Financial Ratio Analysis Example

NORTON CORPORATION
Balance Sheets
December 31, 2018 and 2017

	2018	2017
Assets		
Current assets:		
Cash	$ 30,000	$ 20,000
Accounts receivable, net	20,000	17,000
Inventory	12,000	10,000
Prepaid expenses	3,000	2,000
Total current assets	65,000	49,000
Property and equipment:		
Land	165,000	123,000
Buildings and equipment, net	116,390	128,000
Total property and equipment	281,390	251,000
Total assets	$ 346,390	$ 300,000

NORTON CORPORATION
Balance Sheets
December 31, 2018 and 2017

	2018	2017
Liabilities and Stockholders' Equity		
Current liabilities:		
Accounts payable	$ 39,000	$ 40,000
Notes payable, short-term	3,000	2,000
Total current liabilities	42,000	42,000
Long-term liabilities:		
Notes payable, long-term	70,000	78,000
Total liabilities	112,000	120,000
Stockholders' equity:		
Common stock, $1 par value	27,400	17,000
Additional paid-in capital	158,100	113,000
Total paid-in capital	185,500	130,000
Retained earnings	48,890	50,000
Total stockholders' equity	234,390	180,000
Total liabilities and stockholders' equity	$ 346,390	$ 300,000

NORTON CORPORATION
Income Statements
For the Years Ended December 31, 2018 and 2017

	2018	2017
Net sales	$ 494,000	$ 450,000
Cost of goods sold	140,000	127,000
Gross margin	354,000	323,000
Operating expenses	270,000	249,000
Net operating income	84,000	74,000
Interest expense	7,300	8,000
Net income before taxes	76,700	66,000
Less income taxes (30%)	23,010	19,800
Net income	$ 53,690	$ 46,200

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

NORTON CORPORATION 2018	
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

Working Capital*

The excess of current assets over current liabilities.

	12/31/2018
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.

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.

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.

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.

Acid-Test (Quick) Ratio

#2

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

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

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.

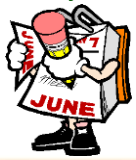
Number of Days' Sales in Accounts Receivable

#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.



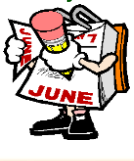
Number of Days' Sales in Accounts Receivable

#4

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

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

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



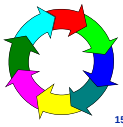
Inventory Turnover

#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.



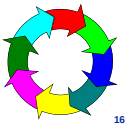
Inventory Turnover

#5

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

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

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



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 2018	
Net operating income	$ 84,000
Net sales	494,000
Interest expense	7,300
Total stockholders' equity	234,390

Here is the rest of the information we will use.

NORTON CORPORATION 2018	
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

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.

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.

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

#7

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

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

Would a 1% return on sales be good?

Return on Average Common Stockholders' Equity (ROE)

#8

$$\text{Return on Stockholders' Equity} = \frac{\text{Net Income}}{\text{Average Common Stockholders' Equity}}$$

$$\text{Return on Stockholders' Equity} = \frac{\$53{,}690}{(\$180{,}000 + \$234{,}390) \div 2} = 25.9\%$$

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

Earnings Per Share

#9

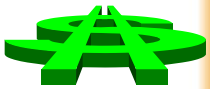
$$\text{Earnings per Share} = \frac{\text{Earnings Available to Common Stockholders}}{\text{Weighted-Average Number of Common Shares Outstanding}}$$

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

The financial press regularly publishes actual and forecasted EPS amounts.

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.