



SLG The **StockLogic** Group, Inc.  
**RATIO MASTER**

# INTERPRETING FINANCIAL STATEMENTS

**Version 2.1**

SLG Ratio Master

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## INTRODUCTION TO FINANCIAL RATIOS

### *What is a Financial Ratio?*

A ratio is a tool used to analyze financial statements. It is a relationship between two numbers expressed in comparison to “1” (e.g. 3:1 or 7.5:1).

There are many financial ratios commonly used to analyze financial statements. Some of these are “key” ratios (identified in RatioMaster with a key symbol) that are significant and frequently used. The remainder are supplemental ratios and are useful in performing a comprehensive analysis of financial statements.

*Balance Sheet Ratios* relate two items in the Balance Sheet (e.g. Quick Ratio or Acid Test). *Earnings Statement and Retained Earnings Statement Ratios* express relationships between items in the Earnings Statement and/or Retained Earnings Statement (e.g. Net Profit Margin). *Combined Ratios* express relationships between an item or items found in the Balance Sheet to an item or items found in the Earnings Statement and/or Retained Earnings Statement (e.g. Earnings per Common Share). *Value Ratios* express the value of a company’s securities with items found in the financial statements (e.g. Price-Earnings Ratio).

Ratios are a significant help in determining the health of a company. However, the significance of values derived by ratios varies considerably between different types of companies (e.g. industrials vs utilities). These differences usually arise from the manner in which income is derived, the underlying risk of the enterprise, and the assets (inventories) required to sustain revenue.

### *What is the Significance of Trend Analysis?*

The analysis of trends is significant in determining the true picture for a given business. Trends in ratios over a series of years will enable the analyst to determine patterns in business behavior. When a series of ratios over time for the same company is analyzed, one can see improvements or declines in general performance. It is critical, however, that an appropriate base year is selected. For example, a banner first year followed by a year of otherwise normal performance may incorrectly imply that there is a problem if not viewed in context.

These ratios become valuable indeed when compared to the ratios of other businesses in the same sector over the same time period. This relative performance in comparison to either a competitor or an industry standard can provide valuable insight into the company’s abilities, verify sustainable competitive advantages, and provide other indications of relative performance.

## BALANCE SHEET RATIOS

### *Working Capital Ratio*

The Working Capital Ratio and the Quick Ratio are the two common ratios used to measure corporate liquidity. The Working Capital Ratio is a simple examination of by how much the current assets exceed the current liabilities. An examination of the liquidity of the current assets adds some refinement to the analysis. For example, cash is better than inventory where two businesses have a Working Capital Ratio of 3:1.

A Working Capital Ratio of 3:1 means there is \$3 available to pay each \$1 of debt. This is a general statement however, and many other factors such as the type of business, liquidity of assets, and inventory turnover rate will affect the analysis. A ratio in excess of 5:1, if maintained, may suggest problems in inventory management or unnecessary excess cash. Bear in mind that many high-tech or intellectual capital companies, with low overhead, little inventory, and good profitability, may yield higher ratios than a discount warehouse store.

### *Quick Ratio (the Acid Test)*

The Quick Ratio is a more stringent test than the Working Capital Ratio. As hinted in the discussion regarding Working Capital Ratio, composition of current assets is a key factor. The Quick ratio removes inventory from the calculation to examine the relationship between liquid assets and liabilities.

A good rule of thumb is that if a company has a Quick Ratio of 1:1 or better it is in a good liquid position. Again, knowledge of the type of business is critical. A ratio of less than 1:1 might still indicate good health if the inventory turnover rate is high (equivalent to cash).

### *Net Tangible Assets per \$1000 of Total Debt Outstanding*

This ratio describes the protection provided to a debtholder by the company's tangible assets. In other words, it's the asset value behind each \$1000 of total debt outstanding. This ratio provides the debtholder with an indication of the security provided after all prior ranking debt is accounted for. The debtholder in question is presumed to be subordinated to all prior debt, excepting deferred taxes and minority interest.

A rule of thumb is that utilities should have a ratio of 1.5:1 and industrials should have a minimum of 2:1. These would be expressed as \$1500 net tangible assets per \$1000 of total debt outstanding and \$2000 net tangible assets per \$1000 of total debt outstanding, respectively.

The significant limitation of this ratio is that book values for assets are used. These values usually have no relation to current market (liquidation) values. Despite this

serious limitation, some jurisdictions require its disclosure in prospectuses for new debt issues.

### *Equity Value (Book Value) per Preferred Share*

Preferred shares rank before common shares in liquidation, distribution of assets, or winding up of the company. In deriving this ratio, the book value (including common and preferred share capital) is divided by the issued and outstanding preferred shares.

A rule of thumb is a minimum of 2:1 for both industrials and utilities.

### *Equity Value (Book Value) per Common Share*

Common shares rank after preferreds in liquidation, distribution of assets, or winding-up of the company. In deriving this ratio, the book value (excluding preferred share capital) is divided by the issued and outstanding common shares.

The equity value per common share rarely matches the market value. Some shares will trade many times above or below this value due to the real or perceived earnings power within the company. Therefore, there is no rule of thumb for this ratio.

### *Percentage of Total Capital Ratios*

These ratios include:

Percentage of Total Capital Attributable to Debtholders

Percentage of Total Capital Attributable to Preferred Shareholders

Percentage of Total Capital Attributable to Common Shareholders

These ratios simply indicate what portion of total invested capital each type of holder is entitled to. Generally expressed as a percentage, a portion indicated as 35% is equivalent to a ratio expressed as 0.35:1. Common shareholders are usually entitled to more due to accumulated retained earnings. Preferred shareholders and debtholders are entitled to par or occasionally par plus a small premium.

Rules of thumb suggest that, for utilities, total debt should not exceed 60% of total capital and, for industrials total debt should not exceed 30% of total capital. In both cases, the equity component is taken at book value.

### *Debt to Equity Ratio*

This significant ratio can signal when a company's borrowing is excessive. Excess debt in a time of increasing interest rates can spell doom for a company. At the very least, excess debt increases services charges, reduces earnings available for dividends, and reduces the margin of safety for investors. Simply put, the higher the ratio the higher the risk.

A rule of thumb for utilities is 1.5:1. That is, due to stable regulated earnings, the equity can be financed to 150%. For industrials, the ratio should not exceed 0.5:1

## **EARNINGS STATEMENT AND RETAINED EARNINGS STATEMENT RATIOS**

### *Interest Coverage*

This ratio tests the ability of the company to pay the interest charges on its debt. The ratio indicates the dollar amount of net income available to pay each \$1 of interest charges. It is important to take all debt into account in this calculation as default on any loan, no matter how junior, could trigger an upwards reaction and signal an inability to meet more senior obligations. This is known as the "overall method of calculation."

Prior performance provides the best insight into what is acceptable for a given company or sector. Industrials have a specific operations franchise and are subject to rate boards who allow for operational expenses and a fair return on capital. Therefore a low coverage rate of 2:1 maintained over the last five fiscal years is acceptable. Industrials, on the other hand, suffer with the volatility of the market and must have maintained a coverage rate of 3:1 over the last five fiscal years to pass the rule of thumb.

### *Preferred Dividend Coverage*

This ratio tests the ability of the company to pay the preferred dividends. It is essentially the extension of the interest coverage calculation to include preferred dividends. The ratio indicates the dollar amount of net income available to pay each \$1 of preferred dividends.

Similar to interest coverage calculations, for utilities industrials, a low coverage rate of 2:1 maintained over the last five fiscal years is acceptable. Industrials, on the other hand, suffer with the volatility of the market and must have maintained a coverage rate of 3:1 over the last five fiscal years to pass the rule of thumb.

*Note on Apparent Tax Rate:* Since preferred dividends are paid out after income tax, the coverage is calculated on a pre-tax basis by adjusting the preferred dividends for income tax. This apparent tax rate is calculated using current and deferred taxes as a percentage of adjusted net earnings. This rate may differ from the actual tax rate for a given period but is a useful approximation.

### *Percentage Dividend Payout Ratios*

These ratios include:

Percentage of Available Earnings Paid out as Preferred and Common Dividends

Percentage of Available Earnings Paid out as Common Dividends

These ratios simply describe the percentage of available earnings paid out as various dividends. Maintenance of stable payout ratios is an indication of stable earnings. Therefore, even in unstable times, companies will try to maintain stable payouts to preserve the credit rating and investor appreciation of their securities. Analysts will look for stability over several fiscal years to provide some clue as to earnings stability.

### *Efficiency or Profitability Ratios*

These ratios include (in successive order):

Gross Profit Margin

Operating Profit Margin

Net (After-tax) Profit (or Earnings) Margin

These ratios are extremely useful in comparing a company's performance in a current year to prior years (internal) or externally with other companies in the same business sector. In successive order, these ratios indicate the profitability of operations at various levels. The gross margin is a general indicator of the profitability and efficiency of the company's operation. The operating profit margin factors in the "sg&a" (selling, general, and admin) costs prior to calculating this level of profit. This ratio can be helpful when data specific to 'cost of goods sold' (used in the Gross Profit Ratio) is unavailable. The Net Profit Margin is the summation of a company's operations for a period and effectively documents, in a single number, the management ability within the company. Note that not all companies will have minority interest and equity income so these items must be deducted and added respectively prior to the calculation of net profit.

### **COMBINED RATIOS**

These ratios use data from both the Income/Earnings Statement and/or the Retained Earnings Statement and the Balance Sheet. For this reason they are known as Combined Ratios. Among other uses, these will describe how effectively assets are used, how able the company is to pay its debts, and the frequency of inventory turnover.

### *Pre-tax Return on Invested Capital*

This ratio demonstrates how well management has utilized the assets under management. Note that the source of invested capital (debt vs equity) is not differentiated.

### *Net (After-tax) Return on Invested Capital*

This ratio differs from the Pre-tax Return on Invested Capital above in that the income tax is not included in the numerator and total interest charges are calculated net of taxes.

### *Net (After-tax) Return on Common Equity*

This ratio is essentially the same as the previous one except it excludes debt from the denominator. In this fashion, the common shareholders are able to discern the profitability of their capital in the enterprise.

### *Cash Flow / Total Debt Outstanding*

This ratio documents the company's ability to repay its debt. While not a key ratio, its cousin, the Interest Coverage Ratio, is key. Used together in analysis, the analyst is able to determine the company's ability, first, to pay servicing charges and, second, to meet any demands on principle.

It is important to understand the nature and significance of Cash Flow. Cash Flow is net earnings plus all deductions not requiring cash outlay, less all additions not received in cash. In other words, it is the actual tangible measure of cash flowing in and out of the business. Some companies may have large deductions for depreciation and deferred taxes that result in little or no net earnings on the books but which speak to significant cash and the resultant ability to meet debt obligations.

Be wary of taking delight in large cash flows because other liabilities like sinking funds and other commitments may not show on the books but nonetheless have a significant subtractive effect on cash flow. Cash Flow should be considered as a source to meet financial obligations and is represented by data from all financial statements including the Statement of Changes in Financial Position.

As a rule of thumb, for utilities, annual Cash Flow should be 20% of total debt outstanding for the prior five years. For industrials, annual Cash Flow should be 30% of total debt outstanding for the prior five years.



### *Earnings per Common Share*

This is one of the most widely reported and understood ratios. It represents the net earnings of the company (less commitments to preferred shareholders) in relation to the total number of common shares issued and outstanding. This figure is often referred to by the acronym EPS, for “earnings per share”, and is a stepping-stone to the Price-Earnings Ratio.

In less mature companies where stock options may be used in lieu of salaries, or in any company where significant equivalents-to-common securities exist, it is illuminating to calculate the Fully Diluted Earnings per Common Share. This answers the question: “... what is the effect on earnings per share if all common options were exercised, all convertible debentures converted, all warrants exercised, and all convertible preferreds were converted?...”. Note that earnings will be adjusted to reflect unpaid preferred dividends for the hypothetically converted preferreds, and unpaid interest charges for the hypothetically converted debentures. The interest adjustment arises from the fact that interest is paid before taxes and “earnings” is an after-tax figure.

The Earnings per Share figure suggests the possibility of dividends that may be paid on common shares. However, this is a corporate policy decision and there is no rule of thumb regarding the frequency or size of dividend payments. In considering dividends, the Board of Directors must consider the net earnings for the current fiscal period, the stability of earnings, the amount of retained earnings and their rate of return, the working capital requirements, corporate policy, and other plans for either expansion or contraction which may speak to capital requirements. After considering all of these, the Board of Directors can reach a decision regarding the frequency and size of any dividend.

### *Inventory Turnover Ratio*

This ratio demonstrates the number of times inventory is turned over in a year. Caution must be exercised in using this ratio, as the value will differ considerably from industry sector to industry sector. Some companies have little or no inventory (service companies) and others may have significant inventory (retail sales). Notwithstanding the size of the inventory, some industries have high turnover (grocery stores) and others have low turnover (wineries).

Simply calculated as the total cost of goods sold divided by the current inventory, this ratio demonstrates the inventory on hand as a fraction of total inventory handled during the period (typically fiscal year). When the rate is divided into 365 the analyst can show the number of days required to turn over the company inventory. When the cost of goods sold is not an available figure, net sales may be used as the numerator.

While this ratio is useful in analyzing one impact on earnings, it does not speak to specific items in inventory, just the value of items held in inventory. As such, a lower-than-average value provides a clue that some inventory items lag in turnover – for any of a number of reasons.

Since a large part of working capital is often tied up in inventory, the management of inventory and the rate of turnover have a direct effect on earnings. Inventory can be determined creatively where “true” inventory does not exist. For example, a construction company may attribute all outstanding bids, RFPs, and RFQs (and the costs associated with them) as inventory. While not common, it can provide some insight into the use of working capital.

## VALUE RATIOS

### *Dividend Yield*

This ratio yields a percentage rate of return on the investment in common or preferred stock. This figure is most useful in comparing years of performance for an individual company. Comparisons with other companies will be affected by the number of considerations made by the Boards of Directors with regard to dividends discussed above in “*Earnings per Common Share*”. Reinvested earnings, the proportion of common and preferred shares, and the basic record of management skill are not reflected in this ratio. However, it does clearly show the return on investment provided by a dividend, based on the prevailing market price of the security.

### *Price-Earnings Ratio*

This is the most widely reported and regarded ratio in financial analysis. The Price Earnings Ratio is generally expressed as an integer. When multiplied by the *Earnings per Common Share* the result is the current market price of a common share. Conversely, the Price-Earnings Ratio, if known, can be divided into the market price of a common share to yield the *Earnings per Common Share*. As suggested, this is calculated only for common shares. This ratio value has the most relevance for an actively traded stock in a highly liquid market – like a public stock market.

This ratio is shorthand for the multiple of actual or anticipated earnings represented by the price of a common share. The Price-Earnings Ratio illustrates the optimism investors have with regards to the future earnings performance of the company. In many instances, the higher the ratio the more speculative the optimism for short-term increase in value or the more confident the investor is in the longer-term realization of earnings.

*Note on Comparative Value:* Public companies’ Price-Earnings Ratios can be used to derive a hypothetical value for a private company in the same business sector. However, the analyst should always remember that “value” is a post-transaction attribute of a stock (e.g. You don’t really know what its worth until a mutually acceptable price is set and the deal is made.) Therefore, while comparisons are interesting, they mean little in determining the value of a thinly traded, illiquid private company stock.