Ratio Analysis

10.1 Liquidity ratio

Ability of a firm to meet short-term obligations (< 1 year)

I] Current Ratio

⇒ $\text{Current Ratio} = \dfrac{\text{Current Assets}}{\text{Current Liabilities}}$

⇒ Measures short term solvency
financial obligation

⇒ Higher ratio → Stronger liquidity

II] Acid test (Quick) ratio

⇒ $\text{Acid-test ratio} = \dfrac{\text{Quick Assets}}{\text{Current Liabilities}}$

⇒ Quick Assets = Current Assets − (Inventory + Prepaid Expenses)

⇒ Measures ability to meet obligations without selling inventory

⇒ Ideal = 1 : 1

III] Turnover Ratio

Turnover ratios measures how quickly certain current assets are convert to cash/sales.

Types

a) Inventory turnover

$\Rightarrow$ Inventory Turnover ratio $= \dfrac{\text{Cost of goods sold}}{\text{Average inventory}}$

$\Rightarrow$ Cost of goods sold = Sales − Gross profit

$\Rightarrow$ Average inventory $= \dfrac{(\text{Opening} + \text{Closing inventory})}{2}$

$\Rightarrow$ Higher ratio $\rightarrow$ better inventory management

b) Debtors (Accounts Receivable) turnover

$\Rightarrow$ Debtors Turnover Ratio $= \dfrac{\text{Net Credit Sales}}{\text{Average Accounts Receivable (Debtors)}}$

$\Rightarrow$ If the figure for net credit sales is not available, then net sales figure is to be used

$\Rightarrow$ Higher ratio $\rightarrow$ efficient collection

c) Average Collection Period

$$\Rightarrow \text{Average Collection Period} = \frac{\text{Average Debtors}}{\text{Average Daily Credit Sales}}$$

$$\Rightarrow \text{Average Collection Period} = \frac{365 \text{ Days}}{\text{Debtors Turnover}}$$

⇒ Shows days taken to collect dues

d) Fixed Assets Turnover Ratio

$$\Rightarrow \text{Fixed Assets turnover ratio} = \frac{\text{Net Sales}}{\text{Net Fixed Assets}}$$

⇒ measures sales per rupee of investment in fixed assets

e) Total Assets Turnover

$$\Rightarrow \text{Total Assets turnover ratio} = \frac{\text{Net Sales}}{\text{Average total Assets}}$$

⇒ overall efficiency of using all assets

10.2 Leverage / Capital structure ratio

=> Measures long-term financial stability and ability to repay loans.

=> Two sets of ratios

a) The ratios based on the relationship between borrowed fund and owner's capital which are computed from balance sheet

=> Debt to equity ratio

=> Debt to asset ratio

b) The ratios calculated from profit & loss account are

=> Interest coverage ratio

=> Debt Service Coverage ratio

a) Debt - Equity Ratio

=> $\text{Debt - Equity Ratio} = \dfrac{\text{Total Debt}}{\text{Total Equity}}$

=> Shows proportion of funds from outsiders vs owners

2 Debt Asset Ratio

$$\Rightarrow \text{Debt Asset Ratio} = \frac{\text{Total Debt}}{\text{Total Assets}}$$

=> Comprises of long term debt plus current liabilities (shows % of assets financed by debt)

3 ~~Invest~~ Interest Coverage Ratio

$$\Rightarrow \text{Interest Coverage Ratio} = \frac{\text{Earning Before Interest and Taxes}}{\text{Interest}}$$

=> Higher ratio → better ability to pay interest

4 Debt Service Coverage Ratio (DSCR)

$$\Rightarrow \frac{\text{Profit after tax} + \text{Depreciation} + \text{Other non cash expenditure} + \text{Interest on term loan}}{\text{Interest on term loan} + \text{Repayment of term loan}}$$

=> Judges ability to repay both principle + interest

=> Used by banks for loan evaluation

10.3 Profitability ratios

Measures profitability and operational efficiency

1) Net Profit Ratio

$$\text{Net Profit Ratio (\%)} = \frac{\text{Net Profit}}{\text{Net Sales}} \times 100$$

2) Return on Total Assets

$$\text{Return on Total Assets} = \frac{\text{Net profit after tax}}{\text{Fixed assets + Current assets}}$$

3) Return on Capital Employed

$$\text{Return on Capital Employed} = \frac{\text{Net Profit After tax}}{\text{Total Capital Employed}}$$

Total Capital Employed = Total Fixed Assets + Current Assets − Current Liabilities

Measures returns on total funds used

4) Return on shareholders Equity

$$\text{Return on shareholders equity} = \frac{\text{Net profit after tax}}{\text{Average total shareholder's equity or net worth}}$$

⇒ Shows return earned for equity holder

5 Earning Per Shares

$$\text{Earning per shares} = \frac{\text{Net profit available to the shareholders}}{\text{Number of orginal shares outstanding}}$$

Indicates profit earned per share

6 Price - Earning ratio

Indicates market expectations of growth

$$\text{Price - Earning ratio} = \frac{\text{Market Price per share}}{\text{Earning Per Shares}}$$

Balance Sheet of ABC Co. Ltd. as on March 31, 2023 (Rs. in Crore)

ASSETS	Current Year	Previous Year
Non-current assets		
Property, plant and equipment		60.00
Current assets		
Cash & bank	0.20	
Receivables	11.80	
Inventories	10.60	
Pre-paid expenses	0.80	
Investments	16.60	40.00
Total assets		100.00

LIABILITIES		
Equity		
Equity share capital	16.00	
Other equity	22.00	38.00
Non-current liability		
Secured loan	21.00	
Unsecured loan	25.00	46.00
Current liabilities		16.00
Total liabilities		100.00

Statement of Profit & Loss for the year ended 31.03.23

INCOME		
Revenue from operations	105.00	
Other income	-	105.00
EXPENSES		
Cost of material consumed	67.00	
Employee benefit expenses	12.00	
Depreciation & Amortization	2.50	
Finance cost	1.00	
Other expenses	13.50	96.00
PROFIT BEFORE TAX		9.00
Income- tax		4.00
PROFIT AFTER TAX		5.00
Equity dividend		3.00
RETAINED EARNINGS		2.00

Market price per equity share = Rs. 20.00

Opening inventory = Rs 13 crores

Closing inventory = Rs 15 crores

Gross profit = Rs 16 crores

- Current Ratio = Current Assets / Current Liabilities = 40/16.00 = 2.5

Investments	16.60	40.00
Current liabilities		16.00

- Quick Ratio = Quick Assets / Current Liabilities
  = Current Assets - (Inventory + Prepaid expenses) / Current Liabilities
  = [40-(10.60+0.8)]/16.00 = 1.79

Investments	16.60	40.00
Current liabilities		16.00

Inventories	10.60
Pre-paid expenses	0.80

- Inventory Turnover Ratio = Cost of goods sold/Average Inventory
  = (Net Sales-Gross Profit)/ [(opening stock + closing stock)/2]
  = (105-16)/ [(15+13)/2] = 89/14 = 6.36

Opening inventory = Rs 13 crores

Closing inventory = Rs 15 crores

Gross profit = Rs 16 crores

Revenue from operations	105.00

- Debtors Turnover Ratio = Net Sales/ Average account receivables (Debtors)
  = 105/11.80 =8.8983

Revenue from operations	105.00

Receivables	11.80

- Average Collection period = 365 days / Debtors turnover = 365 days /8.8983 = 41 days
- Fixed Assets Turnover ratio = Net Sales / Net Fixed Assets
  = 105/60 = 1.75

Property, plant and equipment		60.00

- Debt to Equity Ratio = Debt/ Equity
  = (21.00+25.00)/(16.00+22.00) = 46/38 = 1.21

Equity	
Equity share capital	16.00
Other equity	22.00
Non-current liability	
Secured loan	21.00
Unsecured loan	25.00

- Net Profit Ratio = Net Profit / Net Sale = 9/105.00 = 0.0857 or 8.57 %

PROFIT BEFORE TAX		9.00

- Return on Shareholders' Equity = Net Profit after tax/Net worth
  = 5.00/(16.00+22.00) =0.13157 or 13.16%

Equity	
Equity share capital	16.00
Other equity	22.00

PROFIT AFTER TAX		5.00