

## CHAPTER 4

# ACCOUNTING RATIOS

### Points to Remember :

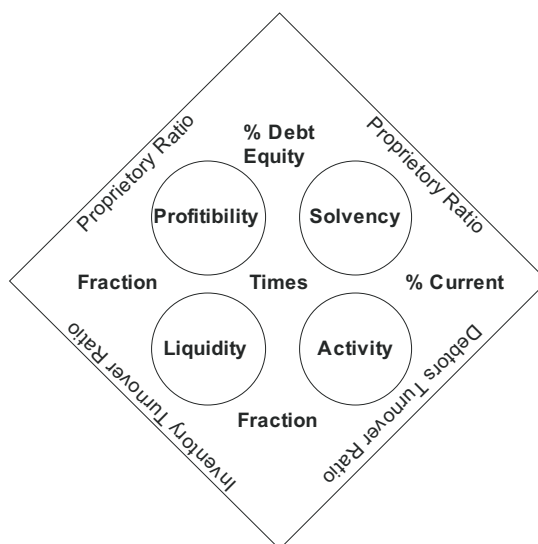
1. Loose tools and stores & spares will be excluded from inventories while calculating. Current ratio and inventories turn over ratio.
2. Provision for doubtful debt will be deducted from Trade receivables for calculating current and liquid ratios. But it will not deduct while calculating trade Receivables turnover ratio.
3. Non-trade Investment will be exclude from shareholder's funds and Capital employed and Total Assets for calculating solvency and Profitability ratios, and corresponding their income (i.e., interest on Non-trade Investment) will exelucts from Net Profit.
4. Operating cost and operating expenses are reperate concept shouldn't inter change.

**Accounting Ratio:** It is an arithmetical relationship between two accounting variables.

**Ratio Analysis:** It is a technique of analysis of financial statements to conduct a quantitative analysis of information in a company's financial statements.

**"Ratio analysis is a study of relationship among various financial factors in a business."**

—Myers



**RATIO ANALYSIS**

**Expression of ratios: Ratios are expressed in following four ways:**

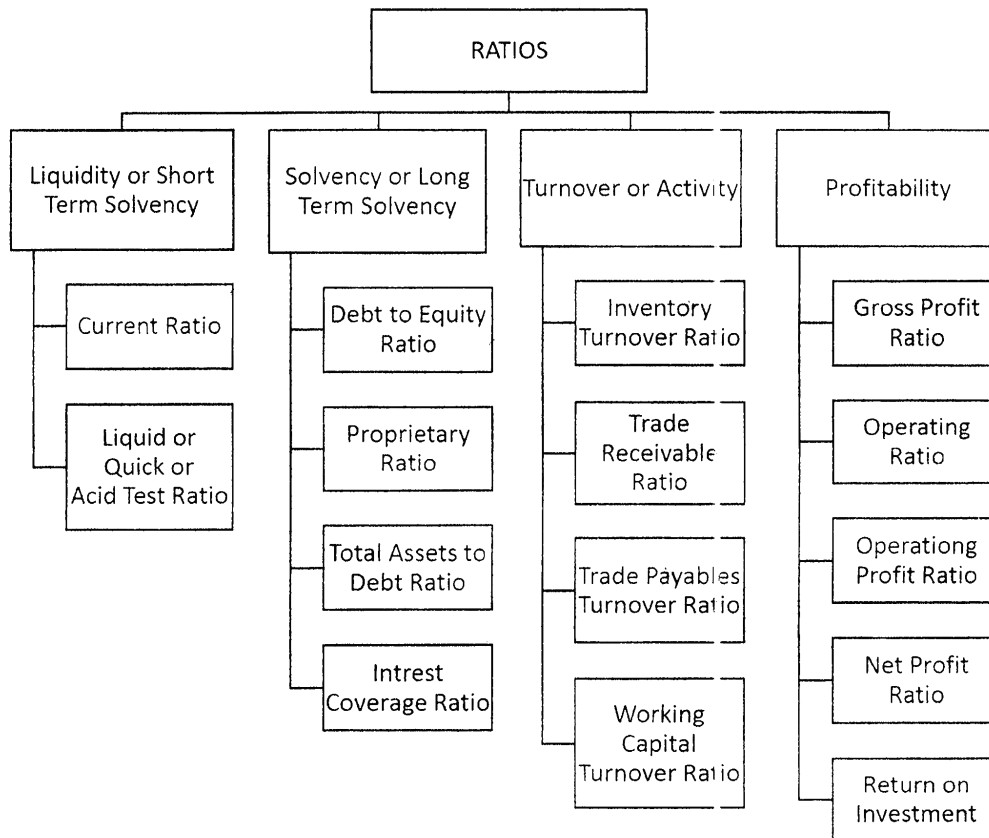
**Pure Ratio** Like 2:1. All liquidity and solvency ratios are expressed in pure form.

**Percentage** e.g. 15%. All profitability ratios are presented in percentage form.

**Times** Like 4 times. All turnover ratios and Interest Coverage Ratio are presented in this form.

**Fraction** like  $\frac{3}{4}$ .

**Classification or Types of Ratios:**



### Liquidity Ratios

Current Ratio

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

Liquid or Quick or Acid Test Ratio

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

### Supporting Formulae

1. Current Assets =
  - Current Investments (also known as Market able Securities or S.T. Investment)
  - + Inventories (except Loose Tools & Stores and Spares)
  - + Trade Receivables (Debtors and B.R.) Net after provision for bdd.
  - + Cash and Cash Equivalent (Cash and Bank Balances)
  - + Short Term Loans and Advances
  - + Other Current Assets (Prepaid Expenses, Accrued Income & Advance Tax)
2. Current Liabilities =
  - Short Term Borrowings (Bank Overdraft and Cash Credit)
  - + Trade Payables (Creditors and B.P.)
  - + Other Current Liabilities (O/s Expenses, Income Received in Advance, Unpaid or Unclaimed Dividend)
  - + Short Term Provisions (Provision for Tax, Proposed Dividend)
3. Liquid Assets = Current Assets
  - Inventory (closing)
  - Other Current assets (Prepaid Expenses, Accrued Income & Advance Tax)
4. Working Capital = Current Assets - Current Liabilities
5. Total Assets = Non-Current Assets + Current Assets
6. Total Liabilities = Non-Current Liabilities + Current Liabilities

7. Non-Current Assets = Fixed Assets (tangible and intangible)  
+ Non-Current Investments  
+ Long Term Loans & Advances (Capital Advances, Security Deposits)
8. Non-Current Liabilities = Long Term Loans( Debentures, Bank Loans, Bonds)  
+ Long Term Provisions (Provision for employee benefit & Warranties)
9. Capital Employed = Shareholders Fund  
+ Borrowed Fund (Non-Current Liabilities)
10. Capital Employed = Total Assets - Current Liabilities  
= Non-Current Assets + Working Capital
11. Shareholders Fund = Share Capital  
+ Reserves and Surplus  
Non-Current Non Trade Investments

Shareholders Fund = Total Assets - Non Current Liabilities - Current / liabilities

(Note: Total Assets will include only Non-Current TRADE Investments for Capital Employed)

Non Current: Investment will remain Non-Current TRADE Investments in Absence of any other information.

### Solvency Ratios

- Debt - Equity Ratio

$$\text{Debt - Equity Ratio} = \frac{\text{Debt (Non Current Liabilities)}}{\text{Equity (Shareholders Fund)}}$$

- Proprietary Ratio

$$\text{Proprietary Ratio} = \frac{\text{Shareholders Fund}}{\text{Total Assets}}$$

- Total Asset to Debt Ratio

$$\text{Total Asset to Debt Ratio} = \frac{\text{Total Assets}}{\text{Debt (Non Current Liabilities)}}$$

- Interest Coverage Ratio

$$\text{Interest Coverage Ratio} = \frac{\text{Profit BEFORE Interest, Tax and Dividend}}{\text{Interest on Long Term Loans}}$$

### Activity or Turnover Ratios

- Working Capital Turnover Ratio

$$\text{Working Capital Turnover Ratio} = \frac{\text{Revenue from Operation}}{\text{Working Capital}}$$

- Inventory Turnover Ratio

$$\text{Inventory Turnover Ratio} = \frac{\text{Cost of Revenue from Operation}}{\text{Average Inventory}}$$

- Receivable Turnover Ratio

$$\text{Receivable Turnover Ratio} = \frac{\text{Net Credit Revenue from Operation}}{\text{Average Debtors} + \text{Average BR.}}$$

$$\text{Receivable Turnover Ratio} = \frac{12 \text{ months or } 365 \text{ days or } 52 \text{ weeks}}{\text{Debt or Average Collection Period}}$$

- Payable Turnover Ratio

$$\text{Payable Turnover Ratio} = \frac{\text{Net Credit Purchases}}{\text{Average Creditors} + \text{Average B.P.}}$$

$$\text{Payable Turnover Ratio} = \frac{12 \text{ months or } 365 \text{ days or } 52 \text{ weeks}}{\text{Average Payment Period}}$$

### Supporting Formulae

a) Revenue from Operation (Net Sales) = Total Revenue from Operation  
Return of Revenue from Operation

b) Total Revenue from Operation = Cash Revenue from Operation  
+ Credit Revenue from Operation

c) Net Credit Revenue from Operation = Credit Revenue from Operation  
- Return of Revenue from Operation

d) Cost Of Revenue From Operation (COGS) = Opening Inventory  
+ Net Purchases + Direct Expenses  
- Closing Inventory

e) Cost Of Revenue From Operation (COGS) = Revenue From Operation  
- Gross Profit

$$\begin{aligned} \text{f) Cost Of Revenue From Operation (COGS)} &= \text{Cost of Raw Material Consumed} \\ &+ \text{Purchases of Stock in Trade} \\ &+ \text{Change in Inventory of Finished} \\ &\quad \text{Goods, WIP, Stock in Trade} \\ &+ \text{Direct Expenses} \end{aligned}$$

$$\text{g) Average Inventory} = \frac{\text{Opening Inventory} + \text{Closing Inventory}}{2}$$

$$\text{h) Average Debtors} = \frac{\text{Opening Debtors} + \text{Closing Debtors}}{2}$$

$$\text{i) Average B.R.} = \frac{\text{Opening B.R.} + \text{Closing B.R.}}{2}$$

$$\text{j) Average Creditors} = \frac{\text{Opening Creditors} + \text{Closing Creditors}}{2}$$

$$\text{k) Average B.P.} = \frac{\text{Opening BP} + \text{Closing B. P.}}{2}$$

$$\text{l) Average Receivable} = \text{Average Debtors} + \text{Average B.R.}$$

$$\text{m) Average Payable} = \text{Average Creditors} + \text{Average B.P.}$$

In absence of Information
• Debtors = Opening Debtors = Closing Debtors = Average = Debtors
• B.R. = Opening B.R. = Closing B.R. = Average B.R.
• Creditors = Opening Creditors = Closing Creditors = Average Creditors
• B.P. = Opening B.P. = Closing B.P. = Average B.P.

### **Profitability Ratio**

#### **Gross Profit Ratio**

$$\text{Gross Profit Ratio} = \frac{\text{Gross Profit}}{\text{Revenue from Operation}} \times 100$$

#### **Net Profit Ratio**

$$\text{Net Profit Ratio} = \frac{\text{Net Profit After Tax}}{\text{Revenue from Operation}} \times 100$$

### **Operating Ratio or Operating Cost Ratio**

$$\text{Operating Ratio} = \frac{\text{Operating Cost}}{\text{Revenue from Operation}} \times 100$$

### **Operating Profit Ratio**

$$\text{Operating Profit Ratio} = \frac{\text{Operating Profit}}{\text{Revenue from Operation}} \times 100$$

### **Return on Investment or Return on Capital employed**

$$\text{ROI} = \frac{\text{Profit BEFORE Interest, Tax and Dividend}}{\text{Capital Employed}} \times 100$$

### **Supporting Formulae**

- Net Profit = Gross Profit + Indirect Incomes - Indirect Expenses  
= Gross profit + Non-Operating Income – (Operating Expenses + Non-Operating Expenses)  
= Gross profit + Non-Operating Incomes – Operating Expenses - Non Operating Expenses  
= Gross profit – Operating Expenses + Non-Operating Incomes - Non Operating Expenses  
= (Gross profit – Operating Expenses) + Non-Operatin, Incomes, non-Operating Expenses
- Net Profit = Operating Profit + Non-Operating Incomes - Non Operating Expenses
- Indirect Expenses = Operating Expenses + Non-Operating Expenses
- Non-Operating expenses Example Interest Paid on loans a finance cost
- Operating Expenses = Office and Administrative Expenses  
+ Selling and Distribution Expenses  
+ General Expenses  
+ Depreciation
- Operating Expenses = Employee Benefit Expenses + Other Operating Expenses
- Indirect Incomes (also known Non-Operating Incomes)  
Example: Interest Received on Investment
- Operating Cost = Cost of Revenue from Operation + Operating Expenses
- Operating Profit = Gross Profit - Operating Expenses  
= Revenue from Operation - Cost of Revenue - Operating Expenses  
= Revenue from Operation - (Cost of Revenue + Operating Expenses)
- Operating Profit = Revenue from Operation-Operating Cost
- Operating Profit = Net Profit - Non Operating Incomes + Non-Operating Expenses

## RATIO ANALYSIS

### Illustration -1

A firm had current Liabilities of 60,000. After the payment, Current ratio was 3.25:1. Determine current Assets & current ratio before the payment was made.

Sol. Let the current Assets after payment be x

$$\text{The current Ratio} = \frac{\text{Current Assets (CA)}}{\text{Current Liabilities (CL)}}$$

$$\frac{3.25}{1} = \frac{x}{60,000 - 20,000}$$

$$\begin{aligned} 3.25 * 40,000 &= x \\ x &= 1,30,000 \end{aligned}$$

Hence, Current Asset after payment = 1,30,000

$$\begin{aligned} \boxed{\text{Current Asset before payment}} &= (1,30,000 + 20,000) \\ &= \boxed{\text{₹ 1,50,000}} \end{aligned}$$

$$\begin{aligned} \text{Current Ratio (Before payment)} &= \frac{\text{CA before payment}}{\text{CL before payment}} \\ &= \frac{1,50,000}{60,000} \end{aligned}$$

$$\boxed{\text{CR} = \frac{2.5}{1}}$$

### Illustration - 2

A Ltd. has a current ratio of 3.5:1 & quick ratio of 2:1. If excess of current assets over quick assets represented by stock is 24,000. Calculate current Assets & current liabilities.

Sol. Current ratio =  $\frac{\text{CA}}{\text{CL}}$

$$\frac{3.5}{1} = \frac{\text{CA}}{\text{CL}}$$

$$\text{CA} = 3.5 \text{ CL} \quad - \quad 1$$

Quick ratio =  $\frac{\text{QA (Quick Assets)}}{\text{CL}}$

$$\frac{2}{1} = \frac{\text{CA} - \text{Stock}}{\text{CL}}$$

$$2\text{CL} = \text{CA} - 24,000$$

$$2\text{CL} + 24,000 = \text{CA} \quad - \quad 2$$

From 1 & 2 , we get -

$$3.5 \text{ CL} = 2\text{CL} + 24000$$

$$3.5\text{CL} - 2\text{CL} = 24000$$

$$1.5 \text{ CL} = 24000$$

$$\text{CL} = \frac{24000}{1.5}$$

$$\boxed{\text{CL} = 16,000}$$

$$\begin{aligned} \text{CA} &= 3.5 \text{ CL} \\ &= 3.5 * 16,000 \end{aligned}$$

$$\boxed{\text{CA} = 56,000}$$

Illustration - 3

The current Ratio is 2:1. State giving reason which of the following transaction would improve , reduce & not change the current Ratio :-

- Payment of dividend
- purchase of goods on credit
- Redeemed 9% Debentures of Rs 100000 at a premium of 10%
- Sale of goods for Rs 25000 (cost rs 20,000)
- Issued Rs 100000 Equity shares to the vendors of Machinery.

Sol. (a) Payment of dividend will reduce the current assets & current liabilities by same amount. Hence, current ratio will IMPROVE

(b) Both current Assets & current Liabilities will Increase by same amount . Hence, Current ratio will REDUCE.

© Both current Assets & current Liabilities will Decrease by the same amount. Hence, Current ratio will IMPROVE

(d) Total current Assets will Increase by Rs 5000 (profit) leaving current liabilities unchanged . hence, Current ratio will IMPROVE.

(e) Both current Assets & current Liabilities are not affected . Hence No CHANGE in current ratio.

Illustration - 4

Calculate current ratio & Quick ratio from the following:

Total Debt	Rs	Long term Borrowings	Rs
Toatal Assets	10,00,000	Long term provision	4,00,000
Fixed Assets	1,500,000	Inventories	1,70,000
Non- current investment	5,00,000	Prepaid Expenses	30,000
Long term Loans Advances	1,00,000		

$$\text{Sol. Current ratio} = \frac{\text{Current Assets}}{\text{Current Liabilities}}$$

$$\begin{aligned} \text{Current Assets} &= \text{Total Assets} - \text{Non current Assets} \\ &= \text{Total Assets} - (\text{Fixed Asset} + \text{Non Current} \\ &\quad \text{Inv.} + \text{Long term Loans \& Adv.}) \\ &= 1500,000 - (500\ 000 + 10\ 0000 + 100000) \end{aligned}$$

$$\boxed{\text{CA} = \text{rs } 800\ 000}$$

$$\begin{aligned} \text{Current Liabilities} &= \text{Total debt} - \text{Non - current liabilites} \\ &= \text{Total Debt} - (\text{Long term Borrowings} \\ &\quad + \text{Long term provisions}) \end{aligned}$$

$$= 10,00,000 - (400,000 + 200,000)$$

$$\boxed{\text{CL} = \text{RS } 400,000}$$

$$\boxed{\text{Current Ratio}} = \frac{\text{Rs } 800,000}{\text{Rs } 400,000} = \boxed{2:1}$$

$$\boxed{\text{Quick ratio}} = \frac{\text{Quick Assets}}{\text{Current Liabilities}} = \frac{\text{Rs } 600,000}{\text{RS } 400,000} = \boxed{1:5}$$

$$\boxed{\text{Quick Assets}} = \text{Current Assets} - \text{inventories} - \text{prepaid expenses}$$

$$= \text{Rs } 800,000 - \text{Rs } 170,000 - \text{Rs } 30,000$$

$$\boxed{\text{QA} = \text{Rs } 600,000}$$

Illustration - 5

Trade receivable turnover ratio is 4 times

Cost of revenue from operations is Rs 320000

Gross profit ratio is 20%

Closing trade receivables were Rs 10,000 more than

Trade receivables in the beginning

Cash revenue from operations is 11/3 of credit revenue from operation

Calculate

(I) Opening trade Receivables

(II) Closing Trade Receivables

Sol. Let total revenue from operations be X

$$\text{Total revenue from Operations} = \text{Cost of revenue from Operations} + \text{Gros profit}$$

$$\begin{aligned} X &= 320000 + 20\% X \\ X &= \frac{20 X}{100} + 320000 \\ X &- \frac{1}{5} X = 320000 \end{aligned}$$

$$\frac{4 X}{5} = 320000$$

$$X = 320000 \times \frac{5}{4}$$

$$\boxed{X = \text{Rs } 400,000} \quad \text{Total Revenue}$$

Let credit revenue from operations be Y

$$\text{Total revenue from operations} = \text{Cash Revenue} + \text{Credit Revenue Operations}$$

$$400,000 = \frac{1}{3} y + y$$

$$400,000 = \frac{4}{3} y$$

$$y = 400,000 \times \frac{3}{4}$$

$$\boxed{y = \text{Rs } 300,000} \quad \text{Credit Revenue}$$

$$\begin{aligned} \text{Trade Receivables Turnover Ratio} &= \frac{\text{Credit revenue from Operations}}{\text{Avg. trade Receivables}} \\ 4 &= \frac{\text{Rs } 3,00,000}{\text{Average Trade receivables}} \end{aligned}$$

$$\text{Average Trade Receivables} = \frac{300,000}{4} = \text{Rs } 75,000$$

Let OP.Trade receivables be z

Let CI.Trade receivable be = z + 10,000

$$\text{Avg Trade receivables} = \frac{\text{OP T|R} + \text{CI} \times \text{T|R}}{2}$$

$$75000 = \frac{z+z+10000}{2}$$

$$150000 = 2z + 10000$$

$$2z = 140000$$

$$\boxed{z = \text{Rs } 70,000} \quad \text{op. T|R}$$

$$\text{CI.. T|R} = 70000 + 10000 = 80000$$

Illustration - 6

Calculate the values of opening & closing inventory from the foll. -

Total Sales Rs 200,000

Sales Reluin Rs 12,500

Gros profit 1/4 on cost

Inventory Turnover ratio = 6 times

Inventory at thr beginning is 1:5 times more than the inventory at the end.

Sol. Net sales = total sales - sales reluin

$$= 200,000 - 12500$$

$$= \text{Rs } 187500$$

Gross Profit = 1/4 on cost

Let cost of revenue from operations = 100

$$\text{Gross profit} = \frac{1}{4} * 100 = 25$$

$$\text{Revenue from operations} = 100 + 25 = 125$$

If revenue from operations is 125, then cost is = 100

$$\text{If revenue from operations is } 187500, \text{ then cost is } = \frac{100}{125} * 187500$$

$$= 150,000$$

$$\text{Inventory turnover ratio} = \frac{\text{Cost of revenue from operations}}{\text{Average inventory}}$$

$$6 = \frac{150000}{\text{Avg inventory}}$$

$$\text{Avg Inventory} = \frac{150000}{6} = \text{Rs } 25000$$

$$\text{Avg Inventory} = \frac{\text{op..inv} + \text{cl.inv}}{2}$$

$$\text{op inv} + \text{cl inv} = \text{Avg inv.} * 2$$

$$= 25000 * 2 = \text{Rs } 50,000$$

Let cl. inventory be x

then op. Inventory = x + 1.5x = 2.5 x

Hence, x + 2.5x = 50,000

$$3.5x = 50,000$$

$$x = \frac{50,000}{3.5}$$

$$\boxed{x = 14286} \quad \text{Closing inventory}$$

$$\text{op. Inv} = 2.5x$$

$$= 2.5 * 14286$$

$$\boxed{\text{op. Inv.} = 35715}$$

**Illustration 7:**

The Following particulars are extracted from the Balance Sheet of XYZ1+d as at 31st Mar 2019 :-

Particulars	Rs Amount
Equity share capital	2,00,000
10% preference share capital	1,80,000
capital reserve	40,000
profit & loss balance	1,00,000
12% Debenlures	50,000
10% Morlgage loan	1,50,000
Current Liabilities	4,20,000
Current Assets	300,000

calculate the following ratio:

- (a) Debt - EquityRatio
- (b) Proprietary ratio
- © Interest coverage ratio when Net profit after tax Rs 50,400 & rate of Income tax was 40%

Sol. (a) DEBT - EQUITY RATIO =  $\frac{\text{Debt}}{\text{Equity}}$

$$\begin{aligned} \text{Debt (long - term)} &= \text{Debentures} + \text{Mortgage loan} \\ &= \text{Rs } 50,000 + 1,50,000 \\ &= 200,000 \end{aligned}$$

$$\begin{aligned} \text{Equity / Share holder`s Funds} &= \text{Eq share cap} + \text{pref. share cap} + \\ &\quad \text{cap. Reserve} + \text{p\& L balance} \\ &= 200,000 + 180,000 + 40,000 \\ &\quad + 100,000 \\ &= \text{Rs } 520,000 \end{aligned}$$

$$\text{Debt - Equity Ratio} = \frac{\text{Rs } 200,000}{\text{Rs } 520,000} = \frac{0.38}{1}$$

$$\begin{aligned} \text{(b) Proprietary Ratio} &= \frac{\text{Shareholder`s funds}}{\text{Total Assets}} \\ &= \frac{\text{Rs } 520,000}{\text{Rs } 720,000} \\ &= 0.722 \text{ or } 72.2 \% \end{aligned}$$

$$\begin{aligned} \text{Total Assets} &= \text{Non current Assets} + \text{current Assets} \\ &= \text{Rs } 4,20,000 + \text{Rs } 300,000 \\ &= 720,000 \end{aligned}$$

$$\text{© Interest Coverage Ratio} = \frac{\text{Net profit before interest \& tax}}{\text{Fixed interest charges}}$$

$$\begin{aligned} \text{Fixed interest Charges} &= 12\% \text{ int. on Deb. of Rs } 50,000 \\ &\quad + 10\% \text{ Int. on mortgage loan of Rs } 150,000 \end{aligned}$$

$$= \frac{(12 * 50,000)}{100} + \frac{(10 * 150,000)}{100}$$

$$= 6000 + 15000 = \text{Rs } 21000$$

Let net profit before tax = Rs 100

Tax = Rs 40

Net profit after tax = Rs 60

Net profit after Tax is Rs 60 when net profit before Tax = 100

Net profit after tax is Rs 50,400 Then net profit before Tax =  $100 * \frac{50,400}{60}$   
Rs = 84000

Net profit before tax = Rs 84000

Net Profit before int. & tax = Rs 84000 + 21000  
= Rs 10,5000

Interest Coverage Ratio =  $\frac{\text{Rs } 105000}{\text{Rs } 21000} = 5$  times

#### Illustration - 8

Calculate Total Assets to Debt Ratio from foll. inf. -

Capital Employed	16,20,000	Equity share capital	8,00,000
Current Liabilities	180,000	8% Debentures	3,00,000
Fixed Asset (Gross)	9,50,000	Capital Reserve	2,40,000
Accumulated Depreciation	1,50,000	Surplus i.e., balance in	20,000
Non - Current Investment	700,000	Statement of P&L - dr.)	
Trade Receivables	2,50,00	Cash & Cash Equivalents	50,000

Sol. Total Asset to debt Ratio =  $\frac{\text{Total Assets}}{\text{Debt}}$

Total Assets = Non - Current Assets + Current Assets

$$= [\text{Fixed asset (Gross)} + [\text{Trade Receivable} \\ \text{(-) Accumulated Deprecialin} + \text{cash \& cash eq}] \\ + \text{Non - current - Investment}]$$

$$= [9,50,000 - 1,50,000 + 7,00,000] + [250,000 + 50,000]$$

$$= 15,00,000 + 3,00,000$$

Total assets = Rs 18,00,000

(I) Calculate Return on investment if Net profit before tax for the year 2018-19 is Rs 7,83,600

(II) Calculate Return on investment for the yr. 2018-19 w.r.t opening Capital Employed given -

(a) Reserves & Surplus

Surplus -

opening Balance	4,20,00	
Add Transfer from statement of profit & loss	9,72,00	13,92,000

Sol. ROI =  $\frac{\text{Net profit before int. \& Tax}}{\text{Capital Employed}} * 100$

$$= \frac{\text{Rs } 10,11,600}{\text{Rs } 33.72,000} * 100 = 30\%$$

Calculation of Net profit before int & tax -

Net profit before Tax      Rs 7,83,600  
 Add int. on long term borrowings      Rs 2,40,000  
     ( 15% 16,00,000)  
 Less Int. on Non-Trade Investments      Rs (12,000)  
     (10% of 1,20000)  
 Net profit before int. & tax                      Rs 10,11,600

Calculation of capital employed -

Asset side approach :-

Capital employed = Fixed Asset + Working capital  
 = Non current Assets (excluding Non-Trade investment )+ Current Assets-current liabilities  
 = 20,00,000 + 21,72,000 - 8,00,000  
 = Rs 33,72,000

Capital employed = shareholders fund + long term Debts  
 16,20,000 = 10,20,000 + long term Debts

Long term Debts = 16,20,000 – 10,20,000  
 Rs 6,00,000

Shareholders funds = Eq share cap +cap raserve (-) Surplus Balance  
 in Statement of P & L  
 = 8,00,000 + 2,40,000 - 20,000  
 = Rs 10,20,000

Total Asset to                      Rs 18,00,000      = 3:1  
 Debt ratio                              Rs 6,00,000

Illustration - 9

Following is the balance sheet of Davi Exports ltd. As at 31st march 2019

Particulars	Rs
<b>I. EQUITY &amp; LIBILITIESS</b>	
1. Shareholder`s Funds	
(a) Share Capital	5,00,000
(b) Reserve & Surplus	13,92,000
2. Non- current Liabilities	
15% Long term Borrowings	16,00,000
3. Current Liabilities	8,00,000
<b>Total</b>	<b>42,92,000</b>
<b>II ASSETS</b>	<b>Rs</b>
1. Non - current Assets	
(a) Fixed Assets	18,00,000
(b) Non - Current investment	
(I) 10% Investment	2,00,000
(II) 10% Non- Trade investment	1,20,000
2. Current Assets	21,72,000
<b>Total</b>	<b>42,92,000</b>

Liabilities side Approach :-

Capital Employed = Share capital +Reserve + Surplus+  
 Non Current liabilities - Non - Trade Investment

$$= 5,00,000 + 13,92,000 + 16,00,000 - 1,20,000$$

$$= \text{rs } 33,72,000$$

II ROI = **Net profit before int & Tax \* 100**

Opening capital Employed

Given - Net profit RS 9,72,000

Add int. on Long term Borrowing Rs 2,40,000  
(15% 16,00,000)

Less int. on Non- Trade investment Rs (12,000)  
(10% 1,20,000)

Net profit before int. & tax Rs 12,00,000

Calculation of capital employed :-

Asset side Approach :-

$$\begin{aligned} \text{Capital Employed} &= \text{Non Current Assets (excluding Non-trade investment)} \\ &+ \text{Current Assets} - \text{Current Liabilities} - \text{Current} \\ &\quad \text{Years Profit} \\ &= \text{Rs } (20,00,000 + 21,72,000 - 8,00,000 - 9,72,000) \\ &= \text{Rs } 24,00,000 \end{aligned}$$

Liabilities side Approach :-

$$\begin{aligned} \text{Capital Employed} &= \text{Share capital} + \text{Reserve \& Surplus Current year's profit} \\ &+ \text{Non current Liabilities} - \text{Non - Trade Investments} \\ &= \text{Rs } (5,00,00 + 4,20,000 + 16,00,000 - 1,20,000) \\ &= \text{Rs } 24,00,000 \end{aligned}$$

$$\text{Hence, ROI} = \frac{\text{rs } 12,00,000}{\text{Rs } 24,00,000} * 100 = 50\%$$

Illustration -10

Calculate Gross profit ratio from the foll -

Cash sales 25% Net sales

Average inventory Rs 1,60,000

Inventory Turnover ratio 8 times

Average Trade Receivables Rs 2,00,000

Trade recevables Turnover ratio 6 times

$$\begin{aligned} \text{Sol. Gross profit ratio} &= \frac{\text{Gross Profit}}{\text{Revenue from Operations}} * 100 \\ &= \frac{\text{Rs } 3,20,000}{16,00,000} * 100 = 20\% \end{aligned}$$

Cost of Revenue from Operations :-

$$\text{Inventory Turnover Ratio} = \frac{\text{COGS}}{\text{Average Inventory}}$$

$$8 = \frac{\text{COGS}}{\text{Rs } 1,60,000}$$

$$\begin{aligned} \text{COGS} &= \text{Rs } 1,60,000 * 8 \\ &= \boxed{\text{Rs } 12,80,000} \end{aligned}$$

Credit sales :-

$$\text{Trade Receivable Turnover Ratio} = \frac{\text{Net credit sales}}{\text{average trade receivables}}$$

$$6 = \frac{\text{Net cr. sales}}{\text{Rs 2,00,000}}$$

$$\begin{aligned} \text{Net cr. sales} &= 6 * \text{Rs 2,00,000} \\ &= \boxed{\text{Rs 12,00,000}} \end{aligned}$$

If Cash sales = 25% net sales

Then Credit sales = 75% of net sales

$$\text{Rs 12,00,000} = 75\% \text{ Net sales}$$

$$\text{Net sales} = \frac{\text{Rs 12,00,000}}{75\%} = \boxed{16,00,000}$$

$$\begin{aligned} \text{Gross profit} &= [\text{Revenue from operations (Net sales)}] - [\text{Cost of revenue from Operations (COGS)}] \\ &= \text{Rs 16,00,000} - \text{rs 12,80,000} \\ &= \text{Rs 3,20,000} \end{aligned}$$

Illustration - 11

calculate Operating ratio from the following

Operating cost rs 6,80,000

Operating expenses rs 80,000

Purchase of stock in trade rs 6,06,000

change in inventories of stock in trade rs 15,000

Employes benefits Expenses rs 9,000

Selling & Distribution Expenses rs 58,000

Loss on sale of fixed Asset rs 12,000

Gross profit Ratio - 25%

Administrative Expenses ₹ 22,000

$$\text{Sol. Operating Ratio} = \frac{\text{Cost of revenue from operations} + \text{Operating Expenses}}{\text{Revenue from operation}} * 100$$

$$\begin{aligned} &= \frac{\text{rs 6,00,000} + \text{rs 80,000}}{\text{rs 8,00,000}} * 100 \\ &= 85\% \end{aligned}$$

$$\begin{aligned} \text{Cost of revenue from Operation} &= \text{operating cost} - \text{operating expenses} \\ &= \text{rs 6,80,000} - \text{rs 80,000} \\ &= \text{rs 6,00,000} \end{aligned}$$

$$\begin{aligned} \text{Cost of revenue from operation} &= \text{Purchase of stock in Trade} + \\ &\quad \text{Change in inventories} + \text{stock in stock} + \\ &\quad \text{Employee Benefit Expenses} \\ &= \text{rs 6,06,000} - \text{rs 15,000} + \text{rs 9000} \\ &= \text{rs 6,00,000} \end{aligned}$$

Operating Expenses = Given rs 80,000

$$\begin{aligned} \text{Otherwise Operating Exp.} &= \text{Administrative Expenses} + \text{selling \& Distribution Expenses} \\ &= \text{Rs 22000} + \text{rs 58000} \\ &= \text{rs 80,000} \end{aligned}$$

(a) Cost of Revenue from operations -

Let Revenue from Operations be rs 100

and If Gross profit = rs 25

Then, Cost of revenue fom operation = rs 75

If cost of revenue from operation is rs 75 Revenue fom operations rs 100

If cost of revenue from operation is rs 6,00,000  
Then revenue from Operation = rs 6,00,00, \*  $\frac{100}{rs\ 75}$   
= 8,00,000

Illustration - 12

Ravenue from operation 8,00,000  
Gross profit ratio 25%  
Operating ratio 90%  
Non - Operating Expenses rs 4000  
Non - Operating income rs 44000  
calculate Net profit ratio:

$$\begin{aligned}\text{Sol. Net profit ratio} &= \frac{\text{Net Profit}}{\text{Revenue from operations}} * 100 \\ &= \frac{rs\ 1,20,000}{rs\ 8,00,000} * 100 = 15\%\end{aligned}$$

Calculation of Net profit

$$\begin{aligned}\text{Operating profit ratio} &= 100\% - \text{Operating Ratio} \\ &= 100\% - 90\% \\ &= 10\%\end{aligned}$$

$$\begin{aligned}\text{Operating profit Ratio} &= \frac{\text{Operating profit}}{\text{Revenue from Operations}} * 100 \\ 10 &= \frac{\text{operating Profit}}{8,00,000} \times 100\end{aligned}$$

$$\text{Operating profit} = \frac{rs\ 8,00,0000 * 10}{100} = 80,000$$

$$\begin{aligned}\text{Net profit} &= \text{Operating profit} + \text{Non operating Income} - \text{Non - Operating Expenses} \\ &= rs\ 80,000 + rs\ 44,000 - rs\ 4000 \\ &= rs\ 1,20,000\end{aligned}$$