

Ratio Analysis Techniques

Ratio Analysis: It is concerned with the calculation of relationships, which after proper identification & interpretation may provide information about the operations and state of affairs of a business enterprise. The analysis is used to provide indicators of past performance in terms of critical success factors of a business. This assistance in decision-making reduces reliance on guesswork and intuition and establishes a basis for sound judgments.

Types of Ratios

Liquidity Measurement	Profitability Indicators	Financial Leverage/Gearing	Operating Performance	Investment Valuation
Current Ratio	Profit Margin Analysis	Equity Ratio	Fixed Assets Turnover	Price/Earnings Ratio
Quick Ratio	Return on Assets	Debt Ratio	Sales/ Revenue	Price/Earnings to Growth ratio
	Return on Equity	Debt-Equity Ratio	Average Collection Period	Dividend Yield
	Return on Capital Employed	Capitalization Ratio	Inventory Turnover	Dividend Payout Ratio
		Interest Coverage Ratio	Total assets Turnover	

Liquidity Measurement Ratios

Liquidity refers to the ability of a firm to meet its short-term financial obligations when and as they fall due. The main concern of liquidity ratio is to measure the ability of the firms to meet their short-term maturing obligations. The greater the coverage of liquid assets to short-term liabilities the better as it is a clear signal that a company can pay its debts that are coming due in the near future and still fund its ongoing operations. On the other hand, a company with a low coverage rate should raise a red flag for investors as it may be a sign that the company will have difficulty meeting running its operations, as well as meeting its obligations.

Ratio	Formula	Meaning	Analysis
Current Ratio	Current Assets/Current Liabilities Current assets includes cash, marketable securities, accounts receivable and inventories. Current liabilities includes accounts payable, short	The number of times that the short term assets can cover the short term debts. In other words, it indicates an ability to meet the short term obligations as & when they fall due	Higher the ratio, the better it is, however but too high ratio reflects an in-efficient use of resources & too low ratio leads to insolvency. The ideal ratio is considered to be 2:1.,

	term notes payable, short-term loans, current maturities of long term debt, accrued income taxes and other accrued expenses		
Quick Ratio or Acid Test Ratio	$(\text{Cash} + \text{Cash Equivalents} + \text{Short Term Investments} + \text{Accounts Receivables}) / \text{Current Liabilities}$	Indicates the ability to meet short term payments using the most liquid assets. This ratio is more conservative than the current ratio because it excludes inventory and other current assets, which are more difficult to turn into cash	The ideal ratio is 1:1. Another beneficial use is to compare the quick ratio with the current ratio. If the current ratio is significantly higher, it is a clear indication that the company's current assets are dependent on inventory.

Profitability Indicators Ratios

Profitability is the ability of a business to earn profit over a period of time. The profitability ratios show the combined effects of liquidity, asset management (activity) and debt management (gearing) on operating results. The overall measure of success of a business is the profitability which results from the effective use of its resources.

Ratio	Formula	Meaning	Analysis
Gross Profit Margin	$(\text{Gross Profit} / \text{Net Sales}) * 100$	A company's cost of goods sold represents the expense related to labor, raw materials and manufacturing overhead involved in its production process. This expense is deducted from the company's net sales/revenue, which results in a company's gross profit. The gross profit margin is used to analyze how efficiently a company is using its raw materials, labor and manufacturing-related fixed assets to generate profits.	Higher the ratio, the higher is the profit earned on sales
Operating Profit Margin	$(\text{Operating Profit} / \text{Net Sales}) * 100$	By subtracting selling, general and administrative expenses	Lower the ratio, lower the expense related to the sales

		from a company's gross profit number, we get operating income. Management has much more control over operating expenses than its cost of sales outlays. It Measures the relative impact of operating expenses	
Net Profit Margin	$(\text{Net Profit} / \text{Net Sales}) * 100$	This ratio measures the ultimate profitability	Higher the ratio, the more profitable are the sales.
Return on Assets	$\text{Net Income} / \text{Average Total Assets}$ (Earnings Before Interest & Tax = Net Income)	This ratio illustrates how well management is employing the company's total assets to make a profit.	Higher the return, the more efficient management is in utilizing its asset base
Return on Equity	$\text{Net Income} / \text{Average Shareholders Equity} * 100$	It measures how much the shareholders earned for their investment in the company	Higher percentage indicates the management is in utilizing its equity base and the better return is to investors.
Return on Capital Employed	$\text{Net Income} / \text{Capital Employed}$ $\text{Capital Employed} = \text{Avg. Debt Liabilities} + \text{Avg. Shareholders Equity}$	This ratio complements the return on equity ratio by adding a company's debt liabilities, or funded debt, to equity to reflect a company's total "capital employed". This measure narrows the focus to gain a better understanding of a company's ability to generate returns from its available capital base.	It is a more comprehensive profitability indicator because it gauges management's ability to generate earnings from a company's total pool of capital.

Financial Leverage / Gearing Ratios

These ratios indicate the degree to which the activities of a firm are supported by creditors' funds as opposed to owners as the relationship of owner's equity to borrowed funds is an important indicator of financial strength. The debt requires fixed interest payments and

repayment of the loan and legal action can be taken if any amounts due are not paid at the appointed time. A relatively high proportion of funds contributed by the owners indicates a cushion (surplus) which shields creditors against possible losses from default in payment. Financial leverage will be to the advantage of the ordinary shareholders as long as the rate of earnings on capital employed is greater than the rate payable on borrowed funds.

Ratio	Formula	Meaning	Analysis
Equity Ratio	$(\text{Ordinary Shareholder's Interest} / \text{Total assets}) * 100$	This ratio measures the strength of the financial structure of the company	A high equity ratio reflects a strong financial structure of the company. A relatively low equity ratio reflects a more speculative situation because of the effect of high leverage and the greater possibility of financial difficulty arising from excessive debt burden.
Debt Ratio	$\text{Total Debt} / \text{Total Assets}$	This compares a company's total debt to its total assets, which is used to gain a general idea as to the amount of leverage being used by a company. This is the measure of financial strength that reflects the proportion of capital which has been funded by debt, including preference shares.	With higher debt ratio (low equity ratio), a very small cushion has developed thus not giving creditors the security they require. The company would therefore find it relatively difficult to raise additional financial support from external sources if it wished to take that route. The higher the debt ratio the more difficult it becomes for the firm to raise debt.
Debt – Equity Ratio	$\text{Total Liabilities} / \text{Total Equity}$	. This ratio measures how much suppliers, lenders, creditors and obligors have committed to the company versus what the shareholders have committed. This ratio indicates the extent to which debt is covered by shareholders' funds.	A lower ratio is always safer, however too low ratio reflects an inefficient use of equity. Too high ratio reflects either there is a debt to a great extent or the equity base is too small

Capitalization Ratio	Long Term Debt / (Long Term Debt + Shareholder's Equity)	This ratio measures the debt component of a company's capital structure, or capitalization (i.e., the sum of long-term debt liabilities and shareholders' equity) to support a company's operations and growth.	A low level of debt and a healthy proportion of equity in a company's capital structure is an indication of financial fitness. A company too highly leveraged (too much debt) may find its freedom of action restricted by its creditors and/or have its profitability hurt by high interest costs. This ratio is one of the more meaningful debt ratios because it focuses on the relationship of debt liabilities as a component of a company's total capital base, which is the capital raised by shareholders and lenders.
Interest Coverage Ratio	EBIT / Interest on Long Term Debt	This ratio measures the number of times a company can meet its interest expense	The lower the ratio, the more the company is burdened by debt expense. When a company's interest coverage ratio is only 1.5 or lower, its ability to meet interest expenses may be questionable.

Operating Performance Ratios:

These ratios look at how well a company turns its assets into revenue as well as how efficiently a company converts its sales into cash, i.e how efficiently & effectively a company is using its resources to generate sales and increase shareholder value. The better these ratios, the better it is for shareholders.

Ratios	Formula	Meaning	Analysis
Fixed Assets Turnover	$\text{Sales} / \text{Net Fixed Assets}$	This ratio is a rough measure of the productivity of a company's fixed assets with respect to generating sales	High fixed assets turnovers are preferred since they indicate a better efficiency in fixed assets utilization.
Average Collection Period	$(\text{Accounts Receivable} / \text{Annual Credit Sales}) * 365 \text{ days}$	The average collection period measures the quality of debtors since it indicates the speed of their collection.	The shorter the average collection period, the better the quality of debtors, as a short collection period implies the prompt payment by debtors. An excessively long collection period implies a very liberal and inefficient credit and collection performance. The delay in collection of cash impairs the firm's liquidity. On the other hand, too low a collection period is not necessarily favorable, rather it may indicate a very restrictive credit and collection policy which may curtail sales and hence adversely affect profit.
Inventory Turnover	$\text{Sales} / \text{Average Inventory}$	It measures the stock in relation to turnover in order to determine how often the stock turns over in the business. It indicates the efficiency of the firm in selling its product.	High ratio indicates that there is a little chance of the firm holding damaged or obsolete stock.
Total Assets Turnover	$\text{Sales} / \text{Total Assets}$	This ratio indicates the efficiency with which the firm uses all its assets to generate sales.	Higher the firm's total asset turnover, the more efficiently its assets have been utilised.

Investment Valuation Ratios:

These ratios can be used by investors to estimate the attractiveness of a potential or existing investment and get an idea of its valuation.

Ratio	Formula	Meaning	Analysis
Price Earning Ratio (P/E Ratio)	Market Price per Share / Earnings Per Share	This ratio measures how many times a stock is trading (its price) per each rupee of EPS	A stock with high P/E ratio suggests that investors are expecting higher earnings growth in the future compared to the overall market, as investors are paying more for today's earnings in anticipation of future earnings growth. Hence, stocks with this characteristic are considered to be growth stocks. Conversely, a stock with a low P/E ratio suggests that investors have more modest expectations for its future growth compared to the market as a whole.
Price Earnings to Growth Ratio	(P/E Ratio) / Earnings Per Share	The price/earnings to growth ratio, commonly referred to as the PEG ratio, is obviously closely related to the P/E ratio. The PEG ratio is a refinement of the P/E ratio and factors in a stock's estimated earnings growth into its current valuation. By comparing a stock's P/E ratio with its projected, or estimated, earnings per share (EPS) growth, investors are given insight into the degree of overpricing or under pricing of a stock's	The general consensus is that if the PEG ratio indicates a value of 1, this means that the market is correctly valuing (the current P/E ratio) a stock in accordance with the stock's current estimated earnings per share growth. If the PEG ratio is less than 1, this means that EPS growth is potentially able to surpass the market's current valuation. In other words, the stock's price is being undervalued.

		current valuation, as indicated by the traditional P/E ratio.	On the other hand, stocks with high PEG ratios can indicate just the opposite - that the stock is currently overvalued.
Dividend Yield Ratio	$\left(\frac{\text{Annual Dividend per Share}}{\text{Market Price per Share}} \right) * 100$	This ratio allows investors to compare the latest dividend they received with the current market value of the share as an indicator of the return they are earning on their shares	This enables an investor to compare ratios for different companies and industries. Higher the ratio, the higher is the return to the investor
Dividend Payout Ratio	$\left(\frac{\text{Dividend per Share}}{\text{Earnings per Share}} \right) * 100$	This ratio identifies the percentage of earnings (net income) per common share allocated to paying cash dividends to shareholders. The dividend payout ratio is an indicator of how well earnings support the dividend payment.	