

Financial Ratios

(Cheat Sheet)



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Financial Ratios Including Limitations

Financial ratios are one component of financial analysis. Financial ratios are often calculated by using amounts from previously issued annual financial statements. In that case the resulting *ratios are history* and may not be indicative of the present and future situation. It is also wise to consider the financial ratios to be averages. For example, the sales are unlikely to have occurred evenly throughout the year. Therefore, the resulting number of days' sales in inventory may be 100, but it is an average of some months of 120 days and some months of 80 days.

The turnover ratios and the "return on" ratios usually involve an annual income statement amount and a balance sheet amount. However, the balance sheet amount is valid only for the *final moment* of the accounting year and may not be indicative of the amounts within the accounting year. This is especially true when a corporation ends its accounting year at the low point of its business activity. To overcome this situation, it is best to use the *average balance sheet amounts for the 12 months during the year*. (Merely averaging the two lowest points of the year will not solve the problem.)

It is also important to realize that companies within the same industry may apply accounting principles differently. Some companies may be conservative in their accounting, while another may be the complete opposite. For example, *Company C* values its inventory using LIFO and uses very short useful lives for depreciating its plant assets. Its competitor *Company L* values its inventory using FIFO and uses very long useful lives for depreciating its plant assets. In periods of inflation, the financial statements and financial ratios of these companies will have differences due to the way accounting principles are applied.

Of course within a company where the accounting rules are consistently applied, the current financial ratios can be compared with confidence to its financial ratios from the past and to those budgeted for the current year and future years.

Working Capital

Working capital is actually an amount (rather than a ratio) which is an indicator of a company's ability to meet its obligations. It is calculated as follows: *current assets* minus *current liabilities*. For example, if a business has \$280,000 of current assets and \$260,000 of current liabilities, its *working capital is \$20,000*.

Current Ratio

The current ratio is also an indicator of a company's ability to pay its current obligations. The calculation is: *current assets* divided by *current liabilities*. If a company has current assets of \$300,000 and current liabilities of \$150,000 the company's *current ratio is 2:1* [$(\$300,000/\$150,000):1$].

Acid-Test Ratio or Quick Ratio

The acid-test ratio is also known as the *quick ratio*. It is a more conservative indicator of a company's ability to pay its current obligations (than the current ratio) since *inventory is excluded* from the calculation. In other words, the calculation is: [*cash + marketable securities + accounts receivable*] divided by *current liabilities*. If a company had current assets of \$300,000 (of which \$180,000 was inventory) and current liabilities of \$150,000, the *acid-test ratio will be approximately 0.8:1* [$\$120,000/\$150,000$].

Receivables Turnover Ratio

The receivables turnover ratio is an indicator of how fast a company's accounts receivable are (or were) collected. The calculation is: *credit sales* for a year divided by the *average balance in accounts receivable* during the same year. If credit sales for the year were \$800,000 and the average amount of accounts receivable throughout the year was \$100,000 the company's *receivables turnover ratio will be 8 times* [$\$800,000/\$100,000$].

Of course, if only the two low end-of-the-year receivable amounts are averaged, the resulting ratio will be much different from the average based on the average throughout the year.

Average Collection Period or Days' Sales in Receivables

The average collection period tells how many days (on average) it takes to collect a company's accounts receivable. The calculation is: *360 or 365 days* divided by the *receivables turnover ratio*. Using the information in our previous calculation, the receivables turnover ratio was 8. Therefore, the *average collection period was 45 days* [360 days/8]. A logical next step is to compare the average collection period to past ratios and also to the credit terms offered to customers.

Inventory Turnover Ratio

The inventory turnover ratio indicates how many times a company's inventory turns over in a year. The calculation is: *cost of goods sold* for a year divided by the *average inventory* during the same year. Since a company records *inventory* at cost, it is logical to use the *cost of goods sold* from the income statement. If the cost of goods sold for the year was \$600,000 and the average cost of inventory during the year was \$200,000 the company's *inventory turnover ratio is 3 times* [\$600,000/\$200,000].

Again, if the average inventory is based on the two lowest points of the year, this turnover ratio will be greater than an average based on amounts throughout the year.

Days' Sales in Inventory or Days to Sell

The days' sales in inventory indicates how many days of sales are in inventory. The calculation is: *360 or 365 days* divided by the *inventory turnover ratio*. If the inventory turnover ratio is 3, the *days' sales in inventory will be 120 days* [360 days/3].

Free Cash Flow

The calculation of free cash flow is: *net cash flow from operating activities* minus the *necessary capital expenditures*. (Sometimes a company's dividend payments are deducted along with the capital expenditures.) If a corporation had cash from operating activities of \$200,000 and necessary capital expenditures of \$60,000 the amount of *free cash flow* was \$140,000.

Times Interest Earned

Times interest earned indicates a company's ability to pay the interest on its debt. The calculation is: *income before interest expense and income tax expense* divided by *interest expense*. If a company's net income was \$100,000 after interest expense of \$40,000 and income tax expense of \$20,000 the times interest earned is *4 times* [$\$160,000/\$40,000$].

Gross Profit or Gross Margin (in dollars)

Gross profit is the remainder of *net sales* minus *cost of goods sold*. Gross profit is the amount prior to deducting a company's selling, general and administrative expenses and adding or subtracting the nonoperating items. If net sales (gross sales minus sales returns and allowances and sales discounts) were \$800,000 and the cost of goods sold was \$600,000 the *gross profit* was \$200,000.

Gross Profit Percentage or Gross Margin as a Percentage

The gross profit percentage is the dollars of *gross profit* divided by the dollars of *net sales*. If the gross profit was \$200,000 and the net sales were \$800,000 the *gross profit percentage* or *gross margin* was 25%.

Return on Assets

The return on assets indicates how profitably a company has used its assets. The calculation is the *company's net income for a year* divided by the *average amount of assets during the same year*. If the corporation's net income for the year was \$100,000 and the average amount of assets was \$1,000,000 the *return on assets* was 10%.

Sometimes the return is *after* income tax expense and sometimes it is *before* income tax expense.

Return on Equity

Return on equity (with no preferred stock) is a corporation's *net income for a year* divided by the *average amount of stockholders' equity during the year*. If the corporation's net income was \$100,000 and its stockholders' equity averaged \$500,000 during the year, the *return on equity was 20%*.

Asset Turnover Ratio

The calculation of the asset turnover ratio is: *net sales for a year* divided by the *average amount of assets during the same year*. If net sales were \$800,000 and the average amount of assets was \$1,000,000 the *asset turnover ratio was 0.8:1* [$\$800,000/\$1,000,000$].