Udhna College

M.COM. Sem-II

Financial and Management Accounting-IV

UNIT-1 Ratio Analysis (of Company's Financial Statements): (Practical) 35%

Contents:

- Classification of ratios
- Uses and limitations of ratios
- Computation / Interpretation and analysis of different ratios.

Exclude: Preparation of financial statements on the basis of ratios and other data.
Note: The Weightage shall be on testing conceptual knowledge of Ratio and interpretation based on the same.

Introduction

Analysts and investors make use of the methods for ratio analysis to study and evaluate the fiscal wellbeing of businesses by closely examining the historical performance and monetary statements.

Comparative data and analysis can give an insight into the performance of the business over a given period of time by comparing it with the industry standards. At the same time, it also measures how well a business racks up against other businesses functioning in the same sector.

What is Ratio Analysis?

Ratio analysis refers to the analysis of various pieces of financial information in the financial statements of a business. They are mainly used by external analysts to determine various aspects of a business, such as its profitability, liquidity, and solvency.

Analysts rely on current and past financial statements to obtain data to evaluate the financial performance of a company. They use the data to determine if a company's financial health is on an upward or downward trend and to draw comparisons to other competing firms.

Uses of Ratio Analysis

1. Comparisons

One of the uses of ratio analysis is to compare a company's financial performance to similar firms in the industry to understand the company's position in the market. Obtaining financial ratios, such as Price/Earnings, from known competitors and comparing it to the company's ratios can help management identify market gaps and examine its competitive advantages, strengths, and weaknesses. The management can then use the information to formulate decisions that aim to improve the company's position in the market.

2. Trend line

Companies can also use ratios to see if there is a trend in financial performance. Established companies collect data from the financial statements over a large number of reporting periods. The trend obtained can be used to predict the direction of future financial performance, and also identify any expected financial turbulence that would not be possible to predict using ratios for a single reporting period.

3. Operational efficiency

The management of a company can also use financial ratio analysis to determine the degree of efficiency in the management of assets and liabilities. Inefficient use of assets such as motor vehicles, land, and building results in unnecessary expenses that ought to

be eliminated. Financial ratios can also help to determine if the financial resources are over- or under-utilized.

Classification of Ratios:

There are numerous financial ratios that are used for ratio analysis, and they are grouped into the following categories:

1. Liquidity ratios

Liquidity ratios measure a company's ability to meet its debt obligations using its current assets. When a company is experiencing financial difficulties and is unable to pay its debts, it can convert its assets into cash and use the money to settle any pending debts with more ease.

- **Current Ratio:**

The ratio of current assets to current liabilities is called 'current ratio'. In order to measure the short-term liquidity or solvency of a concern, comparison of current assets and current liabilities is inevitable. Current ratio indicates the ability of a concern to meet its current obligations as and when they are due for payment.

Formula: $$\text{Current Ratio} = \frac{\text{Current assets}}{\text{Current liabilities}}$$

Standard Expected Current Ratio:

Internationally accepted current ratio is 2:1 i.e., current assets shall be 2 times to current liabilities.

A very high current ratio also does not indicate efficiency since it means less efficient use of funds.

- **Liquid Ratio:**

This ratio is also called 'Quick' or 'Acid test' ratio. It is calculated by comparing the quick assets with current liabilities.

Formula:

$$\text{Liquid ratio} = \frac{\text{Quick assets or liquid assets}}{\text{Current liabilities}}$$

Quick or liquid assets refer to assets which are quickly convertible into cash. Current assets other than stock and prepaid expenses are considered as quick assets.

The ideal liquid ratio or the generally accepted 'norm' for liquid ratio is '1'.

- **Cash Position Ratio:**

This ratio is also called 'Absolute Liquidity ratio' or 'super quick ratio'. This is a variation of quick ratio. This ratio is calculated when liquidity is highly restricted in terms of cash and cash equivalents. This ratio measures liquidity in terms of cash and near cash items and short-term current liabilities.

Cash position ratio is calculated with the help of the following formula-

Formula:

$$\text{Cash position ratio} = \frac{\text{Cash and Bank Balances} + \text{Marketable securities}}{\text{Current liabilities}}$$

2. Solvency ratios

Solvency ratios are also referred to as the financial leverage ratios. These ratios will compare an organisation's level of debt with assets, earnings, and equity in order to determine the possibility of an organisation to stay in operation over an extended period of time by settling all its short and long-term debts and by paying interest regularly.

- **Fixed Assets Ratio:**

The ratio establishes the relationship between fixed assets and long-term funds. The objective of calculating this ratio is to ascertain the proportion of long-term funds invested in fixed assets.

The ratio is calculated as given below:

Formula :

$$\text{Fixed assets ratio} = \frac{\text{Fixed assets}}{\text{Long-term funds}}$$

An ideal fixed assets ratio is 0.67.

Fixed assets ratio of more than '1' implies that fixed assets are purchased with short-term funds, which is not a prudent policy.

Fixed assets here mean = Fixed assets – Depreciation

Long-term funds = Share capital + Reserves and surplus + Long-term loans – Fictitious assets

- **Debt Equity Ratio:**

This ratio is ascertained to determine long-term solvency position of a company. Debt equity ratio is also called 'external-internal equity ratio'.

Formula:

$$\text{Debt-Equity ratio} = \frac{\text{External equities}}{\text{Internal equities}}$$

The term external equities refers to total outsiders liabilities..

Internal equities refers to shareholders funds or the tangible networth. Here shareholders refers to only the equity shareholders.

Ideal ratio is '1'

The debt equity ratio is also calculated as given below:

$$\text{1. Debt-equity ratio} = \frac{\text{Total long - term debt}}{\text{Total long - term funds}}$$

$$\text{2. Debt-equity ratio} = \frac{\text{Shareholders funds}}{\text{Total long - term funds}}$$

$$\text{3. Debt-equity ratio} = \frac{\text{Total long - term debt}}{\text{Shareholders funds}}$$

- **Proprietary Ratio:**

This ratio compares the shareholders' funds or owner's funds and total tangible assets. In other words this ratio expresses the relationship between the proprietor's funds and the total tangible assets.

Formula

$$\text{Proprietary ratio} = \frac{\text{Shareholders' funds}}{\text{Total tangible assets}}$$

A high ratio indicates safety to the creditors and a low ratio shows greater risk to the creditors.

- **Capital Gearing Ratio:**

This ratio is also known as capitalisation or leverage ratio. It is also one of the long-term solvency ratios. It is used to analyse the capital structure of the company. The ratio

establishes relationship between fixed interest and dividend bearing funds and equity shareholders' funds.

The capital gearing ratio is calculated with the help of the following formula-

Formula

$$\text{Capital gearing Ratio} = \frac{\text{Long-term loans + Debentures + Preference share capital}}{\text{Equity shareholders' funds}}$$

Capital gearing ratio shows the proportion of various items of long-term finance employed in the business. Its main emphasis is on indication of the proportion between owners' funds and non-owners' funds. This proportion is called leverage. If the ratio is high, the capital gearing is said to be high and if the ratio is low the capital gearing is said to be low. The implication is that high gearing is 'Trading on Thin Equity' and low gearing is 'Trading on Thick Equity.'

3. Profitability Ratios

Profitability ratios measure a business' ability to earn profits, relative to their associated expenses. Recording a higher profitability ratio than in the previous financial reporting period shows that the business is improving financially. A profitability ratio can also be compared to a similar firm's ratio to determine how profitable the business is relative to its competitors.

Some examples of important profitability ratios include the return on equity ratio, return on assets, profit margin, gross margin, and return on capital employed.

The following are various ratios used to analyse profitability:

- **<u>Return on Investment (or) Overall Profitability Ratio:</u>**

This ratio is called 'Return on Investment' (R.O.I) or 'Return on capital employed'. It measures the sufficiency or otherwise of profit in relation to capital employed.

Return on capital employed is calculated by using the following formula:

Formula:

$$\text{R.O.I.} = \frac{\text{Operating Profit}}{\text{Capital Employed}} \times 100$$

The term operating profit means profit before interest and tax.

The term capital employed has been interpreted in different ways by different accountants and authors.

Some of the different meanings of capital employed are given below:

(1) Total of all assets i.e., fixed as well as current assets.

(2) Total of fixed assets.

(3) Total of long-term funds employed in the business.

i.e., (Share capital + Reserves and Surplus + Long-term loans)-(Other Non Current Assets)

(4) Net working capital + Fixed assets.

Return on investment is used to measure the operational and managerial efficiency. A comparison of ROI with that of similar firms, with that of industry and with past ratio will be helpful in determining how efficiently the long-term funds of owners and creditors being put into use. Higher the ratio, the more efficient is the use of the capital employed.

Return on investment can be computed for measuring the return for various purposes.

Some of the purposes for which the ratios are calculated are explained below:

(a) Return on Shareholders' Funds:

This ratio determines the profitability from the shareholder's point of view.

Formula:

$$\text{Return on shareholders funds} = \frac{\text{Net profit after interest and tax}}{\text{Shareholders funds}} \times 100$$

The net profit here is net income after payment of interest and tax and it includes net non- operating income also, (i.e., Non-operating income minus non- operating expenses).

The term shareholders' funds includes equity share capital, preference share capital and all reserves and profits belonging to shareholders.

(b) Return on Equity Shareholders Funds (or) Return on Equity (or) Return on Net Worth:

This ratio signifies the return on equity shareholders' funds. The profit considered for computing the ratio is taken after payment of preference dividend.

The ratio of return on equity shareholders' funds is calculated as given below:

Formula:

$$\text{Return on equity shareholders' funds} = \frac{\text{Net profit after interest, tax and preference dividend}}{\text{Equity shareholders funds}} \times 100$$

The term equity shareholders' funds (or) Equity (or) Net worth refers to equity share capital + Reserves + Profits – Accumulated losses

(c) Return on Total Assets:

This ratio is calculated to measure the productivity of total assets. There are-two ways of calculating this ratio.

Formula:

$$\text{Return on Total Assets} = \frac{\text{Net profit after tax}}{\text{Total assets}} \times 100$$

$$\text{Return on Total Assets} = \frac{\text{Net profit after tax + Interest}}{\text{Total assets excluding fictious assets}} \times 100$$

The term fictitious assets refer to preliminary expenses, debit balance of Profit and Loss Account and other similar losses shown on Balance Sheet asset side.

- **Gross Profit Ratio:**

This ratio is also known as Gross margin or trading margin ratio. Gross profit ratio indicates the difference between sales and direct costs. Gross profit ratio explains the relationship between gross profit and net sales.

Formula:

$$\text{Gross Profit Ratio} = \frac{\text{Gross Profit}}{\text{Net sales}} \times 100$$

A higher ratio is preferable, indicating higher profitability.

- **Operating Ratio:**

This ratio indicates the relationship between total operating expenses and sales.

Formula:

$$\text{Operating ratio} = \frac{\text{Cost of sales + Operating expenses}}{\text{Net sales}} \times 100$$

Total operating expenses here include cost of goods sold administrative expenses and Selling and distribution expenses. Generally finance expenses like interest are not included under operating expenses.

Lower the ratio more is the efficiency. The ratio should be low enough to provide fair return to the shareholders and other investors.

- **Operating Profit Ratio:**

It is the ratio of profit made from operating sources to the sales. Usually shown as a percentage. It shows the operational efficiency of the firm and is a measure of the management's efficiency in running the routine operations of the firm.

Formula:

$$\text{Operating profit ratio} = \frac{\text{Operating Profit}}{\text{Sales}} \times 100$$

$$\text{Operating profit} = \text{Net profit} + \text{Non-operating expenses} - \text{Non-operating incomes}$$

(or)

$$\text{Gross profit} - \text{Operating expenses.}$$

Operating expenses include administration, selling and distribution expenses. Finance expenses are generally excluded.

- **Expenses Ratios:**

These ratios are also known as supporting ratios to operating ratio. They indicate the efficiency with which business as a whole functions. It is better for the concern to know how it is able to save of waste over expenditure in respect of different items of expenses. Therefore each aspect of cost of sales and operating expenses are analysed.

The formulas for some of the expanses are given below:

Formula:

1. Administrative expenses ratio:

$$\frac{\text{Administrative expenses}}{\text{Net sales}} \times 100$$

2. Selling and distribution expenses ratio :

$$\frac{\text{Selling and distribution expenses}}{\text{Net sales}} \times 100$$

3. Financial expenses ratio :

$$\frac{\text{Financial expenses}}{\text{Net sales}} \times 100$$

- **Net Profit Ratio:**

This ratio is also called net profit to sales ratio. It is a measure of management's efficiency in operating the business successfully from the owner's point of view. It indicates the return on shareholders' investments. Higher the ratio better is the operational efficiency of the business concern.

Formula:

$$\text{Net profit ratio} = \frac{\text{Net profit after tax}}{\text{Net sales}} \times 100$$

4. Efficiency ratios

Efficiency ratios are also called as the activity ratios. These ratios determine the efficiency of a business by using its liabilities and assets to boost sales and optimise profits. Efficiency ratios measure how well the business is using its assets and liabilities to generate sales and earn profits. They calculate the use of inventory, machinery utilization, turnover of liabilities, as well as the usage of equity. These ratios are

important because, when there is an improvement in the efficiency ratios, the business stands to generate more revenues and profits.

- **Inventory or Stock Turnover Ratio:**

This ratio is also called stock velocity ratio. It is calculated to ascertain the efficiency of inventory management in terms of capital investment. It shows the relationship between the cost of goods sold and the amount of average inventory. Stock turnover ratio is obtained by dividing the cost of sales by average stock.

There are different ways of calculating stock turnover ratio as mentioned below:

Formula:

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

$$\text{or} = \frac{\text{Net sales}}{\text{Average inventory cost}}$$

$$\text{or} = \frac{\text{Net sales}}{\text{Average inventory at selling price}}$$

$$\text{or} = \frac{\text{No. of units sold}}{\text{Average no. of units in stock}}$$

Cost of goods sold can be ascertained as mentioned below:

(1) In Case of Trading Concerns:

Cost of goods sold = (Opening stock + Purchases + Direct expenses) – Closing stock

In case of manufacturing concerns:

Cost of goods sold = (Total cost of production + Opening stock of finished goods) — Closing stock of finished goods

Total cost of production = Cost of material consumed + Labour cost + Production overheads

In all situations where gross profit is known:

Cost of goods sold = Sales – Gross profit

Average stock may be taken as the average of stocks at the beginning and end of the accounting period.

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

To judge the efficiency of stock turnover ratio it should be compared over a period of time.

A high inventory ratio indicates efficient inventory management and efficiency of business operations.

- **Debtors Turnover Ratio:**

Debtors Turnover ratio is also called as receivables turnover ratio or debtors velocity. Debtors turnover ratio measures the number of times the receivables are rotated in a year in terms of sales. This ratio also indicates the efficiency of credit collection and efficiency of credit policy. The ratio is helpful in determining the operational efficiency of a business concern and the effectiveness of its credit policy. It is important to maintain a reasonable quantitative relationship between receivables and sales.

Debtors turnover ratio can be calculated as follows:

Formula :

$$\text{Debtors/Receivables turnover} = \frac{\text{Net credit sales}}{\text{Average receivables}}$$

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

The objective of this ratio is to measure the liquidity of receivables or obtaining the average period over which receivables are uncollected.

$$\text{Average collection period} =$$

$$(1)\ \frac{\text{Months in a year or Days in a year}}{\text{Debtors turnover}}$$

(or)

$$(2)\ \frac{\text{Average accounts receivable} \times \text{Months in a year or days in a year}}{\text{Net credit sales for the year}}$$

The higher the turnover ratio and shorter the average collection period, better is the liquidity of debtors. In other words high turnover ratio and short collection period convey quick payment on the part of debtors. If the turnover ratio is low and the collection period is long, it implies that payments by debtors are delayed.

- **Creditors Turnover Ratio (or) Accounts Payable Turnover:**

This ratio is also known as accounts payable or creditors velocity. Longer the period of payables outstanding lesser is the problem of working capital of the firm. But if the firm does not pay off its creditors within time, it will adversely affect goodwill of the business.

Creditors turnover ratio indicates the number of times the payables rotate in a year. The term accounts payable includes sundry creditors and bills payable.

Payables turnover indicates the relationship between net purchases for the whole year and total payables.

Formula:

$$\text{Creditors turnover ratio} = \frac{\text{Net credit purchases}}{\text{Average accounts payable}}$$

$$\text{Average payment period} = \frac{\text{Days or months in the year}}{\text{Creditors turnover ratio}}$$

(or)

$$\text{Average payment period} = \frac{\text{Accounts payable}}{\text{Net credit purchases}} \times \frac{365}{12}$$

$$\text{Net credit purchases} = \text{Credit purchases} - \text{Purchase returns}$$

$$\text{Average accounts payable} = \frac{\text{Opening payables} + \text{Closing payables}}{2}$$

A higher ratio indicates that creditors are not paid in time. A lower ratio indicates payment of creditors promptly. Depending on the liquidity position of the firm, the kind of payables turnover desirable can be planned.

- **Working Capital Turnover Ratio:**

Working capital ratio measures the effective utilisation of working capital. It also measures the smooth running of business or otherwise. The ratio establishes relationship between cost of sales and working capital. Working capital turnover ratio is calculated with the help of the following formula.

Formula:

$$\text{Working capital turnover ratio} = \frac{\text{Sales / Cost of sales}}{\text{Net working capital}}$$

$$\text{Net working capital} = \text{Current assets} - \text{Current liabilities}$$

A higher ratio is the indication of lower investment of working capital and more profit.

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5. Coverage ratios

Coverage ratios measure a business' ability to service its debts and other obligations. Analysts can use the coverage ratios across several reporting periods to draw a trend that predicts the company's financial position in the future. A higher coverage ratio means that a business can service its debts and associated obligations with greater ease.

- **Interest Cover or Fixed Charges Cover:**

This ratio establishes the relationship between profit before interest and tax and fixed interest charges.

Formula :

$$\text{Interest cover (or) fixed charges cover} = \frac{\text{Profit before interest and tax}}{\text{Fixed interest charges}}$$

This ratio is meaningful to debenture-holders and lenders of long-term loans. It highlights the ability of the concern to meet interest commitments and its capacity to raise additional funds in future. Higher the ratio better is the position of long-term creditors and the company's risk is lesser.

6. Market prospect ratios

Market prospect ratios help investors to predict how much they will earn from specific investments. T**Pay Out Ratio:**

This ratio also indirectly throws light on the financial policy of the management in ploughing back.

$$\text{Pay out ratio} = \frac{\text{Equity dividend}}{\text{Net profit after tax and preference dividend}} \times 100$$

or

$$\text{Pay out ratio} = \frac{\text{Dividend per equity share}}{\text{Earnings per equity share}} \times 100$$

- **Retained Earnings Ratio:**

This ratio shows the proportion of profits retained in the business out of the current year's profits. In fact the total of the payout ratio and retained earnings ratio should be equal to 100.

Formula :

$$\frac{\text{Retained earnings}}{\text{Net profit after tax and preference dividend}} \times 100$$

or

$$\frac{\text{Retained earnings per equity share}}{\text{Earnings per equity share}} \times 100$$

- **Dividend Yield Ratio:**

In this ratio the dividend is related to the market value of shares. The result is known as dividend yield.

Formula:

$$\text{Dividend yield} = \frac{\text{Dividend per share}}{\text{Market price per share}} \times 100$$

The ratio is very significant from the view point of those investors who are interested in dividend income.

- **Price Earnings Ratio (P.E.R):**

This ratio indicates earnings per share reflected by the market price.

Formula:

$$\text{P.E.R.} = \frac{\text{Market price per equity share}}{\text{Earnings per equity share}}$$

This ratio is of use to prospective investors to decide whether to invest in the equity shares of a company at a particular market price or not. A high P/E Ratio mean that a stock price is more relative to earnings and possibly overvalued. Conversely a low ratio indicates that current stock price is low relative to earnings.

- **Earnings per Share (EPS):**

This ratio highlights the overall success of the concern from owners', point of view and it is helpful in determining market price of equity shares. It reflects upon the capacity of the concern to pay divided to its equity shareholders. The ratio is calculated by dividing the net profit after tax and preference dividend by number of equity shares.

Formula:

$$\text{E.P.S.} = \frac{\text{Net profit after tax and preference dividend}}{\text{No. of Equity shares}}$$

Generally, investors are accustomed to judge companies in the context of the share market, with the help of 'Earnings per share'.

What are the limitations of ratio analysis?

Some of the most important limitations of ratio analysis include:

- **Historical Information:** Information used in the analysis is based on real past results that are released by the company. Therefore, ratio analysis metrics do not necessarily represent future company performance.
- **Inflationary effects:** Financial statements are released periodically and, therefore, there are time differences between each release. If inflation has

occurred in between periods, then real prices are not reflected in the financial statements. Thus, the numbers across different periods are not comparable until they are adjusted for inflation.

- **Changes in accounting policies:** If the company has changed its accounting policies and procedures, this may significantly affect financial reporting. In this case, the key financial metrics utilized in ratio analysis are altered and the financial results recorded after the change are not comparable to the results recorded prior to the change. It is up to the analyst to be up to date with changes to accounting policies. Changes made are generally found in the notes to the financial statements section.
- **Operational changes:** A company may significantly change its operational structure, anything from their supply chain strategy to the product that they are selling. When significant operational changes occur, the comparison of financial metrics before and after the operational change may lead to misleading conclusions about the company's performance and future prospects.
- **Seasonal effects:** An analyst should be aware of seasonal factors that could potentially result in limitations of ratio analysis. The inability to adjust the ratio analysis to the seasonality effects may lead to false interpretations of the results from the analysis.
- **Manipulation of financial statements:** Ratio analysis is based on information that is reported by the company in its financial statements. This information may be manipulated by the company's management to report a better result than its actual performance.

Conclusion:

Hence, ratio analysis may not accurately reflect the true nature of the business, as the misrepresentation of information is not detected by simple analysis. It is important that an analyst is aware of these possible manipulations and always complete extensive due diligence before reaching any conclusions.