SUMMARY SHEET

EduTap

Financial Ratios

EduTap Hall *of* Fame

RBI Grade B 2020 - 21 — 198 Selections Out of 257

Mr. Ajil	Mr. Aman Choudhary	Mr. Arun Sharma	Ms. Ila Sahu	Mr. Nishant Yadav	Ms. Ojaswi Dale	Mr. Parimal S Athaley
Ms. Resmarani Sahoo	Mr. Ryan Varghese	Mr. Shubham	Mr. Somya Atre	Ms. Srishtli Dabas	Ms. Twinkle Dahlya	Mr. Vaibhav Nayer

SEBI Grade A 2020 — 63 Selections Out of 80

Mr. Gaurav	Mr. Abhishek	Mr. Abhishek	Mr. Adesh	Mr. Adil	Miss. Gopika	Mr. Harsh
Miss. Akansha	Mr. Amit Meena	Mr. Dhruv	Mr. Digant	Mr. Durga Parsad	Mr. Hitesh	Mr. Johnson

NABARD Grade A 2020 — 65 Selections Out of 69

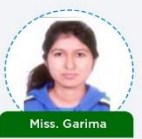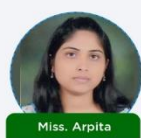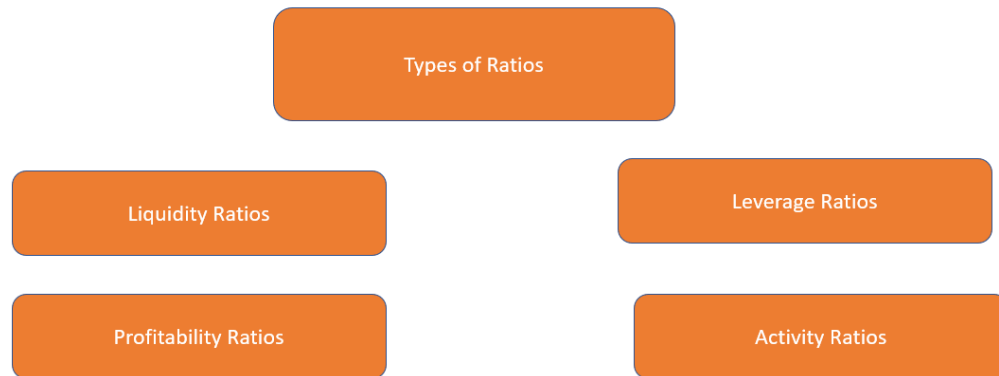|						
Mr. Gourav Kumar	Mr. Sayed Saif	Mr. Vinay Jadhav	Mr. Ratan Singh	Mr. Vishal Singla	Mr. Mohan Das	Miss. Garima
Mr. Amandeep	Miss. Arpita	Mr. Krishan Kumar	Mr. Shivam	Mr. Karan Sharma	Miss. Shivani Bhosle	Mr. Prasad

Important Points

1. This Summary Sheet shall only be used for Quick Revision after you have read the Complete Notes

2. For Building Concepts along with examples/concept checks you should rely only on Complete Notes

3. It would be useful to go through this Summary sheet just before the exam or before any Mock Test

4. Questions in the exam are concept based and reading only summary sheets shall not be sufficient to answer all the questions
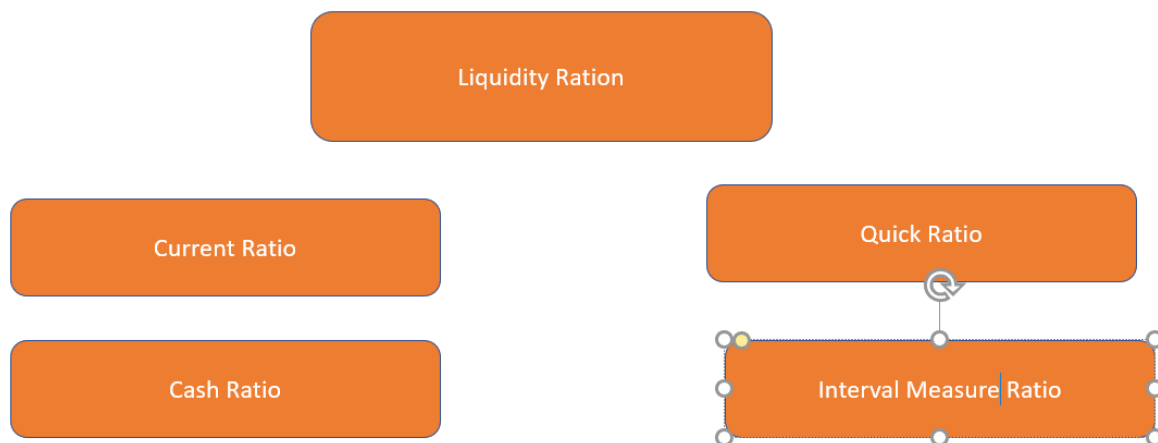
1 Summary Points

➢ **Ratio Analysis** is one of the **tools for performing financial analysis of a company**. It involves comparison for a useful interpretation of the financial statements. Ratios computed through the financial statements are compared with past ratios, competitor's ratios, industry ratios and projected ratios to conclude company's current financial health

➢ **Type of Ratios: Traditional Classification**
   Based on Traditional Classification, we can classify ratios as

   1. **Profit and Loss Account Ratios**: These are the ones which are calculated using Profit and Loss Account Only
   2. **Balance sheet Ratios**: These are the ones which are calculated using Balance Sheet Only
   3. **Composite Ratios or Inter Statement Ratios**: These are calculated using both Profit and Loss account and balance sheet

➢ **Types of Ratios based on Functional Classification**

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                    ┌─────────────────────┐
                    │   Types of Ratios   │
                    └─────────────────────┘

   ┌─────────────────────┐              ┌─────────────────────┐
   │   Liquidity Ratios  │              │   Leverage Ratios   │
   └─────────────────────┘              └─────────────────────┘

   ┌─────────────────────┐              ┌─────────────────────┐
   │ Profitability Ratios│              │   Activity Ratios   │
   └─────────────────────┘              └─────────────────────┘
```

Liquidity Ratios are also known as Short Term Solvency Ratios

Leverage Ratios are also known as Long Term Solvency Ratios

➢ **Liquidity Ratios:** Measures the firm's ability to meet its current obligations (liabilities). These are further classified into,

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                    ┌─────────────────────┐
                    │   Liquidity Ration  │
                    └─────────────────────┘

   ┌─────────────────────┐              ┌─────────────────────┐
   │    Current Ratio    │              │     Quick Ratio     │
   └─────────────────────┘              └─────────────────────┘

   ┌─────────────────────┐              ┌─────────────────────┐
   │     Cash Ratio      │              │Interval Measure Ratio│
   └─────────────────────┘              └─────────────────────┘
```

➢ **Current Ratio:** Measures the **firm's short-term solvency**. It indicates the availability of current assets in rupees for everyone rupee of current liability

Formula
$$\text{Current ratio} = \frac{\text{Current assets}}{\text{Current liabilities}}$$ An Ideal value of this ratio is 2. An extremely high current ratio is also not desirable since it means less efficient use of funds

- ✓ Current assets include cash and those assets that can be converted into cash within a year
- ✓ All obligations maturing within a year are included in current liabilities
- ✓ A current **ratio of 2 to 1** or more is considered satisfactory
- ✓ It represents a margin of safety for creditors
- ✓ The current ratio is a test of quantity, not quality

➤ **Quick Ratio (Acid-test ratio or Liquid ratio):** Establishes a relationship between quick, or liquid, assets that can be converted into cash immediately or reasonably soon without a loss of value to current liabilities

Formula
Quick Ratio = Quick Assets / Liabilities   **= (Current Assets – Inventories – Prepaid Expenses) / Current Liabilities** Ideal Value is 1

- ✓ Cash is the most liquid asset and Other assets that are considered to be relatively liquid are debtors and bills receivable, and marketable securities
- ✓ A quick **ratio of 1 to 1** is considered to represent a satisfactory current financial condition

➤ **Cash Ratio (Absolute Liquid Ratio or Super Quick Ratio):** Includes comparison of Trade investment or marketable securities that are equivalent of cash to current liabilities

Formula
$$\text{Cash ratio} = \frac{\text{Cash + Marketable securities}}{\text{Current liabilities}}$$

- ✓ Cash **Ratio of 1:2 or 0.5** is generally considered to be good
- ✓ Value greater than 1 means company has excess Cash which is lying idle and should be put to productive use such as putting it in a fixed deposit

➤ **Interval Measure Ratio (Defensive Interval Ratio):** Measures whether there are enough Liquid Assets to cover the regular expenses of the firm

Formula

> **Interval Measure = (Current Assets – Inventory – Prepaid Expenses) / Average daily Operating Expenses**
>
> **Avergae Daily Expenses would be = Cost of Goods Sold + Selling and Admininstrative Expenses – Depreciation / 360**
>
> Depreciation is excluded because it is notional since it is reduce in the value of an asset for which you do not have to pay anything

- ➢ **Example:** Calculate Current Ratio, Quick Ratio and Cash Ratio from the below 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

Solution: Current Assets = Inventories + Trade Receivables + Advance Tax + Cash and Cash Equivalents = 50,000 + 50,000 + 4,000 + 30,000 = 1,34,000
Current Liabilities = Trades Payable + Short Term Borrowings = 1,04,000
Current Ratio = 1,34,000/1,04,000 = **1.29**
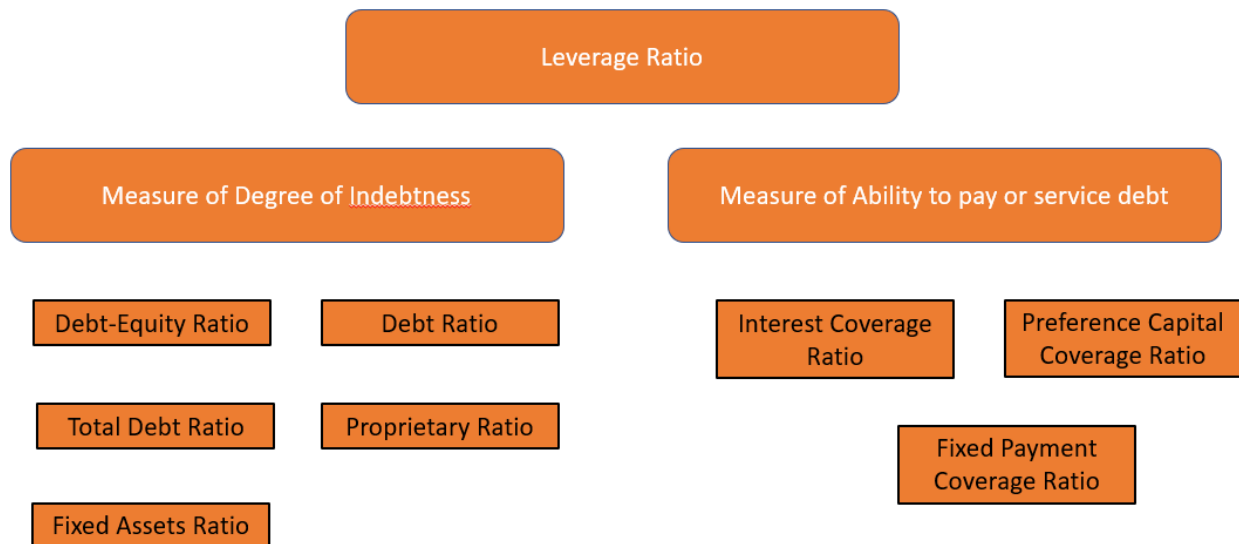**Quick Assets = Current Assets – (Inventories + Advance Tax)**
= 1,34,000 – (50,000 – 4,000)
= 80,000
Quick Ratio = Quick Assets / Current Liabilities = 80,000 / 1,04,000 = **0.77**
Cash Ratio = (Cash + Marketable Securities) / Current Liabilities = 30,000 / 1,04,000 = **0.28**

- ➢ **Leverage Ratios (Capital Structure Ratios / Solvency Ratios):** These represent financial measurements that assess a firm's ability to meet its long-term obligations and suggest appropriate mix of debt and owners' equity in financing the firm's assets. They are,

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                        ┌─────────────────────────┐
                        │     Leverage Ratio      │
                        └─────────────────────────┘

    ┌───────────────────────────────┐      ┌───────────────────────────────────┐
    │  Measure of Degree of Indebtness │    │ Measure of Ability to pay or service debt │
    └───────────────────────────────┘      └───────────────────────────────────┘

    ┌──────────────────┐  ┌──────────────┐      ┌──────────────────┐  ┌────────────────────┐
    │ Debt-Equity Ratio │  │  Debt Ratio  │      │ Interest Coverage │  │ Preference Capital │
    └──────────────────┘  └──────────────┘      │      Ratio       │  │  Coverage Ratio    │
                                                 └──────────────────┘  └────────────────────┘
    ┌──────────────────┐  ┌──────────────────┐
    │ Total Debt Ratio │  │ Proprietary Ratio │      ┌────────────────────┐
    └──────────────────┘  └──────────────────┘      │   Fixed Payment    │
                                                      │  Coverage Ratio    │
    ┌──────────────────┐                              └────────────────────┘
    │ Fixed Assets Ratio │
    └──────────────────┘
```

- ➢ **Important Balance Sheet Formulas:**
    1. Net Fixed Assets = Fixed Assets – Depreciation
    2. Total Assets = Current Assets + Fixed Assets
    3. Total Liabilities = Long Term Debt + Current Liabilities
    4. Shareholder Capital = Share Capital+ Preference Share Capital + Paid Capital +Retained Earnings
    5. Reserves and Surplus = Paid up Capital + Retained Earnings
    6. Shareholder Capital = Share Capital + Preference Share Capital + Reserves and Surplus
    7. Net Worth = Shareholder Capital
    8. Net Current Assets = Current Assets – Current Liabilities
    9. Net Assets = Net Current Assets + Net Fixed Assets
    10. Net Assets = Total Assets – Current Liabilities
    11. Capital Employed = Total Long-Term Debt + Shareholder Capital
    12. Capital Employed = Current Assets – Current Liabilities + Net Fixed Assets
    13. Capital Employed = Total Assets – Current Liabilities
    14. Capital Employed = Net Current Assets + Net Fixed Assets
    15. Capital Employed = Net Assets
    16. Total Assets = Total Liability + Share Holder Capital
    17. Total Assets = Long Term Debt + Current Liabilities + Shareholder Capital

- ➢ **Debt-Equity Ratio:**

Formula
Debt Equity Ratio = Total Liabilities /Shareholder Funds   Shareholder Funds means the same as Shareholder Capital

Since Shareholder Funds = Net Worth, the formula can also be stated as

Debt Equity Ratio = Total Liabilities/Net Worth

Altenativey this is also known as Debt Equity Ratio = External Equities/Internal Equities
External equities are Total Liabilities and Internal Equities are Shareholder Funds

Ratio of 1 is considered quite satisfactory in this case

Alternate Debt – Equity Ratio Formulas

Sometimes Debt-Equity Ratio is calculated as Long-term financial ratio. In this case instead of taking all the liabilities (current + Long Term) in the numerator, only the Long-term debt is taken in the numerator because in a longer-term perspective the current liabilities does not matter. There are 2 formulas to calculate debt-equity ratio from longer term perspective

Formula
(i)   Debt – Equity Ratio = Total Long-Term Debt/Total Long-Term Funds   (ii) Debt -Equity Ratio = Total Long-Term Debt/Total Shareholder Funds   Formula (ii) is more popular and should be used for as Long-term Debt-Equity Ratio if nothing is mentioned   The formula (i) gives proportion of Long-term debt to Total Long-Term Funds. Total Long-Term Funds in denominator will be equivalent to Long Term Debt + Shareholder Funds. **The ideal value in this case will be .5**   The Formula (ii) gives proportion of Long-Term Debt to Shareholder Funds. In this formula the denominator will not include Long term debt. **The ideal value in this case will be 1** i.e. long term borrowed funds are equal to shareholder funds. **Even a value of 2 would not be considered bad if firm is in the business which needs heavy investment in fixed assets** which makes it necessary for them to borrow

Note: In exam if it is not mentioned that you have to calculate Debt-Equity ratio from short term perspective or long-term perspective then please use the below formula -

Debt Equity Ratio = Total Liabilities/Shareholder Funds

Significance of this Ratio: This ratio indicates the proportion of owners stake in the business. Excessive Liabilities tend to cause insolvency. The ratio indicates depenedency on outside funds for its existence. Higher the ratio, higher the dependency on outside funds, higher the risk of insolvency

➤ **Debt Ratio:**

Formula
Debt Ratio = = (Long Term Debt+ Short Term Debt + Current Portion of Long Term Debt)/ Total Assets

➤ **Total Debt Ratio:**

Formula
Total Debt Ratio = (Long Term Debt + Current Liabilities) / (Shareholder Funds + Long Term Debt + Current Liabilties) Total Liability = Long Term Debt + Current Liabilities Total Assets = Shareholder Funds + Long Term Debt + Current Liabilties **Total Debt Ratio = Total Liabilities / Total Assets**

➤ **Proprietary Ratio:**

Formula
Proprietary Ratio = Shareholders Funds / Total Assets

➤ **Fixed Asset Ratio:**

Formula
Fixed Asset Ratio = Fixed Assets/Long Term Funds Fixed Assets means net fixed asses (Assets at Original Cost – Depreciation) and Long Term funds means Shareholder Funds + Long term debt or Long term borrowings

The ideal value is < 1 and ideal value is .67

The value less than 1 indicates fixed assets are less in value as comapred to long term funds. So it means that part of long term funds has been used to buy fixed assets and rest in day to day use i.e. Working Capital

➢ **Example:** Find the Debt-Equity Ratio, Debt Ratio and Proprietary Ratio for the below data

Equity Share Capital	1,50,000
Preference Share Capital	5,00000
Reserves	2,50,000
Debt	70,00,000
Current Liabilities	20,00,000

 Solution:

 Debt-Equity Ratio would be **= Total Liabilities/Net Worth**

 Total Liabilities **=** 70,00000+20,00000 = 9000000

 Net Worth = Share holder Capital = 5,00000 + 2,50,000 + 1,50,000 = 9,00000

 So, Debt-Equity Ratio is 9000000/900000 = 10

Debt Ratio = (Long Term Debt+ Short Term Debt + Current Portion of Long Term Debt)/ Total Assets

Total Assets = Total Liabilities + Shareholder Equity

Debt Ratio would be **=** 70,00000 / (70,00000+20,0000+1,50,000 + 5,00,000 + 2,50,000) = **.70**

Proprietary Ratio = Shareholders Funds / Total Assets

Proprietary Ratio = (9,00000) / (70,00000+1,50,000 + 5,00,000 + 2,50,000+20,00000) = **.090**

➢ **Interest-Coverage Ratio:** Indicates the firm's ability to meet interest (and other fixed-charges) obligations

Formula

$$\text{Interest coverage} = \frac{\text{EBIT}}{\text{Interest}}$$

EBIT = Earnings Before Interest and Taxes
Interest = Interest liability of the Firm on the Loan

- ✓ A higher ratio is desirable; but too high a ratio indicates that the firm is very conservative in using debt
- ✓ A lower ratio indicates excessive use of debt or inefficient operations

➤ **Preference Capital Coverage Ratio:** Measures the capability of the firm in paying dividends to Preference Share Holders

Formula
Prefernce Capital Coverage Ratio = Profit After Tax / Preference Dividend

➤ **Fixed Payment Coverage Ratio:** Calculates the relationship between operation profits (EBIT) and the fixed liabilites of the firm

Formula
Fixed Charge Covergae Ratio = $$\dfrac{\text{EBIT}}{I + \dfrac{(PR + PD)}{(1-t)}}$$ I = Interest   PR = Principal Repayment   PD = Preference Dividend   T = Tax rate

➤ **Example:** A firm has operating profit of 4,50,000. The interest which needs to given by the company is 90,000 and tax liability is 30%. It has to pay a debt of 70,000 during the year and preference dividend of 10,000. Find the Fixed Payment Coverage Ratio.

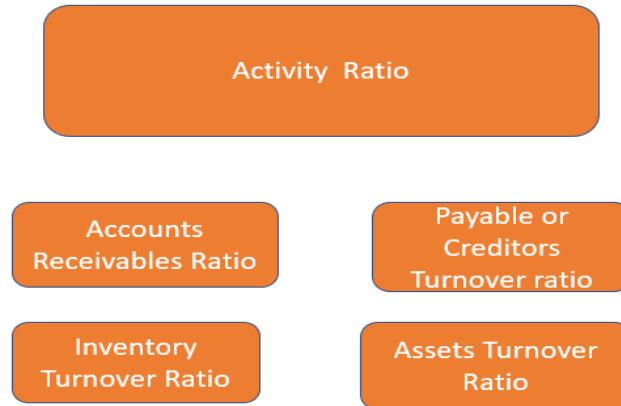**Solution:** FC ratio = EBIT / [I + (PR + PD)/ (1-t)]
I = 90,000
PR = 70,000
PD = 10,000

T = 30% or 0.3

= 4,50,000 / [90,000 + (70,000+10,000) / (1-0.3)] = **2.2**

- ➢ **Activity Ratios (Turnover Ratios):** Are employed to evaluate the efficiency with which the firm manages and utilizes its assets to generate sales and profits. They are,

Activity Ratio

Accounts Receivables Ratio

Payable or Creditors Turnover ratio

Inventory Turnover Ratio

Assets Turnover Ratio

- ➢ **Inventory Turnover Ratio:** Indicates the efficiency of the firm in producing and selling its product. Inventory turnover also known as stock turnover ratio

Formula

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

The average inventory is the average of opening and closing balances of inventory

In case you are an outsider of the company and value of Cost of Goods Sold is not available then you can replace Cost of Goods Sold by Sales

Inventory turnover = Sales/Average Inventory

Days of Inventory Holdings (DIH):

Formula

$$\text{DIH} = \frac{\text{Average inventory}}{\text{Cost of goods sold}} \times 360 = \frac{360}{\text{Inventory turnover}}$$

- ✓ For example, Inventory turnover of 4 means that company replenishes it inventory 4 times a year or it converts inventory into finsihed goods 4 times a year
- ✓ DIH of 4 means inventory is held for 90 days after which it is converted into finished goods

➢ **Debtors or Accounts Receivables Turnover Ratio:** Indicates the number of times debtors turnover each year. Generally, the higher the value of debtor's turnover, the more efficient is the management of credit. This ratio is also known as Debtors Velocity

Formula
$$\text{Debtors turnover} = \frac{\text{Credit sales}}{\text{Average debtors}}$$ Average Debtors is the average of closing and Opening Debtors   This can also be calculated as Credit Sales/ Average Accounts Receivable where Accounts receivable is a sum of Debtors and Bills Receivable. Bills receivable are form of debtors only who have issued a form of promissory note indicating they promise to pay to you in future   There is no ideal value as it depends on nature of industry but it the amount of receivables should not exceed 3 to 4 months credit sales

Average Collection Period: Indicates how many days it takes to collect money from Debtors

Formula
Average Collection Period = 360 / Debtors Turnover

- ✓ The average collection period measures the quality of debtors since it indicates the speed of their collection
- ✓ The shorter the average collection period, the better the quality of debtors, since a short collection period implies the prompt payments by debtors

➢ **Payables or Creditors Turnover Ratio:** Indicates the pattern of payment of trade payable

Formula

Payable Turnover Ratio = Credit Purchase / Average Payables

Average Payables is the average of Opening and Closing Payables

Average payment Period: Indicates the number of days the firm takes to pay its creditors

Formula
Average Payment Period = 360/Payable Turnover ratio

➢ **Asset Turnover Ratios:** Measures a firm's ability to produce a large volume of sales for a given amount of net assets (capital employed)

Formula

$$\text{Net assets turnover} = \frac{\text{Sales}}{\text{Net assets}}$$

We have already discussed earlier that Net Assets = Net Fixed Assets + Net Current Assets

Net Fixed Assets = Net Fixed Assets – Depreciation
Net Current Assets = Current Assets – Current Liabilities

Also Since Net Assets = Capital Employed, this ratio can also be called as

Capital Employed Turnover = Sales / Capital Employed

✓ **Fixed Assets Turnover**: This ratio shows the firm's ability in generating sales from Net Fixed Assets (i.e. after depreciation)

Formula

$$\text{Fixed assets turnover} = \frac{\text{Sales}}{\text{Net fixed assets}}$$

✓ **Net Current Assets Turnover**: This ratio shows the firm's ability in generating sales from Net Current Assets or working Capital

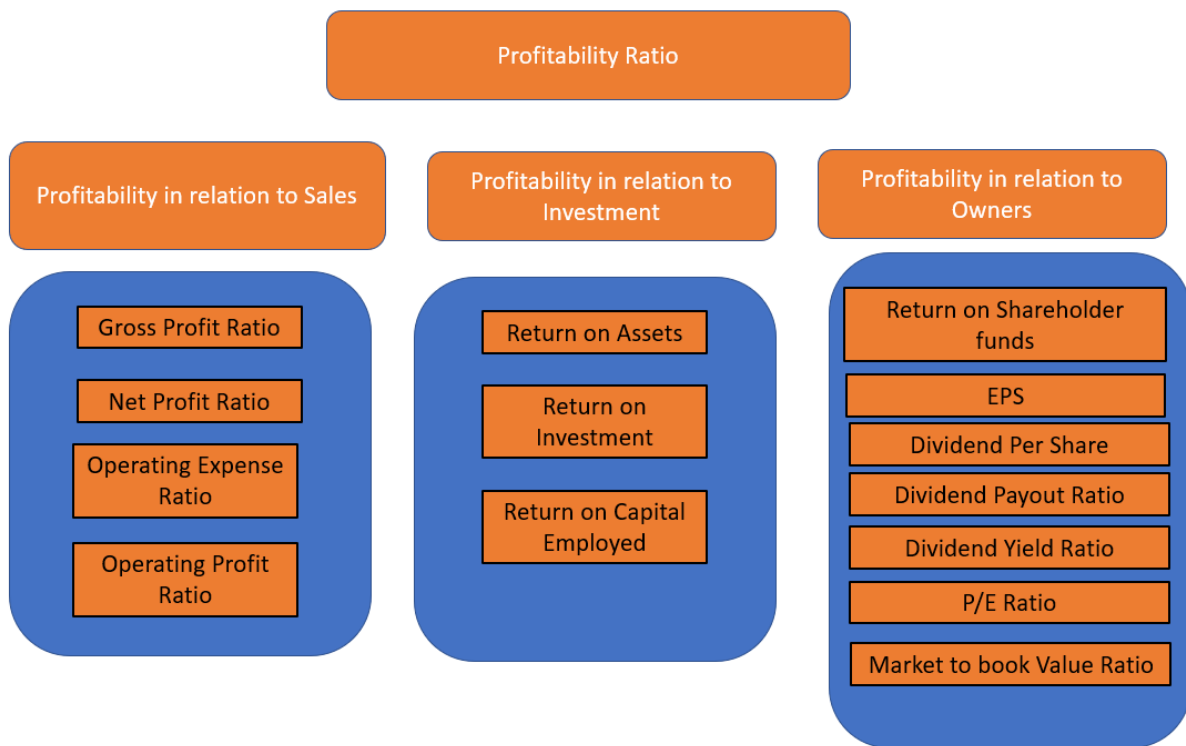| Formula |
|---|
| $$\text{Net current assets turnover} = \frac{\text{Sales}}{\text{Net current assets}}$$ Since Net Current Assets =   Current Assets – Current Liabilities which is equal to **working Capital** this ratio is also called

Working Capital Turnover = Sales/ Working Capital |

- ✓ **Total Asset Turnover**: This ratio shows the firm's ability in generating sales from all financial resources committed to total assets

Formula
$$\text{Total assets turnover} = \frac{\text{Sales}}{\text{Total assets}}$$ **Total Assets = Net Fixed Assets + Current Assets**

- ➢ **Profitability Ratios:** Are calculated to measure the operating efficiency of the company. They are categorised as,
    - ✓ Profitability in relation to **sales**
    - ✓ Profitability in relation to **investment**
    - ✓ Profitability in relation to **Owners**

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                         ┌─────────────────────────────┐
                         │      Profitability Ratio      │
                         └─────────────────────────────┘
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Profitability in relation to Sales	Profitability in relation to Investment	Profitability in relation to Owners
Gross Profit Ratio	Return on Assets	Return on Shareholder funds
Net Profit Ratio	Return on Investment	EPS
Operating Expense Ratio	Return on Capital Employed	Dividend Per Share
Operating Profit Ratio		Dividend Payout Ratio
		Dividend Yield Ratio
		P/E Ratio
		Market to book Value Ratio

➢ **Gross Profit Margin:** Reflects the efficiency with which management produces each unit of product. This ratio indicates the average spread between the cost of goods sold and the sales revenue

Formula
$\text{Gross profit margin} = \dfrac{\text{Sales} - \text{Cost of goods sold}}{\text{Sales}}$ $= \dfrac{\text{Gross profit}}{\text{Sales}}$

✓ High Gross Profit margin means either you have an advantage to sell at higher price or you are managing your cost properly
✓ Low Gross Profit margin means either you are selling at lower price or you are not managing your cost properly
✓ Gross Profit indicates the degree to which the firm can reduce the selling price without resulting in losses from operations

- ➤ **Net Profit Ratio:** Establishes a relationship between net profit and sales and indicates management's efficiency in manufacturing, administering and selling the products

Formula
$$\text{Net profit margin} = \frac{\text{Profit after tax}}{\text{Sales}}$$

- ➤ **Operating Expense Ratio:**

Formula
Operating Expense Ratio = (Cost of Goods Sold + Operating Expenses) / Sales This is also known as **Operating Ratio**

- ➤ **Operating Profit Ratio:**

Formula
Operating Profit Ratio = Operating Profit / Sales Since Operating Profit = EBIT **Operating Profit Ratio = EBIT/Sales**

Interpretation: Operating Profit ratio helps in determining the efficiency of business. An increase in ratio, over the previous period indicates improvement in the operational efficiency (decreases operating expenses) of the business provided gross profit ratio is constant

- ➤ **Note: Operating Profit Ratio = 1 - Operating Expense Ratio**

- ➤ **Return on Investment (ROI):**

Formula
If investment is thought to be total assets then

> **ROI = ROTA = PAT/Total Assets**
> **ROTA Stands for Return on Total Assets**
>
> If investment is thought to be Net assets then
>
> **ROI = RONA = PAT/Net Assets**
> **RONA Stands for Return on Net Assets**

➢ Since, PAT is affected by capital structure because with increase in leverage (debt) the PAT can increase if rate of return given by the firm is more than the interest rate of debt. Thus, for better computation of operating efficiency we use EBIT,

Formula

$$ROI = ROTA = \frac{EBIT(1-T)}{\text{Total assets}} = \frac{EBIT(1-T)}{TA}$$

$$ROI = RONA = \frac{EBIT(1-T)}{\text{Net assets}} = \frac{EBIT(1-T)}{NA}$$

ROTA stands for Return on Total Assets
RONA Stands for Return on Net Assets

➢ Another alternate form of Return on Investment is when just the Operating profit (EBIT) is considered in the Numerator

Formula

ROI = Operating Profit (EBIT)/Net Assets

Since net assets = Capital Employed, we can also mention it as

ROI = Operating Profit (EBIT)/ Capital Employed

Significance of ROI

ROI is concept that measures the profit earned by investing a unit of capital. We can also express it as yield on capital. It let us know whether the funds have been used wisely or not. Suppose funds are borrowed at 8% and ROI is 7.5%, then it means it would have been better not to borrow. The business can survive only when return on investment is more than cost of capital employed

➢ **Return on Assets:**

Formula
If investment is thought to be total assets then **ROI = ROTA = PAT/Total Assets**

- ➤ **Return on Capital Employed (ROCE):**

Formula
If investment is though to be Net assets then **ROI = ROCE = PAT/Net Assets or ROI = PAT/Capital Employed** Sometimes instead of PAT we use EBIT after deducting taxes from it where $$\frac{EBIT(1-T)}{Net\ assets} = \frac{EBIT(1-T)}{NA}$$

- ➤ **Note:** In exam, you can select formula based on below criteria:

When Return on Assets or Return on Total Assets is asked
ROI = ROTA = PAT/Total Assets

When Return on Capital Employed is asked

$$\frac{EBIT(1-T)}{Net\ assets} = \frac{EBIT(1-T)}{NA}$$

When Return on Investment is asked

$$\frac{EBIT(1-T)}{Net\ assets} = \frac{EBIT(1-T)}{NA}$$ OR **Operating Profit (EBIT)/Net Assets**

- ➤ **Return on Equity or Return on Shareholder's Funds:** ROE indicates how well the firm has used the resources of owners

Formula
$$ROE = \frac{Profit\ after\ taxes}{Net\ worth\ (Equity)} = \frac{PAT}{NW}$$ Net Worth is same as Shareholders Funds

➤ **Earnings Per Share (EPS):** Shows the profitability of the firm on a per-share basis

Formula
$$EPS = \frac{\text{Profit after tax}}{\text{Number of shares outstanding}}$$ If preference dividend is paid then   EPS = (PAT – Preference Dividend) / Number of Outstanding shares

➤ **Dividend Per Share (DPS):**

Formula
$$DPS = \frac{\text{Earnings paid to shareholders (dividend)}}{\text{Number of ordinary shares outstanding}}$$

➤ **Dividend Pay-out Ratio:**

Formula
Dividend Payout ratio = DPS/EPS   DPS stands for Dividend Per Share   EPS Stands for EPS per Share

➤ **Dividend Yield Ratio**

Formula
Dividend yield ratio = DPS/Market Price per share   DPS stands for Dividend Per Share   Market price per share means price of the share on the stock exchange

➤ **Price/Earnings Ratio or P/E Ratio:**

Formula

$$\text{Price-earnings ratio} = \frac{\text{Market value per share}}{\text{Earnings per share}} = \frac{\text{MV}}{\text{EPS}}$$

Significance: Price Earnings ratio helps the investor decide whether or not buy the shares of the company at a particular market price. P/E ratio is the most important factor deciding whether one should buy shares or not

➢ **Market to Book Value Ratio:**

Formula

$$\text{M/B ratio} = \frac{\text{Market value per share}}{\text{Book value per share}}$$

➢ **Example:** From the following details, calculate Return on Shareholders' Funds, EPS, Book value per share and P/E ratio if the market price of the share is Rs. 34 and the net profit after tax was Rs. 1,50,000

Share Capital : Equity (Rs.10)	Rs. 4,00,000	Current Liabilities	Rs. 1,00,000
12% Preference	Rs. 1,00,000	Fixed Assets	Rs. 9,50,000
General Reserve	Rs. 1,84,000	Current Assets	Rs. 2,34,000
10% Debentures	Rs. 4,00,000		

Solution: PAT = 1,50,000
Return on Shareholders' Funds = PAT/Shareholder Funds
Now Shareholder Funds = Equity + Preference + General Reserve
                     = 4,00000+1,00000+1,84,000 = 6,84,000
So, Return on Shareholder Funds = 1,50,000/6,84,000 = 21.93%
EPS = (PAT – Preference Dividend) /Number of Shares
Preference Dividend = 12% of 1,00,000 = 12000
Now Number of Shares = Total Value of Shares/ Value per share = 4,00,000/10 = 40,000
EPS = (150,000 – 12000) /40,000 = 3.45
Book Value Per Share = (Share Capital – Preference Capital) / Number of Shares
                 = (6,84,000 - 1,00,000)/40,000
                  = 14.60
P/E = Price of Share / Earning Per Share = 34/3.45 = **9.86** times

- ➢ **Du Point Analysis:** Created by the DuPont Corporation in the 1920s. It examines the return on equity (ROE) analyzing profit margin, total asset turnover, and financial leverage. In a DuPont analysis, the formula for **ROE** is:

> **ROE** = **Profit Margin x Total Asset Turnover x Leverage Factor**
>
> **Or**
>
> **ROE** = **Profit Margin x Total Asset Turnover x Equity Multiplier**
>
> **Or**
>
> **ROE = (Net Income or PAT /Revenues) x (Revenues/Total Assets) x (Total Assets/ Shareholders' Equity)**

- ➢ **Capital Gearing Ratio:** The firm's capital **can either be low geared or high geared**. When a firm's capital is composed of **more common stocks rather than other fixed interest or dividend bearing** funds, it's said to have been **low geared**. On the other hand, when the firm's capital consists of **less common stocks and more of interest or dividend bearing** funds, it's said to be **high geared**

> **Capital Gearing Ratio = Common Stockholders' Equity / Fixed Interest-bearing funds**

- ➢ **Example:** Find the Capital gearing Ratio:

Details	In US $
Shareholders' Equity	300,000
Short term Debt	200,000
Long term Debt	300,000

  Solution: Common Stockholders' Equity = 3,00000
  Fixed Interest-bearing funds = Long term Debt + Short Term Debt = 2,00000 + 3,00000 = 5,00000
  Ratio = 3,00000/5,00000 = 0.6

- ➢ **Debt Service Coverage Ratio:** Is calculated to know the cash profit availability to repay the debt including interest

$$\text{DSCR} = \frac{\text{PAT + Interest + Lease rental + Non-cash expenses}}{\text{Installment (Interest + Principal repayment) + Lease Rental}}$$

- ✓ Acceptable industry norm for a debt service coverage ratio is between **1.5 to 2**
- ✓ **Another Formula used to calculate DSCR:**

> **DSCR = EBIDTA/ (Installment (Interest +Principal) + Lease Payment)**
>
> EBIDTA is basically Earnings before Interest Depreciation Taxes and Amortization

Or

DSCR = Cash Profit available for Debt Service/ (Interest + Principal Payment). In this formula cash profit means the same thing i.e. EBIDTA and Lease Payment is assumed to be zero

➤ Different Users and Their Use of Ratios

Below we have mapped ratios to be used by a particular kind of user. We have indicated the ratios to be used by Long Term-Creditors, Banks granting short term loans and by the shareholders. We have already explained these ratios in the earlier part of this document.

Rations to be used by a Long-Term Creditor	$\text{Interest coverage} = \dfrac{\text{EBIT}}{\text{Interest}}$
	Fixed Charge Covergae Ratio $= \dfrac{\dfrac{\text{EBIT}}{\text{I} + (\text{PR} + \text{PD})}}{(1\text{-}t)}$
	Debt service Coverage Ratio = Cash Profit available for Debt Service/ (Int. + Principal)
Ratios to be used by Bank Granting a Short-Term Loan	Quick ratio = Quick Assets : Current Liabilities or $\dfrac{\text{Quick Assets}}{\text{Current Liabilities}}$
	$\text{Current ratio} = \dfrac{\text{Current assets}}{\text{Current liabilities}}$
Ratios to be used by Shareholders	$\text{EPS} = \dfrac{\text{Profit after tax}}{\text{Number of shares outstanding}}$
	Dividend Payout ratio = DPS/Market Price per share

- ➢ **Use and Limitations of Accounting Ratios**
  1. **Helps in Inter Firm Comparison**: They help us compare performance of 2 different firms
  2. **Helps in Intra -Firm Comparison**: The also help us compare performance of different divisions of the same firm
  3. **Helps in Planning**: Ratio assist management in basic functions of planning , forecasting, and controlling. Ratio provide clues or trends on future problems

- ➢ **Limitation of Ratios**
  1. **Limitations of financial statements**: Ratios are based on information which has been recorded in financial statements. But in financial statements also different companies adopt different accounting policies like different techniques of inventory valuation or depreciation etc. In such a case using ratios to compare two firms having different accounting policies will not be appropriate

  2. **Ratios alone are not adequate**: Ratios alone are not adequate. They need to be seen with lot of other data. For example, a high current ratio does not necessarily mean that firm has good liquidity position because on further analysis we may found that inventory forms a large part of current assets and 80% of the inventory is outdated which is of no use

  3. **Window Dressing**: The term window dressing means manipulation of accounts in such a way as to conceal vital facts and present financial statements in such a way, as to show better position that what actually it is. In such a situation, the ratio might not present the true picture. **For example**, high inventory turnover ratio is considered to be good, but it might have been achieved by price reductions to clear the inventory. In such a situation ratio does not represent the reality

  4. **Price level Changes**: Financial analysis based on accounting ratios will give misleading results if the effect of the changes in price level are not considered. For example, companies set up in different years having plant and machinery of different ages, cannot be compared. This s because the deprecation charged on plant and machinery in case of older company would be much lower figure as compared to the company which has been set up recently. The financial statements of different companies during comparison need to be adjusted

  5. **No fixed standards**: No fixed standards can be laid down for ratios. **For example,** though current ratio is considered to be good if it near about 2 but if a company has arrangement with the bank to provide funds in times of need then even a ratio of slightly above can be considered to be good