<u>Ratio analysis</u> -03

Ratio

It is the relationship between two according two accounting numbers. It is one number expressed in terms of another.

Ratio analysis

It is the technique of the computation of number of accounting ratios from the data derived from the financial statements. It is a technique of comparative analysis in which are in similar line of operation, so as to ascertain the financial soundness of concern.

Significance or uses or managerial uses of ratios-

Ratio analysis has been identified as a very important tool for management and facilitates several things. They are-

1. It helps as a check upon the efficiency with which working capital is being used in the enterprise.
2. It helps the financial management in evaluating the financial position and performance of the firm.
3. It is a medium of communication of financial position of a concern.
4. It is very use full in financial forecasting.
5. Ratios facilitates for comparison in inter-firm and inter-firms progress and performance.
6. Financial ratios are very useful in the diagnosis and financial health of a firm.

7. Ratios also helps in cost control and efficiency improvement.

Limitations of ratios-

1. It is based on financial statement, if there are manipulated, the data may not reflect the truth.
2. It ignores qualitative aspects like managerial abilities, nature of customers, employees etc. for making effective decisions.
3. Ratios it self will not give decisions.
4. Ratios alone are not adequate for judging the financial position of a business.
5. There is no standardization in ratios.
6. Ratios are based on many assumptions.
7. Understanding of ratios needs professional knowledge.

Classification of Ratios

1. statement wise Ratios
   a. Balance sheet Ratios.
   b. Income statement Ratios.
   c. Combined or composite Ratios.

2. Solvency Ratios or objectivity Ratios

a. Short-term solvency ratios.

b. Long-term solvency ratios.

c. Turn over ratios (activity based).

d. Profitability ratios.

I. **Liquidity or short term solvency ratios**-

1. Current ratio-

It is the ratio which is computed by taking into consideration the current assets and current liabilities.

Current assets = cash, bank, debtors, B/R, stock, short term investments, prepaid expenses.

Current liabilities = creditors, B/P, bank overdraft, provision for tax, proposed dividend expenses

$$\textbf{C.R} = \frac{\textbf{C.A}}{\textbf{C.L}} \quad \textbf{(ideal current ratio is 2:1)}$$

2. Acid test or quick or liquid ratio-

This ratio measures the relationship between quick assets and quick liabilities.

Quick or liquid assets = All current assets except stock and prepaid expenses.

Quick or liquid liabilities = All current liabilities except bank over draft.

$$\textbf{Q.R or L.R} = \frac{\textbf{Q.A or L.A}}{\textbf{Q.L or L.L}} \quad \textbf{(ideal ratio is 1:1)}$$

3. <u>Absolute liquid ratio-</u>
4.

It is the ratio which takes into consideration only those assets, which are purely liquid in nature like cash, bank and tradable investments and includes all current liabilities except bank over draft.

$$\text{A.L.R} = \frac{\text{A.L.A}}{\text{Q.L or L.L}} \quad \text{(ideal ratio is 0.5:1 or 1:2)}$$

II.Long term solvency or capital structure or leverage ratios –

1. debt-equity ratio- it is the ratio of debts or long – term liabilities and equity or owners fund or net worth.

Debt = Long term + short term liabilities

Equity = Equity capital+ reserves and surplus

$$\textbf{Debt equity ratio} = \frac{\textbf{Debt or external liabilities}}{\textbf{Equity or internal liabilities}} \quad (2:1)$$

2. Net- worth ratio or proprietary ratio- it is the ratio between equity and total assets.

$$\textbf{N.W.R} = \frac{\textbf{Net worth or equity or SHF}}{\textbf{Total assets – goodwill}} \quad \textbf{(ideal ratio is 5:1)}$$

3.Fixed assets to net worth ratio- it studies the relationship between net fixed assets and net worth

$$\textbf{F.A to N.W.R} = \frac{\textbf{Net fixed assets}}{\textbf{Net assets}} \quad \textbf{(ideal ratio is 2/3)}$$

4. Capital gearing ratio- it is the ratio between equity capital and fixed interest bearing securities.

CGR = $\frac{\textbf{Fixed interest/dividend bearing securities}}{\textbf{Equity fund or net worth}}$

Fixed interest/dividend securities = Debentures +long term loans + public deposits + preference capital

Equity fund or net worth or share holders fund or internal liabilities = equity+ reserves/surpluses.

5. Solvency ratio- it is the ratio between the total assets and total liabilities.

Solvency ratio = $\frac{\textbf{Total assets}}{\textbf{Total liabilities}}$

III turn over or activity ratios-

1. Stock or inventory turnover ratios -

It measures the operational efficiency. It includes the number of time the stock have been turn over in a year.

$$\textbf{STR} = \frac{\textbf{cost of goods sold (c o g s)}}{\textbf{Average stock (A.S)}}$$

C o g c = sales - gross profit

Or

Op.stock + purchases – closing stock

$$\textbf{A.S} = \frac{\textbf{Op.stock + closing stock}}{\textbf{2}}$$

2. Debtors turnover ratio

It is that ratio which reflects the number of times the debts are collected in a year.

$$\text{DTR} = \frac{\text{Net credit sales}}{\text{Average trade debtors}}$$

$$\text{Average debtors} = \frac{\text{op. debtors + cl. debtors}}{2}$$

3. Debt or average collection period-(ratio)

It is the ratio which clearly indicates the average time taken to collect or recover cash from debtors.

$$\text{Debt collection period} = \frac{\text{no of months or days in a year}}{\text{Debtor's turnover ratio}}$$

4. Creditors turnover ratio

It is the ratio which indicates the duration with in which creditors are paid off.

$$\text{CTR} = \frac{\text{Net credit purchases}}{\text{Average trade creditors}}$$

$$\text{Average creditors} = \frac{\text{op. creditors + cl. Creditors}}{2}$$

5. Debt or average payment period ratio-

It is the ratio which highlights the average time taken to make payments to creditors.

$$\text{Debt payment period} = \frac{\text{no. of months or days in a year}}{\text{Creditor'sturnover ratio.}}$$

6. Working capital turnover ratio-

$$\text{W C T R} = \frac{\text{Net sales}}{\text{Working capital}}$$

7. Fixed assets turnover ratio-

$$F\,A\,T\,R = \frac{\text{Net sales}}{\text{Fixed assets}}$$

IV **Profitability ratios-**

1. Gross profit ratio

It is the ratio between net sales and gross profit denoted in terms of percentage.

$$\text{G.P ratio} = \frac{\text{G.P}}{\text{Net sales}} \times 100$$

2. Net profit ratio-

It is the ratio between the net profit and net sales of an organization.

$$\text{N.P. ratio} = \frac{\text{N.P}}{\text{Net sales}} \times 100$$

3. Operating ratio-

It is the ratio between the operating cost and net sales of an organization.

$$\text{Operating ratio} = \frac{\text{operating cost}}{\text{Net sales}} \times 100$$

Operating profit = all expenses or cost in a year.

4. Expenses ratio-

It is the ratio between the specified expenses like office or administrative, selling and distribution to that of net sales, as a percentage.

$$\text{Expenses ratio} = \frac{\text{specific Expenses}}{\text{Net sales}} \times 100$$

5. Operating profit ratio-

It is the ratio between the operating profit and net sales of an organization.

$$\text{O.P. ratio} = \frac{\text{operating profit}}{\text{Net sales}} \times 100$$

Operating profit = N.P + non-operating expenses – non-operating income

6. Return on capital employed- (ratio)

This ratio establishes the relationship between the net profit and capital employed in business.

(EBIT)

$$\text{R C E} = \frac{\text{Returnon capital employed}}{\text{Capital employed}} \times 100$$

RCE or EBIT = Earnings before interest and taxes

Capital employed = owners fund + long term borrowings – good will and fictitious assets.

7. Earnings per share ratio-

It is the ratio between earnings available to equity share holders and number of equity shares.

E P S = net profit after tax and preference dividend

Number of equity shares.

8. price-earning ratio-

This ratio indicates the number of times the earnings per share is covered by its market price.

$$\text{P/E ratio} = \frac{\text{market price per equity share}}{\text{Earnings per equity share.}}$$

9. Dividend payout ratio-

$$\text{Dividend payout ratio} = \frac{\text{Dividend per share}}{\text{E P S}}$$

Summary of ratio's

Ratio	Equation/formula	Standard
A)current solvency		

ratio's		
Current ratio	<u>Current assets</u> Current liabilities	2:1
Quick ratio	<u>Quick assets</u> Current liabilities Quick assets = CA-(stock=prepaid expenses)	1:1
Absolute liquid Ratio	<u>Absolute liquid assets</u> Current liabilities Absolute liquid assets = QA-(debtors + B/R)	0.5:1
B)long term solvency ratio's		
Debt/equity ratio	<u>Debt</u> Debt = long term liabilities + short Term liabilities Equity = share capital + liability + reserves + P&L A/c credit balance.	2:1

Proprietary ratio	<u>Net worth</u> Total assets Net worth = capital + reserves + P&L cr. Bal –(preliminary exp + accumulate losses)	5:1
Fixed assets to net worth ratio	<u>Net fixed assets</u> Net worth	2/3 of net worth
Current assets to net worth ratio	<u>Current assets</u> Net worth	Higher the ratio higher the solvency
Capital gearing ratio	<u>Fixed commitment securities</u> Equity share hol. Fund	Higher the ratio higher of capital gearing
c)Turnover ratio		
Stock turnover ratio	<u>Cost of goods sold</u> Avg. stock CGS=sales – G/P	Higher the ratio more favorable

	Average stock = <u>opgstock + clearing stock</u> 2	
Debtors turnover ratio	<u>Net annual credit sales</u> Average Tr. Debtors Credit sales = total sales-cash sales Average Tr. Debtors = <u>Opg. Debtors+ clg. Debtors</u> 2	Higher the ratio More Favorable.
Creditors turnover ratio	<u>Net annual credit purchases</u> Avg. trade creditors Credit purchases = total purchases - cash purchases Avg. Tr. Creditors = <u>Opg. Creditors = clg. creditors</u> 2	Higher the ratio Favorable.
Debt collection period	<u>No. of days or month in a year</u> Debtors turnover ratio	30 days or 1month

Average payment Period	$\frac{\text{No. of days or month in a year}}{\text{Creditors turnover ratio}}$	30 days or 1month
Working capital ratio	$\frac{\text{Net sales}}{\text{Working capital}}$	Higher the ratio, Higher efficiency
Total assets turnover ratio.	$\frac{\text{Net sales}}{\text{Fixed assets}}$	2 times
Fixed assets turnover ratio	$\frac{\text{Net sales}}{\text{Fixed assets}}$	5 times or more
Current assets turnover ratio	$\frac{\text{Net sales}}{\text{Current assets}}$	Higher the ratio, Higher efficiency
D) profitability ratio		
Gross profit ratio	$\frac{\text{Gross profit X 100}}{\text{Net sales}}$	Higher the ratio, Higher efficiency

	Gross profit = opening stock + purchase + direct expenses- (sales + closing stock)	
Net profit ratio	<u>Net profit X100</u> Net sales	Higher the ratio, Higher efficiency
Operatingratio	<u>Operating cost X100</u> Net sales Operating cost = CGS + Operating expenses	Lower the ratio, higher the efficiency
Operating profit ratio	<u>Operating profit X100</u> Net sales Operating profit = net profit + non Operating expenses - non- Operating incomes.	10% or more
Expenses ratio	<u>Specific expenses X100</u> Net sales	Lower the ratio, Higher the efficiency

Return on capital Employed ratio	<u>Return on capital employed</u> Capital employed Capital employed = owners fund + long term borrowings – fictitious assets.	15% or more
Earnings per share ratio	<u>Earnings available to equity shareholders</u> No of equity shares (*= net profit after tax – preference dividend)	More the ratio more is the efficiency
Price earnings ratio	<u>Market price per equity shares</u> Earnings per share	