12 – ACCOUNTANCY

CHAPTER – 4

RATIO ANALYSIS

I. LIQUIDITY RATIOS

1. Current Ratio:

\[
\text{Current Ratio} = \frac{\text{Current Assets}}{\text{Current Liabilities}}
\]

**Current Assets:**
1. Cash in hand
2. Cash at bank
3. Sundry debtors
4. Bills receivable
5. Short term investment
6. Marketable securities
7. Stock
8. Prepaid expenses

**Current Liabilities:**
1. Bank overdraft
2. Sundry creditors
3. Bills payable
4. Outstanding Expenses

2. Liquid Ratio:

\[
\text{Liquid ratio} = \frac{\text{Liquid Assets}}{\text{Current Liabilities}}
\]

**Liquid Assets:**

\[
\text{Current assets} - (\text{Stock} + \text{Prepaid expenses})
\]

**Current Liabilities:**
1. Bank overdraft
2. Sundry creditors
3. Bills payable
4. Outstanding Expenses

3. Absolute Liquid Ratio:

\[
\text{Absolute Liquid Ratio} = \frac{\text{Absolute Liquid Assets}}{\text{Liquid Liabilities}}
\]

**Absolute Liquid Assets:**
1. Cash
2. Bank
3. Short term investment

**Liquid Liabilities:**

\[
\text{Current liabilities} - \text{Bank overdraft}
\]

II. SOLVENCY RATIOS

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1. **Debt – Equity Ratio:**

\[
\text{Debt – Equity Ratio} = \frac{\text{Total long term debt}}{\text{Shareholders’ funds}}
\]

**Total long term debt:**
1. Debentures
2. Loans
3. Long term loans

**Shareholders’ funds:**
1. Equity share capital
2. Preference share capital
3. Reserves and surplus

2. **Proprietary Ratio:**

\[
\text{Proprietary Ratio} = \frac{\text{Shareholder funds}}{\text{Total tangible assets}}
\]

**Shareholders’ funds:**
1. Equity share capital
2. Preference share capital
3. Reserves and surplus

**Total tangible assets:**
1. All assets (Fixed assets, Current assets) Except Goodwill, Preliminary Exp

### III. PROFITABILITY RATIOS

1. **Gross Profit Ratio:**

\[
\text{Gross profit ratio} = \frac{\text{Gross profit}}{\text{Sales}} \times 100
\]

**Gross profit:**

\[
\text{Gross profit} = \text{Sales} – \text{Cost of goods sold}
\]

\[
\text{Cost of goods sold} = \text{Opening stock} + \text{Purchases} – \text{Closing stock}
\]

\[
\text{Cost of goods sold} = \text{Sales} – \text{Gross profit}
\]

**Sales:**

\[
\text{Sales} = \text{Sales} – \text{Sales return}
\]

(Or)

\[
\text{Sales} = \text{Cash sales} + \text{credit sales} – \text{sales return}
\]

(Or)

\[
\text{Total sales} – \text{sales return}
\]

2. **Net Profit Ratio:**

\[
\text{Net Profit Ratio} = \frac{\text{Net Profit}}{\text{Sales}} \times 100
\]

**Net Profit:**

\[
\text{Net Profit} = \text{Gross Profit} – (\text{Administration Exp, Selling Exp, Distribution Exp, Financial Exp})
\]

**Sales:**

\[
\text{Sales} = \text{Sales} – \text{Sales return}
\]

(Or)

\[
\text{Sales} = \text{Cash sales} + \text{credit sales} – \text{sales return}
\]

3. **Operating Profit Ratio**
Operating Profit Ratio = \frac{\text{Operating Profit}}{\text{Sales}} \times 100

**Operating Profit:Sales:**

\[ \text{Operating Profit} = \text{Net Profit} + \text{Non operating Exp} - \text{Non operating Income} \]
\[ \text{Sales} = \text{Sales} - \text{Sales return} \]

**Non-operating Expenses:**

1. Interest on loan  
2. Loss on sale of all assets  
3. Loss on sale of Furniture  
4. Loss on sale of machinery  
5. Loss on sale of plant  
6. Loss on sale of investments  
7. Financial Expenses

**Non-operating income:**

1. Dividend  
2. Interest received  
3. Profit on sale of all assets  
4. Profit on sale of Furniture  
5. Profit on sale of machinery  
6. Profit on sale of plant  
7. Profit on sale of investments  
8. Interest received from investments

\[ \text{Operating Profit} = \text{Gross Profit} - \text{Operating Expenses} \]

**Operating Ratio**

\[ \text{Operating Ratio} = \frac{\text{Cost of goods sold} + \text{Operating Exp}}{\text{Sales}} \times 100 \]

**Cost of goods sold:**

\[ \text{Cost of goods sold} = \text{Opening stock} + \text{Purchases} - \text{Closing stock} \]
\[ \text{Sales} = \text{Sales} - \text{Sales return} \]

**Sales:**

\[ \text{Sales} = \text{Cash sales} + \text{credit sales} - \text{sales return} \]

**Operating Expenses:**

1. Administration Expenses  
2. Selling Expenses  
3. Distribution Expenses  
4. Office Expenses

IV. **ACTIVITY RATIOS**

1. **Capital Turnover Ratio:**

   \[
   \text{Capital turnover Ratio} = \frac{\text{Sales}}{\text{Capital Employed}}
   \]

   **Capital Employed:**
   1. Equity share capital
   2. Preference share capital
   3. Reserves and surplus return
   4. Long term borrowed funds

   **Sales:**
   \[
   \text{Sales} = \text{Sales} - \text{Sales return}
   \]
   \[
   \text{Sales} = \text{Cash sales + credit sales} - \text{sales return}
   \]

2. **Fixed Assets Turnover Ratio:**

   \[
   \text{Fixed Assets Turnover Ratio} = \frac{\text{Sales}}{\text{Fixed Assets}}
   \]

   **Fixed Assets:**
   \[
   \text{Fixed Assets} = \text{Fixed Assets} - \text{Depreciation}
   \]

   **Fixed Assets:**
   1. Land
   2. Building
   3. Machinery return
   4. Plant
   5. Furniture
   6. Computers

   **Sales:**
   \[
   \text{Sales} = \text{Sales} - \text{Sales return}
   \]
   \[
   \text{Sales} = \text{Cash sales + credit sales} - \text{sales return}
   \]

3. **Stock Turnover Ratio:**

   \[
   \text{Stock Turnover Ratio} = \frac{\text{Cost of Goods Sold}}{\text{Average Stock}}
   \]

   **Cost of goods sold:**
   \[
   \text{Cost of goods sold} = \text{Opening stock + Purchases} - \text{Closing stock}
   \]
   \[
   \text{Cost of goods sold} = \text{Sales} - \text{Gross profit}
   \]

   **Average Stock:**
   \[
   \text{Opening stock + Closing stock} \div 2
   \]

4. **Debtors Turnover Ratio:**

   \[
   \text{Debtors Turnover Ratio} = \frac{\text{Net sales}}{\text{Average debtors}}
   \]

   **Net sales:**
   \[
   \text{Net sales} = \text{Sales} - \text{Sales return}
   \]
   \[
   \text{Net sales} = \text{Cash sales + credit sales} - \text{sales return}
   \]

   **Average debtors:**
   \[
   \text{Average debtors} = \frac{\text{Opening debtors} + \text{Closing debtors}}{2}
   \]
Credit Sales

Debtors Turnover Ratio = \[
\frac{\text{Credit Sales}}{\text{Average Debtors}}
\]

Credit Sales:
Credit Sales = Total sales – Cash sales – Sales return
(In case credit sales is not given, total sales can be taken as credit sales.)

Average Debtors:
Opening Debtors + Closing Debtors
2
(In case Opening debtor and closing debtor is not given, Bills receivable + sundry debtors can be taken as average debtors)

5. Creditors Turnover Ratio:
Creditors Turnover Ratio = \[
\frac{\text{Credit Purchases}}{\text{Average Creditors}}
\]

Credit Purchases:
Credit Purchases = Total Purchases – Cash Purchases – Purchases return Creditors
(In case Credit Purchases is not given, total Purchases can be taken as credit Purchases.)

Average Creditors:
Opening Creditors + Closing Creditors
2
(In case Opening creditors and closing creditors is not given, Bills payable + sundry Creditors can be taken as average creditors)
VALUATION OF GOOD WILL

PARTNERSHIP ACCOUNTS

I. Average Profit Method:

- **Calculation of Average profit method:**
  
  \[
  \text{Average Profit} = \frac{\text{Total Profits}}{\text{No. of Years}}
  \]

- **Calculation of good will:**
  
  \[
  \text{Average Profit} \times \text{No. of Years}
  \]

II. Super Profit Method:

- **Calculation of Average Profit:**
  
  \[
  \text{Average Profit} = \frac{\text{Total Profits}}{\text{No. of Years}}
  \]

- **Calculation of Normal Profit:**
  
  \[
  \text{Normal Profit} = \text{Capital employed} \times \text{Normal Rate of returns}
  \]

- **Calculation of Super Profit:**
  
  \[
  \text{Super profit} = \text{Average Profit} - \text{Normal Profit}
  \]

- **Calculation of Good will :**
  
  \[
  \text{Good will} = \text{Super Profit} \times \text{No. of years of Purchase.}
  \]

INTEREST ON DRAWINGS

I. Product Method:

\[
\text{Interest on Drawing} = \text{Total Drawings} \times \frac{\text{Rate of interest}}{100} \times \frac{1}{12}
\]

**Note:** - If the amount is withdrawn at irregular period of month.
II. **Average Period Method:**

Interest on Drawing = \( \frac{\text{Total Drawings} \times \text{Rate of interest}}{100} \times \frac{\text{Average Period}}{12} \)

**Average Period:**

- **Withdrawn in the beginning of every month**
  
  \[
  \text{Average Period} = \frac{12 + 1}{2} = \frac{13}{2} = 6\frac{1}{2} \text{ month}
  \]

  \[
  = \frac{13}{24} \text{ (or) } \frac{13}{12}
  \]

- **Withdrawn in the middle of every month**
  
  \[
  \text{Average Period} = \frac{11\frac{1}{2} + \frac{1}{2}}{2} = \frac{12}{2} = 6 \text{ month}
  \]

  \[
  = \frac{6}{12} \text{ (or) } \frac{6}{24}
  \]

- **Withdrawn in the End of every month**
  
  \[
  \text{Average Period} = \frac{11 + 0}{2} = \frac{11}{2} = 5\frac{1}{2} \text{ month}
  \]

  \[
  = \frac{5.5}{12} \text{ (or) } \frac{11}{24}
  \]