

RATIO ANALYSIS

A decorative graphic consisting of a solid teal horizontal bar that spans the width of the slide. Below this bar, on the right side, there are three thin, parallel horizontal lines in a lighter teal color, extending further to the right edge of the slide.

RATIO ANALYSIS

Ratio analysis is the process of determining and interpreting numerical relationship based on financial statements.

It is the technique of interpretation of financial statements with the help of *accounting ratios* derived from the balance sheet and profit and loss account.

Classification Of Ratios

- Analysis of Short Term Financial Position or Test of Liquidity.
- Analysis of Long Term Financial Position or Test of Solvency.
- Activity Ratios.
- Profitability Ratios.

I. Test Of Liquidity

- The liquidity ratios are used to test the short term solvency or liquidity position of the business.
- It enables to know whether short term liabilities can be paid out of short term assets.
- It is a valuable aid to management in checking the efficiency with which working capital is being employed.
- It is also of importance to shareholders and long term creditors in determining to some extent the prospects of dividend and interest payment.

Important Ratios In Test Of Liquidity

- Current ratio.
- Quick ratio.
- Absolute liquid ratio.

Current Ratio

It is the most widely used of all analytical devices based on the balance sheet. It establishes relationship between total current assets and current liabilities.

$$\text{Current ratio} = \frac{\text{Current assets}}{\text{Current liabilities}}$$

Ideal ratio: 2:1

High ratio indicates under trading and over capitalization.

Low ratio indicates over trading and under capitalization.

Quick Ratio or Acid Test Ratio

It establishes relationship between liquid assets and liquid liabilities. It is a refinement to current ratio and second testing device for working capital.

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

Ideal ratio: 1:1

Usually, a high acid test ratio is an indication that the firm is liquid and has ability to meet its current or liquid liabilities in time and on the other hand a low quick ratio represents that the firm's liquidity position is not good.

Absolute Liquidity Ratio

This ratio establishes a relationship between absolute liquid assets to quick liabilities.

$$\text{Absolute liquid ratio} = \frac{\text{Absolute liquid assets}}{\text{Quick liabilities}}$$

Ideal ratio: 1:2

It means that if the ratio is 1:2 or more than this the concern can be taken as liquid. If the ratio is less than the standard of 1:2, it means the concern is not liquid.

II. Test Of Solvency

- Long term solvency ratios denote the ability of the organization to repay the loan and interest.
- When an organization's assets are more than its liabilities is known as solvent organization.
- Solvency indicates that position of an enterprise where it is capable of meeting long term obligations.

Important Ratios In Test Of Solvency

- Debt-equity ratio.
- Proprietary ratio.
- Solvency ratio.
- Fixed assets to net worth ratio.
- Fixed assets ratio
- Debt servicing ratio.
- Dividend coverage ratio.

Debt Equity Ratio

It is calculated to measure the relative claims of outsiders and the owners against the firm's assets. This ratio indicates the relationship between the outsiders funds and the shareholders' funds.

$$\text{Debt equity ratio} = \frac{\text{Outsiders funds}}{\text{Shareholders funds}}$$

Ideal ratio: 2:1; It means for every 2 shares there is 1 debt. If the debt is less than 2 times the equity, it means the creditors are relatively less and the financial structure is sound.

Proprietary Ratio or Net Worth Ratio

It establishes relationship between the proprietors fund or shareholders funds and the total assets

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

Ideal ratio: 0.5:1

Higher the ratio better the long term solvency (financial) position of the company.

Solvency Ratio

It expresses the relationship between total assets and total liabilities of a business. This ratio is a small variant of equity ratio and can be simply calculated as “*100-equity ratio*”.

$$\text{Solvency ratio} = \frac{\text{Total assets}}{\text{Total liabilities}}$$

No standard ratio is fixed in this regard.

Higher the solvency ratio, the stronger is its financial position and vice-versa.

Fixed Assets To Net Worth

It is obtained by dividing the depreciated book value of fixed assets by the amount of proprietors funds.

$$\text{Fixed assets to net worth ratio} = \frac{\text{Net fixed assets}}{\text{Net worth}}$$

Ideal ratio: 0.75:1

A higher ratio, say, 100% means that there are no outside liabilities and all the funds employed are those of shareholders.

Fixed Assets Ratio

It establishes the relationship between fixed assets and capital employed

$$\text{Fixed assets ratio} = \frac{\text{Fixed assets}}{\text{Capital employed}}$$

Ideal ratio: 0.67:1

This ratio enables to know how fixed assets are financed i.e. by use of short term funds or by long term funds. This ratio should not be more than 1.

Debt Service Ratio

This ratio is determined by dividing net profit by fixed interest charges.

$$\text{Debt service ratio} = \frac{\text{Net profit before deduction of interest and income tax}}{\text{Fixed interest charges}}$$

Ideal ratio: 6 or 7 times; if the ratio is high it means there is higher margin of safety for the long term lenders and as such it is not difficult for the business to obtain further long term funds and vice-versa.

Dividend Cover Ratio

It is the ratio between disposable profit and dividend. Disposable profit refers to profit left over after paying interest on long term borrowing and income tax.

$$\text{Dividend cover ratio} = \frac{\text{Net profit after interest and tax}}{\text{Dividend declared}}$$

This ratio indicates the ability of the business to maintain the dividend on shares in future.

If this ratio is higher it indicates that there is sufficient amount of retained profit.

III. Activity Ratio

- Activity ratios indicate the performance of an organization.
- This indicate the effective utilization of the various assets of the organization.
- Most of the ratio falling under this category is based on turnover and hence these ratios are called as turnover ratios.

Important Ratios In Activity Ratio

- Stock turnover ratio.
- Debtors turnover ratio.
- Creditors turnover ratio.
- Working capital turnover ratio.
- Fixed assets turnover ratio.
- Current assets turnover ratio.
- Total assets turnover ratio.

Stock Turnover Ratio

This ratio establishes the relationship between the cost of goods sold during a given period and the average stock holding during that period and indicates operational and marketing efficiency.

$$\text{Inventory turnover ratio} = \frac{\text{Cost of goods sold}}{\text{Average stock}}$$

$$\begin{aligned} \text{Cost of goods sold} &= \text{sales} - \text{gross profit} \\ &= \text{opening stock} + \text{purchases} - \text{closing stock} \end{aligned}$$

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

Debtor Turnover Ratio

This ratio explains the relationship of net credit sales of a firm to its book debts indicating the rate at which cash is generated by turnover of receivables or debtors.

$$\text{Debtor turnover ratio} = \frac{\text{Net credit sales}}{\text{Average Debtors}}$$
$$\text{Average debtors} = \frac{\text{Opening balance} + \text{Closing balance}}{2}$$

Creditors Turnover Ratio

This ratio indicates the number of times the creditors are paid in a year.

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

$$\text{Average creditors} = \frac{\text{Opening balance} + \text{closing balance}}{2}$$

$$\text{Average payment period} = \frac{\text{Number of working days}}{\text{Creditors turnover ratio}}$$

Working Capital Turnover Ratio

This ratio indicates the number of times the working capital is turned over in the course of the year.

Measures efficiency in working capital usage.

$$\text{Working capital turnover ratio} = \frac{\text{Cost of sales}}{\text{Average working capital}}$$

$$\text{Average working capital} = \frac{\text{Opening + closing working capital}}{2}$$

Fixed Assets Turnover Ratio

This ratio establishes a relationship between fixed assets and sales.

$$\text{Fixed assets turnover ratio} = \frac{\text{Net sales}}{\text{Fixed assets}}$$

Ideal ratio: 5 times

A high ratio indicates better utilization of fixed assets whereas a low ratio indicates under utilization of fixed assets.

Total Asset Turnover Ratio

This ratio establishes a relationship between total assets and sales. This ratio enables to know the efficient utilization of total assets of a business.

$$\text{Total assets turnover ratio} = \frac{\text{Net sales}}{\text{Total assets}}$$

Ideal ratio: 2 times

High ratio indicates efficient utilization and ratio less than 2 indicates under utilization.

IV. Profitability Ratio

- Profitability ratios indicate the profit earning capacity of a business.
- Profitability ratios are calculated either in relation to sales or in relation to investments.
- Profitability ratios can be classified into two categories.
 - a) General Profitability Ratios.
 - b) Overall Profitability Ratios.

General Profitability Ratios

- Gross profit ratio.
- Net profit ratio.
- Operating ratio.
- Operating profit ratio.
- Expense ratio.

Gross Profit Ratio

It expresses the relationship of gross profit to net sales and is expressed in terms of percentage. This ratio is a tool that indicates the degree to which selling price of goods per unit may decline without resulting in losses.

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

A low gross profit ratio may indicate unfavorable purchasing, the instability of management to develop sales volume thereby making it impossible to buy goods in large volume.

Net Profit Ratio

It expresses the relationship between net profit after taxes to sales. Measure of overall profitability useful to proprietors, as it gives an idea of the efficiency as well as profitability of the business to a limited extent.

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

Higher the ratio better is the profitability.

Operating Ratio

This ratio establishes a relationship between cost of goods sold plus other operating expenses and net sales. This ratio is calculated mainly to ascertain the operational efficiency of the management in their business operations.

$$\text{Operating ratio} = \frac{\text{Cost of goods sold} + \text{operating expenses}}{\text{Net sales}}$$

Higher the ratio the less favorable it is because it would leave a smaller margin to meet interest, dividend and other corporate needs. This ratio is partial index of over all profitability.

Operating Profit Ratio

This ratio establishes the relationship between operation profit and net sales.

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

$$\text{Operating profit ratio} = 100 - \text{operating ratio}$$

Operating profit = Net sales – (cost of goods sold + Administrative and office expenses + selling and distributive expenses.

Expenses Ratio

It establishes relationship between individual operation expenses and net sales revenue.

1. Cost of goods sold ratio = $\frac{\text{Cost of goods sold}}{\text{Net sales}} \times 100$
2. Admin. and office exp ratio = $\frac{\text{Office and admin exp}}{\text{Net Sales}} \times 100$
3. Selling and distribution ratio = $\frac{\text{Selling and dist. exp}}{\text{Net sales}} \times 100$
4. Non-operating expense ratio = $\frac{\text{Non operating expense}}{\text{Net sales}} \times 100$

Test Of Overall Profitability

- Return on shareholders investment or Net worth ratio.
- Return on equity capital.
- Return on capital employed.
- Dividend yield ratio.
- Price covering ratio.
- Dividend pay out ratio.
- Earning per share.

Return On Shareholders Investment

Shareholders investment also called return on proprietor's funds is the ratio of net profit to proprietor's funds.

It is calculated by the prospective investor in the business to find out whether the investment would be worth-making in terms of return as compared to the risk involved in the business.

$$\text{Return on shareholders investment} = \frac{\text{Net profit (After tax and int)}}{\text{Proprietors funds}}$$

Return On Equity Capital

This ratio establishes the relationship between net profit available to equity shareholders and the amount of capital invested by them.

It is used to compare the performance of company's equity capital with those of other companies, and thus help the investor in choosing a company with higher return on equity capital.

$$\text{Return on equity capital} = \frac{\text{Net profit} - \text{preference dividend}}{\text{Equity share capital (paid up)}}$$

Return On Capital Employed

This ratio is the most appropriate indicator of the earning power of the capital employed in the business.

$$\text{Return on capital employed} = \frac{\text{Net profit before taxes and interest}}{\text{Capital employed}}$$

Ideal ratio: 15%

If the actual ratio is equal to or above 15% It indicates higher productivity of the capital employed and vice versa.

Dividend Yield Ratio

It refers to the percentage or ratio of dividend paid per share to the market price per share.

This ratio throws light on the effective rate of return on investment, which potential investors may hope to earn.

$$\text{Dividend yield ratio} = \frac{\text{Dividend paid per equity share}}{\text{Market price per equity share}}$$

Price Earning Ratio

It shows how many times the annual earnings the present shareholders are willing to pay to get a share. This ratio helps investors to know the effect of earnings per share on the market price of the share.

This ratio when calculated for several years can be used as term analysis for predicting future price earning ratios and therefore, future stock prices.

$$\text{Price earning ratio} = \frac{\text{Average market price per share}}{\text{Earning per share}}$$

Dividend Pay Out Ratio

This ratio indicates the proportion of earnings available which equity share holders actually receive in the form of dividend.

$$\text{Pay out ratio} = \frac{\text{Dividend paid per share}}{\text{Earning per share}}$$

An investor primarily interested should invest in equity share of a company with high pay out ratio.

Earning Per Share

This ratio indicates the earning per equity share.

It establishes the relationship between net profit available for equity shareholders and the number of equity shares.

$$\text{Earning per share} = \frac{\text{Net profit available for equity share holders}}{\text{Number of equity shares}}$$

Thank You!

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