CHAPTER IV

RATIO ANALYSIS
RATIO ANALYSIS APPROACH

The ratio analysis was used to study and compare financial and physical indicators. Financial ratio analysis was used as an effective tool to evaluate and compare the financial performance of small scale industrial units for their solvency, liquidity, profitability, turnover, efficiency and strength. The usage of the performance indicator and ratio for interpreting the financial statements was restricted to those which could give significant results and were considered important.

The following ratios were used for the present study along with their computational formulae:

- Test of Solvency,
- Test of Liquidity,
- Test of Profitability,
- Test of Turnover,
- Test of Efficiency and
- Test of Strength.

The following formulae were used in this study:

1. CURRENT RATIO = \( \frac{\text{Current Assets}}{\text{Current Liabilities}} \)

2. QUICK RATIO = \( \frac{\text{Current Assets} - \text{Inventory}}{\text{Current Liabilities}} \)
3. INVENTORY UTILIZATION (TURNOVER) RATIO

\[ \text{Ratio} = \frac{\text{Inventory}}{\text{Sales}} \]

also
\[ \text{Ratio} = \frac{\text{Sales}}{\text{Inventory}} \]

4. FIXED ASSETS UTILIZATION RATIO

\[ \text{Ratio} = \frac{\text{Sales}}{\text{Net Fixed Assets}} \]

5. TOTAL UTILIZATION RATIO

\[ \text{i.e. Turnover to total Assets ratio} = \frac{\text{Sales}}{\text{Total Assets}} \]

6. TIME INTEREST CHARGE

\[ \text{Ratio} = \frac{\text{E.B.I.T.}}{\text{Interest Charges}} \]

7. PROFIT MARGIN

\[ \text{Ratio} = \frac{\text{Net Profit After Taxes}}{\text{Sales}} \]

8. BASIC EARNING POWER RATIO

\[ \text{Ratio} = \frac{\text{E.B.I.T.}}{\text{Total Assets}} \]

9. RETURN ON TOTAL ASSETS (R.O.A.)

\[ \text{Ratio} = \frac{\text{Net Profit}}{\text{Total Assets}} \]

10. GROSS PROFIT TO SALES RATIO

\[ \text{Ratio} = \frac{\text{Gross Profit}}{\text{Sales}} \times 100 \]

The ratio analysis is presented in Table No. 84. The physical performance based on the physical indicators of the small scale units covered under this study revealed that there was satisfactory progress in engineering industry, plastic industry and chemical industry. This table was developed on the basis of the average performance of the several units covered in each of the industries. These ratios were developed on the basis of financial accounts submitted by the respondents of the engineering, plastic and chemical units.
CURRENT RATIO:

The current ratio is quite satisfactory in engineering industry. This ratio is 1.84 which is almost equal to accepted norms i.e. 2:1. If the current liabilities were 1, their current assets were 1.84. It does mean that persons granting short-term debt need not wait for immediate recovery of their claims, since the engineering units possess sufficient current assets. In case of plastic industry this ratio is 1.86. In case of chemical industry this ratio is 0.94 which means that persons granting short term loans to chemical industry will have tough time for recovery of their claims. This industry has resistance to improve the current ratio to avoid heavy burden on working capital.

QUICK RATIO.

The total current liabilities are comparatively higher than that of current assets in the three industries. Quick ratio stood at 0.7, -4.95 and -0.07 in case of engineering, plastic and chemical industries respectively. A quick ratio of 1:1 is considered normal, as every rupee of current liabilities has been matched with a rupee of quick assets.

A cursory glance of this ratio for these three industries clearly shows that quick assets (cash, receivable and short term investments) are not adequate to liquidate current liabilities.
at a particular point of time. The quick ratio for plastic and chemical industries has touched dangerously low levels. This clearly demonstrates that the plastic industry and the chemical industry have thrown caution to the winds. The study of all these industries confirms that quick assets position is highly unsatisfactory in comparison with quick liabilities. If the quick ratio is not positive it jeopardizes the working capital position of these industries.

INVENTORY UTILIZATION RATIO:

This ratio indicates the relation between sales and inventory. The accepted norm for inventory utilization (turnover) ratio is 5 times to 6 times. This means inventory should be used at least 5 times or more in an accounting cycle.

Inventory utilization ratios for engineering, plastic and chemical industries were 0.75 i.e. only 1.3 times, 0.66 i.e. 1.5 times and 0.47 i.e. 2.1 times respectively. These figures reveal that all units in these three industries had not properly utilized their inventory. This kind of inventory management adversely affects the working capital position of these units. To reduce the burden on working capital, entrepreneurs are advised to adopt scientific inventory management.

FIXED ASSETS UTILIZATION RATIO:

Though the fixed assets do not affect working capital
directly they do indirectly assist in improving the sales, thereby improving the working capital position. This ratio explains the quantum of amount invested in fixed assets in comparison with sales. This ratio was 1.1 for engineering industry, 0.68 for plastic industry and 0.3 for chemical industry. This clearly shows that fixed assets utilization ratio is highly unsatisfactory in the case of plastic and chemical industry and satisfactory in the case of engineering industry. The reason for this weak ratio in plastic and chemical industries is due to the fact that their investment in fixed assets is far less than their sales warrant.

TOTAL ASSETS UTILIZATION RATIO:

This ratio is developed to know the relation between the sales and total assets. In the fixed assets utilization ratio it was found that the net fixed assets of plastic and chemical industries were very less and their total assets are more than that of their sales. However, the engineering units have the reverse position as far as these total assets to sales are concerned. Their total fixed assets in the form of sales was only 62 per cent. In contrast to this, plastic and chemical industries were having a favourable ratio. The plastic industry ratio is 1.27 and that of chemical industry is 1.3. The overall analysis of these ratios shows that the engineering industry invests little in total fixed assets, whereas plastic and chemical industries invest more in total fixed assets.
TIME INTEREST CHARGE RATIO.

In the process of capitalization the cost of borrowing is the prominent factor which should be very carefully considered. Excess cost of borrowing leads to escalation in the cost of establishing the concern. Therefore, to study the importance attached to interest charge, it being one of the major factors of cost of capitalization, this ratio is developed.

The engineering industry have had almost five times of earning before interest and taxes in comparison with the interest paid on the loans taken, whereas plastic industry suffered a heavy loss compared to interest charges paid. The plastic industry was in an infant stage and hence could not earn sufficient profit to meet interest charges. But in case of chemical industry the profit earned by them is extremely high, whereas the interest paid by them is almost negligible. The profit earned by all these industries is more than ten times the interest charges paid by them.

PROFIT MARGIN RATIO.

This ratio is developed to know the relation between net profit after tax and sales. This ratio is a real indicator to measure the profit earning capacity of a concern in terms of sales. Generally every businessman expects his profit earning capacity to be more or at least equal to the interest paid by
the banks on fixed deposits. In the case of engineering units, the sales to net profit after tax amounted to 0.30. This clearly shows that the engineering units have reaped a profit of 30 per cent of their sales which is much higher than the rate of interest allowed by the bankers. This ratio stood at 0.03 for plastic and chemical industries respectively. This means the percentage of profit is very low (3 per cent) which is far below the interest earned by the fixed deposits kept in the bank. If this persists the working capital position will be endangered. In view of this fact plastic and chemical industries are advised to prune their overhead expenditure, reduce wastage in inventory and slightly increase the sales price to improve their profit position.

BASIC EARNING POWER RATIO:

The profit earning capacity in terms of sales is compared to the total assets also. This ratio shows whether or not the concern has employed its total assets effectively. This question can be answered by establishing the relation between earning before interest and tax and total assets. In the case of engineering units, this ratio stood at 0.23 which is almost satisfactory compared to other previous ratios for this industry. This ratio stood at 0.25 and 0.47 for plastic and chemical industries respectively. Interpretation of profit margin ratio and basic earning power ratio read together throw light on profitability in terms of sales.
and total assets. All the units under engineering, plastic and chemical industries are doing quite well in terms of total assets but not in terms of total sales.

RETURN ON TOTAL ASSETS I.E. NET PROFIT TO TOTAL ASSETS:

This ratio indicates whether the total assets of the business have been properly used or not. If it is not properly used, it proves inefficiency on the part of the management. A rate of return on total assets of 15 per cent is an accepted norm. This ratio also helps to measure the profitability of the firm.

In case of engineering, plastic and chemical industries this ratio was 0.06, 0.05 and 0.03 respectively in terms of percentage of profits. This ratio works out to 6 per cent, 5 per cent and 3 per cent for engineering, plastic and chemical industries respectively. This ratio for all these three industries is well below the accepted norm of 15 per cent.

A glance at the basic earning power ratio for engineering, plastic and chemical industrial units shows 23 per cent, 25 per cent, and 47 per cent, respectively, which means a major chunk of profit was swallowed by the interest charges and taxes. Industrialists cannot escape from paying taxes but they can reduce the heavy burden of interest charges.
It is suggested that there should be strict control over borrowed money, reduction of excess inventory build up, adopting economic order quantity (E.O.Q.) method of inventory order system, bargaining for low interest loan and finding out credit or who can provide longer trade credit with low interest rate to improve profit position of these three industries.

GROSS PROFIT TO SALES RATIO:

This is a very important and significant ratio. It reveals the amount of gross profit for each rupee of sales. Earning capacity of the business can be confined by taking the margin between cost of goods and sales. The higher the ratio, greater will be the margin and that is why it is also called margin ratio. Gross profit ratio is very useful as a test of profitability and management efficiency. Gross profit ratio of 20 per cent to 30 per cent is considered normal.

The gross profit ratio in engineering units is 3.11 per cent followed by 16.54 per cent in case of plastic units and 0.36 per cent for chemical units. In all these three types of industries gross profit ratio is well below the norm. Only plastic units attempted to earn more but still it is below the norm. Creditors and share holders are the interested parties and like to have a good high profit margin ratio or at least equal to the accepted norm. If this position continues the survival of these industrial units will be in danger.
It is suggested that industrialists improve the profit margin by reducing overheads and other expenses, adopting scientific management and use of improved machinery.

### TABLE-81

<table>
<thead>
<tr>
<th>RATIOS</th>
<th>ENGINEERING INDUSTRY</th>
<th>PLASTIC INDUSTRY</th>
<th>CHEMICAL INDUSTRY</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Current Ratio</td>
<td>1.84</td>
<td>1.86</td>
<td>0.94</td>
</tr>
<tr>
<td>2. Quick Ratio</td>
<td>0.7</td>
<td>-4.95</td>
<td>-0.07</td>
</tr>
<tr>
<td>3. Inventory Utilization Ratio</td>
<td>0.75</td>
<td>0.66</td>
<td>0.47</td>
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<td>4. Fixed Assets Utilization Ratio</td>
<td>1.1</td>
<td>0.68</td>
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<td>5. Total Assets Utilization Ratio</td>
<td>0.62</td>
<td>1.27</td>
<td>1.3</td>
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<td>6. Time Interest Charge</td>
<td>4.76</td>
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<td>10.3</td>
</tr>
<tr>
<td>7. Profit Margin Ratio</td>
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<td>0.03</td>
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<td>8. Basic Earning Power</td>
<td>0.23</td>
<td>0.25</td>
<td>0.47</td>
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<td>9. Return: on Total Assets</td>
<td>0.06</td>
<td>0.05</td>
<td>0.03</td>
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<tr>
<td>10. Gross Profit to Sales Ratio</td>
<td>3.11%</td>
<td>16.5%</td>
<td>0.36%</td>
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</table>