



Ques-3

RFO : cash sales ₹500000, credit sales ₹600000, sales return ₹100000. Current assets ₹300000, current liabilities ₹100000. Calculate working capital Turnover ratio.

Ans-

$$\text{Working capital turnover ratio} = \frac{\text{RFO}}{\text{working capital}} = \frac{\text{Net sales}}{\text{CA} - \text{CL}}$$

$$= \frac{500000 + 600000 - 100000}{300000 - 100000}$$

$$= \frac{10,00,000}{2,00,000}$$

$$= 5 \text{ times}$$

Ques 4

Calculate inventory turnover ratio  
Credit revenue from operations ₹600000, cash revenue from operations ₹200000, gross profit 25% of cost. Closing inventory was 3 times the opening inventory. Opening inventory was 10% of cost of revenue from operations.

Ans-

$$\text{ITR} = \frac{\text{cost of goods sold (COGS)}}{\text{Avg. inventory}}$$

$$\text{COGS} = \text{RFO} - \text{gross profit}$$

$$x = (600000 + 200000) - 25\% \cdot x$$

$$x + 0.25x = 800000$$

$$1.25x = 800000$$

$$x = \frac{800000}{1.25} = 640000$$

$$x = 6,40,000$$



$$\begin{aligned}
 \text{Avg. Inventory} &= \frac{O + C}{2} \\
 &= \frac{10\% \times + 3 [\text{opening}]}{2} \\
 &= \frac{64000 + 192000}{2} \\
 &= \frac{256000}{2} \Rightarrow \boxed{128000}
 \end{aligned}$$

$$\begin{aligned}
 \text{ITR} &= \frac{320405}{\frac{640000}{128000}} \\
 &= \frac{320405}{5} \Rightarrow \boxed{5 \text{ times}}
 \end{aligned}$$

Ques 5 Mercury Ltd. made credit sales of ₹400000 during the financial period. If the collection period is 36 days and year is assumed to 360 days, calculate:

- (i) Trade receivables turnover ratio
- (ii) Average trade receivables
- (iii) Trade receivables at the end when trade receivables at the end are more than that in the beginning by ₹6000.

Ans - ① Debt collection period =  $\frac{360 \text{ days}}{\text{Trade receivable turnover ratio}}$

$$36 = \frac{360}{\text{TRTR}}$$

$$\boxed{\text{TRTR} = 10 \text{ times}}$$

$$\begin{aligned}
 \text{②} \quad \text{TRTR} &= \frac{\text{Credit RFO}}{\text{Avg. TR}} \\
 10 &= \frac{400000}{\text{Avg. TR}}
 \end{aligned}$$



$$\boxed{\text{Avg. TR} = ₹40,000}$$

$$\begin{aligned} \text{(iii) Opening TR} &= ? \quad x \\ \text{closing TR} &= ? \quad x + 6000 \end{aligned}$$

$$\text{Avg. TR} = \frac{\text{opening TR} + \text{closing TR}}{2}$$

$$40000 = \frac{x + (x + 6000)}{2}$$

$$80000 = 2x + 6000$$

$$\frac{80000 - 6000}{2} = x$$

$$\frac{74000}{2} = x$$

$$\boxed{₹37000 = x}$$

$$\begin{aligned} \text{closing TR} &= x + 6000 \\ &= \boxed{₹43000} \end{aligned}$$

Ques 6 Calculate trade receivables turnover ratio:  
Credit RFO, credit sales ₹800000, opening trade receivables ₹1,20,000 and closing trade receivables ₹2,00,000.

State, giving reason, which of the following would increase, decrease or not change trade receivables turnover ratio:

- (i) Collection from trade receivables ₹40,000. Cash + CTR +
- (ii) Credit revenue from operation, credit sales ₹80,000. CTR + S +
- (iii) Sales return ₹20,000. Sale - CTR -
- (iv) Credit purchase ₹1,60,000. Stock + Credit +



Ans -  $TRTR = \frac{\text{Credit RFO}}{\text{Avg. TR}} = \frac{800000}{\frac{120000 + 200000}{2}}$

$$\Rightarrow \frac{800000}{160000} = 5 \text{ times}$$

(i)  $TRTR = \frac{800000}{\frac{120000 + 160000}{2}} = \frac{800000}{140000} \Rightarrow 5.7 \text{ times}$

$\therefore$  Increase.

(ii)  $TRTR = \frac{880000}{\frac{120000 + 280000}{2}} = \frac{880000}{200000} = 4.4 \text{ times}$

$\therefore$  Decrease

(iii)  $TRTR = \frac{780000}{\frac{120000 + 180000}{2}} = \frac{780000}{150000} = 5.2 \text{ times}$

$\therefore$  Increase.

(iv) No change.

Ques 7 From the following information, calculate opening and closing trade receivables, if trade receivables turnover ratio is 3 times:

(i) Cash revenue from operation is  $\frac{1}{3}$  of credit RFO.

(ii) Cost of RFO is ₹300000.

(iii) Gross profit is 25% of RFO.

(iv) Trade receivables at the end are 3 times more than that of in the beginning.



Ans - Trade receivable turnover =  $\frac{\text{credit RFO}}{\text{Avg. TR}}$

$$3 = \frac{\text{credit RFO}}{\text{Avg. RFO}}$$

$$\begin{aligned} \text{Cost of goods sold} &= \text{RFO} - \text{gross profit} \\ 300000 &= x - 0.25x \\ \frac{300000}{0.75} &= x \end{aligned}$$

$$400000 = \text{RFO}$$

$$* \text{ RFO} = \text{cash RFO} + \text{credit RFO}$$

$$400000 = \frac{1}{3}x + x$$

$$400000 = \frac{4x}{3}$$

$$\frac{1200000}{4} = x$$

$$300000 = \text{credit RFO}$$

$$\text{Avg. TR} = \frac{\text{credit RFO}}{\text{TR TR}} = \frac{300000}{3} = 100000$$

$$\text{Avg. TR} = 100000$$

$$\text{Avg. TR} = \frac{\text{opening TR} + \text{closing TR}}{2}$$

$$100000 = \frac{x + 4x}{2}$$

$$\frac{200000}{5} = x$$

$$40,000 = \text{opening TR}$$

$$160000 = \text{closing TR}$$



Ques-8 Equity share capital ₹15,00,000, gross profit on RFO  
Net sales  $33\frac{1}{3}\%$ , cost of RFO/COGS ₹20,00,000.

current assets ₹10,00,000, current liabilities ₹25,00,000.  
calculate working capital turnover ratio.

Ans-  $\text{COGS} = \text{RFO} - \text{GP}$

$$2000000 = x - \frac{1}{3}x$$

$$2000000 = \frac{2x}{3}$$

$$6000000 = x$$

$$\boxed{30,00,000 = \text{RFO}}$$

$$\begin{aligned}\text{Working capital} &= \text{CA} - \text{CL} \\ &= 10,00,000 - 25,00,000 \\ &= \boxed{\text{₹ } 7,50,000}\end{aligned}$$

$$\begin{aligned}\text{Working capital turnover ratio} &= \frac{30,00,000 \text{ RFO}}{\text{working capital}} \\ &= \frac{30,00,000}{7,50,000} \\ &= \boxed{4 \text{ times}}\end{aligned}$$



# ① PROFITABILITY RATIO

1) Gross profit ratio: It shows relationship between gross profit and net sales. It indicates the margin available to cover operating and non-operating expenses.

$$= \frac{\text{Gross profit}}{\text{RFO}} \times 100$$

- It is expressed in %.
- Higher the rate, better it is.

2) Operating ratio: It shows operational efficiency of the business.

$$= \frac{\text{Operating cost}}{\text{RFO}} \times 100$$

- Operating cost = COGS + operating expenses
- It is expressed in %.
- Lower the ratio, better it is.

3) Operating profit ratio: It shows the operational efficiency of business.

$$= \frac{\text{Operating profit}}{\text{RFO}} \times 100$$

- Operating profit = Gross profit + other operating income - other operating expenses.
- OR
- = RFO - operating cost



$$= \text{Net profit} + \text{Non-operating expenses} - \text{Non-operating income}$$

| Non operating expenses                                            | Non-operating income                                                      |
|-------------------------------------------------------------------|---------------------------------------------------------------------------|
| Interest on borrowing,<br>Loss on sale of asset, charity,<br>etc. | Interest received, dividend<br>received, profit on sale of<br>asset, etc. |

→ Expressed in %

→ Higher the ratio, better it is.

\* Operating ratio + operating profit ratio = 100%.

4) Net profit ratio: It shows net profit margin in relation to sales. It indicates overall efficiency of the business.

$$= \frac{\text{Net profit (after tax)}}{\text{RFO}} \times 100$$

→ It is expressed in %.

→ Higher the ratio, better it is.

5) Return on investment / Return on capital employed / ~~Return on~~: It shows the overall efficiency of the business.

$$= \frac{\text{Profit before interest tax \& dividend}}{\text{Capital employed}} \times 100$$

\* While calculating capital employed, exclude Non-Trad Investment.



- \* While calculating profit, exclude Interest on Non-Trade Investment.

→ It's expressed in %.

→ Higher the ratio, better it is.

Ques 1

Calculate gross profit ratio

|              |                   |        |                         |        |
|--------------|-------------------|--------|-------------------------|--------|
| RFO          | Cash RFO →        | 200000 | Carriage inwards →      | 8000   |
|              | Credit RFO →      | 800000 | Salaries →              | 42000  |
| Net purchase | Cash purchase →   | 40000  | Decrease in Inventory → | 122000 |
|              | Credit purchase → | 360000 | Return outwards →       | 20000  |
|              |                   |        | Wages →                 | 20000  |

Ans -  $COGS = \text{Decrease in inventory} + \text{Net purchase} + \text{Direct expense}$

$$\begin{aligned}
 COGS &= 122000 + (400000 - 20000) + 28000 \\
 &= 150000 + 380000 \\
 &= \boxed{\text{₹ } 5,30,000}
 \end{aligned}$$

$$\begin{aligned}
 \text{Gross profit} &= RFO - COGS \\
 &= 10,00,000 - 5,30,000 \\
 &= \boxed{4,70,000}
 \end{aligned}$$

$$\begin{aligned}
 \text{Gross profit ratio} &= \frac{4,70,000}{10,00,000} \times 100 \\
 &= \boxed{47\%}
 \end{aligned}$$

Ques-2 RFO ₹12,00,000, cost of RFO ₹5,00,000, operating cost ₹600000. Calculate operating ratio.

$$\begin{aligned}
 \text{Ans - Operating ratio} &= \frac{\text{operating cost}}{RFO} \times 100 = \frac{600000}{12,00,000} \times 100 \\
 &= \boxed{50\%}
 \end{aligned}$$



Ques-3 Calculate operating profit ratio:

RFO (Net sales)

Cost of RFO (COGS)

Wages

Office and administrative expenses

Interest on borrowing.

Direct exp.

Non-op exp.

500000

200000

100000

50000

5000

Ans - Operating profit ratio =  $\frac{\text{Operating profit}}{\text{RFO}} \times 100$

$$\begin{aligned}\text{Operating profit} &= \text{RFO} - \text{operating cost.} \\ &= \text{RFO} - [\text{COGS} + \text{operating exp.}] \\ &= 500000 - (200000 + 50000) \\ &= 250000\end{aligned}$$

$$\begin{aligned}\text{Operating profit ratio} &= \frac{250000}{500000} \times 100 \\ &= 50\%\end{aligned}$$

Ques-4 What will the operating profit ratio, if operating ratio is 82.59%?

Ans - Operating ratio + operating profit ratio = 100%

$$82.59 + \text{OPR} = 100$$

$$= 100 - 82.59$$

$$= 17.41\%$$

Ques-5 RFO ₹820000, return 10,000, cost of RFO ₹520000, operating expenses ₹209000, Interest on debenture 40500, gain on sale of asset 81000. Calculate Net profit ratio.





Ans-

$$\begin{aligned}
 GP &= RFO - COGS \\
 &= 820000 - 520000 \\
 &= 300000
 \end{aligned}$$

WN

| Dr.               | PLA/C    |                 | Cr.    |
|-------------------|----------|-----------------|--------|
| To operating exp. | 209000   | By gross profit | 300000 |
| To int. on deb.   | 40500    | By gain on sale | 81000  |
| To Net profit     | 1,31,500 |                 |        |
|                   | 381000   |                 | 381000 |

$$\begin{aligned}
 \therefore \text{Net profit ratio} &= \frac{\text{net profit}}{RFO} \times 100 \\
 &= \frac{131500}{820000} \times 100 \\
 &= 16.03 \%
 \end{aligned}$$

\*  
Ques 6

Y Ltd's profit after interest and tax was £100000. Its current assets were £400000, current liabilities £200000, fixed assets £600000 and 10% long term debt £400000. The rate of tax was 20%. Calculate 'return on investment' of Y Ltd.

Ans-

$$\text{Profit after tax} = 100,000$$

$$\text{profit before tax} = \frac{\text{profit after tax}}{100\% - \text{tax}\%}$$

$$= \frac{100000}{100\% - 20\%}$$

$$= \frac{100000 \times 100}{80}$$

$$= 1,250,000$$



$$\begin{aligned}
 \text{profit before tax} &= 12,50,000 \\
 (+) \text{ Interest on long term debt} &= 40,000 \quad [10\% \times 400,000] \\
 \text{Profit before interest \& tax} &= \underline{12,90,000}
 \end{aligned}$$

$$\begin{aligned}
 \text{Capital employed} &= \text{Total asset} - \text{current liabilities} \\
 &= 10,00,000 - 200,000 \\
 &= 8,00,000
 \end{aligned}$$

$$\begin{aligned}
 \text{Return on Investment (ROI)} &= \frac{12,90,000}{8,00,000} \times 100 \\
 &= 161.25\%
 \end{aligned}$$

$$= \frac{16,50,000}{8,00,000} \times 100$$

$$= 20.63\%$$

\*

Ques-7 Calculate gross profit ratio from the following:  
 Average inventory ₹320,000, inventory turnover ratio 8 times,  
 average trade receivables ₹4,00,000, TRTR 6 times,  
 cash sales 25% of Net sales.

Ans - Inventory turnover ratio =  $\frac{\text{COGS}}{\text{Avg. Inventory}}$

$$8 = \frac{\text{COGS (cash RFO)}}{320,000}$$

$$\text{COGS} = 2,560,000$$

$$\text{TRTR} = \frac{\text{Net credit sales}}{\text{Avg. TR}} \times 100$$

$$6 = \frac{\text{credit RFO}}{4,00,000}$$

$$\text{credit RFO} = 2,400,000$$



$$\text{Net sales (RFO)} = \text{cash sale} + \text{credit sale}$$

$$x = 0.25x + 2400000$$

$$0.75x = 2400000$$

$$x = \frac{2400000}{0.75}$$

$$x = 32,00,000 \text{ (RFO)}$$

$$\begin{aligned} \text{Gross profit} &= \text{RFO} - \text{COGS} \\ &= 3200000 - 2560000 \\ &= \text{₹ } 640,000 \end{aligned}$$

$$\begin{aligned} \text{Gross profit ratio} &= \frac{\text{gross profit}}{\text{RFO}} \times 100 \\ &= \frac{640000}{3200000} \times 100 \\ &= 20\% \end{aligned}$$

Ques-8 RFO ₹ 400000, Gross profit 25%, operating ratio 90%. Non-operating expenses ₹ 2000, Non operating income ₹ 22000. Calculate net profit ratio.

Ans-  $\text{GPR} = \frac{\text{GP}}{\text{RFO}} \times 100$

$$\frac{400000 \times 25}{100} = \frac{\text{GP}}{400000} \times 100$$

$$\frac{25}{100} \times \frac{400000}{100} = \text{GP}$$

$$100000$$

$$\text{GP} = \frac{25}{100} \times 400000$$

$$= 100000$$

$$\begin{aligned} \text{Operating ratio} + \text{operating profit ratio} &= 100\% \\ 90\% + \text{OPR} &= 100\% \end{aligned}$$

$$\text{OPR} = 10\%$$



$$OPR = \frac{\text{operating profit}}{RFO} \times 100$$

$$10 = \frac{OP}{400000} \times 100$$

$$\boxed{40,000 = \text{operating profit}}$$

$$\begin{aligned} \text{Operating profit} &= \text{Net profit} + \text{NOR} - \text{NOI} \\ 40,000 &= NP + 2000 - 22,000 \end{aligned}$$

$$40,000 + 22,000 - 2,000 = NP$$

$$\boxed{60,000 = \text{Net profit}}$$

$$\text{Net Profit Ratio} = \frac{\text{Net profit}}{RFO} \times 100$$

$$= \frac{60,000}{400,000} \times 100$$

$$= \frac{60}{4} \Rightarrow \boxed{15\%}$$

Ques 9 Calculate ROI. Net profit after tax ₹ 650,000, Rate of income tax 50%, 10% debentures of ₹ 10,00,000, fixed assets at cost ₹ 22,50,000. Accumulated depreciation on fixed assets up to date ₹ 2,50,000, current assets ₹ 12,00,000, current liabilities ₹ 4,00,000.

Ans - Profit before tax =  $\frac{\text{Profit after tax}}{100\% - \text{tax}}$

$$= \frac{650,000}{100\% - 50\%} = 650,000 \times \frac{100}{50}$$

$$= 13,00,000$$

(+) Interest on long term debt  
Profit before tax

$$\begin{aligned} &= 10,00,000 \quad (10\% \text{ of } 10,00,000) \\ &= \underline{14,00,000} \end{aligned}$$



$$\begin{aligned}\text{Capital employed} &= \text{Total assets} - \text{current lia.} \\ &= [22,50,000 + 250,000 + 12,00,000] - 4,00,000 \\ &= 32,00,000 - 4,00,000 \\ &= 28,00,000\end{aligned}$$

$$\text{ROI} = \frac{\frac{14,00,000}{28,00,000}}{2} \times 100 = 50$$

$$= 50\%$$