FINANCIAL RATIOS

FOR EXECUTIVES

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Contents

Once a company has had several years of financial ratios, these can then be compared across these years to see if there is a positive or negative development. There are many ratios and all are great to use when a development is to be analyzed.

The following sections provide a short overview of each of the above ratio types along with a list of common examples, all of which will be defined and discussed in subsequent chapters.

Market value ratios

Market value ratios measure how cheap or expensive the company's stock is based on some measure of profit or value. Market value ratios can assist management or an investor in assessing the market's opinion of the company's value. Generally, the higher the market value ratio, the higher the company's stock price will be because the market thinks growth prospects are good and/or they believe the company to be less risky as an investment.

Common market value ratios include the following:

- Dividend payout ratio
- Dividend yield
- Earnings per share (EPS)
- Enterprise value
- Price to book value ratio
- Price to earnings ratio (P/E ratio)

Liquidity ratios

Liquidity ratios measure the company's ability to pay off short-term debt obligations. Most obviously, they can be used to see if a company is in trouble and evaluate their ability to make loan payments or pay suppliers. Less obviously, they can be used to judge a company's ability to take on more debt, or spend more cash, to explore new means for growth through innovation or acquisition.

Common liquidity ratios include the following:

- Acid test
- Cash conversion cycle
- Cash ratio
- Current ratio
- Operating cash flow
- Quick ratio
- Working capital

Performance ratios

Performance ratios (also known as *activity ratios*) measure a company's ability to generate sales and derive profit from its resources. Performance ratios are used to measure the relative efficiency of a company based on the use of its assets, leverage, or other such balance sheet items.

Companies must often strike a balance between the inefficiencies of having too few or too many assets. For example, in the case of too little inventory, you may risk disruption to production and loss of sales. However, sitting on inventory that does not move is a very inefficient use of cash.

Common performance ratios include the following:

- Average collection period
- Fixed assets turnover
- Gross profit margin
- Inventory turnover
- Receivable turnover
- Total assets turnover

Cash flow ratios

Cash flow ratios measure how much cash is generated and the safety net that cash provides to the company to finance debt or grow the business. Cash flow ratios provide an additional way of looking at a company's financial health and performance. Many use the term "cash is king" because it is so vital to the health of an organization.

Common cash flow ratios include the following:

- Cash flow coverage
- Dividend payout ratio
- Free cash flow
- Operating cash flow

Profitability ratios

Profitability ratios can be thought of as the combination of many of the other more specific ratios to show a more complete picture of a company's ability to generate profits. The king of all ratios, return on equity (ROE), can be broken down by the DuPont formula in simple terms as ROE = Margin x Turn x Leverage. You can see how this takes into account other operating ratios. Many of the ratios in this section follow the same concept.

Common profitability ratios include the following:

- Current yield
- Profit margin
- Return on assets (ROA)
- Return on net assets (RONA)
- Return on equity (ROE)
- Return on investment (ROI)

Debt ratios

Debt ratios measure the company's overall debt load and the mix of equity and debt. Debt ratios give us a look at the company's leverage situation. Debt ratios can be good, bad, or indifferent, depending on a host of factors including who is asking. For example, a high total debt ratio may be good for stockholders not wanting to dilute their shares but bad for the creditors of the company.

Common debt ratios include the following:

- Asset to equity
- Asset turnover
- Cash flow to debt ratio
- Debt ratio
- Debt to equity
- Equity multiplier
- Interest coverage

CHAPTER

2

Ratios Description

Each ratio or calculation in this book is presented on its dedicated page in the following standard format:

- Type of ratio (performance ratio, liquidity ratio, and so on)
- Formula for calculating the ratio
- Description of the ratio
- Example based on ABC Company or XYZ Company
- Synonyms (e.g., *quick ratio* is a synonym for *acid test*)

Note For completeness and easy reference, each ratio synonym has its own dedicated page.

Most ratio calculations are based on data from the hypothetical ABC Company, whose financial data are listed in that company's income statement, balance sheet, cash flow statement, and additional company information given in Chapter 3.

Where the ABC Company data are not applicable to certain ratio calculations, we use data from the hypothetical XYZ Company.

Acid test (Quick ratio)

Type: Liquidity measure

Formula

$$\text{Acid test} = \frac{\text{Current assets} - \text{Inventory}}{\text{Current liabilities}}$$

Description

The *acid test ratio* shows whether a company has enough short-term assets to cover its immediate liabilities without selling inventory. The higher the acid test ratio, the safer a position the company is in.

Example

ABC Company has currents assets in the amount of $69,765, inventory in the amount of $24,875, and current liabilities in the amount of $28,500. This gives an acid test of 1.58. An acid test of 1.58 indicates that the company has sufficient current assets to cover its current liabilities more than one and a half times over without selling inventory.

$$\text{Acid test} = \frac{69,765 - 24,875}{28,500} = 1.58$$

The acid test is very similar to the current ratio except that it excludes inventory because inventory is often illiquid. The nature of the inventory and the industry in which the company operates will determine if the acid test or the current ratio is more applicable.

Note

The acid test is also known as the *quick ratio*.

Account receivable turnover (Receivable turnover)

Type: Performance measure

Formula

$$\text{Accounts receivable turnover} = \frac{\text{Sales}}{\text{Receivables}}$$

Description

The *accounts receivable turnover* measures the number of times receivables are converted into cash in a given period. This is different from the average collection period, which shows the number of days it takes to collect the receivables.

Ideally, credit sales should be used in the numerator and average receivables in the denominator. However, these are most often not easily available in the financial statements.

Example

ABC Company has sales in the amount of $210,000 and accounts receivable in the amount of $28,030. This gives an accounts receivable turnover ratio of 7.49. The higher the accounts receivable turnover ratio, the better the company is at converting receivables into cash. A decline in the turnover ratio could mean either a decline in sales or an indication that the customers are taking a longer time to pay for their purchases.

$$\text{Accounts receivable turnover} = \frac{210,000}{28,030} = 7.49$$

The company can improve the turnover ratio by many methods; the most popular is by offering a discount if the customers pay their outstanding balance earlier; for example, within 30 days of the sale.

Note

Accounts receivable turnover is also known as *receivable turnover*.

Additional funds needed (AFN)

Type: Other

Formula

$$\text{AFN} = \underset{\text{asset increase}}{\text{Required}} - \underset{\text{liabilities increase}}{\text{Spontaneous}} - \underset{\text{in retained earnings}}{\text{Increase}}$$

Description

The *additional funds needed* (AFN) is an approximation tool to determine how much external funding a company would require in order to increase sales (if the company is operating at full capacity), given the amount of assets needed to generate those sales. AFN tells you how much outside cash a company needs to support linear growth. Because many of the factors used in AFN require estimation, you can see that AFN really only provides a ballpark figure.

Example

The AFN equation can be written as follows:

$\text{AFN} = (\text{Ao}/\text{So})\ \Delta\text{S} - (\text{Lo}/\text{So})\ \Delta\text{S} - \text{M}\ (\text{S1}) \times (1 - \text{POR})$

- Required asset increase $(\text{Ao}/\text{So})\ \Delta\text{S}$
- Spontaneous liabilities increase $(\text{Lo}/\text{So})\ \Delta\text{S}$
- Increase in retained earnings $\text{M}\ (\text{S1}) \times (1 - \text{POR})$

Ao	Total assets (Current year)	132,000
So	Sales (Current year)	210,000
ΔS	Change in sales (10% sales growth)	21,000
Lo	Spontaneous liabilities (accounts payables)	18,460
M	(Net) Profit margin	4.51%
S1	New sales (Original + Change in sales)	231,000
POR	Payout ratio (Dividend/Net income)	32%

Using the AFN formula, ABC Company would need an additional $4,223 to support a 10% increase in sales.

Altman's Z-Score

Type: Other

Formula

Z-Score = 1.2A + 1.4B + 3.3C + 0.6D + 1.0E

A = Working capital/Total assets

B = Retained earnings/Total assets

C = Earnings before interest & tax/Total assets

D = Market value of equity/Total liabilities

E = Sales/Total assets

Description

The *Altman's Z-Score* was developed to predict the probability that a company will go into bankruptcy within two years. The lower the Z-Score, the greater the probability the company will go into bankruptcy within the next two years. A score less than 1.8 indicates that the company is likely headed for bankruptcy, whereas a score above 3.0 indicates that the company has a low risk of bankruptcy.

Example

ABC Company has a Z-Score of 5.49. This means that there is a very low probability of the company going into bankruptcy within the next two years.

Z-Score = 1.2(1.29) + 1.4(0.36) + 3.3(0.42) + 0.6(0.77) + 1.0(1.59)
= 5.49

	A	B	C	D	F	G	H	I
1								
2		Factor	Nominator	Denominator	Result	Factor	Value	
3		A	41,265	32,000	1.29	1.20	1.55	
4		B	47,040	132,000	0.36	1.40	0.50	
5		C	13,525	32,000	0.42	3.30	1.39	
6		D	61,500	79,930	0.77	0.60	0.46	
7		E	210,000	132,000	1.59	1.00	1.59	
8		Z-Score					5.49	
9								

Asset turnover

Type: Performance measure

Formula

$$\text{Asset turnover} = \frac{\text{Sales}}{\text{Assets}}$$

Description

The *asset turnover ratio* measures the sales generated per dollar of assets and is an indication of how efficient the company is in utilizing assets to generate sales.

Asset-intensive companies such as mining, manufacturing, and so on will generally have lower asset turnover ratios compared to companies that have fewer assets, such as consulting and service companies.

Example

ABC Company has sales in the amount of $210,000 and total assets in the amount of $132,000. This gives an asset turnover ratio of 1.59.

$$\text{Asset turnover} = \frac{210{,}000}{132{,}000} = 1.59$$

This means that for every dollar invested in assets, the company generates $1.59 of sales. This number should be compared to the industry average for companies in the same industry.

Book value per share

Type: Market value measure

Formula

$$\text{Book value per share} = \frac{\text{Common equity}}{\text{Shares outstanding}}$$

Description

The *book value per share* measures common stockholders' equity determined on a per-share basis and is an indication of how the investors view the value of the company's assets. If the market value per share is higher than the book value per share, then the investor is willing to pay a premium over the book value to acquire the company's assets.

Example

ABC Company has common equity in the amount of $52,070 and a total of 10,000 shares outstanding. This gives a book value per share of $5.20 at December 31, 2013.

$$\text{Book value per share} = \frac{52,070}{10,000} = 5.20$$

ABC Company has a market value per share of $6.15. The reason could be that there are certain intangibles assets within the company such as customer list, distribution channels, or know-how, and so on, which the company cannot record as an asset under U.S. or international accounting standards. As a result of this, the investor is willing to pay a premium over book value to acquire the assets of the company.

	Assets	=	Liabilities	+	Equity
Market value	141,430	=	79,930	+	61,500

With a share price of $6.15, the market value of the equity is $61,500, which means that the investor value the company's assets to $141.430, $9,430 over book value.

Breakeven point

Type: Cost accounting

Formula

$$\text{Breakeven point} = \frac{\text{Fixed cost}}{\text{Contribution margin ratio}}$$

Description

The *breakeven point,* often used in cost accounting, is the point at which the company breaks even on a given product and neither incurs a profit nor a loss. The breakeven point shows the minimum amount of sales required for the company to begin making a profit.

Example

XYZ Company is considering investing in a new production unit that costs $1,000,000 to support the increased demands in sales. The fixed cost for the new unit once installed is $200,000 annually. The company has calculated a contribution margin of 68%. This gives a breakeven point of $292,306, or 61,538 units.

$$\text{Breakeven point} = \frac{200{,}000}{0.68} = 292{,}306$$

This table shows that the company breaks even, meaning that it incurs neither a profit nor a loss, when it sells 61.538 units which amounts to sales of $292,306.

	A	B	C	D	F	I
1						
2		Description	Units	Price	Total	
3		Sales	61,538	4.75	292,306	
4		Variable cost	(61,538)	1.50	(92,307)	
5		Fixed cost			(200,000)	
6		Break even			-	
7						

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