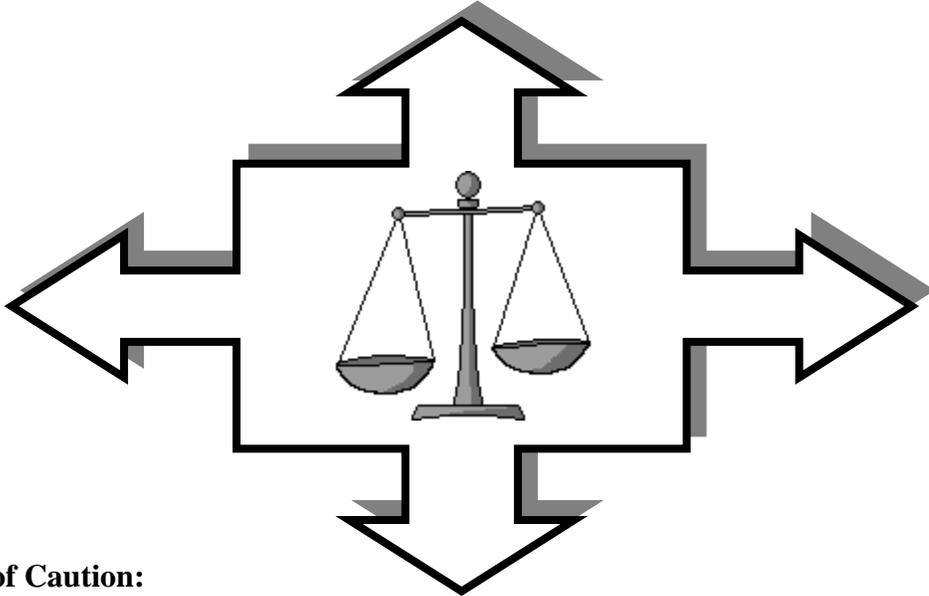




Ratio Review: Formulas, Purpose & Use



Word of Caution:

Please remember that the significance of any particular ratio in the ratio analysis set is highly dependent upon the industry. For example, Gross Profit (Revenue less Cost of Goods Sold) would be irrelevant to service businesses, banks, and other financial institutions. In banks, an important ratio is Net Margin (Net Interest earned less interest expense) yet this ratio would have no significance to manufacturing companies.

This chapter is divided into sections. The first section provides a list of key ratios and their computation method. It then explains the primary value, purpose, and use of each. The second section is a measurement template consisting of a set of ratios to facilitate a “hands on” experience.

Ratios – Formula – Purpose/Use

Liquidity

Ratio:

Current Ratio

Formula:

Current Assets

Current Liabilities

Value/Purpose/Use

Measures short-term debt paying ability

Ratio:

Quick or Acid-test Ratio

Formula:

Cash, Marketable Securities & Receivables

—————
Current Liabilities

Value/Purpose/Use

Measures immediate short-term liquidity

Ratio:

Current Cash Debt Coverage Ratio

Formula:

Net cash provided by Operating Activities

—————
Average Current Liabilities

Value/Purpose/Use

Measures a company's ability to pay off its current liabilities in a given year from the cash it produces from operations.

Activity

Ratio:

Receivable Turnover (Also called Average Collection Period)

Formula:

Net Revenue

————— = X

Average¹ Receivables (trade)

365

—————
X

Value/Purpose/Use

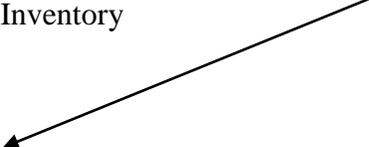
Measures the liquidity of receivables and the average length of time between a sale and collection of cash

¹ Generally, "Average" means beginning balance + ending balance divided by 2

Ratio:

Inventory Turnover

Formula:

$$\frac{\text{Cost of Goods Sold}}{\text{Average Inventory}} = X$$
$$\frac{365}{X}$$


Value/Purpose/Use

Measures the liquidity of inventory and the average length of time that goods purchased are warehoused before they are sold

Ratio:

Asset Turnover

Formula:

$$\frac{\text{Net Revenue (sales)}}{\text{Average Total Assets}}$$

Value/Purpose/Use

Measures how efficiently assets are used in the process of generating revenue for the company

Profitability

Ratio:

Profit margin on revenue

Formula:

$$\frac{\text{Net Income}}{\text{Net Revenue (Sales)}}$$

Value/Purpose/Use

Measures customer profitability (test of profit productivity of sales). It indicates the amount of net income each dollar of sales produces.

Ratio:

Return on Assets

Formula:

Net Income

—————
Average Assets

Value/Purpose/Use

Measures the profit productivity of assets. If the number is lower than competitors it may suggest that the company has too many assets or perhaps the wrong configuration of assets.

Ratio:

Return on Common Stockholder Equity

Formula:

Net Income minus preferred stock dividends

—————
Average common stockholder equity

Value/Purpose/Use

Measures the profitability of owner's investment in the company

Ratio:

Earnings Per Share

Formula:

Net Income minus preferred stock dividends

—————
Weighted Average of Common Shares Outstanding

Value/Purpose/Use

Measures the net income earned on each share of common stock.

Ratio:

Price Earnings Ratio

Formula:

Market Price of Stock

—————
Earning Per Share

Value/Purpose/Use

Used as a method to test the "expensiveness" of a stock. The higher the number in the ratio – the more costly the stock.

Ratio:

Dividend Payout Ratio

Formula:

Cash dividends

Earning Per Share

Value/Purpose/Use

Measures the percentage of profits that are returned to stockholders in the form of dividends. Fortune 500 companies on average payout 55%. A company should retain some portion of earnings to fund future growth. A rule of thumb is that a company should not payout more than 60% however there are exceptions to every rule.

Coverage

Ratio:

Debt to Total Assets

Formula:

Total Debt

Total Assets

Value/Purpose/Use

Measures the percentage of assets funded by creditors. The higher the number – the greater the risk of creditor participation in company decision-making. Generally, creditors are not concerned about the stockholders of a debtor. Their responsibility is to protect the investment of the lending institution.

Ratio:

Times Interest Earned

Formula:

Income before Interest Expense and Income Tax

Interest Expense

Value/Purpose/Use

Measures the company's ability to service its interest costs from operations. The larger the number the stronger the ability to cover interest costs.

Ratio:

Debt Coverage Ratio

Formula:

Net cash provided by Operating Activities

Average Total Liabilities

Value/Purpose/Use

Measures the company's ability to repay its total liabilities from internal funding.

Ratio:

Book Value Per Share

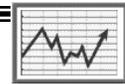
Formula:

Common Stockholders' Equity

Common Shares Outstanding

Value/Purpose/Use

In theory, if a company is liquidated, this is the amount that would be paid to stockholders for each share they own. It is used as one of several guides in determining the risk of an investment.



Ratio Twists

There are many other useful ratios and quantitative assessment tools that focus primarily on a "per share" analysis. These include the Trailing P/E, Forward P/E, PEGY, and Beta. A brief overview is provided below. For more detailed information on any of these, please write to the author at: RVanNess@uamail.albany.edu.

Trailing P/E

The trailing price-to-earnings ratio (TPE) is computed by taking the current share price and dividing it by the trailing 12 months earnings per share.

It is also referred to as the:

- "price multiple" or
- "earnings multiple"

$$\text{TPE} = \frac{\text{Current share price}}{\text{Trailing 12 months earnings per share}}$$

Value/Use: A method of assessing or estimating the value embodied in shares of a particular stock.

Forward P/E

The forward price-to-earnings ratio (FPE) is computed by dividing the current share price by the projected next 12 months earnings per share.

It is also referred to as the:

- “estimated price to earnings”

$$\text{FPE} = \frac{\text{Current share price}}{\text{Projected 12 months earnings per share}}$$

Value/Use: A method of benchmarking – that is comparing one company’s future outlook to that of another company. It is also used as a time series analysis in that the current P/E of a company is compared to its Forward P/E as a method of assessing growth potential.

PEG Ratio

The price-to-earnings-growth ratio (PEG) is computed by dividing the current price-to-earnings ratio by the annual earnings per share growth.

$$\text{PEG} = \frac{\text{Current price/earnings ratio}}{\text{Projected earnings per share growth}}$$

Value/Use: The PEG ratio is often used as an indicator of a stock’s potential value. Some analysts prefer the PEG ratio to the PE ratio because it factors potential growth. The lower the PEG ratio the greater the possibility that the stock is undervalued.

PEGY Ratio

The PEGY ratio (Price, Earnings, Growth, dividend Yield) is computed by dividing the price-to-earnings ratio by the projected earnings growth rate and dividend yield.

$$\text{PEGY} = \frac{\text{Current price/earnings ratio}}{\text{Projected earnings per share growth and dividend yield}}$$



Value/Use: The PEGY ratio is preferred over the PEG ratio for estimating the future value of stocks that pay a large cash dividend.

BETA

The BETA is a measure of the volatility of a stock. A regression analysis is performed to assess the stocks market sensitivity. A BETA of less than 1 indicates that the stock is less volatile than the market as a whole; a BETA of more than 1 indicates that it is more volatile than the market.