ANALAYSIS OF FINANCIAL STATEMENTS,INCOME STATEMENTS AND BALANCE SHEET

(SIMPLE RATIOS)

Financial statements prepared by a business enterprise in the corporate sector are published and are available to the decision-makers. These statements provide financial data which require analysis, comparison and interpretation for taking decision by the external as well as internal users of accounting information. This act is termed as financial statement analysis. It is regarded as an integral and important part of accounting.

Meaning of Accounting Ratios:

A ratio is a mathematical number calculated as a reference to relationship of two or more numbers and can be expressed as a fraction, proportion, percentage and a number of times. When the number is calculated by referring to two accounting numbers derived from the financial statements, it is termed as accounting ratio.

Objectives of financial ratios:

1. To know the areas of the business that needs more attention.

2. To know about the potential areas that can be improved with the effort in the desired direction.

3. To provide a deeper analysis of the profitability, liquidity, solvency and efficiency levels in the business.

4. To provide information for making cross-sectional analysis by comparing the performance with the best industry standards.

5. To provide information derived from financial statements useful for making projections and estimates for the future.

Advantages of Ratio Analysis:

There are many advantages derived from ratio analysis. These are summarized as follows:

1. ***Helps to understand efficacy of decisions:*** The ratio analysis helps you to understand whether the business firm has taken the right kind of operating, investing and financing decisions. It indicates how far they have helped in improving the performance.

2. ***Simplify complex figures and establish relationships:*** Ratios help in simplifying the complex accounting figures and bring out their relationships. They help summarize the financial information effectively and assess the managerial efficiency, firm's credit worthiness, earning capacity, etc.

3. ***Helpful in comparative analysis:*** The ratios are not be calculated for one year only. When many year figures are kept side by side, they help a great deal in exploring the trends visible in the business. The knowledge of trend helps in making projections about the business which is a very useful feature.

4. ***Identification of problem areas:*** Ratios help business in identifying the problem areas as well as the bright areas of the business. Problem areas would need more attention and bright areas will need polishing to have still better results.

5. ***Enables SWOT analysis:*** Ratios help a great deal in explaining the changes occurring in the business. The information of change helps the management a great deal in understanding the current threats and opportunities and allows business to do its own SWOT (Strength-Weakness-Opportunity-Threat) analysis.

6. ***Various comparisons:*** Ratios help comparisons with certain bench marks to assess as to whether firm's performance is better or otherwise. For this purpose, the profitability, liquidity, solvency, etc. of a business, may be compared.

Limitations of Ratio Analysis:

The limitations of ratio analysis which arise primarily from the nature of financial statements are as under:

1. ***Limitations of Accounting Data:*** Accounting data give an unwarranted impression of precision and finality. In fact, accounting data "reflect a combination of recorded facts, accounting conventions and personal judgments which affect them materially. For example, profit of the business is not a precise and final figure. It is merely an opinion of the accountant based on application of accounting policies. The soundness of the judgment necessarily depends on the competence and integrity of those who make them and on their adherence to Generally Accepted Accounting Principles and Conventions". Thus, the financial statements may not reveal the true state of affairs of the enterprises and so the ratios will also not give the true picture.

2. ***Ignores Price-level Changes:*** The financial accounting is based on stable money measurement principle. It implicitly assumes that price level changes are either non-existent or minimal. But the truth is otherwise. We are normally living in inflationary economies where the power of money declines constantly. A change in the price-level makes analysis of financial statement of different accounting years meaningless because accounting records ignore changes in value of money.

3. ***Ignore Qualitative or Non-monetary Aspects:*** Accounting provides information about quantitative (or monetary) aspects of business. Hence, the ratios also reflect only the monetary aspects, ignoring completely the non-monetary (qualitative) factors.

4. ***Variations in Accounting Practices:*** There are differing accounting policies for valuation of inventory, calculation of depreciation, treatment of intangibles Assets definition of certain financial variables etc., available for various aspects of business transactions. These variations leave a big question mark on the cross-sectional analysis. As there are variations in accounting practices followed by different business enterprises, a valid comparison of their financial statements is not possible.

5. ***Forecasting:*** Forecasting of future trends based only on historical analysis is not feasible. Proper forecasting requires consideration of non-financial factors as well.

Types of Ratios:

1. ***Liquidity Ratios:*** To meet its commitments, business needs liquid funds. The ability of the business to pay the amount due to stakeholders as and when it is due is known as liquidity, and the ratios calculated to measure it are known as 'Liquidity Ratios'. These are essentially short-term in nature.

2. ***Solvency Ratios:*** Solvency of business is determined by its ability to meet its contractual obligations towards stakeholders, particularly towards external stakeholders, and the ratios calculated to measure solvency position are known as 'Solvency Ratios'. These are essentially long-term in nature.

3. ***Activity (or Turnover) Ratios:*** This refers to the ratios that are calculated for measuring the efficiency of operations of business based on effective utilization of resources. Hence, these are also known as 'Efficiency Ratios'.

4. ***Profitability Ratios:*** It refers to the analysis of profits in relation to revenue from operations or funds (or assets) employed in the business and the ratios calculated to meet this objective are known as 'Profitability Ratios'.

Liquidity Ratios:

Liquidity ratios are calculated to measure the short-term solvency of the business, i.e. the firm's ability to meet its current obligations. These are analyzed by looking at the amounts of current assets and current liabilities in the balance sheet. The two ratios included in this category are current ratio and liquidity ratio.

Current Ratio:

Current ratio is the proportion of current assets to current liabilities. It is expressed as follows:

Current Ratio = Current Assets: Current Liabilities

or

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

Current assets include current investments, inventories, trade receivables (debtors and bills receivables), cash and cash equivalents, short-term loans and advances and other current assets such as prepaid expenses, advance tax and accrued income, etc.

Current liabilities include short-term borrowings, trade payables (creditors and bills payables), other current liabilities and short-term provisions

Significance: It provides a measure of degree to which current assets cover current liabilities. The excess of current assets over current liabilities provides a measure of safety margin available against uncertainty in realization of current assets and flow of funds. The ratio should be reasonable. It should

neither be very high or very low. Both the situations have their inherent disadvantages. A very high current ratio implies heavy investment in current assets which is not a good sign as it reflects under utilization or improper utilization of resources. A low ratio endangers the business and puts it at risk of facing a situation where it will not be able to pay its short-term debt on time. If this problem persists, it may affect firm's credit worthiness adversely. **Normally, it is safe to have this ratio within the range of 2:1.**

EXAMPLE:

Calulate Current Ratio from the following 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:

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

Current Assets = Inventories + Trade receivables + Advance tax + Cash and cash equivalents
= Rs. 50,000 + Rs. 50,000 + Rs. 4,000 + Rs. 30,000
= Rs. 1,34,000

Current Liabilities = Trade payables + Short-term borrowings
= Rs. 1,00,000 + Rs. 4,000
= Rs. 1,04,000

$$\text{Current Ratio} = \frac{\text{Rs.}1,34,000}{\text{Rs.}1,04,000} = 1.29:1$$

Quick Ratio

It is the ratio of quick (or liquid) asset to current liabilities. It is expressed as

Quick ratio = Quick Assets: Current Liabilities

or

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

The quick assets are defined as those assets which are quickly convertible into cash. While calculating quick assets we exclude the inventories at the end and other current assets such as prepaid expenses, advance tax, etc., from the current assets. Because of exclusion of non-liquid current assets it is

considered better than current ratio as a measure of liquidity position of the business. It is calculated to serve as a supplementary check on liquidity position of the business and is therefore**, also known as 'Acid-Test Ratio'.**

Significance: The ratio provides a measure of the capacity of the business to meet its short-term obligations without any flaw. **Normally, it is advocated to be safe to have a ratio of 1:1** as unnecessarily low ratio will be very risky and a high ratio suggests unnecessarily deployment of resources in otherwise less profitable short-term investments.

EXAMPLE:

Calculate 'Liquidity Ratio' from the following information:

Current liabilities	=	Rs. 50,000
Current assets	=	Rs. 80,000
Inventories	=	Rs. 20,000
Advance tax	=	Rs. 5,000
Prepaid expenses	=	Rs. 5,000

$$\text{Liquidity Ratio} = \frac{\text{Liquid Assets}}{\text{Current Liabilities}}$$

Liquidity Assets = Current assets –(Inventories + Prepaid expenses + Advance tax)

= Rs. 80,000 – (Rs. 20,000 + Rs. 5,000 + Rs. 5,000)

= Rs. 50,000

$$\text{Liquidity Ratio} = \frac{\text{Rs. } 50,000}{\text{Rs. } 50,000} = 1:1$$

Solvency Ratios:

The persons who have advanced money to the business on long-term basis are interested in safety of their periodic payment of interest as well as the repayment of principal amount at the end of the loan period. Solvency ratios are calculated to determine the ability of the business to service its debt in the long run. The following ratios are normally computed for evaluating solvency of the business.

1. Debt-Equity Ratio;
2. Debt to Capital Employed Ratio;
3. Proprietary Ratio;
4. Total Assets to Debt Ratio;

Debt-Equity Ratio

Debt-Equity Ratio measures the relationship between long-term debt and equity. If debt component of the total long-term funds employed is small, outsiders feel more secure. From security point of view, capital structure with less debt and more equity is considered favorable as it reduces the chances of bankruptcy. **Normally, it is considered to be safe if debt equity ratio is 2: 1**. However, it may vary from industry to industry. It is computed as follows:

$$\text{Debt-Equity Ratio} = \frac{\text{Long – term Debts}}{\text{Shareholders' Funds}}$$

Where:

Shareholders' Funds (Equity) = Equity Share Capital +Preference Share Capital+ Reserves and Surplus

EXAMPLE "A":

From the following balance sheet of a company, calculate Debt-Equity Ratio:

Balance Sheet

Particulars	Note No.	Rs.
I. Equity and Liabilities		
1. Shareholders' funds		
a) Share capital		10,00,000
b) Reserves and surplus	1	1,00,000
2. Non-Current Liabilities		
Long-term borrowings		1,50,000
3. Current Liabilities		1,50,000
		14,00,000
II. Assets		
1. Non-Current Assets		
a) Fixed assets		
- Tangible assets	2	11,00,000
2. Current Assets		
a) Inventories		1,00,000
b) Trade receivables		90,000
c) Cash and cash equivalents		1,10,000
		14,00,000

Notes to Accounts

	Rs.
1. Share Capital	
Equity Share Capital	8,00,000
Preference Share Capital	2,00,000
	10,00,000

Fixed Assets

	Rs.
2. Tangible Assets:	
Plant and Machinery	5,00,000
Land and Building	4,00,000
Motor Car	1,50,000
Furniture	50,000
	11,00,000

Solution:

$$\text{Debt-Equity Ratio} = \frac{\text{Long - term Debts}}{\text{Equity (Shareholders'Funds)}}$$

Long-term Debts = Long-term Borrowings
= Rs. 1,50,000

Equity = Share capital + Reserves and surplus
= Rs. 10,00,000 + Rs. 1,00,000 = Rs. 11,00,000

$$\text{Debt Equity Ratio} = \frac{1,50,000}{11,00,000} = 0.136 : 1$$

Debt to Capital Employed Ratio

The Debt to capital employed ratio refers to the ratio of long-term debt to the total of external and internal funds (capital employed or net assets). It is computed as follows:

Debt to Capital Employed Ratio = Long-term Debt/Capital Employed

Where:

Capital employed = long-term debt + shareholders' funds.

In example A, capital employed shall work out to Rs. 1,50,000 + Rs. 11,00,000 = Rs. 12,50,000.

And the Debt to capital employed ratio as Rs. 1, 50,000/Rs. 12, 50,000 = 0.12:1.

Proprietary Ratio

Proprietary ratio expresses relationship of proprietor's (shareholders) funds to capital employed and is calculated as follows:

Proprietary Ratio = Shareholders, Funds/Capital employed

Based on data of Illustration A, it shall be worked out as follows:

Rs. 11,00,000/Rs. 12,50,000 = 0.88: 1

Total Assets to Debt Ratio

This ratio measures the extent of the coverage of long-term debts by assets. It is calculated as

Total assets to Debt Ratio = Total assets/Long-term debts

Taking the data of Illustration A, this ratio will be worked out as follows: Rs. 14,00,000/Rs. 1,50,000 = 9.33 : 1

Activity (or Turnover) Ratios

These ratios indicate the speed at which, activities of the business are being performed. The activity ratios express the number of times assets employed, or, for that matter, any constituent of assets, is turned into sales during an accounting period. Higher turnover ratio means better utilisation of assets and signifies improved efficiency and profitability, and as such is known as efficiency ratios. The important activity ratios calculated under this category are

1. Inventory Turnover;
2. Trade receivable Turnover;
3. Trade payable Turnover;
4. Fixed assets Turnover; and
5. Working capital Turnover.

Inventory Turnover Ratio

It determines the number of times inventory is converted into revenue from operations during the accounting period under consideration. It expresses the relationship between the cost of revenue from operations and average inventory. The formula for its calculation is as follows:

Inventory Turnover Ratio = Cost of Revenue from Operations / Average Inventory

Where:

Average inventory refers to arithmetic average of opening and closing inventory, and

The cost of revenue from operations (COGS) means revenue from operations less gross profit.

EXAMPLE:

From the following information, calculate inventory turnover ratio:

		Rs.
Revenue from operations	=	4,00,000
Average Inventory	=	55,000
Gross Profit Ratio	=	10%

Solution:

Revenue from operations	=	Rs. 4,00,000
Gross Profit	=	10% of Rs. 4,00,000 = Rs. 40,000
Cost of Revenue from operations	=	Revenue from operations – Gross Profit
	=	Rs. 4,00,000 – Rs. 40,000 = Rs. 3,60,000

Trade Receivables Turnover Ratio

It expresses the relationship between credit revenue from operations and trade receivable. It is calculated as follows:

Trade Receivable Turnover ratio = Net Credit Revenue from Operations/Average Trade Receivable

Where

Average Trade Receivable =

(Opening Debtors and Bills Receivable + Closing Debtors and Bills Receivable)/2

EXAMPLE:

Calculate the Trade receivables turnover ratio from the following information:

	Rs.
Total Revenue from operations	4,00,000
Cash Revenue from operations	20% of Total Revenue from operations
Trade receivables as at 1.4.2014	40,000
Trade receivables as at 31.3.2015	1,20,000

Solution:

Trade Receivables Turnover Ratio	=	$\frac{\text{Net Credit Revenue from Operations}}{\text{Average Trade Receivables}}$
Credit Revenue from operations	=	Total revenue from operations – Cash revenue from operations
Cash Revenue from operations	=	20% of Rs. 4,00,000
	=	Rs. 4,00,000 $\frac{20}{100}$ = Rs. 80,000
Credit Revenue from operations	=	Rs. 4,00,000 – Rs. 80,000 = Rs. 3,20,000

$$\text{Average Trade Receivables} = \frac{\text{Opening Trade Receivables + Closing Trade Receivables}}{2}$$

$$= \frac{\text{Rs. } 40,000 + \text{Rs. } 1,20,000}{2} = \text{Rs. } 80,000$$

$$\text{Trade Receivables Turnover Rations} = \frac{\text{Net Credit Revenue Form Operations}}{\text{Average Inventoary}}$$

$$\text{Trade Receivables Turnover Ratio} = \frac{\text{Rs. } 3,20,000}{\text{Rs. } 80,000} = 4 \text{ times.}$$

Trade Payable Turnover Ratio

Trade payables turnover ratio indicates the pattern of payment of trade payable. As trade payable arise on account of credit purchases, it expresses relationship between credit purchases and trade payable. It is calculated as follows:

Trade Payables Turnover ratio = Net Credit purchases/ Average trade payable

Where

Average Trade Payable = (Opening Creditors and Bills Payable + Closing Creditors and Bills Payable)/2

EXAMPLE:

Calculate the Trade payables turnover ratio from the following figures:

		Rs.
Credit purchases during 2014-15	=	12,00,000
Creditors on 1.4.2014	=	3,00,000
Bills Payables on 1.4.2014	=	1,00,000
Creditors on 31.3.2015	=	1,30,000
Bills Payables on 31.3.2015	=	70,000

Solution:

$$\text{Trade Payables Turnover Ratio} = \frac{\text{Net Credit Purchases}}{\text{Average Trade Payables}}$$

$$\text{Average Trade Payables} = \frac{\text{Creditors in the beginning + Bills payables in the beginning + Creditors at the end + Bills payables at the end}}{2}$$

$$= \frac{\text{Rs. } 3,00,000 + \text{Rs. } 1,00,000 + \text{Rs. } 1,30,000 + \text{Rs. } 70,000}{2}$$

$$= \text{Rs. } 3,00,000$$

$$\therefore \text{ Trade Payables Turnover Ratio} = \frac{\text{Rs. } 12,00,000}{\text{Rs. } 3,00,000} = 4 \text{ times}$$

Fixed Assets Turnover Ratio:

It is computed as follows:

$$\text{Fixed asset turnover Ratio} = \frac{\text{Net Revenue from Operation}}{\text{Net Fixed Assets}}$$

Working Capital Turnover Ratio:

It is calculated as follows:

$$\text{Working Capital Turnover Ratio} = \frac{\text{Net Revenue from Operation}}{\text{Working Capital}}$$

Where: Working Capital = Current Assets – Current Liabilities

EXAMPLE:

From the following information, calculate (i) Net assets turnover, (ii) Fixed assets turnover, and (iii) Working capital turnover ratios :

	Amount (Rs.)		*Amount (Rs.)*
Preference shares capital	4,00,000	Plant and Machinery	8,00,000
Equity share capital	6,00,000	Land and Building	5,00,000
General reserve	1,00,000	Motor Car	2,00,000
Balance in Statement of Profit and Loss	3,00,000	Furniture	1,00,000
15% debentures	2,00,000	Inventory	1,80,000
14% Loan	2,00,000	Debtors	1,10,000
Creditors	1,40,000	Bank	80,000
Bills payable	50,000	Cash	30,000
Outstanding expenses	10,000		

Revenue from operations for the year 2014-15 were Rs. 30,00,000

Solution:

Revenue from Operations = Rs. 30,00,000

Fixed Assets = Rs.8,00,000 + Rs.5,00,000 + Rs.2,00,000 + Rs.1,00,000 = Rs. 16,00,000

Working Capital = Current Assets – Current Liabilities = Rs.4,00,000 – Rs.2,00,000 = Rs. 2,00,000

Fixed Assets Turnover Ratio = Rs.30,00,000/Rs.16,00,000 = 1.88 times

Working Capital Turnover Ratio= Rs.30,00,000/Rs.2,00,000 = 15 times.

Profitability Ratios

The profitability or financial performance is mainly summarized in the statement of profit and loss. Profitability ratios are calculated to analyze the earning capacity of the business which is the outcome of utilization of resources employed in the business. There is a close relationship between the profit and the efficiency with which the resources employed in the business are utilized. The various ratios which are commonly used to analyze the profitability of the business are:

1. Gross Profit Ratio
2. Net Profit Ratio
3. Return on Investment (ROI) or Return on Capital Employed (ROCE)
4. Return on Net Worth (RONW)
5. Earnings per share

Gross Profit Ratio

Gross profit ratio as a percentage of revenue from operations is computed to have an idea about gross margin. It is computed as follows:

Gross Profit Ratio = Gross Profit/Net Revenue of Operations × 100

EXAMPLE:

Given the following information:

	Rs.
Revenue from Operations	3,40,000
Cost of Revenue from Operations	1,20,000
Selling expenses	80,000
Administrative Expenses	40,000

Calculate Gross profit ratio.

Solution:

Gross Profit = Revenue from Operations – Cost of Revenue from Operations
= Rs. 3,40,000 – Rs. 1,20,000
= Rs. 2,20,000

$$\text{Gross Profit Ratio} = \frac{\text{Gross Profit}}{\text{Revenue from operation}} \times 100$$

$$= \frac{\text{Rs. 2,20,000}}{\text{Rs. 3,40,000}} \quad 100$$

= 64.71%

Net Profit Ratio

Net profit ratio is based on all inclusive concept of profit. It relates revenue from operations to net profit after operational as well as non-operational expenses and incomes. It is calculated as under:

Net Profit Ratio = Net profit/Revenue from Operations × 100

Generally, net profit refers to profit after tax (PAT).

EXAMPLE:

Gross profit ratio of a company was 25%. Its credit revenue from operations was Rs. 20,00,000 and its cash revenue from operations was 10% of the total revenue from operations. If the indirect expenses of the company were Rs. 50,000, calculate its net profit ratio.

Solution:

Cash Revenue from Operations = Rs.20,00,000 × 10/90 = Rs.2,22,222

Hence, total Revenue from Operations are = Rs.22,22,222

Gross profit = 0.25 × 22,22,222 = Rs. 5,55,555

Net profit = Rs.5,55,555 – 50,000 = Rs.5,05,555

Net profit ratio = Net profit/Revenue from Operations × 100 = Rs.5,05,555/Rs.22,22,222 × 100 = 22.75%.

Return on Capital Employed or Investment

It explains the overall utilization of funds by a business enterprise. Capital employed means the long-term funds employed in the business and includes shareholders' funds, debentures and long-term loans. Alternatively, capital employed may be taken as the total of non-current assets and working capital. Profit refers to the Profit Before Interest and Tax (PBIT) for computation of this ratio. Thus, it is computed as follows:

Return on Investment (or Capital Employed) = Profit before Interest and Tax/ Capital Employed × 100

Return on Shareholders' Funds or Return on Net worth (RONW)

This ratio is very important from shareholders' point of view in assessing whether their investment in the firm generates a reasonable return or not. It should be higher than the return on investment otherwise it would imply that company's funds have not been employed profitably. A better measure of profitability from shareholders point of view is obtained by determining return on total shareholders' funds, it is also termed as Return on Net Worth (RONW) and is calculated as under:

$$\text{Return on Shareholders' Fund} = \frac{\text{Profit after Tax}}{\text{Shareholders' Funds}} \quad 100$$

Earnings per Share

The ratio is computed as:

EPS = Profit available for equity shareholders/Number of Equity Shares

In this context, earnings refer to profit available for equity shareholders which are worked out as Profit after Tax – Dividend on Preference Shares.

EXAMPLE:

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From the following details, calculate Return on Investment:

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		

Also calculate Return on Shareholders' Funds and EPS, if the net profit after tax was Rs. 1,50,000, and the tax had amounted to Rs. 50,000.

Solution:

Profit before interest and tax = Rs. 1,50,000 + Debenture interest + Tax

= Rs. 1,50,000 + Rs. 40,000 + Rs. 50,000 = Rs.2,40,000

Capital Employed = Equity Share Capital + Preference Share Capital + Reserves + Debentures

= Rs. 4,00,000 + Rs. 1,00,000 + Rs. 1,84,000 + Rs. 4,00,000 = Rs. 10,84,000

Return on Investment = Profit before Interest and Tax/ Capital Employed × 100

= Rs. 2,40,000/Rs. 10,84,000 × 100 = 22.14%

Shareholders' Fund = Equity Share Capital + Preference Share Capital + General Reserve

= Rs. 4,00,000 + Rs. 1,00,000 + Rs. 1,84,000 = Rs. 6,84,000

Return on Shareholders' Funds = Profit after tax/shareholders' Funds × 100

= Rs. 1,50,000/Rs. 6,84,000 × 100 = 21.93%

Preference Share Dividend = Rate of Dividend × Prefence Share Capital

= 12% of Rs. 1,00,000 = Rs. 12,000

Profit available to equity = Profit after Tax – Preference dividend on Shareholders preference shares

= Rs. 1,50,000 – Rs. 12,000 = Rs. 1,38,000

No. of Equity Shares = Rs 400000/Rs 10 =40000 shares

EPS = Profit available for Equity Shareholders/ Number of Equity Shares

= Rs. 1,38,000/ 40,000 = Rs. 3.45