



Chapter 2

Analyzing Financial Statements and Ratios

Chapter Overview

- I. Introduction
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 - b. The income statement
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 - a. Liquidity
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 - i. Total asset turnover ratio
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 - i. Debt ratio
 - ii. Interest coverage ratio
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 - i. Net profit margin
 - ii. Return on equity
 - e. Market value
 - i. Market value
 - ii. Price-to-earnings ratio

V. Conclusion

Key Concepts

When reading this chapter, students should focus on the following key concepts:

1. The balance sheet, income statement, and statement of cash flows are vital tools to be used by financial managers.
2. How to interpret data contained in financial statements.
3. How ratios are used to analyze the financial performance of an organization.
4. How to use data to compare the financial performance of one organization against another.

Quiz Questions

1. Which of the following is a picture or snapshot of the financial condition of an organization at a specific point in time?
 - a. Balance sheet
 - b. Income statement
 - c. Statement of cash flows
 - d. Budget
 - e. None of the above
2. Which ratio measures how an organization finances its operation with debt and equity?
 - a. Current ratio
 - b. Quick ratio
 - c. Total asset turnover ratio
 - d. Inventory turnover ratio
 - e. Debt ratio
3. Which ratio measures how often an organization sells and replaces its inventory over a specified period of time?
 - a. Current ratio
 - b. Quick ratio
 - c. Total asset turnover ratio
 - d. Inventory turnover ratio
 - e. Debt ratio
4. Which of the following is an estimate of how much money investors will pay for each dollar of the organization's earnings?
 - a. Interest coverage ratio
 - b. Net profit margin
 - c. Return on equity
 - d. Market value
 - e. Price-to-earnings ratio

5. Which financial statement tracks cash in and cash out of an organization over a specified period of time?
- a. Balance sheet
 - b. Income statement
 - c. Statement of cash flows
 - d. Budget
 - e. None of the above
6. Which of the following measures the return rate an organization's owners or shareholders are receiving on their investments?
- a. Interest coverage ratio
 - b. Net profit margin
 - c. Return on equity
 - d. Market value
 - e. Price-to-earnings ratio
7. The _____ shows the organization's income over a specified period of time.
- a. Balance sheet
 - b. Income statement
 - c. Statement of cash flows
 - d. Budget
 - e. None of the above
8. An estimation of an organization's worth according to the stock market is _____.
- a. Interest coverage ratio
 - b. Net profit margin
 - c. Return on equity
 - d. Market value
 - e. Price-to-earnings ratio
9. Which of the following is a profitability ratio that measures the percentage of an organization's total sales or revenues that was net profit or income?
- a. Interest coverage ratio
 - b. Net profit margin
 - c. Return on equity
 - d. Market value
 - e. Price-to-earnings ratio
10. Which ratio is an indication of whether an organization can meet its current liabilities—those due within a year—with its current assets?
- a. Current ratio
 - b. Quick ratio
 - c. Total asset turnover ratio

- d. Inventory turnover ratio
- e. Debt ratio

Answers to Quiz Questions

Numbers in parentheses represent where, in the text, you'll find this discussed.

1. a (p. 39)
2. e (p. 49)
3. d (p. 48)
4. e (p. 52)
5. c (p. 44)
6. c (p. 51)
7. b (p. 42)
8. d (p. 52)
9. b (p. 51)
10. a (p. 46)



Responses

1. *What are the three major sections of the balance sheet? Provide at least one example of an item that would be found under each of those sections.*

See pages 39–42. The three sections of the balance sheet are Assets, Liabilities, and Owners', or Shareholders', Equity. Assets include what the organization owns, such as cash and inventory. Liabilities are the organization's financial debts, including both short- and long-term obligations. Owners' Equity is the estimated ownership value of the company, such as stock and capital.

2. *What is the primary difference between an income statement and a statement of cash flows?*

See pages 43–44. The income statement shows revenues coming in to and expenses going out of an organization, whereas the statement of cash flows displays cash coming in and going out of the organization. Under accrual basis accounting, this difference can be considerable, as revenues are not necessarily equivalent to cash coming in. For example, in some situations cash payment for a sale might not be received for several months.

3. *What is the purpose of computing financial ratios?*

See page 44. Financial ratios provide information about the condition and performance of a company. They are useful in comparing an organization's financial status to that of the organization's own past, as well as to rival competitors in the same industry.

4. *If an organization's current ratio value is below 1.00, what might that suggest about the organization?*

See pages 46–47. A current ratio value below 1.00 suggest that an organization is unable to cover its debts with its assets, such as cash and accounts receivable. As such, the organization may need to convert longer-term assets into cash or borrow money to cover obligations owed.

5. *What information do leverage ratios provide?*

See page 49. Leverage ratios show how a company finances its operation with debt and equity. An organization that relies extensively on borrowing money in order to operate is considered to be heavily leveraged and is more at risk of financial problems than one that is not so reliant on debt.

6. *Why is the price-to-earnings ratio so widely used among investors?*

See pages 52–53. The price-to-earnings, or P/E, ratio gives an estimate of how much money investors will pay for each dollar of the company's earnings. One of the strengths of the P/E ratio for investors is that its scaled nature allows for comparisons of the market values of organizations of all sizes.

7. *This chapter repeatedly states that financial ratios are most valuable when viewed in comparison to the organization's historical ratio values as well as to competitors. Why is this context valuable when examining financial ratio values?*

See page 54. Successful organizations evaluate themselves both internally and externally. From a financial perspective, companies must know how their status and performance measures internally compared to their own historical data. Externally, companies must understand how their financial position compares to that of their competition. Lacking either of these perspectives provides an incomplete view of the organization's financial condition.



PRACTICE problems

Response

Using the Nike financial statements provided the text, the ten financial ratios discussed in the chapter were calculated as shown below:

1. **Current ratio** = Current assets

$$\begin{aligned}
 & \text{Current liabilities} \\
 = & \frac{\$13,696,000,000}{\$5,027,000,000} \\
 = & 2.72
 \end{aligned}$$

$$\begin{aligned}
 2. \text{ Quick ratio} &= \frac{(\text{Current assets} - \text{inventory})}{\text{Current liabilities}} \\
 &= \frac{(\$13,696,000,000 - 3,947,000,000)}{\$5,027,000,000} \\
 &= \frac{\$9,749,000,000}{\$5,027,000,000} \\
 &= 1.94
 \end{aligned}$$

$$\begin{aligned}
 3. \text{ Total asset turnover ratio} &= \frac{\text{Net sales}^*}{\text{Average total assets}}
 \end{aligned}$$

* Note that Nike's income statement uses "Revenues," instead, on its income statement.

$$\begin{aligned}
 &= \frac{\$27,799,000,000}{(\$18,594,000,000 + \$17,545,000,000)/2} \\
 &= \frac{\$27,799,000,000}{\$18,069,500,000} \\
 &= 1.54
 \end{aligned}$$

$$\begin{aligned}
 4. \text{ Inventory turnover ratio} &= \frac{\text{Cost of goods sold}^*}{\text{Average inventory}}
 \end{aligned}$$

* Note that Nike's income statement uses "Cost of sales," instead, on its income statement.

$$\begin{aligned}
 &= \frac{\$15,353,000,000}{(\$3,947,000,000 + \$3,484,000,000)/2} \\
 &= \frac{\$15,353,000,000}{\$3,715,500,000}
 \end{aligned}$$

$$= 4.13$$

$$\begin{aligned} 5. \text{ Debt ratio} &= \frac{\text{Total liabilities}}{\text{Total assets}} \\ &= \frac{\$7,770,000,000}{\$18,594,000,000} \\ &= 0.42 \end{aligned}$$

$$6. \text{ Interest coverage ratio} = \frac{\text{Earnings Before Interest and Taxes (EBIT)}^*}{\text{Interest expense}}$$

* On Nike's income statement, EBIT is not directly provided. It must be self-calculated by using the Gross Margin figure and subtracting the subsequent expenses not related to interest or taxes, which here represent the four lines/values immediately below Gross Margin.

$$= \frac{\$3,680,000,000}{\$33,000,000}$$

$$= 111.52$$

$$\begin{aligned} 7. \text{ Net profit margin} &= \frac{\text{Net income}}{\text{Sales}} \\ &= \frac{\$2,693,000,000}{\$27,799,000,000} \\ &= 9.69\% \text{ (should be expressed as a percentage)} \end{aligned}$$

$$\begin{aligned} 8. \text{ Return on equity} &= \frac{\text{Net income}}{\text{Shareholders' equity}} \\ &= \frac{\$2,693,000,000}{\$10,824,000,000} \\ &= 24.88\% \text{ (should be expressed as a percentage)} \end{aligned}$$

$$9. \text{ Market value} = \text{Price per share of common stock} \times \text{number of outstanding shares}^*$$

* The number of shares of outstanding common stock is computed by adding the numbers of Class A and Class B common stock outstanding presented in the shareholders' equity section of Nike's balance sheet (178,000,000 + 692,000,000 = 870,000,000).

$$= \$76.91 \times 870,000,000$$

$$= \$66,911,700,000$$

10. **Price-to-earnings ratio** = $\frac{\text{Price per share of common stock}}{\text{Earnings per share}^*}$

* Earnings per share = $\frac{\text{Net income}}{\text{Number of outstanding shares of common stock}}$

Number of outstanding shares of common stock

$$= \frac{\$76.91}{\$2,693,000,000 / 870,000,000}$$

$$= \frac{\$76.91}{3.10}$$

$$= 24.81$$

$$= 24.81$$

CASE ANALYSIS

Responses to Questions

The case study at the end of the chapter asks students to compare the financial health of Nike and Under Armour based on the ten financial ratios discussed in the chapter. The chapter provides Under Armour's financial ratio results; students have just calculated Nike's financial ratios (see the Practice Problems section in this Instructor's Manual).

Please note that students are being asked to make a rather simplistic assessment based on comparing the ratio figures for these two companies and what they've just learned about each ratio. In actuality, the ratio results and assessments may be much more complex. Note also that the two companies are being compared on different dates, as Nike and Under Armour use different fiscal year start and end dates.

1. *In what ratio areas is Nike stronger than Under Armour?*

Inventory turnover ratio, interest coverage ratio, net profit margin, return on equity, market value

2. *In what ratio areas is Under Armour stronger than Nike?*

Current ratio, quick ratio, total asset turnover ratio, debt ratio, price-to-earnings ratio

3. *If you were an investor considering purchasing stock in either Nike or Under Armour, in which company would you purchase stock? Explain and support your answer.*

This is a challenging question to answer, as each company is stronger than the other in five of the ten financial ratios. Furthermore, as with any stock investment, it is impossible to predict the future, which is the crux of the issue when purchasing stock. Consider evaluating students' answers based on how well they support their answer with sound financial analysis rather than viewing the question as having a definitively right-or-wrong answer.

Additional Classroom/Exam Problems

1. *The Memphis Redbirds team has earnings before interest and taxes (EBIT) of \$2,250,000 and \$450,000 in depreciation expenses. It also has an interest expense of \$120,000 and a 40% tax rate. How much in taxes will be paid?*

EBIT	\$2,250,000
Interest	<u>120,000</u>
EBT	\$2,130,000

Taxes are paid on EBT. So, taxes paid would be 40% of EBT, or

$$\begin{aligned}\text{Taxes} &= 40\% \times \text{EBT} \\ &= 40\% \times \$2,130,000 \\ &= \$852,000\end{aligned}$$

2. *See Additional Classroom Problem 1. What is the team's net income?*

EBIT	\$2,250,000
Interest	<u>120,000</u>
EBT	\$2,130,000
Taxes (40%)	<u>\$852,000</u>
Net Income	<u>\$1,278,000</u>

3. *See Additional Classroom Problem 1. If the team had no amortization expenses, what is the team's operating income?*

Operating Income, or EBITDA (earnings before interest, taxes, depreciation, and amortization), can be found by subtracting expenses from revenues. Here we have no revenue or expense data other than the depreciation and amortization expense information. Therefore, we can work backward to calculate operating income.

So, what is known is as follows:

<u>EBITDA</u>	<u>?????</u>	
Amortization	\$0	
Depreciation	<u>\$450,000</u>	
EBIT	\$2,250,000	
Interest	<u>120,000</u>	
EBT	\$2,130,000	
Taxes (40%)		<u>\$852,000</u>
Net Income		<u><u>\$1,278,000</u></u>

$$\text{EBIT} = \text{EBITDA} - D - A$$

$$\$2,250,000 = \text{EBITDA} - \$450,000 - 0$$

$$\$2,700,000 = \text{EBITDA}$$