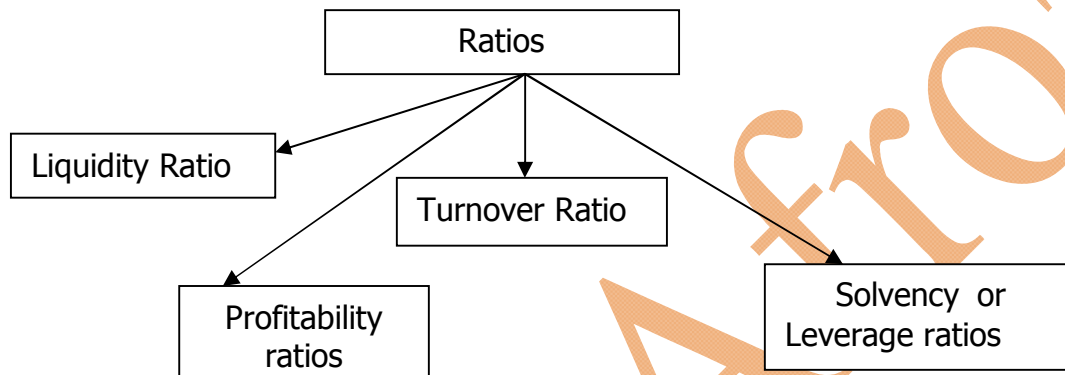


RATIO ANALYSIS

It is a tool of financial statements which calculate to the operating performance and financial position of a firm. It is very helpful at the time of interpretation of Financial statement.

There are various uses of ratios .The ratios which can be calculated from the accounting data are classified into the following broad categories



A. LIQUIDITY RATIO

The various ratios that explains about the liquidity position of the firm are

1. Current Ratio
2. Acid Test Ratio / quick ratio
3. Absolute liquid ratio / cash ratio

1. CURRENT RATIO

$$\text{Current Ratio} = \frac{\text{Current Asset}}{\text{Current Liabilities}}$$

Current assets = cash and bank balances, marketable securities, inventory, and debtors, excluding provisions for bad debts and doubtful debtors, bills receivables and prepaid expenses.

Current liabilities = sundry creditors, bills payable, short- term loans, income-tax liability, accrued expenses and dividends payable.

2. ACID TEST RATIO / QUICK RATIO

$$\text{Acid Test Ratio} = \frac{\text{Quick Assets}}{\text{Current liabilities}}$$

Quick assets = *Current Assets-(Prepaid Expenses+Stock)* Quick assets are those current assets, which can be converted into cash immediately or within reasonable short time without a loss of value.

3. ABSOLUTE LIQUID RATION / CASH RATIO

Absolute liquid assets include cash, bank balances, and marketable securities.

$$\text{Absolute liquid ratio} = \frac{\text{Absolute liquid assets}}{\text{Current liabilities}}$$

B. TURNOVER RATIO

Turnover ratios are also known as activity ratios. We may calculate the following turnover ratios.

1. Inventory Turnover Ratio
2. Debtor Turnover Ratio
3. Creditor Turnover Ratio
4. Assets Turnover Ratio

1. INVENTORY TURNOVER RATIO

$$\text{Inventory Turnover Ratio} = \frac{\text{Cost of goods sold}}{\text{Average Inventory}}$$

The average inventory is simple average of the opening and closing balances of inventory. (Opening + Closing balances / 2). Where opening balance of the inventory has not mention then closing balance of inventory may be considered as average inventory.

2. DEBTOR TURNOVER RATIO

$$\text{Debtor Turnover Ratio} = \frac{\text{Net Credit Sales}}{\text{Average Trade Debtors}}$$

Net credit sales = gross credit sales - sales return. Trade debtor includes sundry debtors and bill's receivables. Average trade debtors (Opening + Closing balances / 2)

3. CREDITOR TURNOVER RATIO

$$\text{Creditor Turnover Ratio} = \frac{\text{Net Credit Purchases}}{\text{Average Trade Creditor}}$$

$$\text{Net credit purchases} = \text{Gross credit purchases} - \text{purchase return}$$

4. ASSETS TURNOVER RATIO

The relationship between assets and sales is known as assets turnover ratio. Several assets turnover ratios can be calculated some of them is:

- a) Total asset turnover.
- b) Net asset turnover
- c) Fixed asset turnover
- d) Current asset turnover
- e) Net working capital turnover ratio

a. **TOTAL ASSET TURNOVER**

This ratio shows the firm's ability to generate sales from all financial resources committed to total assets.

$$\text{Total asset turnover} = \frac{\text{Total Sales}}{\text{Total Assets}}$$

b. **NET ASSET TURNOVER**

$$\text{Net asset turnover} = \frac{\text{Total Sales}}{\text{Net Assets}}$$

Net assets = total assets - current liabilities. Intangible and fictitious assets like goodwill, patents, accumulated losses, deferred expenditure may be excluded for calculating the net asset turnover.

c. **FIXED ASSET TURNOVER**

$$\text{Fixed asset turnover} = \frac{\text{Total Sales}}{\text{Net Fixed Assets}}$$

$$\text{Net fixed assets} = \text{cost of fixed assets} - \text{depreciation.}$$

d. **CURRENT ASSET TURNOVER**

$$\text{Current asset turnover} = \text{Total Sales/Current Assets}$$

e. NET WORKING CAPITAL TURNOVER RATIO

A higher ratio is an indicator of better utilization of current assets and working capital and vice-versa (a lower ratio is an indicator of poor utilization of current assets and working capital).

$$\text{Net working capital turnover ratio} = \frac{\text{Total Sales}}{\text{Working Capital}}$$

Working capital = current assets - current liabilities.

C. SOLVENCY OR LEVERAGE RATIOS

The ratio is based on the relationship between borrowed funds and owner's capital it is computed from the balance sheet, the second types are calculated from the profit and loss a/c. The various solvency ratios are:

1. Debt equity ratio
2. Debt to total capital ratio
3. Proprietary (Equity) ratio
4. Fixed assets to net worth ratio
5. Fixed assets to long term funds ratio
6. Debt service (Interest coverage) ratio

1. DEBT EQUITY RATIO

This ratio indicates the relative proportions of debt and equity in financing the firm's assets.

$$\text{Debt equity ratio} = \frac{\text{Outsider Funds (Total Debts)}}{\text{Shareholder Funds or Equity}}$$

Outsider fund = long-term debts as well as current liabilities.

Shareholder funds = Equity share capital+ preference share capital+ reserves and surplus including accumulated profits.

However, **fictitious assets** like accumulated deferred expenses etc should be **deducted** from the total of these items to shareholder funds.

The shareholder funds so calculated are known as net worth of the business.

2. DEBT TO TOTAL CAPITAL RATIO

$$\text{Debt to total capital ratio} = \frac{\text{Total Debts}}{\text{Total Assets}}$$

4. PROPRIETARY (EQUITY) RATIO

This ratio indicates the proportion of total assets financed by owners.

$$\text{Proprietary (equity) ratio} = \frac{\text{Shareholder funds}}{\text{Total assets}}$$

5. FIXED ASSETS TO NET WORTH RATIO

This ratio establishes the relationship between fixed assets and shareholder funds.

$$\text{Fixed assets to net worth ratio} = \frac{\text{Fixed Assets} \times 100}{\text{Net Worth}}$$

Net worth also known as shareholder's fund.

5. FIXED ASSETS TO LONG TERM FUNDS RATIO

$$\text{Fixed assets to long term funds ratio} = \frac{\text{Fixed Assets} \times 100}{\text{Long-term Funds}}$$

6. DEBT SERVICE (INTEREST COVERAGE) RATIO

$$\text{Debt Service Ratio} = \frac{\text{Earnings before interest and tax (EBIT)}}{\text{Interest Charges}}$$

D. PROFITABILITY RATIOS

The profitability ratio of the firm can be measured by calculating various profitability ratios. General two groups of profitability ratios are calculated.

- a. Profitability in relation to sales.
- b. Profitability in relation to investments.

Profitability in relation to sales

1. Gross profit margin or ratio
2. Net profit margin or ratio
3. Operating profit margin or ratio
4. Operating Ratio
5. Expenses Ratio

1. GROSS PROFIT MARGIN OR RATIO

It measures the relationship between gross profit and sales. It is calculated by dividing gross profit by sales.

$$\text{Gross profit margin or ratio} = \frac{\text{Gross profit} \times 100}{\text{Net sales}}$$

Gross profit = sales - cost of goods sold.

2. NET PROFIT MARGIN OR RATIO

$$\text{Net profit margin or ratio} = \frac{\text{Earnings after tax} \times 100}{\text{Net Sales}}$$

2. OPERATING PROFIT MARGIN OR RATIO

$$\text{Operating profit margin or ratio} = \frac{\text{Operating expenses} \times 100}{\text{Net sales}}$$

Operating expenses = cost of goods produced/sold + general and administrative expenses + selling and distributive expenses.

4. EXPENSES RATIO

$$\text{Cost of goods sold} = \frac{\text{Cost of goods sold} \times 100}{\text{Net Sales}}$$

$$\text{Administrative Expenses Ratio} = \frac{\text{Administrative Expenses} \times 100}{\text{Net sales}}$$

$$\text{Selling and distribution expenses ratio} = \frac{\text{Selling and distribution expenses} \times 100}{\text{Net sales}}$$

6. OPERATING PROFIT MARGIN OR RATIO

Operating profit margin or ratio establishes the relationship between operating profit and net sales.

$$\text{Operating profit margin or ratio} = \frac{\text{Operating Profit} \times 100}{\text{Net sales}}$$

*Operating profit is the difference between net sales and total operating expenses. (**Operating profit** = Net sales – cost of goods sold – administrative expenses – selling and distribution expenses.)*

PROFITABILITY IN RELATION TO INVESTMENTS

1. Return on gross investment or gross capital employed
2. Return on net investment or net capital employed
3. Return on shareholder's investment or shareholder's capital employed.
4. Return on equity shareholder investment or equity shareholder capital employed.

1. RETURN ON GROSS CAPITAL EMPLOYED

This ratio establishes the relationship between net profit and the gross capital employed. The term gross capital employed means the total investment made in business.

$$\text{Return on gross capital employed} = \frac{\text{Earnings After Tax (EAT)} \times 100}{\text{Gross capital employed}}$$

2. RETURN ON NET CAPITAL EMPLOYED

It is calculated by dividing Earnings Before Interest & Tax (EBIT) by the net capital employed. The term net capital employed in the gross capital in the business minus current liabilities.

$$\text{Return on net capital employed} = \frac{\text{Earnings Before Interest \& Tax (EBIT)} \times 100}{\text{Net capital employed}}$$

3. RETURN ON SHARE CAPITAL EMPLOYED

$$\text{Return on share capital employed} = \frac{\text{Earnings after tax (EAT)} \times 100}{\text{Shareholder capital employed}}$$

4. RETURN ON EQUITY SHARE CAPITAL EMPLOYED

$$\text{Return on equity share capital employed} = \frac{\text{Earnings after tax (EAT), preference dividends} \times 100}{\text{Equity share capital employed}}$$

EARNINGS PER SHARE

$$\text{Earnings per share} = \frac{\text{Earnings after tax} - \text{Preferred dividends (if any)}}{\text{Equity shares outstanding}}$$

DIVIDEND PER SHARE

$$\text{Dividend per share} = \frac{\text{Earnings paid to the ordinary shareholders}}{\text{Number of ordinary shares outstanding}}$$

DIVIDENDS PAY OUT RATIO (PAY OUT RATIO)

It measures the relationship between the earnings belonging to the equity shareholders and the dividends paid to them.

Dividend pay our ratio (Pay our ratio) = $\frac{\text{Total dividend paid to equity share holders}}{\text{Total earnings available to equity share holders}}$

Or

$\frac{\text{Dividend per share}}{\text{Earnings per share}}$

DIVIDEND AND EARNINGS YIELD

yield is expressed in terms of market value per share. The dividend yield may be defined as the relation of dividend per share to the market value per ordinary share.

Dividend Yield = $\frac{\text{Dividend Per share}}{\text{Market value of ordinary share}}$

Earnings yield = $\frac{\text{Earnings per share}}{\text{Market value of ordinary share}}$

PRICE EARNING RATIO

The reciprocal of the earnings yield is called price earnings ratio. It is calculated by dividing the market price of the share by the earnings per share.

Price earnings (P/E) ratio = $\frac{\text{Market price of share}}{\text{Earnings per share}}$