

Chapter-8

Financial statement analysis

Lecture 1

* Types of ratios :-

- 1) Liquidity ratio
- 2) Leverage / solvency ratio
- 3) Turnover ratio
- 4) Profitability ratio

1) Liquidity ratio :-

$$a) \text{ Current ratio} = \frac{\text{Current assets}}{\text{Current liability}}$$

Higher the ratio . better the condition

$$b) \text{ Acid-test ratio} = \frac{(\text{Current assets} - \text{Inventories})}{\text{Current liabilities}}$$

Higher the ratio . better the condition

$$c) \text{ Cash ratio} = \frac{(\text{Cash \& bank balance} + \text{current investments})}{\text{Current liabilities}}$$

Higher the ratio . better the condition

Lecture 2

Q No. 1: Current Ratio is 3.5:1; Working Capital is Rs. 90,000.

Calculate the amount of Current Assets and Current Liabilities.

Sol. Let current assets be $3.5x$ & current liabilities be x

Working capital = current assets - current liabilities

$$90,000 = 3.5x - x$$

$$90,000 = 2.5x$$

$$x = \frac{90,000}{2.5} = 36,000$$

--- Current liability = $x = 36,000$

$$\text{Current assets} = 3.5x = 3.5(36,000) = 1,26,000$$

Q No. 2: Shine Limited has a current ratio 4.5 : 1 and quick ratio 3 : 1; if the inventory is 36,000, calculate Current Liabilities and Current Assets.

Sol. Let current assets be $4.5x$ & current liabilities be x

Quick ratio = $\frac{\text{Current assets} - \text{Inventories}}{\text{Current liabilities}}$

$$\frac{3}{1} = \frac{4.5x - 36,000}{x}$$

$$3x = 4.5x - 36,000$$

$$36,000 = 4.5x - 3x$$

$$36,000 = 1.5x$$

$$x = \frac{36,000}{1.5} = 24,000$$

--- Current liability = $x = 24,000$

$$\text{Current assets} = 4.5x = 4.5(24,000) = 1,08,000$$

Q No. 3: Current Liabilities of a company are Rs. 75,000. If current ratio is 4:1 and Liquid Ratio is 1 : 1, calculate value of Current Assets, Liquid Assets and Inventory.

Sol..

$$\text{Current liability} = 75.000$$

$$\text{Current ratio} = \frac{\text{Current assets}}{\text{Current liability}}$$

$$\frac{4}{1} = \frac{\text{current assets}}{75.000}$$

$$75.000 \times 4 = \text{current assets}$$

$$\text{Current assets} = 3.00.000$$

$$\text{Liquid ratio} = \frac{(\text{Current assets} - \text{Inventories})}{\text{Current liabilities}}$$

$$\frac{1}{1} = \frac{3.00.000 - \text{inventory}}{75.000}$$

$$75.000 = 3.00.000 - \text{inventory}$$

$$\text{Inventory} = 3.00.000 - 75.000 = 2.25.000$$

$$\text{--- Liquid assets} = \text{current assets} - \text{inventory}$$

$$3.00.000 - 2.25.000 = 75.000$$

Q No. 4: Handa Ltd. has inventory of Rs. 20,000. Total liquid assets are Rs. 1,00,000 and quick ratio is 2 : 1. Calculate current ratio.

Sol..

$$\text{Liquid assets} = \text{Current assets} - \text{inventory}$$

$$1.00.000 = \text{Current assets} - 20.000$$

$$\text{Current assets} = 1.00.000 + 20.000 = 1.20.000$$

$$\text{Quick ratio} = \frac{\text{Current assets} - \text{inventory}}{\text{Current liabilities}}$$

$$\frac{2}{1} = \frac{1.20.000 - 20.000}{\text{Current liability}}$$

$$2 \text{ current liability} = 1.00.000$$

$$\text{Current liability} = \frac{1.00.000}{2} = 50.000$$

$$\begin{aligned} \text{--- Current ratio} &= \frac{\text{Current assets}}{\text{Current liability}} \\ &= \frac{1.20.000}{50.000} \\ &= 2.4 : 1 \end{aligned}$$

Q No. 6: Calculate Current Ratio and Quick Ratio from the following information:

Particulars	(Rs.)
Inventories	50,000
Trade receivables	50,000
Advance tax	4,000
Cash and cash equivalents	30,000
Trade payables	1,00,000
Short-term borrowings (bank overdraft)	4,000

Sol.

$$1) \text{ Current ratio} = \frac{\text{Current assets}}{\text{Current liability}}$$

$$\text{Current assets} = 50.000 + 50.000 + 4.000 + 30.000 = 1.34.000$$

$$\text{Current liability} = 1.00.000 + 4.000 = 1.04.000$$

$$\text{Current ratio} = \frac{\text{Current assets}}{\text{Current liability}}$$

$$= \frac{1.34.000}{1.04.000}$$

$$= 1.28 : 1$$

$$\text{--- } 1.28 : 1$$

$$2) \text{ Quick ratio} = \frac{\text{Current asset} - \text{inventory}}{\text{Current liability}}$$

$$= \frac{1.34.000 - 50.000 - 4.000}{1.04.000}$$

$$= 0.77 : 1$$

$$\text{--- } 0.77 : 1$$

2) Leverage / solvency ratio :-

a) Structural ratio

$$i) \text{ Debt equity ratio} = \frac{\text{Long term debts}}{\text{Shareholder's fund}}$$

Where

Shareholders' Funds (Equity) = Share capital + Reserves and Surplus + Money received against share warrants + Share application money pending allotment

Share Capital = Equity share capital + Preference share capital

or

Shareholders' Funds (Equity) = Non-current Assets + *Working Capital - Non-Current Liabilities

Working capital = Current assets - Current liabilities

Higher the ratio . higher the risk

$$ii) \text{ Debt to capital employed ratio} = \frac{\text{All debts}}{\text{Capital employed (or net asset)}}$$

Capital employed = long-term debt + shareholders' funds.

Alternatively, it may be taken as net assets = total assets - current liabilities

Higher the ratio . higher the risk

Q No. 7: Calculate debt-equity ratio from the following information:

Total Assets	Rs. 15,00,000
Current Liabilities	Rs. 6,00,000
Total Debts	Rs. 12,00,000

Sol..

$$\text{Debt equity ratio} = \frac{\text{Long term debts}}{\text{Share holder's fund}}$$

$$\text{Long term liability} = 12.00.000 - 6.00.000 = 6.00.000$$

$$\text{Shareholder's fund} = 15.00.000 - 12.00.000 = 3.00.000$$

$$\text{Debt equity ratio} = \frac{\text{Long term debts}}{\text{Share holder's fund}}$$

= 6.00.000

3.00.000

--- 2:1

Q No.

Q No. 5: Calculate Current Ratio if: Inventory is Rs. 6,00,000; Liquid Assets Rs. 24,00,000;

Quick Ratio 2 : 1.

Sol.

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

Liquid assets = Current assets - inventory

24.00.000 = Current asset - 6.00.000

Current asset = 30.00.000

Quick ratio = $\frac{\text{Current asset} - \text{inventory}}{\text{Current liability}}$

2 = $\frac{30.00.000 - 6.00.000}{1}$

1 Current liability

2 Current liability = 24.00.000

Current liability = $\frac{24.00.000}{2}$ = 12.00.000

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

= $\frac{30.00.000}{12.00.000}$

12.00.000

--- 2.5 : 1

Lecture 3

Q No. 8: From the following balance sheet of a company, calculate Debt-Equity Ratio:

I. Equity and Liabilities	2022 (Rs.)
Share Capital	8000
Share Premium	1100
Retained earnings	3082
7% Mortgage loan	2000
Creditors	600
Outstanding salaries	140
Provision for taxation	140
Total	15062
II. Assets	
Plant & Machinery	6600
Accumulation Dep. on plant and mach	(2620)
Building	11600
Accumulation depreciation on Building	(4500)
Land	1200
Stock	962
Debtors	760
Prepaid expenses	80
Cash	980
Total	15062

Sol.: Debt equity ratio = $\frac{\text{Long term debts}}{\text{Shareholder's fund}}$

Long term debt = 2.000

Shareholder's fund = 8.000 + 1.100 + 3.082 = 12.182

Debt equity ratio = $\frac{\text{Long term debts}}{\text{Shareholder's fund}}$

= $\frac{2.000}{12.182}$

--- 0.164 : 1

Q No. 9: Company A lists Rs. 40,00,000 in short-term liabilities and Rs. 70,00,000 in long-term liabilities on their balance sheet. They have also issued Rs. 20,00,000 in preferred stock, Rs. 5,00,000 in minority interest, and have around 8,00,000 outstanding shares trading at Rs. 10 per share. Using all that information, calculate the debt-to-capital ratio.

Sol. Debt to capital employed ratio =
$$\frac{\text{All debts}}{\text{Capital employed}}$$

$$\text{All debts} = 40,00,000 + 70,00,000 = 1,10,00,000$$

$$\text{Capital employed} = 20,00,000 + 5,00,000 + 80,00,000 + 1,10,00,000 = 2,15,00,000$$

$$\begin{aligned} \text{Debt to capital employed ratio} &= \frac{\text{All debts}}{\text{Capital employed}} \\ &= \frac{1,10,00,000}{2,15,00,000} \\ &= 0.51 : 1 \end{aligned}$$

b) Coverage ratio

i) Interest coverage ratio =
$$\frac{\text{Profit before interest \& tax (PBIT)}}{\text{Interest on long term debts}}$$

Higher the ratio . better the condition

ii) Fixed charges coverage ratio =
$$\frac{(\text{PBIT} + \text{Depreciation})}{\text{Repayment of loan interest (1 - tax rate)}}$$

iii) Debt service coverage ratio =
$$\frac{(\text{PBIT} + \text{other non-cash chrgs int on loan} + \text{lease rental})}{\text{Interest on loan} + \text{Lease rentals} + \text{Repayment of loan}}$$

Q No. 10: From the following details, calculate interest coverage ratio: Net Profit after tax Rs. 60,000; 15% Long term debt 10,00,000; and Tax rate 40%.

Sol. Interest coverage ratio =
$$\frac{\text{PBIT}}{\text{Interest on long term debts}}$$

$$\text{PBIT} = \frac{\text{PAT}}{(1 - \text{tax rate})} + \text{interest}$$

$$= \frac{60.000}{(1 - 0.40)} + (10.00.000 \times 15\%)$$

$$= 1.00.000 + 1.50.000$$

$$= 2.50.000$$

$$\text{Interest coverage ratio} = \frac{\text{PBIT}}{\text{Interest on long term debts}}$$

$$= \frac{2.50.000}{1.50.000}$$

--- 1.67 times

Q No. 11: Company A records EBIT of Rs. 300,000, operating lease payments of Rs. 200,000, and Rs. 50,000 in interest expense. Calculate Fixed Charges Coverage Ratio.

Sol. Fixed charges coverage ratio = $\frac{(\text{PBIT} + \text{Depreciation})}{\text{Repayment of loan interest (1 - tax rate)}}$

$$= \frac{3.00.000 + 0}{50.000}$$

--- 6 times

3) Turnover ratio :-

a) Inventory turnover ratio = $\frac{\text{Cost of goods sold}}{\text{Average inventory}}$

Higher the ratio . better the condition

b) Receivables / Debtors's turnover ratio = $\frac{\text{Net credit sales}}{\text{Average sundry debtors}}$

Higher the ratio . higher the efficiency

c) Average collection period ratio = $\frac{365}{\text{Debtor's turnover}}$

$$d) \text{ Fixed assets turnover ratio} = \frac{\text{Net sales}}{\text{Average net fixed assets}}$$

$$e) \text{ Total assets turnover} = \frac{\text{Net sales}}{\text{Average total assets}}$$

Q No. 12: From the following information, calculate inventory turnover ratio :

	Rs.
Inventory in the beginning	= 18,000
Inventory at the end	= 22,000
Net purchases	= 46,000
Wages	= 14,000
Revenue from operations	= 80,000
Carriage inwards	= 4,000

Sol..
$$\text{Inventory turnover ratio} = \frac{\text{Cost of goods sold}}{\text{Average inventory}}$$

$$\text{Cost of goods sold} = 18,000 + 46,000 + 14,000 + 4,000 - 22,000 = 60,000$$

$$\text{Average inventory} = \frac{18,000 + 22,000}{2} = 20,000$$

$$\begin{aligned} \text{Inventory turnover ratio} &= \frac{\text{Cost of goods sold}}{\text{Average inventory}} \\ &= \frac{60,000}{20,000} \\ &= 3 \text{ times} \end{aligned}$$

~~H/W~~ Q No. 13: From the following information, calculate inventory turnover ratio:

	Rs.
Revenue from operations	= 4,00,000
Average Inventory	= 55,000
Gross Profit Ratio	= 10%

Sol.. Inventory turnover ratio = $\frac{\text{Cost of goods sold}}{\text{Average inventory}}$

$$= \frac{4,00,000 - (10\% \text{ of } 4,00,000)}{55,000}$$

--- 6.54 times

~~H/W~~ Q No. 14: Calculate the Trade receivables turnover ratio from the following information:

Total Revenue from operations	Rs. 4,00,000
Cash Revenue from operations	20% of Total Revenue from operations
Trade receivables as at 1.4.2021	Rs. 40,000
Trade receivables as at 31.3.2022	Rs. 1,20,000

Sol.. Trade receivable turnover ratio = $\frac{\text{Credit sales}}{\text{Average receivable}}$

$$\text{Average receivable} = \frac{40,000 + 1,20,000}{2} = 80,000$$

$$\text{Trade receivable turnover ratio} = \frac{\text{Credit sales}}{\text{Average receivable}}$$

$$= \frac{4,00,000 \times 80\%}{80,000}$$

--- 4 times

Lecture 4

4) Profitability ratio :-

a) Profit margin ratio

$$i) \text{Gross profit margin} = \frac{\text{Gross profit}}{\text{Net sales or revenue}}$$

Higher the ratio . better the condition

$$ii) \text{EBDITA margin} = \frac{\text{EBDITA}}{\text{Net sales}}$$

$$iii) \text{Net profit margin} = \frac{\text{Net profit} \times 100}{\text{Net sales}}$$

b) Rate of return ratio

$$i) \text{Return on assets} = \frac{\text{PAT}}{\text{Average total assets}}$$

$$ii) \text{Earning power} = \frac{\text{PBIT}}{\text{Average total assets}}$$

$$iii) \text{Return on capital employed} = \frac{\text{PBIT}(1 - \text{tax rate})}{\text{Average total assets}}$$

$$iv) \text{Return on equity} = \frac{\text{Equity earnings}}{\text{Average equity}}$$

Q No. 15: Following information is available for the year 2022-23, calculate gross profit margin ratio:

Revenue from Operations:	Cash	25,000
	Credit	75,000
Purchases:	Cash	15,000
	Credit	60,000
Carriage Inwards		2,000
Salaries		25,000
Decrease in Inventory		10,000
Return Outwards		2,000
Wages		5,000

Sol. Gross profit margin = $\frac{\text{Gross profit}}{\text{Net sales or revenue}}$

Gross profit = 25,000 + 75,000 - (15,000 + 60,000 - 2,000 + 2,000 + 5,000) = 1,00,000 - 90,000 = 10,000

Gross profit margin = $\frac{\text{Gross profit}}{\text{Net sales or revenue}}$
 = $\frac{10,000}{1,00,000} \times 100$
 --- 10%

Q No. 16: Given the following information:

Revenue from Operations	3,40,000
Cost of Revenue from Operations	1,20,000
Selling expenses	80,000
Administrative Expenses	40,000

Calculate Gross profit ratio and EBITDA margin

Sol. Gross profit margin = $\frac{\text{Gross profit}}{\text{Net sales or revenue}}$

Gross profit = 3,40,000 - 1,20,000 = 2,20,000

Gross profit margin = $\frac{\text{Gross profit}}{\text{Net sales or revenue}}$

$$= \frac{2.20.000}{3.40.000} \times 100$$

--- 64.70%

$$\text{EBDITA margin} = \frac{\text{EBDITA}}{\text{Net sales}} \times 100$$

Gross profit 2.20.000

- Op exp (80.000)

(40.000)

Op profit 1.00.000

$$\text{EBDITA margin} = \frac{\text{EBDITA}}{\text{Net sales}} \times 100$$

$$= \frac{1.00.000}{3.40.000} \times 100$$

29.41%

Q No. 17: Gross profit ratio of a company was 25%. Its credit revenue from operations was Rs. 20,00,000 and its cash revenue from operations was 10% of the total revenue from operations. If the indirect expenses of the company were Rs. 50,000, calculate its net profit ratio.

Sol.
$$\text{Net profit margin} = \frac{\text{Net profit}}{\text{Net sales}} \times 100$$

Net sales -

Since cash sales is 10% of total sales

-- Credit sales will be 90% of total sales

20.00.000 = 90% of total sales

$$\text{Total sales} = \frac{20.00.000}{90\%} = 22.22.222$$

$$\text{Gross profit ratio} = \frac{\text{Gross profit}}{\text{Sales}} \times 100$$

$$25\% = \frac{\text{Gross profit}}{22.22.222}$$

$$\text{Gross profit} = 22.22.222 \times 25\% = 5.55.555$$

$$\text{Net profit} = 5.55.555 - 50.000 = 5.05.555$$

$$\begin{aligned} \text{Net profit margin} &= \frac{\text{Net profit}}{\text{Net sales}} \times 100 \\ &= \frac{5.05.555}{22.22.222} \times 100 \\ &= 22.75\% \end{aligned}$$

Q No. 18: From the following information calculate Gross Profit Ratio, Inventory Turnover Ratio and Trade Receivable Turnover Ratio.

Revenue from Operations	Rs. 3,00,000
Cost of Revenue from Operations	Rs. 2,40,000
Inventory at the end	Rs. 62,000
Gross Profit	Rs. 60,000
Inventory in the beginning	Rs. 58,000
Trade Receivables	Rs. 32,000

Sol.
$$\begin{aligned} \text{Gross profit ratio} &= \frac{\text{Gross profit}}{\text{Net sales}} \times 100 \\ &= \frac{60.000}{3.00.000} \times 100 \\ &= 20\% \end{aligned}$$

$$\begin{aligned} \text{Inventory turnover ratio} &= \frac{\text{Cost of goods sold}}{\text{Average inventory}} \\ \text{Average inventory} &= \frac{58.000 + 62.000}{2} = 60.000 \end{aligned}$$

$$\begin{aligned} \text{Inventory turnover ratio} &= \frac{\text{Cost of goods sold}}{\text{Average inventory}} \\ &= \frac{2.40.000}{60.000} \\ &= 4 \text{ times} \end{aligned}$$

$$\begin{aligned} \text{Trade receivable turnover ratio} &= \frac{\text{Credit sales}}{\text{Average receivables}} \\ &= \frac{3,00,000}{32,000} \\ &= 9.375 \text{ times} \end{aligned}$$

Q No. 19:

Calculate Inventory Turnover Ratio from the data given below:

Inventory in the beginning of the year	Rs. 10,000
Inventory at the end of the year	Rs. 5,000
Carriage	Rs. 2,500
Revenue from Operations	Rs. 50,000
Purchases	Rs. 25,000

Sol.
$$\text{Inventory turnover ratio} = \frac{\text{Cost of goods sold}}{\text{Average inventory}}$$

$$\text{Cost of goods sold} = 10,000 + 25,000 + 2,500 - 5,000 = 32,500$$

$$\text{Average inventory} = \frac{10,000 + 5,000}{2} = 7,500$$

$$\begin{aligned} \text{Inventory turnover ratio} &= \frac{\text{Cost of goods sold}}{\text{Average inventory}} \\ &= \frac{32,500}{7,500} \\ &= 4.33 \text{ times} \end{aligned}$$

~~Ans~~

Q No. 20: Calculate Inventory Turnover Ratio if: Inventory in the beginning is Rs. 76,250, Inventory at the end is Rs. 98,500, Sales is Rs. 5,20,000, Sales Return is Rs. 20,000, Purchases is Rs. 3,22,250.

Sol.

$$\text{Inventory turnover ratio} = \frac{\text{Cost of goods sold}}{\text{Average inventory}}$$

$$\text{Cost of goods sold} = 76.250 + 3.22.250 - 98.500 = 3.00.000$$

$$\text{Average inventory} = \frac{76.250 + 98.500}{2} = 87.375$$

$$\text{Inventory turnover ratio} = \frac{\text{Cost of goods sold}}{\text{Average inventory}}$$

$$= \frac{3.00.000}{87.375}$$

--- 3.43 times

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