

DEFINITION OF RATIOS

Introduction

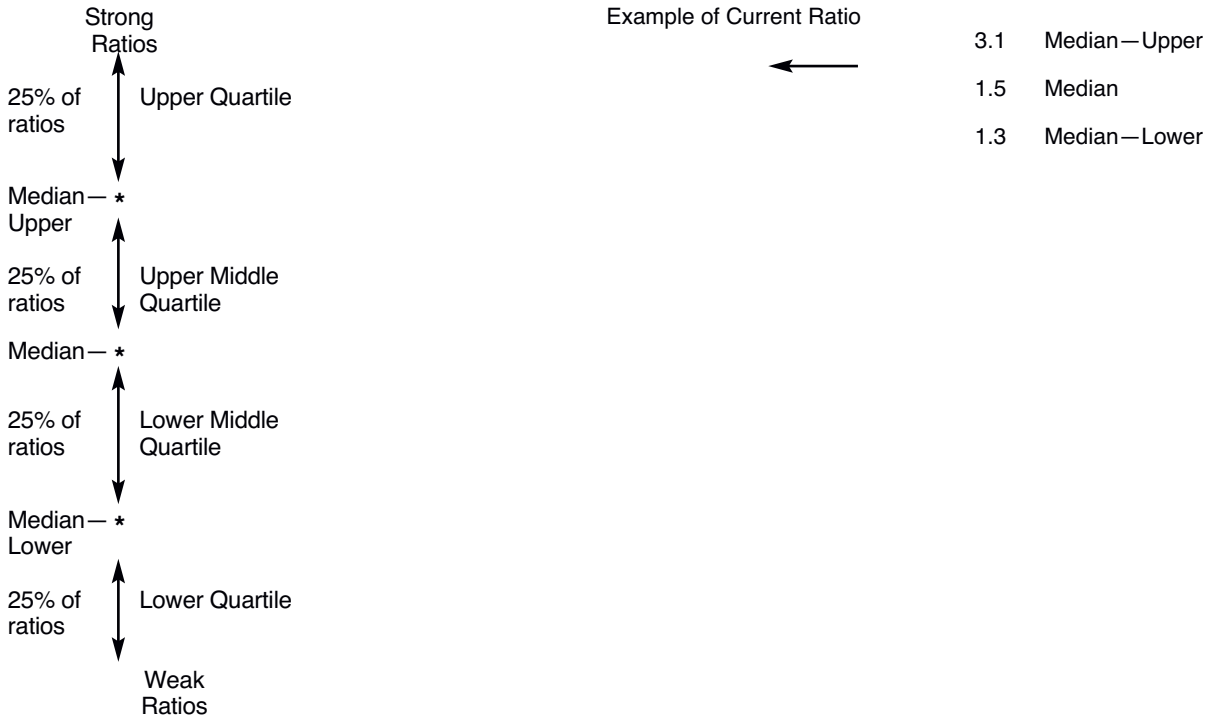
On each data page, below the common size balance sheet and income statement information, you will find a series of ratios computed from the financial statement data.

Here is how these figures are calculated for any given ratio:

1. The ratio is computed for each financial statement in the sample.
2. These values are arrayed (listed) in an order from the strongest to the weakest. In interpreting ratios, the “strongest” or “best” value is not always the largest numerical value, nor is the “weakest” always the lowest numerical value. (For certain ratios, there may be differing opinions as to what constitutes a strong or a weak value. RMA follows general banking guidelines consistent with sound credit practice to resolve this problem.)
3. The array of values is divided into four groups of equal size. The description of each ratio appearing in the *Statement Studies* provides details regarding the arraying of the values.

What Are Quartiles?

Each ratio has three points, or “cutoff values,” that divide an array of values into four equal-sized groups called quartiles, as shown below. The quartiles include the upper quartile, upper-middle quartile, lower-middle quartile, and the lower quartile. The upper quartile is the cutoff value where one-quarter of the array of ratios falls between it and the strongest ratio. The median is the midpoint—that is, the middle cutoff value where half of the array falls above it and half below it. The lower quartile is the point where one-quarter of the array falls between it and the weakest ratio. In many cases, the average of two values is used to arrive at the quartile value. You will find the median and quartile values on all *Statement Studies* data pages in the order indicated in the chart below.



Why Use Medians/Quartiles Instead of the Average?

There are several reasons why medians and quartiles are used instead of an average. Medians and quartiles eliminate the influence of an “outlier” (an extremely high or low value compared to the rest of the values). They also more accurately reflect the ranges of ratio values than a straight averaging method would.

It is important to understand that the spread (range) between the upper and lower quartiles represents the middle 50% of all the companies in a sample. Therefore, ratio values greater than the upper quartile or less than the lower quartile may begin to approach “unusual” values.

Nonconventional Values:

For some ratio values, you will occasionally see an entry that is other than a conventional number. These entries are defined as follows:

- (1) UND — This stands for “undefined,” the result of the denominator in a ratio calculation approaching zero.
- (2) NM — This may occasionally appear as a quartile or median for the ratios sales/working capital, debt/worth, and fixed/worth. It stands for “no meaning” in cases where the dispersion is so small that any interpretation is meaningless.
- (3) 999.8 — When a ratio value equals 1,000 or more, it also becomes an “unusual” value and is given the “999.8” designation. This is considered to be a close enough approximation to the actual unusually large value.

Linear versus Nonlinear Ratios:

An array that is ordered in ascending sequence or in descending sequence is linear. An array that deviates from true ascending or true descending when its values change from positive to negative (low to high positive, followed by high to low negative) is non-linear.

A specific example of a nonlinear ratio would be the Sales/Working Capital ratio. In other words, when the Sales/Working Capital ratio is positive, then the top quartile would be represented by the lowest positive ratio. However, if the ratio is negative, the top quartile will be represented by the highest negative ratio! In a nonlinear array such as this, the median could be either positive or negative because it is whatever the middle value is in the particular array of numbers.

Nonlinear Ratios

Sales/Working Capital
Fixed/Worth
Debt/Worth

Linear Ratios

Current Ratio
Quick Ratio
Sales Receivables
Days' Receivables
Cost of Sales/Inventory
Days' Inventory
Cost of Sales/Payables
Days' Payables
EBIT/Interest
Net Profit + Deprec, Depletion, Amort/Current Maturities Long-Term Debt
% Profits Before Taxes/Tangible Net Worth
% Profits Before Taxes/Total Assets
Sales/Net Fixed Assets
Sales/Total Assets
% Depreciation, Depletion, Amortization/Sales
% Officers', Directors', Owners' Compensation/Sales

Important Notes on Ratios:

Turnover Ratios — For certain ratios (sales/receivables, cost of sales/inventory, cost of sales/payables) you will see two numbers, one in **BOLD** and one in regular type. These ratios are generally called turnover ratios. The number in **BOLD** represents the **number of days** and the number in regular type is the **number of times**. Please see the definition of sales/receivables on the following pages for a more complete description of the two types of calculations and what each means.

Inventory Presentations — **Inventory presentations** are based on fiscal year-end point-in-time balances, not averages. In addition, our data capture does not permit us to know what method of inventory accounting (LIFO or FIFO, for instance) was used.

The following ratios contained in the *Statement Studies* are grouped into five principal categories: liquidity, coverage, leverage, operating, and specific expense items.