

If profit after tax is 5,40,000, before tax = $\frac{100 \times 5,40,000}{45} = ₹ 12,00,000.$

(iii) RETURN ON EQUITY RATIO (ROE)

This ratio reflects the return on shareholder's funds that the business enterprise was able to earn. It is calculated as :

$$\frac{\text{Net Income After Taxes}}{\text{Average Shareholders' Funds}} \times 100$$

Components : The proprietor's equity or funds include the paid up value of the equity as well as preference share capital. To this are added all uncommitted capital and revenue reserves and retained earnings. Since the amount of paid up equity and preference capital may not remain same during the accounting period, it is desirable to take an average of the shareholders' funds e.g. :

$$\frac{\text{Beginning Shareholders' Funds} + \text{Ending Shareholders' Funds}}{2}$$

2

Net income in the ratio is the net income after taxes.

Uses and interpretation : The proprietors or shareholders are primarily interested in the profit-earning capacity of the business in which their funds are invested. If the profits earned by the firm are insufficient, it will fail to attract funds for expanding operations since additional capital will not be available.

$$\text{(ii) Gross Profit Ratio} = \frac{\text{Gross Profit}}{\text{Net Sales}} \times 100$$
$$= \frac{1,00,000}{5,00,000} \times 100 = 20\%$$

Illustration 11

From the following particulars, you are required to calculate :

- (i) Current Ratio (ii) Net Profit Ratio (iii) Gross Profit Ratio

Net Sales : ₹ 1,40,000; Gross Profit : ₹ 10,000; Net Profit : ₹ 6,000; B/R : ₹ 2,000;
Debtors : ₹ 8,800; Stock : ₹ 10,000; Cash : ₹ 6,000; Creditors : ₹ 12,000; B/P : ₹ 8,800.

Solution

$$\text{(i) Current Ratio} = \frac{\text{Current Assets}}{\text{Current Liabilities}}$$
$$\frac{26,800 (2,000 + 8,800 + 10,000 + 6,000)}{20,800 (12,000 + 8,800)} = 1.29 : 1.$$

$$(ii) \text{ Net Profit Ratio} = \frac{\text{Net Profit}}{\text{Net Sales}} \times 100 = \frac{6,000}{1,40,000} \times 100 = 4.28\% \text{ or } 4.3\%$$

$$(iii) \text{ Gross Profit Ratio} = \frac{\text{Gross Profit}}{\text{Sales}} \times 100 = \frac{10,000}{1,40,000} \times 100 = 7.14\%.$$

Illustration 12 (Calculation of Current Ratio)

X Ltd. has liquid ratio of 1.5 : 1. Its stock is ₹ 60,000 and its current liabilities are ₹ 1,20,000. Calculate the current ratio.

Solution

$$\text{Liquid Ratio} = \text{Quick Assets} = 1.5 : 1$$

$$= \frac{\text{Quick Assets}}{\text{Current Liabilities}} = \frac{1.5}{1}$$

$$\text{or Quick Assets} = 1,20,000 \times 1.5 = 1,80,000$$

$$\begin{aligned}\text{Current Assets} &= \text{Quick Assets} + \text{Stock} \\ &= 1,80,000 + 60,000 = ₹ 2,40,000\end{aligned}$$

$$\text{Current Ratio} = \frac{\text{Current Assets}}{\text{Current Liabilities}} = \frac{₹ 2,40,000}{₹ 1,20,000} = 2 \text{ or } 2 : 1 \text{ or } 200\%$$

Illustration 13 (Calculation of Current Assets)

$$\text{Creditors' Turnover Ratio} = \frac{\text{Net Credit Purchase}}{\text{Average Trade Creditors}}$$

$$= \frac{\text{₹ } 7,84,800}{\text{₹ } 1,10,000} = 7.13 \text{ Times}$$

$$\text{Debt-Payment Period} = \frac{365}{7.13} = 51.20 \text{ or } 51 \text{ Days.}$$

✓ Illustration 19 (Return on Equity)

Calculate Return on Equity (R.O.E.) from the followings information : 10% Preference Share Capital (Fully paid up) - ₹ 1,00,000; 16,000 Equity Shares of ₹ 10 each fully paid; Reserves and Surplus - ₹ 6,40,000; Net Profit after tax - ₹ 2,37,500

Solution

$$\text{Return on Equity} = \frac{\text{Profit after Interest and Tax}}{\text{Shareholders' Funds}} \times 100$$

Shareholders Funds = Preference Share Capital + Equity Share Capital + Reserves
and Surplus

$$= ₹ 1,00,000 + ₹ 1,60,000 + ₹ 6,40,000 = ₹ 9,00,000$$

R.O.E

$$= \frac{2,37,500}{9,00,000} \times 100 = 26.39\% \text{ (App.)}$$

$$- CA - CL = 72,000$$

.....(ii)

Substracting (ii) from (i), we get

$$1.5 CL = 72,000$$

$$CL = \frac{72,000}{1.5} = ₹ 48,000$$

$$\text{Current Assets} = 48,000 \times 4.5 = ₹ 2,16,000$$

Illustration 21 (Debt-Equity Ratio)

Calculate Debt-Equity Ratio:

Debentures ₹ 4,00,000.

Creditors ₹ 1,00,000.

Long Term Loans ₹ 8,00,000.

Share Capital ₹ 2,00,000.

Reserve Fund ₹ 1,20,000.

Preliminary Expenses ₹ 20,000.

[B.Com. Delhi 2008]

Solution

$$\begin{aligned} \text{(i) Debt} &= \text{Debentures + Long term Loans} \\ &= 4,00,000 + 8,00,000. \\ &= ₹ 12,00,000 \end{aligned}$$

$$\begin{aligned}
 \text{Equity} &= \text{Share capital + Reserve Fund - Preliminary Expenses} \\
 &= 2,00,000 + 1,20,000 - 20,000 \\
 &= ₹ 3,00,000
 \end{aligned}$$

$$\begin{aligned}
 \text{Debt Equity Ratio} &= \frac{\text{Debt}}{\text{Equity}} \\
 &= \frac{12,00,000}{3,00,000} \\
 &= 4
 \end{aligned}$$

Illustration 22 (Average Collection Period)

Two companies A Ltd and B Ltd. belong to the same industry. Both companies allow a credit period of 30 days to their customers. The following particulars have been extracted from their books:

	A. Ltd. ₹ in Lakhs	B. Ltd. ₹ in Lakhs
Total Sales	200	500
	30	180
	13	18

Capital Employed = Equity Share Capital + Reserve + Long Term Loan

Illustration 26 (Miscellaneous Ratios)

The following is the Balance Sheet of X Company Ltd. :

Liabilities Amount ₹	Assets	Amount ₹	
8,000 Equity		Building	40,000
Shares of ₹ 10 each	80,000	Machinery	82,000
Profit and Loss Account	12,000	Inventories	24,000

10% Debentures	30,000	Debtors	9,000
Creditors	46,800	Cash	13,560
Provision for Tax	1,200	Prepaid expenses	1,440
	1,70,000		1,70,000

Calculate:

- (1) Debt-Equity Ratio
- (2) Current Ratio
- (3) ~~Other Ratios~~

[B. Com. Delhi 2009]

Solution

$$(1) \text{ Debt - Equity Ratio} = \frac{\text{Debt}}{\text{Equity}}$$

$$\begin{aligned}
 &= \frac{\text{Debentures}}{\text{Share Capital + Profit & Loss Account}} \\
 &= \frac{30,000}{80,000 + 12,000} \\
 &= \frac{30,000}{92,000} \\
 &= 0.33 \text{ (approx)}
 \end{aligned}$$

$$(2) \text{ Current Ratio} = \frac{\text{Current Assets}}{\text{Current Liabilities}}$$

$$\begin{aligned}
 &= \frac{\text{Inventories + Debtors + Cash + Prepaid Expenses}}{\text{Creditors + Provision for Tax}} \\
 &= \frac{24,000 + 9,000 + 13,560 + 1,440}{46,800 + 1,200} \\
 &= \frac{48,000}{48,000} \\
 &= 1
 \end{aligned}$$

- (ii) Original cost of fixed assets
- (iii) Credit period allowed
- (iv) Nature and composition of current assets and current liabilities.

Illustration 25 (Miscellaneous Ratios)

The following figures have been extracted from the books of X Ltd. and Y Ltd. for the year ended 31st March, 2010 :

	X Ltd. ₹	Y Ltd. ₹
Net sales	36,00,000	23,00,000
Earnings before interest and tax (EBIT)	7,20,000	3,38,000
Current assets	9,00,000	4,25,000
Current liabilities	5,00,000	2,10,000
Average debtors	5,50,000	3,00,000
Equity share capital	10,00,000	8,00,000
Reserve and surplus	2,00,000	1,25,000
Long-term loan	6,00,000	1,00,000

Calculate the following ratios for both the above mentioned companies and comment on their comparative performance.

Ratio Analysis

12.41

- (i) Net profit ratio
 - (ii) Current ratio
 - (iii) Debtors turnover ratio
 - (iv) Return on Capital Employed.
- Note: Credit sales of X Ltd and Y Ltd accounted for 80% of their total sales.

[B. Com, Delhi 2011]

Solution

	X Ltd	Y Ltd
(i) Net Profit Ratio	$= \frac{7,20,000}{36,00,000} \times 100 = 20\%$	$\frac{3,38,000}{23,00,000} \times 100 = 14.7\%$
(ii) Current ratio	$= \frac{9,00,000}{5,00,000} = 9:5$	$\frac{4,25,000}{2,10,000} = 4.25:2.1$
(iii) Debtors Turnover ratio	$\frac{28,80,000}{7,20,000} = 4$	$\frac{18,40,000}{3,38,000} = 5.4 - 6.1$
(iv) Return on Capital Employed	$\frac{7,20,000}{18,00,000} = 40\%$	$\frac{3,38,000}{10,25,000} = 33\%$

Formulae

- (i) **Net Profit Ratio** =
$$\frac{\text{Net Profit Before Interest and Tax}}{\text{Net Sales}}$$
- (ii) **Current Ratio** =
$$\frac{\text{Current Assets}}{\text{Current Liabilities}}$$
- (iii) **Debtors Turnover** =
$$\frac{\text{Credit Sales}}{\text{Average Debtors}}$$
- (iv) **Return on Capital Employed** =
$$\frac{\text{Earnings before Interest and Tax}}{\text{Capital Employed}}$$

(Miscellaneous Ratios)

Problem 12. Calculate absolute liquid ratio from the following information:

	Amount (₹)
Share capital	1,00,000
12% Debentures	2,00,000

Bank Overdraft	25,000
Trade payables	20,000
Bills Payable	30,000
Goodwill	2,00,000
Plant and Machinery	2,00,000
Inventories	50,000
Trade receivables	50,000
Cash in hand	30,000
Bills Receivable	75,000
Marketable Securities	10,000
Cash at Bank	20,000

Solution:

$$\text{Absolute Liquid Ratio} = \frac{\text{Absolute Liquid Assets}}{\text{Current Liabilities}}$$

Cash in Hand	30,000
Marketable Securities	10,000
Cash at Bank	20,000
Absolute Liquid Assets	60,000
Bank Overdraft	25,000
Trade Payables	20,000
Bills Payable	30,000
Current Liabilities	75,000

$$\text{Absolute Liquid ratio} = \frac{60,000}{75,000} = 0.8$$

Problem 13. Calculate current ratio, liquid ratio and absolute liquid ratio from the following information:

	Amount (₹)
Inventories	1,80,000
Trade Receivables	2,25,000
Cash In Hand	30,000
Bills Receivable	90,000
Cash At Bank	45,000
Bills Payable	75,000
Trade Payables	1,20,000

Outstanding Expenses

Prepaid Expenses	1,05,000
Land And Building	30,000
Goodwill	6,00,000
	1,50,000

Solution:

Inventories

Trade Receivables	1,80,000
Cash In Hand	2,25,000
Bills Receivable	30,000
Cash at Bank	90,000
Prepaid Expenses	45,000
	30,000

Total Current Assets

Bills Payable	6,00,000
Trade Payables	75,000
Outstanding, Expenses	1,20,000
	1,05,000
Total Current Liabilities	3,00,000

$$\text{Current Ratio} = \frac{\text{Current Assets}}{\text{Current Liabilities}} = \frac{6,00,000}{3,00,000} = 2$$

$$\text{Liquid Ratio} = \frac{\text{Liquid Assets}}{\text{Current Liabilities}} = \frac{6,00,000 - (1,80,000 + 30,000)}{3,00,000} \\ = 1.3$$

$$\text{Absolute Liquid Ratio} = \frac{\text{Absolute liquid Assets}}{\text{Current Liabilities}} = \frac{30,000 + 45,000}{3,00,000} = 0.25$$

Problem 14. Calculate current assets, liquid assets, current liabilities and

$$\text{Liquid Assets} = 2,06,250 \times 1.4 = ₹ 2,88,750$$

$$\text{Liquid Assets} = \text{Current Assets} - (\text{Stock} + \text{Prepaid Expenses})$$

$$\begin{aligned}\text{Stock} &= \text{Current Assets} - \text{Liquid Assets} \text{ (Assuming nil prepaid expenses)} \\ &= ₹ 2,47,500.\end{aligned}$$

Problem 15. Find out Operating Ratio:

Cost of goods sold ₹ 6,00,000

Office and Administrative Expenses ₹ 45,000

Selling and Distribution Expenses ₹ 30,000

Sales ₹ 9,00,000

Sales Return ₹ 30,000

Solution:

$$\text{Operating Ratio} = \frac{\text{Operating Cost}}{\text{Net Sales}}$$

$$\begin{aligned}\text{Operating Cost} &= \text{Cost of goods sold} + \text{Administrative Expenses} + \\ &\quad \text{Selling and Distribution Expenses}\end{aligned}$$

$$= 6,00,000 + 45,000 + 30,000 = ₹ 6,75,000$$

$$\text{Net Sales} = 9,00,000 - 30,000 = ₹ 8,70,000$$

$$\text{Operating Ratio} = \frac{6,75,000}{8,70,000} = 77.58\%$$

5,50,000

(iii)

2. Equity = Capital Employed - 10% Debentures = ₹ 40,00,000 - ₹ 5,00,000 = ₹ 35,00,000.

Illustration 106. The Current Assets of a company are ₹ 9,00,000. Its Current Ratio is 3.00 and Liquid Ratio is 1.20. Calculate the Current Liabilities, Liquid Assets and Inventory.

(Foreign 2005)

(iv)

Solution:

((i))
$$\text{Current Ratio} = \frac{\text{Current Assets}}{\text{Current Liabilities}}$$
$$3 = \frac{₹ 9,00,000}{\text{Current Liabilities}}$$

$$\text{Current Liabilities} = \frac{\text{₹ } 9,00,000}{3} = \text{₹ } 3,00,000.$$

$$(ii) \quad \text{Liquid Ratio} = \frac{\text{Liquid Assets}}{\text{Current Liabilities}}$$

$$1.20 = \frac{\text{Liquid Assets}}{\text{₹ } 3,00,000}$$

$$\text{Liquid Assets} = \text{₹ } 3,60,000.$$

$$(iii) \quad \begin{aligned} \text{Inventory} &= \text{Current Assets} - \text{Liquid Assets} \\ &= \text{₹ } 9,00,000 - \text{₹ } 3,60,000 = \text{₹ } 5,40,000. \end{aligned}$$

Illustration 107. On the basis of information given below, calculate of the following ratios:

(i) Current Ratio (ii) Quick Ratio (iii) Debt-Equity Ratio and