

# CH. - RATIO ANALYSIS

## RATIO:

A ratio is defined as “the indicated quotient of two mathematical expressions” and as “the relationship between two or more things”.

### □ ACCOUNTING RATIO / FINANCIAL RATIO: (NATURE OF RATIO ANALYSIS)

“The relationship between two accounting figures, expressed mathematically, is known as a financial ratio/accounting ratio”. Ratios help to summaries’ the large quantities of financial data and to make ‘qualitative judgement’ about the firm’s financial performance.

For example, when current assets are divided by current liabilities the ratio indicates a relationship - a quantified relationship between current assets and current liabilities.

### □ MODES OF EXPRESSION

There are three different ways of expressing ratios:

- (i) Pure Ratio - \_\_\_: \_\_\_
- (ii) Percentage Ratio - %
- (iii) Rate - \_\_\_times

### □ TRADITIONAL CLASSIFICATION

#### I. Balance Sheet Ratios

- |                     |                               |
|---------------------|-------------------------------|
| 1 Current Ratio     | 4 Capital Gearing Ratio       |
| 2 Liquid Ratio      | 5 Debt-Equity Ratio           |
| 3 Proprietary Ratio | 6 Stock-working capital Ratio |

#### II. Revenue Statement Ratios

- |                      |                                     |
|----------------------|-------------------------------------|
| 1 Gross Profit Ratio | 4 Operating Profit/Net Profit Ratio |
| 2 Expenses Ratio     | 5 Stock turnover Ratio              |
| 3 Operating Ratio    |                                     |

#### III. Composite Ratio

- |                              |                               |
|------------------------------|-------------------------------|
| 1 Return on Capital Employed | 2 Return on Proprietor’s Fund |
| 3 Return on Equity Capital   | 4 Earning per share (E.P.S.)  |
| 5 Dividend pay-out ratio     | 6 Price Earning Ratio         |
| 7 Debt-Service Ratio         | 8 Debtors Turnover            |
| 9 Creditors Turnover         |                               |

**RATIO AT A GLANCE (LET US RECAPITULATE)**

Ratio	Formula	Component	Standard	
Current Ratio	$\frac{\text{Current Assets}}{\text{Current liabilities}} = \_:\_$	<p><b>Current Assets :</b> Debtors, stock, accrued income, pre-payments, B/R, Cash &amp; Bank, Adv. given.</p> <p><b>Current Liabilities:</b> Creditors, B/P, O/s Exp., unclaimed dividend, unclaimed dividend, Prov. for taxation, proposed dividend, Bank Overdraft</p>	2:1	Short term Solvency
Quick Ratio/ Liquid Ratio/ Acid test Ratio	$\frac{\text{Quick Assets}}{\text{Quick Liabilities}} = \_:\_$	<p><b>Quick Assets</b> = Current Assets Less (Stock &amp; Prepayments)</p> <p><b>Quick Liabilities</b> = Current Liabilities less Bank overdraft</p>	1:1	Immediate Solvency
Stock to Working Capital	$\frac{\text{Stock}}{\text{Working Capital}} = \_ \%$	<p><b>Stock</b> = Closing Stock</p> <p><b>Working Capital</b> = Current Assets Less Current Liabilities</p>	Should be Less than 100% or 1:1	Investment in Stocks
Proprietary Ratio	$\frac{\text{Proprietor's Funds (SHF)}}{\text{Total Assets}} = \_ \%$	<p><b>Proprietors' Funds</b> = Preference Capital + Equity Capital + Reserve &amp; Surplus - Misc. Expenditures.</p> <p><b>Total Assets</b> = Fixed Assets + Investments + Current Assets.</p>	65% to 75%	Long term stability

<p>Debt Equity Ratio</p>	$\frac{\text{Debt}}{\text{Equity}}$ <p><i>Or</i></p> $\frac{\text{Borrowed funds}}{\text{Shareholders' funds}}$ <p>= __: __</p>	<p><b>Debt:</b> Debentures , Term loans, Public Deposits</p> <p><b>Equity:</b> Equity Capital, Reserve and Surplus, Pref. Share Cap. less Fictitious assets.</p>	<p>1<sup>st</sup> formula 2:1</p> <p>2<sup>nd</sup> formu la 0.65 to 0.75</p>	<p>Long term financial policy</p>
<p>Capital Gearing Ratio</p>	$\frac{\text{Borrowed funds} + \text{PSC}}{\text{Shareholders' funds} - \text{PSC}}$ <p>= __ : __</p>	<p>Pref. Cap. + Debentures + Term Loans</p> <p>Eq. Share Cap. + Reserve &amp; Surplus</p>	<p>&gt;1 High &lt;1 Low</p>	<p>Capital Gearing Capita Structue</p>
<p>Gross Profit Ratio</p>	$\frac{\text{Gross Profit}}{\text{Net sales}}$ <p>= __%</p>	<p>Gross profit = Net Sales less Cost of goods sold</p>		<p>Profitability</p>
<p>Operating Ratio</p>	$\frac{\text{COGS} + \text{Operating Exp.}}{\text{Net sales}}$ <p>= __%</p>	<p>COGS = Sales - GP</p> <p>Operating Exp. = Office + Selling + Finance</p>		<p>Operational Profitability</p>
<p>Expenses Ratio</p>	$\frac{\text{Expenses}}{\text{Net sales}}$ <p>= __%</p>	<p>Respective exp. viz. Office, Selling, &amp; Finance expenses</p>		<p>Operational Profitability</p>

Net Profit Ratio	$\frac{\text{Net Profit}}{\text{Net sales}}$ $= \_ \%$	Operating NP, NPBT, NPAT		Profitability
Stock Turnover Ratio	$\frac{\text{COGS}}{\text{Average Stock}}$ $= \_ \text{ times}$	COGS = Sales - GP Avg. stock = Op. + Cl. St.		Operational Efficiency & Investment in stock

Return on capital Employed	$\frac{\text{NPBIT}}{\text{Total fund employed}}$ $= \_ \%$	NPBIT = NPBT + Int. Total funds Employed = SHF + BF OR FA + Invt. + WC	To be compared with similar ratio of other companies	Profitability And overall efficiency
Return on SHF/ Net Worth	$\frac{\text{NPAT}}{\text{Shareholders' funds}}$ $= \_ \%$	NPAT = NPBT - TAX SHF = SC + R&S - Misc. exp.	(same as above)	Profit Earning Capacity
Return on Equity capital	$\frac{\text{NPAT} - \text{Pref. Dividend}}{\text{Equity shareholders' funds}}$ $= \_ \%$	ESHF = SHF - Pref, cap.		Earning capacity on equity share
Earnings Per Share	$\frac{\text{NPAT} - \text{Pref. dividend}}{\text{No. of Equity shares}}$ $= ₹ \text{ /-}$			Earning Capacity on Equity share
Price Earning Ratio (P/E)	$\frac{\text{MPS}}{\text{EPS}}$ $= \_ \text{ --- \%}$			Earning per share on Market price
Dividend Payout Ratio	$\frac{\text{Dividend per share}}{\text{Earning per share}}$ $= \_ \text{ --- \%}$			Internal strength & dividend policy
Debt Service Ratio	$\frac{\text{EBITDA}}{\text{Interest + Instalment}}$ $= \_ \text{ --- times}$			Capacity of paying debt



### FUNCTIONAL CLASSIFICATION OF RATIO

OBJECTIVES OF ANALYSIS	RATIO TO BE COMPILED/COMPUTED
<b>1. Financial Stability / Solvency Position :</b> a. Immediately Solvency b. Short-term Solvency c. Investment in Stock d. Long-term Solvency and Stability	A Quick Ratio B Current Ratio C Stock-working Capital D Proprietary Ratio
<b>2. Operating or trading efficiency</b> (Profitability relating to sales)	A Gross Profit Ratio B Operating Ratio C Operating Net Profit ratio D Expenses Ratio
<b>3. Overall profitability</b> or (Profitability as related to investments)	A Return on total Resources/ Capital employed B Return on proprietor's funds C Return on equity capital D E.P.S. E Dividend payout ratio
<b>4. Capital Structure</b>	A Capital Gearing B Debt-Equity Ratio C Proprietary Ratio
<b>5. Over-trading or Under-trading</b>	A Proprietary Ratio B Current Ratio C Stock Turnover Ratio D Liquid Ratio
<b>6. Overall efficiency</b>	A Return on Capital employed B Return on Proprietors' Fund C Stock Turnover Ratio D Debtors turnover Ratio E Debt-service Ratio
<b>7. Financial Management</b>	A Stock - Working Capital Ratio B Stock Turnover Ratio C Debtors Turnover Ratio

D	Creditors Turnover Ratio
E	Capital gearing Ratio
F	Debt - Service Ratio
G	Dividend Payout Ratio
H	Proprietary Ratio
I	Current Ratio
J	Liquid Ratio

### Important Equations

- 1 Gross Sales = Cash Sales + Credit Sales
- 2 Net Sales = Gross Sales - Sales Returns
- 3 Cost of Goods sold = Opening Stock + Purchase + Direct Exps. - Closing stock OR  
Cost of Goods sold = (Net) sales - Gross profit
- 4 Gross Profit = (Net) sales - Cost of goods sold
- 5 Sales = Cost of goods sold + Gross Profit
- 6 Operating Net profit (Before interest) = Gross Profit - Operating Expenses  
(Excluding interest on loans, debentures etc.)
- 7 Operating Net profit (after Interest) = GP - Operating Expenses
- 8 Operating Expenses = Administrative expenses + Selling & Distribution expenses + Finance expenses
- 9 Operating Cost = Sales - Operating Net Profit
- 10 Net Profit = Operating N.P. + Non operating Income - (before interest & tax) Non Operating Expenses & Losses + Interest
- 11 Cost of goods sold = R.M. consumed + wages + factory O.H. + Opening stock of W.I.P.  
(For Mfg. Concern) - Closing stock of W.I.P. + Opening stock of finished goods - Closing stock of finished goods
- 12 Raw Material consumed = Opening stock of Materials + Purchase of Raw Materials + Expenses on purchase of Raw Materials - Closing stock of Raw Materials

- 13 Total Capital Employed = Total Net Assets
- 14 i) T.C. / T.N.A. = Proprietors' Funds (Net worth) + Loans & Advance  
 = Long term Assets (i.e. Fixed Assets including Investments)  
 + Working Capital  
 = Fixed Assets + Working Capital
- ii) Proprietor's Fund = Paid up share capital + Reserves - Misc. Expenses & Loss
- 15 A) Working Capital = Current Assets - Current Liabilities  
 B) Current Assets = Working Capital + Current liabilities
- 16 Liquid / Quick Assets = Current Assets - Stock & prepayments  
 Stock = Current Assets - Liquid Assets  
 Current Assets = Quick Assets + Stock & prepayments
- 17 Liquid or Quick Liabilities = Current Liabilities - Bank O.D.  
 Bank O.D. = Current Liabilities - Quick Liabilities  
 C.L. = Quick Liabilities + Bank O.D.
- 18 Total Assets = F.A. + Investment + C.A.