

Accounting Ratios

Meaning

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

1. To know the areas of the business which need more attention;
2. To know about the potential areas which 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; and
5. To provide information derived from financial statements useful for making projections and estimates for the future.

Advantages

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 summarise 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 being 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 (StrengthWeakness-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: (i) over a number of accounting periods with itself (Intra-firm Comparison/Time Series Analysis), (ii) with other business enterprises (Inter-firm Comparison/Cross-sectional Analysis) and (iii) with standards set for that firm/industry (comparison with standard (or industry expectations)).

Types of Ratios

There is a two way classification of ratios

- (1) Traditional classification
- (2) Functional classification

Traditional classification

1. 'Statement of Profit and Loss Ratios: A ratio of two variables from the statement of profit and loss is known as statement of profit and loss ratio. For example, ratio of gross profit to revenue from operations is known as gross profit ratio. It is calculated using both figures from the statement of profit and loss.
2. Balance Sheet Ratios: In case both variables are from the balance sheet, it is classified as balance sheet ratios. For example, ratio of current assets to current liabilities known as current ratio. It is calculated using both figures from balance sheet.
3. Composite Ratios: If a ratio is computed with one variable from the statement of profit and loss and another variable from the balance sheet, it is called composite ratio. For example, ratio of credit revenue from operations to trade receivables (known as trade receivables turnover ratio) is calculated using one figure from the statement of profit and loss (credit revenue from operations) and another figure (trade receivables) from the balance sheet.

Functional classification

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 utilisation 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

I- 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 analysed 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.

a. Current Ratio

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

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

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.

b. Quick Ratio

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

$$\text{Quick ratio} = \text{Quick Assets} / \text{Current Liabilities}$$

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'.

II- Solvency Ratios

- a. Debt-Equity Ratio;
- b. Debt to Capital Employed Ratio;
- c. Proprietary Ratio;
- d. Total Assets to Debt Ratio;
- e. Interest Coverage Ratio.

a. 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 favourable 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:

Debt-Equity Ratio = Long – term Debts/Shareholders' Funds

Where:

Shareholders' Funds (Equity) = Share capital + Reserves and Surplus + Money received against share warrants

Share Capital = Equity share capital + Preference share capital

Or

Shareholders' Funds (Equity) = Non-current assets + Working capital – Non-current liabilities

Working Capital = Current Assets – Current Liabilities

b. 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 (or Net Assets)

c. Proprietary Ratio

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

Proprietary Ratio = Shareholders, Funds/Capital employed (or net assets)

d. 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

e. Interest Coverage Ratio

It is a ratio which deals with the servicing of interest on loan. It is a measure of security of interest payable on long-term debts. It expresses the relationship between profits available for payment of interest and the amount of interest payable. It is calculated as follows:

Interest Coverage Ratio = Net Profit before Interest and Tax / Interest on long-term debts

III- Activity (or Turnover) Ratio

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 ratios means better utilisation of assets and signify improved efficiency and profitability, and as such are known as efficiency ratios. The important activity ratios calculated under this category are

- a) Inventory Turnover;
- b) Trade receivable Turnover;
- c) Trade payable Turnover;
- d) Investment (Net assets) Turnover
- e) Fixed assets Turnover; and
- f) Working capital Turnover.

a. 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 means revenue from operations less gross profit.

b. 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

It needs to be noted that debtors should be taken before making any provision for doubtful debts.

c. 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

Average Payment Period = No. of days or month in a year/Trade Payables Turnover Ratio

d. Net Assets or Capital Employed Turnover Ratio

It reflects relationship between revenue from operations and net assets (capital employed) in the business. Higher turnover means better activity and profitability.

It is calculated as follows:

Net Assets or Capital Employed Turnover ratio = Revenue from Operation / Capital Employed

Capital employed turnover ratio which studies turnover of capital employed (Or Net Assets) is analysed further by following two turnover ratios:

i. Fixed Assets Turnover Ratio:

It is computed as follows:

Fixed asset turnover Ratio = Net Revenue from Operation / Net Fixed Assets

ii. Working Capital Turnover Ratio :

It is calculated as follows:

Working Capital Turnover Ratio = Net Revenue from Operation / Working Capital

IV- Profitability Ratios

The profitability or financial performance is mainly summarised in the statement of profit and loss. Profitability ratios are calculated to analyse the earning capacity of the business which is the outcome of utilisation 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 utilised. The various ratios which are commonly used to analyse the profitability of the business are:

- a) Gross profit ratio
- b) Operating ratio
- c) Operating profit ratio
- d) Net profit ratio
- e) Return on Investment (ROI) or Return on Capital Employed (ROCE)
- f) Return on Net Worth (RONW)
- g) Earnings per share
- h) Book value per share
- i) Dividend pay-out ratio
- j) Price earning ratio.

a. 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:

$$\text{Gross Profit Ratio} = \text{Gross Profit/Net Revenue of Operations} \times 100$$

b. Operating Ratio

It is computed to analyse cost of operation in relation to revenue from operations. It is calculated as follows:

$$\text{Operating Ratio} = (\text{Cost of Revenue from Operations} + \text{Operating Expenses}) / \text{Net Revenue from Operations} \times 100$$

c. Operating Profit Ratio

It is calculated to reveal operating margin. It may be computed directly or as a residual of operating ratio.

$$\text{Operating Profit Ratio} = 100 - \text{Operating Ratio}$$

Alternatively, it is calculated as under:

$$\text{Operating Profit Ratio} = \text{Operating Profit/ Revenue from Operations} \times 100$$

Where Operating Profit = Revenue from Operations – Operating Cost

d. 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:

$$\text{Net Profit Ratio} = \text{Net profit/Revenue from Operations} \times 100$$

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

e. Return on Capital Employed or Investment

It explains the overall utilisation 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:

$$\text{Return on Investment (or Capital Employed)} = \frac{\text{Profit before Interest and Tax}}{\text{Capital Employed}} \times 100$$

Return on Shareholders' Funds

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:

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

f. Earnings per Share

The ratio is computed as:

$$\text{EPS} = \frac{\text{Profit available for equity shareholders}}{\text{Number of Equity Shares}}$$

In this context, earnings refer to profit available for equity shareholders which is worked out as

Profit after Tax – Dividend on Preference Shares.

This ratio is very important from equity shareholders point of view and also for the share price in the stock market. This also helps comparison with other to ascertain its reasonableness and capacity to pay dividend.

g. Book Value per Share

This ratio is calculated as:

Book Value per share = Equity shareholders' funds/Number of Equity Shares

Equity shareholder fund refers to Shareholders' Funds – Preference Share Capital. This ratio is again very important from equity shareholders point of view as it gives an idea about the value of their holding and affects market price of the shares.

h. Dividend Pay-out Ratio

This refers to the proportion of earning that is distributed to the shareholders. It is calculated as –

Dividend Pay-out Ratio = Dividend per share / Earnings per share

This reflects company's dividend policy and growth in owner's equity.

i. Price / Earning Ratio

The ratio is computed as –

P/E Ratio = Market Price of a share/earnings per share

Summary

Ratio Analysis:

An important tool of financial statement analysis is ratio analysis. Accounting ratios represent relationship between two accounting numbers.

Objective of Ratio Analysis:

The objective of ratio analysis is to provide a deeper analysis of the profitability, liquidity, and solvency and activity levels in the business. It is also to identify the problem areas as well as the strong areas of the business.

Advantages of Ratio Analysis:

Ratio analysis offers many advantages including enabling financial statement analysis, helping understand efficacy of decisions, simplifying complex figures and establish

relationships, being helpful in comparative analysis, identification of problem areas, enables SWOT analysis, and allows various comparisons.

Limitations of Ratio Analysis:

There are many limitations of ratio analysis. Few are based because of the basic limitations of the accounting data on which it is based. In the first set are included factors like Historical Analysis, Ignores Price-level Changes, Ignore Qualitative or Non-monetary Aspects, Limitations of Accounting Data, Variations in Accounting Practices, and Forecasting. In the second set are included factor like means and not the end, lack of ability to resolve problems, lack of standardised definitions, lack of universally accepted standard levels, and ratios based on unrelated figures.

Types of Ratios:

There are many types of ratios, viz., liquidity, solvency, activity and profitability ratios. The liquidity ratios include current ratio and acid test ratio. Solvency ratios are calculated to determine the ability of the business to service its debt in the long run instead of in the short run. They include debt equity ratio, total assets to debt ratio, proprietary ratio and interest coverage ratio. The turnover ratios basically exhibit the activity levels characterised by the capacity of the business to make more sales or turnover and include Inventory Turnover, Trade Receivables Turnover, Trade Payables Turnover, Working Capital Turnover, Fixed Assets Turnover and Current assets Turnover. Profitability ratios are calculated to analyse the earning capacity of the business which is the outcome of utilisation of resources employed in the business. The ratios include Gross Profit ratio, Operating ratio, Net Profit Ratio, Return on investment (Capital employed), Earnings per Share, Book Value per Share, Dividend per Share and Price/Earning ratio.