1165.10</td>
<td>9885.80</td>
</tr>
<tr>
<td>1999-00</td>
<td>7202.30</td>
<td>527.60</td>
<td>499.40</td>
<td>1217.00</td>
<td>11346.50</td>
</tr>
<tr>
<td>2000-01</td>
<td>8736.40</td>
<td>601.80</td>
<td>577.10</td>
<td>1522.20</td>
<td>13665.80</td>
</tr>
<tr>
<td>2001-02</td>
<td>10256.60</td>
<td>609.50</td>
<td>626.70</td>
<td>1667.20</td>
<td>15275.90</td>
</tr>
<tr>
<td>2002-03</td>
<td>9235.10</td>
<td>598.20</td>
<td>668.70</td>
<td>1556.70</td>
<td>13445.20</td>
</tr>
</tbody>
</table>

- **Regression co-efficients**: 1.3093, -1.8942, 7.5414, -2.7404, 2616.712
- **Standard Errors**: 2.2450, 0.2334, 10.035, 3.4825, -
- **t-values**: 0.5832, 8.114, 0.7515, 0.7869, -
- **% contribution of xᵢ**: 4%, 85%, 6%, 5%, 100%
- **Autocorrelation co-efficient**: \( \rho = -0.0063 \)
- **Durbin – Watson d-test statistic**: \( d = 1.5339 \)

(Source: Annual Reports of PARRY)
From the above study the following conclusions are drawn:

(1) The contribution of \( X_2 \): manufacturing expenses towards \( y \): Operating income is significant.

(2) The correlation calculated among \((x_1, x_3); (x_1, x_4)\) and \((x_3, x_4)\) are all positive.

(3) There exists multicollinearity between \( x_1 \) and \( x_3 \) since \( r(x_1, x_3) = 0.9580 \).

(4) There exists negative autocorrelation coefficient and it is insignificant.

The correlation matrix based on \((y: x_1, x_2, x_3, x_4)\)

<table>
<thead>
<tr>
<th></th>
<th>( y )</th>
<th>( x_1 )</th>
<th>( x_2 )</th>
<th>( x_3 )</th>
<th>( x_4 )</th>
</tr>
</thead>
<tbody>
<tr>
<td>( y )</td>
<td>1</td>
<td>0.9711* ( (11.5082) )</td>
<td>-0.2820 ( (0.8314) )</td>
<td>0.9746* ( (12.3088) )</td>
<td>0.6789* ( (2.61531) )</td>
</tr>
<tr>
<td>( x_1 )</td>
<td>0.9711 ( (11.5082) )</td>
<td>1</td>
<td>-0.2423 ( (0.7064) )</td>
<td>0.9580* ( (9.4489) )</td>
<td>0.7870* ( (3.6080) )</td>
</tr>
<tr>
<td>( x_2 )</td>
<td>-0.2820 ( (0.8314) )</td>
<td>-0.2423 ( (0.7064) )</td>
<td>1</td>
<td>-0.2348 ( (0.6832) )</td>
<td>-0.4587 ( (1.4680) )</td>
</tr>
<tr>
<td>( x_3 )</td>
<td>0.9746 ( (12.3088) )</td>
<td>0.9580* ( (9.4489) )</td>
<td>-0.2348 ( (0.6832) )</td>
<td>1</td>
<td>0.6851* ( (2.6601) )</td>
</tr>
<tr>
<td>( x_4 )</td>
<td>0.6789* ( (2.6153) )</td>
<td>0.7870* ( (3.6080) )</td>
<td>-0.4587 ( (1.4601) )</td>
<td>0.6851* ( (2.6601) )</td>
<td>1</td>
</tr>
</tbody>
</table>

+ values in paranthesis indicate their corresponding t-values

* Significant at 5% level
**Relationship between Cost of Sales and Expenses**

The efficiency of the firm can be understood with the help of finding out the relationship between cost of sales and other expenses.

A null hypothesis is framed and tested in this study.

$H_0$: There is no significant influence of material, manufacturing expenses towards operating income of selected fertilizer units. Regression co-efficients and autocorrelation co-efficient are calculated and analysis is done.
### TABLE - 5.32

**MFL - RELATIONSHIP BETWEEN COST OF SALES AND EXPENSES**

<table>
<thead>
<tr>
<th>YEAR</th>
<th>MATERIAL</th>
<th>MANUFACTURING EXPENSES</th>
<th>PERSONNEL EXPENSES</th>
<th>SELLING &amp; ADMINISTRATIVE EXPENSES</th>
<th>OPERATING INCOME</th>
</tr>
</thead>
<tbody>
<tr>
<td>1993-94</td>
<td>3273.90</td>
<td>531.70</td>
<td>194.50</td>
<td>542.50</td>
<td>7766.20</td>
</tr>
<tr>
<td>1994-95</td>
<td>3818.30</td>
<td>658.50</td>
<td>204.60</td>
<td>798.60</td>
<td>9458.60</td>
</tr>
<tr>
<td>1995-96</td>
<td>4298.90</td>
<td>733.40</td>
<td>359.30</td>
<td>826.40</td>
<td>9862.20</td>
</tr>
<tr>
<td>1996-97</td>
<td>4489.00</td>
<td>716.60</td>
<td>382.80</td>
<td>707.30</td>
<td>9668.20</td>
</tr>
<tr>
<td>1997-98</td>
<td>4389.80</td>
<td>291.60</td>
<td>246.80</td>
<td>1028.20</td>
<td>8384.90</td>
</tr>
<tr>
<td>1998-99</td>
<td>6963.13</td>
<td>1674.40</td>
<td>398.53</td>
<td>1011.27</td>
<td>10047.33</td>
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<tr>
<td>1999-00</td>
<td>6966.87</td>
<td>2070.80</td>
<td>419.07</td>
<td>1102.13</td>
<td>10558.87</td>
</tr>
<tr>
<td>2000-01</td>
<td>8406.30</td>
<td>2484.30</td>
<td>513.90</td>
<td>1037.50</td>
<td>12442.00</td>
</tr>
<tr>
<td>2001-02</td>
<td>6864.60</td>
<td>2118.00</td>
<td>626.90</td>
<td>883.70</td>
<td>10493.20</td>
</tr>
<tr>
<td>2002-03</td>
<td>6005.50</td>
<td>2304.90</td>
<td>477.60</td>
<td>990.60</td>
<td>9778.60</td>
</tr>
</tbody>
</table>

**Regression co-efficients**
- Material: 0.7360
- Manufacturing: -0.2126
- Personnel: 1.1020
- Selling & Administrative: -0.9804
- Operating Income: 6505.65

**Standard Errors**
- Material: 3.4521
- Manufacturing: 0.046
- Personnel: 0.2890
- Selling & Administrative: 0.4872

**t-values**
- Material: 0.2132
- Manufacturing: 4.6118
- Personnel: 3.814
- Selling & Administrative: 2.012

**% contribution of x**
- Material: 2%
- Manufacturing: 43%
- Personnel: 38%
- Selling & Administrative: 17%
- Operating Income: 100%

**Autocorrelation co-efficient**
\[ r = 0.0710 \]

**Durbin – Watson d-test statistic**
\[ d = 1.6936 \]

(Source: Annual Reports of MFL)
The correlation matrix based on \((y: x_1, x_2, x_3, x_4)\)

<table>
<thead>
<tr>
<th></th>
<th>(y)</th>
<th>(x_1)</th>
<th>(x_2)</th>
<th>(x_3)</th>
<th>(x_4)</th>
</tr>
</thead>
<tbody>
<tr>
<td>(y)</td>
<td>1</td>
<td>0.8643* (4.8609)</td>
<td>0.7865* (3.6020)</td>
<td>0.7475 (3.1829)</td>
<td>0.5692 (1.9581)</td>
</tr>
<tr>
<td>(x_1)</td>
<td>0.8643* (4.8609)</td>
<td>1</td>
<td>0.9122* (6.2968)</td>
<td>0.8125* (3.9421)</td>
<td>0.7380* (3.0933)</td>
</tr>
<tr>
<td>(x_2)</td>
<td>0.7865* (3.6020)</td>
<td>0.9122* (6.2968)</td>
<td>1</td>
<td>0.8438* (4.4472)</td>
<td>0.6028 (2.1368)</td>
</tr>
<tr>
<td>(x_3)</td>
<td>0.7475 (3.1829)</td>
<td>0.8125* (3.9421)</td>
<td>0.8438* (4.4472)</td>
<td>1</td>
<td>0.4621 (1.4738)</td>
</tr>
<tr>
<td>(x_4)</td>
<td>0.5692 (1.9581)</td>
<td>0.7380* (3.0933)</td>
<td>0.6028 (2.1368)</td>
<td>0.4621 (1.4738)</td>
<td>1</td>
</tr>
</tbody>
</table>

+ values in paranthesis indicate their corresponding t-values

* Significant at 5% level

From the above study, the following conclusions are drawn:

1. The contributions of \(x_2\) and \(x_3\): manufactory expenses and personnel expenses towards \(y\): cost of sales are verified and it is significant.

2. The correlation calculated between cost of sales and other explanatory factors are all positive.

3. There exists high multicollinearity between \((x_1, x_2) (x_2, x_3)\) and \((x_1, x_3)\) since

\[
\begin{align*}
r(x_1, x_2) &= 0.9122 \\
r(x_2, x_3) &= 0.8438 \\
r(x_1, x_3) &= 0.8125
\end{align*}
\]

4. There exists autocorrelation co-efficient and it is insignificant.
TABLE - 5.33

SPIC – RELATIONSHIP BETWEEN COST OF SALES AND EXPENSES

<table>
<thead>
<tr>
<th>YEAR</th>
<th>MATERIAL</th>
<th>MANUFACTURING EXPENSES</th>
<th>PERSONNEL EXPENSES</th>
<th>SELLING &amp; ADMINISTRATIVE EXPENSES</th>
<th>OPERATING INCOME</th>
</tr>
</thead>
<tbody>
<tr>
<td>1993-94</td>
<td>9741.20</td>
<td>7225.50</td>
<td>1311.50</td>
<td>2106.10</td>
<td>11932.90</td>
</tr>
<tr>
<td>1994-95</td>
<td>1114.50</td>
<td>9172.30</td>
<td>1026.40</td>
<td>1912.40</td>
<td>12589.90</td>
</tr>
<tr>
<td>1995-96</td>
<td>18372.80</td>
<td>5546.20</td>
<td>1215.40</td>
<td>2639.00</td>
<td>18114.10</td>
</tr>
<tr>
<td>1996-97</td>
<td>16055.00</td>
<td>6583.40</td>
<td>1283.50</td>
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<td>18106.50</td>
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<tr>
<td>1997-98</td>
<td>19708.10</td>
<td>4521.40</td>
<td>1163.40</td>
<td>3354.30</td>
<td>20609.70</td>
</tr>
<tr>
<td>1998-99</td>
<td>14899.29</td>
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<td>1016.96</td>
<td>3814.43</td>
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<tr>
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<td>16479.55</td>
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<td>1027.06</td>
<td>3579.05</td>
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<td>12242.47</td>
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<td>911.11</td>
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<td>20122.72</td>
</tr>
<tr>
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<td>9745.29</td>
<td>2779.33</td>
<td>903.44</td>
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<td>16454.37</td>
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<tr>
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<td>9097.59</td>
<td>3101.93</td>
<td>943.82</td>
<td>1088.32</td>
<td>15671.66</td>
</tr>
</tbody>
</table>

Regression co-efficients
- Standard Errors
  - 0.6414
  - 0.4802
  - -18.050
  - 1.3922
  - 23020.600

Standard Errors
- 2.2793
- 1.9910
- 2.1132
- 4.622
- -

% contribution of x_i
- 3%
- 2%
- 90%
- 5%
- 100%

Autocorrelation co-efficient
- \( \rho = -0.1513 \)

Durbin – Watson d-test statistic
- \( d = 2.2551 \)

(Source: Annual Reports of SPIC)
The correlation matrix based on \((y : x_1, x_2, x_3, x_4)\)

<table>
<thead>
<tr>
<th></th>
<th>(y)</th>
<th>(x_1)</th>
<th>(x_2)</th>
<th>(x_3)</th>
<th>(x_4)</th>
</tr>
</thead>
<tbody>
<tr>
<td>(y)</td>
<td>1</td>
<td>0.7345*</td>
<td>-0.6434*</td>
<td>-0.2225</td>
<td>0.7867*</td>
</tr>
<tr>
<td></td>
<td>(3.0614)</td>
<td>(2.3772)</td>
<td>(0.6455)</td>
<td>(3.6044)</td>
<td></td>
</tr>
<tr>
<td>(x_1)</td>
<td>0.7345*</td>
<td>1</td>
<td>-0.4294</td>
<td>0.3587</td>
<td>0.63352*</td>
</tr>
<tr>
<td></td>
<td>(3.0614)</td>
<td></td>
<td>(1.3448)</td>
<td>(1.0869)</td>
<td>(2.3158)</td>
</tr>
<tr>
<td>(x_2)</td>
<td>-0.6434*</td>
<td>-0.4294</td>
<td>1</td>
<td>0.5849</td>
<td>-0.3518</td>
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<tr>
<td></td>
<td>(2.3772)</td>
<td>(1.3448)</td>
<td></td>
<td>(2.0396)</td>
<td>(1.0630)</td>
</tr>
<tr>
<td>(x_3)</td>
<td>-0.2225</td>
<td>0.3587</td>
<td>0.5849</td>
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<td>-0.0026</td>
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<tr>
<td></td>
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<td>(1.0869)</td>
<td>(2.0396)</td>
<td></td>
<td>(0.0074)</td>
</tr>
<tr>
<td>(x_4)</td>
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<td>0.6335*</td>
<td>-0.3518</td>
<td>-0.0026</td>
<td>1</td>
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<td></td>
<td>(3.6044)</td>
<td>(2.3158)</td>
<td>(1.0630)</td>
<td>(0.0074)</td>
<td></td>
</tr>
</tbody>
</table>

* Significant at 5% level

From the above, the following conclusions are drawn:

1. The contribution of \(x_3\) : personnel expenses towards \(y\) : cost of sales is significant.
2. The correlations calculated between \((y, x_1)\), \((x_1, x_3)\), \((x_1, x_4)\); \((x_2, x_3)\) are all positive.
3. There is no multicollinearity between explanatory factors.
4. The autocorrelation co-efficient exists and negative, and it is insignificant.
### TABLE - 5.34
PARRY - RELATIONSHIP BETWEEN COST OF SALES AND EXPENSES

<table>
<thead>
<tr>
<th>YEAR</th>
<th>MATERIAL</th>
<th>MANUFACTURING EXPENSES</th>
<th>PERSONNEL EXPENSES</th>
<th>SELLING &amp; ADMINISTRATIVE EXPENSES</th>
<th>OPERATING INCOME</th>
</tr>
</thead>
<tbody>
<tr>
<td>1993-94</td>
<td>3150.00</td>
<td>433.70</td>
<td>203.70</td>
<td>933.60</td>
<td>3787.30</td>
</tr>
<tr>
<td>1994-95</td>
<td>4746.50</td>
<td>777.20</td>
<td>271.30</td>
<td>1459.10</td>
<td>5795.40</td>
</tr>
<tr>
<td>1995-96</td>
<td>5201.20</td>
<td>947.50</td>
<td>311.90</td>
<td>805.00</td>
<td>6460.60</td>
</tr>
<tr>
<td>1996-97</td>
<td>5084.20</td>
<td>1159.30</td>
<td>388.90</td>
<td>829.80</td>
<td>6632.40</td>
</tr>
<tr>
<td>1997-98</td>
<td>5345.40</td>
<td>786.40</td>
<td>407.30</td>
<td>902.10</td>
<td>7165.40</td>
</tr>
<tr>
<td>1998-99</td>
<td>5843.60</td>
<td>477.10</td>
<td>449.00</td>
<td>1165.10</td>
<td>7935.40</td>
</tr>
<tr>
<td>1999-00</td>
<td>7202.30</td>
<td>527.60</td>
<td>499.40</td>
<td>1217.00</td>
<td>9418.70</td>
</tr>
<tr>
<td>2000-01</td>
<td>8736.40</td>
<td>601.80</td>
<td>577.10</td>
<td>1522.20</td>
<td>11437.50</td>
</tr>
<tr>
<td>2001-02</td>
<td>10256.60</td>
<td>609.50</td>
<td>626.70</td>
<td>1667.20</td>
<td>13160.00</td>
</tr>
<tr>
<td>2002-03</td>
<td>9235.10</td>
<td>598.20</td>
<td>668.70</td>
<td>1556.70</td>
<td>12058.70</td>
</tr>
</tbody>
</table>

Regression co-efficients
- 1.0560
- 0.1552
- 4.3636
- -0.1336
- -111.7062

Standard Errors
- 3.7553
- 0.0123
- 19.727
- 0.1203
- -

T-values
- 0.2812
- 12.563
- 0.2212
- 1.1102
- -

% contribution of xi
- 6%
- 82%
- 4%
- 8%
- 100%

Autocorrelation co-efficient
- ρ = 0.03234

Durbin – Watson d-test statistic
- d = 1.3786

(Source: Annual Reports of PARRY)
The correlation matrix based on \( y : x_1, x_2, x_3, x_4 \)

<table>
<thead>
<tr>
<th></th>
<th>( y )</th>
<th>( x_1 )</th>
<th>( x_2 )</th>
<th>( x_3 )</th>
<th>( x_4 )</th>
</tr>
</thead>
<tbody>
<tr>
<td>( y )</td>
<td>1</td>
<td>0.9771*</td>
<td>-0.2492 (0.7278)</td>
<td>0.9746 (12.3088)</td>
<td>0.7671* (3.3821)</td>
</tr>
<tr>
<td>( x_1 )</td>
<td>0.9771* (37.0582)</td>
<td>1</td>
<td>-0.2423 (0.7064)</td>
<td>0.9582* (9.4729)</td>
<td>0.7871* (3.6092)</td>
</tr>
<tr>
<td>( x_2 )</td>
<td>-0.2492 (0.7278)</td>
<td>-0.2423 (0.7064)</td>
<td>1</td>
<td>-0.2348 (0.6832)</td>
<td>-0.4587 (1.4777)</td>
</tr>
<tr>
<td>( x_3 )</td>
<td>0.9746* (12.3088)</td>
<td>0.9582* (9.4729)</td>
<td>-0.2348 (0.6832)</td>
<td>1</td>
<td>0.6850 (2.6594)</td>
</tr>
<tr>
<td>( x_4 )</td>
<td>0.7671* (3.3821)</td>
<td>0.7871* (3.6092)</td>
<td>0.4587 (1.4777)</td>
<td>0.6850 (2.6594)</td>
<td>1</td>
</tr>
</tbody>
</table>

+ values in paranthesis indicate their corresponding t-values

* Significant at 5% level

From the above study, the following conclusions are drawn:

1. The contribution of \( x_2 \) : manufacturing expenses towards \( y \) : cost of sales is significant.
2. The correlation calculated between \( y, x_3 \); \( y, x_4 \); \( x_1, x_3 \); \( x_1, x_4 \) and \( x_3, x_4 \) are positive.
3. There exists high multicollinearity between \( x_1, x_3 \) since \( r(x_1, x_3) = 0.9582 \).
4. The autocorrelation co-efficient exists and it is insignificant.
COMMON SIZE MEAN BALANCE SHEET OF SAMPLE FIRMS

The common size balance sheet mean values are calculated for all the three firms for a period of 10 years and the data are shown in Table 5.36 for analysis.

**TABLE – 5.35**

**COMMON SIZE MEAN BALANCE SHEET OF SAMPLE FIRMS**

<table>
<thead>
<tr>
<th>LIABILITIES</th>
<th>MFL</th>
<th>SPIC</th>
<th>PARRY</th>
</tr>
</thead>
<tbody>
<tr>
<td>Share Capital</td>
<td>13.81</td>
<td>4.06</td>
<td>3.14</td>
</tr>
<tr>
<td>Reserves &amp; Surplus</td>
<td>-2.99</td>
<td>23.08</td>
<td>33.61</td>
</tr>
<tr>
<td>Secured Loans</td>
<td>31.84</td>
<td>34.52</td>
<td>18.54</td>
</tr>
<tr>
<td>Unsecured Loans</td>
<td>23.65</td>
<td>21.06</td>
<td>12.31</td>
</tr>
<tr>
<td>Deficit</td>
<td>1.85</td>
<td>0.03</td>
<td>3.98</td>
</tr>
<tr>
<td>Current Liabilities</td>
<td>31.83</td>
<td>17.25</td>
<td>28.41</td>
</tr>
<tr>
<td>Total Liabilities</td>
<td>100.00</td>
<td>100.00</td>
<td>100.00</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>ASSETS</th>
<th>MFL</th>
<th>SPIC</th>
<th>PARRY</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total Fixed Net Assets</td>
<td>41.25</td>
<td>36.21</td>
<td>41.97</td>
</tr>
<tr>
<td>Investments</td>
<td>0.08</td>
<td>7.88</td>
<td>8.62</td>
</tr>
<tr>
<td>Current Assets</td>
<td>46.25</td>
<td>55.51</td>
<td>49.12</td>
</tr>
<tr>
<td>Miscellaneous Expenses not written off</td>
<td>12.43</td>
<td>0.40</td>
<td>0.29</td>
</tr>
<tr>
<td>Total Assets</td>
<td>100</td>
<td>100.00</td>
<td>100.00</td>
</tr>
</tbody>
</table>
Analysis of Table 5.36 shows that in the case of PARRY, the mean share capital is only 3.14, where as in the case of MFL, it is 13.81 per cent. In SPIC the mean share capital is 4.06 per cent of total liabilities. This shows that MFL has more capital than required during the study period. In the case of reserves and surpluses, the mean per cent is 33.61 for PARRY, 23.08 for SPIC and (-) for MFL. This shows that SPIC and PARRY are in comfortable position than MFL during the study period. The percentage of secured loans is maximum in SPIC and minimum in PARRY. Similarly the percentage of unsecured loans is maximum in MFL and is minimum in PARRY. The current liabilities are more in MFL than SPIC and PARRY.

In respect of assets, the mean percentage of fixed assets is 41.97 in PARRY, 41.25 in MFL and 36.21 in SPIC. Investments percentage is more in PARRY and least in MFL. Current assets to total assets percentage is 55.51 in SPIC, 46.25 in MFL and 49.12 in PARRY. This shows that the value of PARRY seems to be higher than that of other firms during the study period.

In this chapter financial analysis are done with regard to share capital, loan funds, depreciation, assets, liabilities, operating income, PBDIT, PAT, dividend etc of the selected firms. Advanced tools are used to find out the reality of the situation and future trend predictions are also made.