

## Financial Ratio Analysis Example

Now, let's look at Norton Corporation's 2014 and 2013 financial statements.



| NORTON CORPORATION<br>Balance Sheets<br>December 31, 2014 and 2013 |                   |                   |
|--|-------------------|-------------------|
|  | 2014              | 2013              |
| <b>Assets</b>  |                   |                   |
| <b>Current assets:</b>   |                   |                   |
| Cash   | \$ 30,000         | \$ 20,000         |
| Accounts receivable, net   | 20,000            | 17,000            |
| Inventory  | 12,000            | 10,000            |
| Prepaid expenses   | 3,000             | 2,000             |
| <b>Total current assets</b>  | <b>65,000</b>     | <b>49,000</b>     |
| <b>Property and equipment:</b>                                     |                   |                   |
| Land   | 165,000           | 123,000           |
| Buildings and equipment, net                                       | 116,390           | 128,000           |
| <b>Total property and equipment</b>                                | <b>281,390</b>    | <b>251,000</b>    |
| <b>Total assets</b>  | <b>\$ 346,390</b> | <b>\$ 300,000</b> |

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| NORTON CORPORATION<br>Balance Sheets<br>December 31, 2014 and 2013 |                   |                   |
|--|-------------------|-------------------|
|  | 2014              | 2013              |
| <b>Liabilities and Stockholders' Equity</b>                        |                   |                   |
| <b>Current liabilities:</b>  |                   |                   |
| Accounts payable   | \$ 39,000         | \$ 40,000         |
| Notes payable, short-term  | 3,000             | 2,000             |
| <b>Total current liabilities</b>                                   | <b>42,000</b>     | <b>42,000</b>     |
| <b>Long-term liabilities:</b>                                      |                   |                   |
| Notes payable, long-term   | 70,000            | 78,000            |
| <b>Total liabilities</b>   | <b>112,000</b>    | <b>120,000</b>    |
| <b>Stockholders' equity:</b>                                       |                   |                   |
| Common stock, \$1 par value  | 27,400            | 17,000            |
| Additional paid-in capital   | 158,100           | 113,000           |
| <b>Total paid-in capital</b>                                       | <b>185,500</b>    | <b>130,000</b>    |
| Retained earnings  | 48,890            | 50,000            |
| <b>Total stockholders' equity</b>                                  | <b>234,390</b>    | <b>180,000</b>    |
| <b>Total liabilities and stockholders' equity</b>                  | <b>\$ 346,390</b> | <b>\$ 300,000</b> |

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| NORTON CORPORATION<br>Income Statements<br>For the Years Ended December 31, 2014 and 2013 |                   |                   |
|---|-------------------|-------------------|
|   | 2014              | 2013              |
| <b>Net sales</b>  | <b>\$ 494,000</b> | <b>\$ 450,000</b> |
| <b>Cost of goods sold</b>   | <b>140,000</b>    | <b>127,000</b>    |
| <b>Gross margin</b>   | <b>354,000</b>    | <b>323,000</b>    |
| <b>Operating expenses</b>   | <b>270,000</b>    | <b>249,000</b>    |
| <b>Net operating income</b>   | <b>84,000</b>     | <b>74,000</b>     |
| <b>Interest expense</b>   | <b>7,300</b>      | <b>8,000</b>      |
| <b>Net income before taxes</b>  | <b>76,700</b>     | <b>66,000</b>     |
| <b>Less income taxes (30%)</b>  | <b>23,010</b>     | <b>19,800</b>     |
| <b>Net income</b>   | <b>\$ 53,690</b>  | <b>\$ 46,200</b>  |

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Now, let's calculate the 10 ratios based on Norton's financial statements.



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We will use this information to calculate the liquidity ratios for Norton.

| NORTON CORPORATION<br>2014 |           |
|----------------------------|-----------|
| Cash                       | \$ 30,000 |
| Accounts receivable, net   |           |
| Beginning of year          | 17,000    |
| End of year                | 20,000    |
| Inventory                  |           |
| Beginning of year          | 10,000    |
| End of year                | 12,000    |
| Total current assets       | 65,000    |
| Total current liabilities  | 42,000    |
| Sales on account           | 494,000   |
| Cost of goods sold         | 140,000   |

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### Working Capital\*

The excess of current assets over current liabilities.

|                     | 12/31/2014 |
|---------------------|------------|
| Current assets      | \$ 65,000  |
| Current liabilities | (42,000)   |
| Working capital     | \$ 23,000  |

\* While this is not a ratio, it does give an indication of a company's liquidity.

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### Current (Working Capital) Ratio

#1

$$\text{Current Ratio} = \frac{\text{Current Assets}}{\text{Current Liabilities}}$$

$$\text{Current Ratio} = \frac{\$65,000}{\$42,000} = 1.55 : 1$$

Measures the ability of the company to pay current debts as they become due.



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## Acid-Test (Quick) Ratio

**#2**

$$\text{Acid-Test Ratio} = \frac{\text{Quick Assets}}{\text{Current Liabilities}}$$



Quick assets are Cash, Marketable Securities, Accounts Receivable (net) and current Notes Receivable.

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## Acid-Test (Quick) Ratio

**#2**

$$\text{Acid-Test Ratio} = \frac{\text{Quick Assets}}{\text{Current Liabilities}}$$



Norton Corporation's quick assets consist of cash of \$30,000 and accounts receivable of \$20,000.

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## Acid-Test (Quick) Ratio

**#2**

$$\text{Acid-Test Ratio} = \frac{\text{Quick Assets}}{\text{Current Liabilities}}$$

$$\text{Acid-Test Ratio} = \frac{\$50,000}{\$42,000} = 1.19 : 1$$



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## Accounts Receivable Turnover

We will use average

Net, credit sales

**#3**

Average, net accounts receivable

$$\text{Accounts Receivable Turnover} = \frac{\text{Sales on Account}}{\text{Average Accounts Receivable}}$$

$$\text{Accounts Receivable Turnover} = \frac{\$494,000}{(\$17,000 + \$20,000) \div 2} = 26.70 \text{ times}$$

This ratio measures how many times a company converts its receivables into cash each year.



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## Number of Days' Sales in Accounts Receivable

**#4**

$$\text{Days' Sales in Accounts Receivables} = \frac{365 \text{ Days}}{\text{Accounts Receivable Turnover}}$$

$$\text{Days' Sales in Accounts Receivables} = \frac{365 \text{ Days}}{26.70 \text{ Times}} = 13.67 \text{ days}$$

Measures, on average, how many days it takes to collect an account receivable.



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**#4**

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$$\text{Days' Sales in Accounts Receivables} = \frac{365 \text{ Days}}{26.70 \text{ Times}} = 13.67 \text{ days}$$

In practice, would 45 days be a desirable number of days in receivables?



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## Inventory Turnover

**#5**

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

$$\text{Inventory Turnover} = \frac{\$140,000}{(\$10,000 + \$12,000) \div 2} = 12.73 \text{ times}$$

Measures the number of times inventory is sold and replaced during the year.



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$$\text{Inventory Turnover} = \frac{\$140,000}{(\$10,000 + \$12,000) \div 2} = 12.73 \text{ times}$$

Would 5 be a desirable number of times for inventory to turnover?



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## Equity, or Long-Term Solvency Ratios

This is part of the information to calculate the equity, or long-term solvency ratios of Norton Corporation.

| NORTON CORPORATION<br>2014 |          |
|----------------------------|----------|
| Net operating income       | \$84,000 |
| Net sales                  | 494,000  |
| Interest expense           | 7,300    |
| Total stockholders' equity | 234,390  |

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## NORTON CORPORATION 2014

|                            |          |
|----------------------------|----------|
| Common shares outstanding  |          |
| Beginning of year          | 17,000   |
| End of year                | 27,400   |
| Net income                 | \$53,690 |
| Stockholders' equity       |          |
| Beginning of year          | 180,000  |
| End of year                | 234,390  |
| Dividends per share        | 2        |
| Dec. 31 market price/share | 20       |
| Interest expense           | 7,300    |
| Total assets               |          |
| Beginning of year          | 300,000  |
| End of year                | 346,390  |

Here is the rest of the information we will use.

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## Equity Ratio

**#6**

$$\text{Equity Ratio} = \frac{\text{Stockholders' Equity}}{\text{Total Assets}}$$

$$\text{Equity Ratio} = \frac{\$234,390}{\$346,390} = 67.7\%$$

Measures the proportion of total assets provided by stockholders.



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## Net Income to Net Sales A/K/A Return on Sales or Profit Margin

**#7**

$$\text{Net Income to Net Sales} = \frac{\text{Net Income}}{\text{Net Sales}}$$

$$\text{Net Income to Net Sales} = \frac{\$53,690}{\$494,000} = 10.9\%$$



Measures the proportion of the sales dollar which is retained as profit.

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## Net Income to Net Sales A/K/A Return on Sales or Profit Margin

**#7**

$$\begin{aligned} \text{Net Income to Net Sales} &= \frac{\text{Net Income}}{\text{Net Sales}} \\ \text{Net Income to Net Sales} &= \frac{\$53,690}{\$494,000} = 10.9\% \end{aligned}$$



Would a 1% return on sales be good?

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## Return on Average Common Stockholders' Equity (ROE)

**#8**

$$\begin{aligned} \text{Return on Stockholders' Equity} &= \frac{\text{Net Income}}{\text{Average Common Stockholders' Equity}} \\ \text{Return on Stockholders' Equity} &= \frac{\$53,690}{(\$180,000 + \$234,390) \div 2} = 25.9\% \end{aligned}$$



Important measure of the income-producing ability of a company.

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## Earnings Per Share

**#9**

$$\text{Earnings per Share} = \frac{\text{Earnings Available to Common Stockholders}}{\text{Weighted-Average Number of Common Shares Outstanding}}$$

$$\text{Earnings per Share} = \frac{\$53,690}{(17,000 + 27,400) \div 2} = \$2.42$$

The financial press regularly publishes actual and forecasted EPS amounts.



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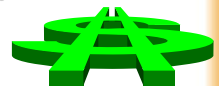
## Price-Earnings Ratio A/K/A P/E Multiple

**#10**

$$\text{Price-Earnings Ratio} = \frac{\text{Market Price Per Share}}{\text{EPS}}$$

$$\text{Price-Earnings Ratio} = \frac{\$20.00}{\$2.42} = 8.3 : 1$$

Provides some measure of whether the stock is under or overpriced.



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