FINANCIAL RATIO ANALYSIS

Financial ratio is a quantitative relationship between two items/variables. Financial ratios can be broadly classified into three groups:

(1).Liquidity Ratio

(2). Leverage/Capital Structure Ratio
(3). Profitability Ratio
(1). Liquidity ratios

Liquidity refers to the ability of a firm to meet its financial obligations in the short-term which is less than a year. Certain ratios which indicate the liquidity of a firm are: (i) Current Ratio, (ii) Acid Test Ratio, (iii) Turnover Ratios. It is based upon the relationship between current assets and current liabilities.

(i) Current ratio:

$$= \frac{\text{Current Assets}}{\text{Current liabilities}}$$

The current ratio measures the ability of the firm to meet its current liabilities from the current assets. Higher the current ratio, greater the short-term solvency (i.e. larger is the amount of rupees available per rupee of liability).

(ii) Acid-test Ratio:

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

Quick assets are defined as current assets excluding inventories and prepaid expenses. The acid-test ratio is a measurement of firm's ability to convert its current assets quickly into cash in order to meet its current liabilities. Generally speaking 1:1 ratio is considered to be satisfactory.

(iii) Turnover Ratios:

Turnover ratios measure how quickly certain current assets are converted into cash or how efficiently the assets are employed by a firm. The important turnover ratios are: -Inventory Turnover Ratio, -Debtors Turnover Ratio, Average Collection Period, Fixed Assets Turnover and Total Assets Turnover

(a) Inventory Turnover Ratio:

$$= \frac{\text{Cost of Good Sold}}{\textit{Average Inventoty}}$$

Where, the cost of goods sold means sales minus gross profit. 'Average Inventory' refers to simple average of opening and closing inventory. The inventory turnover ratio tells the efficiency of inventory management. Higher the ratio, more the efficient of inventory management.

(b) Debtors' Turnover Ratio:

$$= \frac{\text{Net Sales}}{\textit{Average Accounts Receivable (Debtors)}}$$

The ratio shows how many times accounts receivables (debtors) turn over during the year. If the figure for net credit sales is not available, then net sales figure is to be used. Higher the debtors turnover, the greater the efficiency of credit management.

(c) Average Collection Period =

$$= \frac{\text{365 Days}}{\textit{Debtors Turnover}}$$

Average Collection Period represents the number of days' worth credit sales that is locked in debtors (accounts receivable).

(d)Fixed Assets Turnover ratio:

This ratio measures sales per rupee of investment in fixed assets. In other words, how efficiently fixed assets are employed. Higher ratio is preferred. It is calculated as follows:

$$= \frac{\text{Net Sales}}{\textit{Net Fixed Assets}}$$

(e) Total Assets Turnover Ratio

This ratio measures how efficiently all types of assets are employed. It is calculated as fallows:

$$= \frac{\text{Net Sales}}{\textit{Average Total Assets}}$$

2. Leverage/Capital structure ratios

Long term financial strength or soundness of a firm is measured in terms of its ability to pay interest regularly or repay principal on due dates or at the time of maturity. Such long term solvency of a firm can be judged by using leverage or capital structure ratios. Broadly there are two sets of ratios: First, the ratios based on the relationship between borrowed funds and owner's capital which are computed from the balance sheet. Some such ratios are: Debt to Equity and Debt to Asset ratios. The second set of ratios which are calculated from Profit and Loss Account are: The interest coverage ratio and debt service coverage ratio

(i)Debt Equity Ratio

This ratio reflects relative contributions of creditors and owners to finance the business. It is calculated as fallows:

$$= \frac{\textit{Debt}}{\text{Equity}}$$

The desirable/ ideal proportion of the two components (high or low ratio) varies from industry to industry.

(ii). Debt Assets Ratio

In this ratio total debt comprises of long term debt plus current liabilities and total assets comprise of permanent capital plus current liabilities. It is calculated as fallows:

$$= \frac{\textit{Total Debt}}{\text{Total Assets}}$$

The second set or the coverage ratios measure the relationship between proceeds from the operations of the firm and the claims of outsiders.

(iii) Interest Coverage ratio:

Earnings Before Interest and Taxes

Higher the interest coverage ratio better is the firm's ability to meet its interest burden. The lenders use this ratio to assess debt servicing capacity of a firm. *(iv)Debt Service Coverage Ratio (DSCR): This Ratio a more comprehensive and apt to compute debt service capacity of a firm. Financial institutions calculate the average DSCR for the period during which the term loan for the project is repayable. The Debt Service Coverage Ratio is defined as follows:*

$$\frac{\text{Profit After Tax} + \textit{Depreciation} + \textit{Other Non-cash Expenditure} + \textit{Interest on term loan}}{\textit{Repayment of term Loan}}$$

3. Profitability ratios:

Profitability and operating/management efficiency of a firm is judged mainly by the following profitability ratios:

(i) Gross Profit Ratio:

$$= \frac{\textit{Goss Profit}}{\text{Net Sales}}$$

(ii) Net Profit Ratio:

$$= \frac{\text{Net Profit}}{\text{Net Sales}}$$

Some of the profitability ratios related to investments are:

(iii) Return on Total Assets:

$$= \frac{\text{Net income}}{\textit{Average Total Assets}}$$

(iv) Return on Capital Employed:

$$= \frac{\text{Net Profit after tax}}{\textit{Capital Employed}}$$

(Here, Capital Employed = Fixed Assets + Current Assets -Current Liabilities)

(v) Return on Shareholders' Equity:

$$= \frac{\text{Net Profit after Tax (PAT)}}{\text{Average Total Shareholder's Equity or net Worth}}$$

(Net worth includes Shareholders' equity capital plus reserves and surplus)

NOTE:-A common (equity) shareholder has only a residual claim on profits and assets of a firm, i.e., only after claims of creditors and preference shareholders are fully met, the equity shareholders receive a distribution of profits or assets on liquidation. A measure of his well being is reflected by return on equity. There are several other measures to calculate return on shareholders' equity: One of them is *Earnings per Share (EPS): EPS measures the profit available to the equity shareholders per share, that is, the amount that they can get on every share held. It is calculated by dividing the profits available to the shareholders by number of outstanding shares. The profits available to the ordinary shareholders are arrived at by net profits after taxes and preference dividend.*

It indicates the value of equity in the market.

***Illustrations*:**

Balance Sheet of ABC Co. Ltd. as on March 31, 2006 (Rs. in Crore)

Liabilities	Amount	Assets		Amount
Share Capital (1,60,00,000 equity shares of Rs.10 each)	16.00	Fixed Assets (net)		60.00
		Current Assets:		
		Cash & Bank	0.20	
Reserves & Surplus	22.00	Debtors	11.80	
Secured Loans	21.00	Inventories	10.60	
Unsecured Loans	25.00	Pre-paid expenses	0.80	23.40
Current Liabilities & Provision	16.00	Investments		16.60
Total	100.00	Total		100.00

Profit & Loss Account of ABC Co. Ltd. for the year ending on March 31, 2008: (Rupees in Crores)

Particulars	Amount	Particulars	Amount
Opening Stock	13.00	Sales (net)	105.00
Purchases	69.00	Closing Stock	15.00
Wages and Salaries	12.00		

Other Mfg. Expenses	**10.00**		
Gross Profit	**16.00**		
Total	**120.00**	**Total**	**120.00**
Administrative and Personnel Expenses	**1.50**	**Gross Profit**	**16.00**
Selling and Distribution Expenses	**2.00**		
Depreciation	**2.50**		
Interest	**1.00**		
Net Profit	**9.00**		
Total	**16.00**	**Total**	**16.00**
Income Tax	**4.00**	**Net Profit**	**9.00**
Equity Dividend	**3.00**		
Retained Earning	**2.00**		
Total	**9.00**	**Total**	**9.00**

Current Ratio = Current Assets / Current Liabilities = 23.40/16.00 = 1.46

Quick Ratio = Quick Assets / Current Liabilities =Current Assets-(inventory + prepaid expenses)/Current Liabilities = [23.40-(10.60+0.8)]/16.00 = 12.00/16.00 = 0.75

Inventory Turnover Ratio = Cost of goods sold/Average Inventory = (Net Sales-Gross Profit)/ [(opening stock + closing stock)/2] = (105-16)/ [(15+13)/2] = 89/14 = 6.36

Debtors Turnover Ratio = Net Sales/Average account receivables (Debtors) =105/11.80 =8.8983

Average Collection period = 365 days / Debtors turnover = 365 days/8.8983 = 41 days

Fixed Assets Turnover ratio = Net Sales / Net Fixed Assets = 105/60 = 1.75

Debt to Equity Ratio = Debt/ Equity = (21.00+25.00)/(16.00+22.00) = 46/38 = 1.21

Gross Profit Ratio = Gross Profit/Net Sales = 16.00/105.00 = 0.15238 or 15.24%

Net Profit Ratio = Net Profit / Net Sales = 9/105.00 = 0.0857 or 8.57 %

Return on Shareholders' Equity = Net Profit after tax/Net worth = 5.00/(16.00+22.00) =0.13157 or 13.16%