Chapter 2  
Introduction to Financial Statement Analysis

*Note:* All problems in this chapter are available in MyLab Finance.

**1.** In a firm’s 10-K filing, four financial statements can be found: the balance sheet, the income statement, the statement of cash flows, and the statement of stockholders’ equity. Financial statements in form 10-K are required to be audited by a neutral third party, who checks and ensures that the financial statements are prepared according to GAAP and that the information contained is reliable.

**2.** In the United States, the Financial Accounting Standards Board (FASB) establishes Generally Accepted Accounting Principles (GAAP) to provide a common set of rules and a standard format for public companies to use when they prepare their reports.

**3.** Each method will help find the same SEC filings. Morningstar also provides some analysis such as charts and key statistics.

**4.** a. Long-term liabilities would decrease by $20 million, and cash would decrease by the same amount. The book value of equity would be unchanged.

b. Inventory would decrease by $5 million, as would the book value of equity.

c. Long-term assets would increase by $10 million, cash would decrease by $5 million, and long-term liabilities would increase by $5 million. There would be no change to the book   
value of equity.

d. Accounts receivable would decrease by $3 million, as would the book value of equity.

e. This event would not directly affect the balance sheet.

f. This event would not directly affect the balance sheet.

**5.5.** Global Conglomerate’s book value of equity increased by $1 million ($22.2 million in 2022 – $21.2 million in 2021) from 2021 to 2022. An increase in book value does not necessarily indicate an increase in Global’s share price. The market value of a stock does not depend on the book value of equity, which is an accounting measure of historical performance, but on investors’ expectation of the firm’s future performance. Many events may affect Global’s future profitability, and hence its share price, that do not show up on the balance sheet.

**6.** a. $12,414 million

b. $3,579 million

c. $41,240 million

d. $31,290 million, $13,701

e.$9,950 million

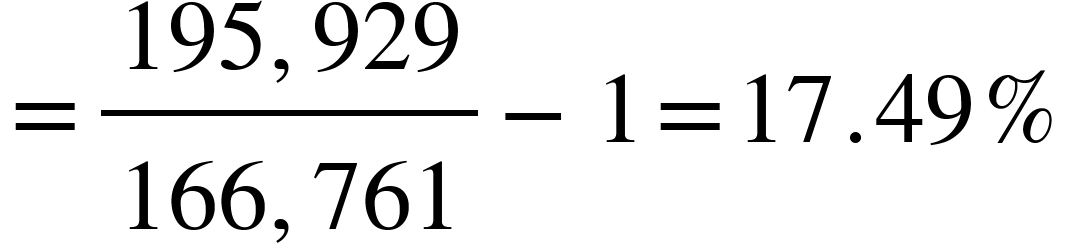
**7.** a. At the end of the fiscal year, Costco had cash and cash equivalents of $11,258 million.

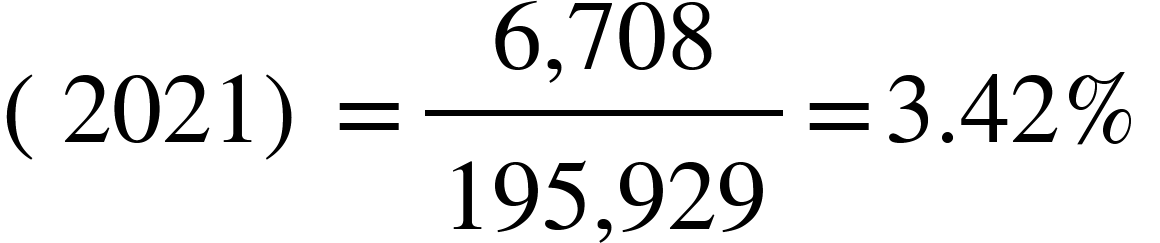
b. Costco’s total assets were $59,268 million.

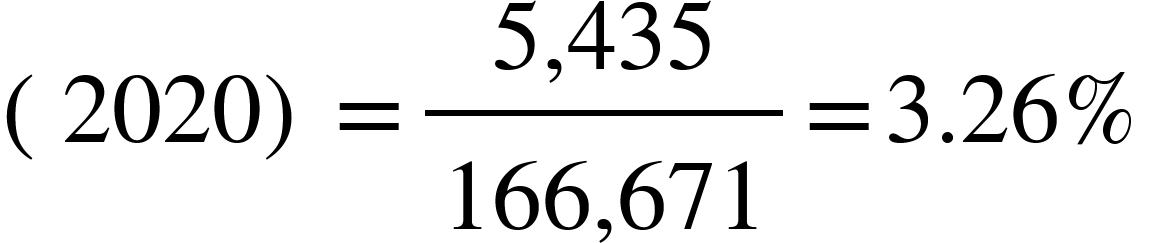
c. Costco’s total liabilities were $29,441 million, and it had $7,491 million in debt ($799 million as the current portion of long-term debt and $6,692 million as long-term debt).

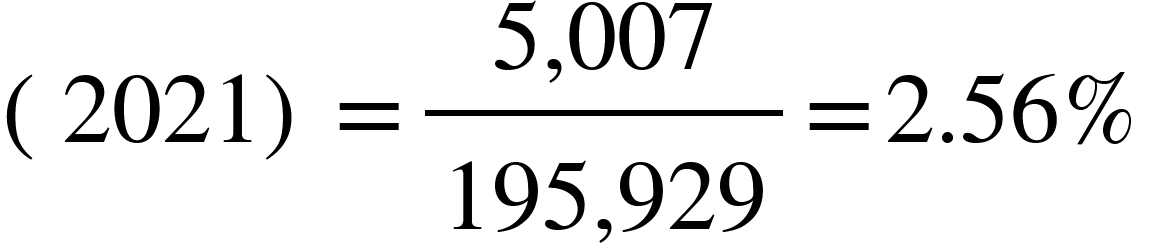
d.The book value of Costco’s equity was $18,078 million.

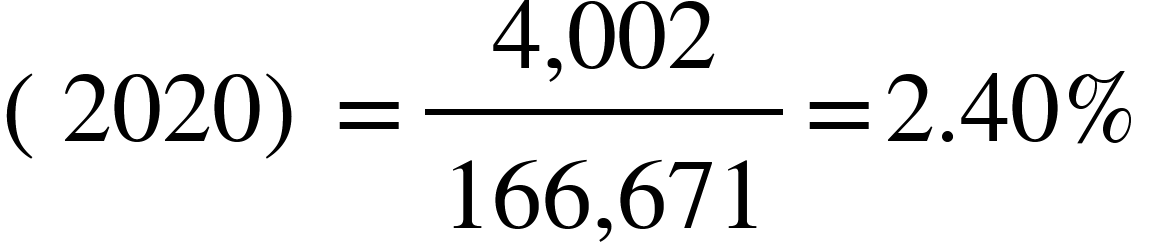
**8.** a. Revenues in 2021 were $195,929 million

Increase in Revenues 

b. Operating Margin 

Operating Margin 

Net Profit Margin 

Net Profit Margin 

Operating margin and net profit margin slightly increased compared with the year before.

c. The diluted earnings per share in 2021 were $11.27. The number of shares used in this calculation of diluted EPS was 444.3 million.

**9.**



10. A repurchase does not impact earnings directly, so any change to EPS will come from a reduction in shares outstanding. 2023 shares outstanding = 55 – 4 × 2 = 47 million, EPS .

11. The equipment purchase does not affect net income directly; however, the increased depreciation expense and tax savings changes net income.



12. If Mydeco’s costs and expenses had been the same fraction of revenues in 2020–23 as they were in 2019, then their net profit margins would have been equal.

2019 net profit margin.



**13.** a. A $10 million operating expense would be immediately expensed, increasing operating expenses by $10 million. This would lead to a reduction in taxes of 25% × $10 million    
$2.5 million. Thus, earnings would decline by 10  2.5  $7.5 million. There would be no effect on next year’s earnings.

b. Capital expenses do not affect earnings directly. However, the depreciation of $2 million would appear each year as an operating expense. With a reduction in taxes of 2 × 25%    
$0.5 million, earnings would be lower by 2  0.5  $1.5 million for each of the next five years.

**14.** **Plan:** Quisco Systems wishes to acquire a new networking technology and is confronted with a common business problem: whether to develop the technology itself in-house or to acquire another company that already has the technology. Quisco must perform a comprehensive analysis of each option, not just comparing internal development costs versus acquisition costs, but considering tax implications as well.

**Execute:**

a. If Quisco develops the product in-house, its earnings would fall by $500 × (1  25%)    
$375 million. With no change to the number of shares outstanding, its EPS would decrease   
by $0.05 to $0.75. (Assume the new product would not change this year’s revenues.)

b. If Quisco acquires the technology for $900 million worth of its stock, it will issue $900/18    
50 million new shares. Because earnings without this transaction are $0.80 × 7.5 billion  $6 billion, its EPS with the purchase is

c. **Evaluate:** Acquiring the technology would have a smaller impact on earnings. But this method is not cheaper. Developing it in-house is less costly and provides an immediate tax benefit. The earnings impact is not a good measure of the expense. In addition, note that because the acquisition permanently increases the number of shares outstanding, it will reduce Quisco’s earnings per share in future years as well.

**15.** a. Net cash provided by operating activities was $8,958 million in 2021.

b. Depreciation expense was $1,781 million in 2021.

c. Net cash used in new property and equipment was –$3,588 million in 2021.

d. Costco raised $0 from sale of shares of its stock, while it spent $496 million on the repurchase of common stock. Costco raised –$496 million from the sale of its shares of stock (net of any purchases).

**16.** a. The company’s cumulative earnings over these four quarters were $918.268 million. Its cumulative cash flows from operating activities were $1.186 billion.

b. Fraction of cash from operating activities used for investment over the four quarters:

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  | 4 | 3 | 2 | 1 | 4 Quarters |
| Operating Activities | 227,502 | –13,935 | 717,635 | 254,534 | 1,185,736 |
| Investing Activities | –196,952 | –35,437 | –251,331 | –96,848 | –580,568 |
| CFI/CFO | 86.57% | –254.30% | 35.02% | 38.05% | 48.96% |

c. Fraction of cash from operating activities used for financing over the four quarters:

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  | 4 | 3 | 2 | 1 | 4 Quarters |
| Operating Activities | 227,502 | –13,935 | 717,635 | 254,534 | 1,185,736 |
| Financing Activities | 462,718 | –13,357 | –526,189 | –96,044 | –172,872 |
| CFF/CFO | –203.39% | –95.85% | 73.32% | 37.73% | 14.58% |

**17. Plan:** Even a relatively simple transaction such as receiving an order to sell merchandise on credit and shipping the order promptly creates a series of changes within the firm. Map out the changes that would occur to a firm that engages in a relatively simple business transaction.

**Execute:**

a. *Revenues:* increase by $5 million

b. *Earnings:* increase by $3 million

c. *Receivables:* increase by $4 million

d. *Inventory:* decrease by $2 million

e. *Cash:* increase by $3 million (earnings)  $4 million (receivables)  $2 million (inventory)  $1 million (cash)

**Evaluate:** We can see that even a relatively simple credit sale has impacts on Revenues, Earnings, Accounts Receivable, Inventory, and eventually Cash.

**18.** **Plan:** Nokela Industries plans to purchase a capital asset. In this case, it is a $40 million cyclo-converter. Any time a firm acquires a capital asset, it is permitted to depreciate the asset for tax purposes. This has Depreciation Expense, Tax Expense, and Cash Flow effects that must be understood and analyzed.

**Execute:**

a. Earnings for the next four years would have to deduct the depreciation expense. After   
taxes, this would lead to a decline of 10 × (1  25%)  $7.5 million each year for the next   
four years.

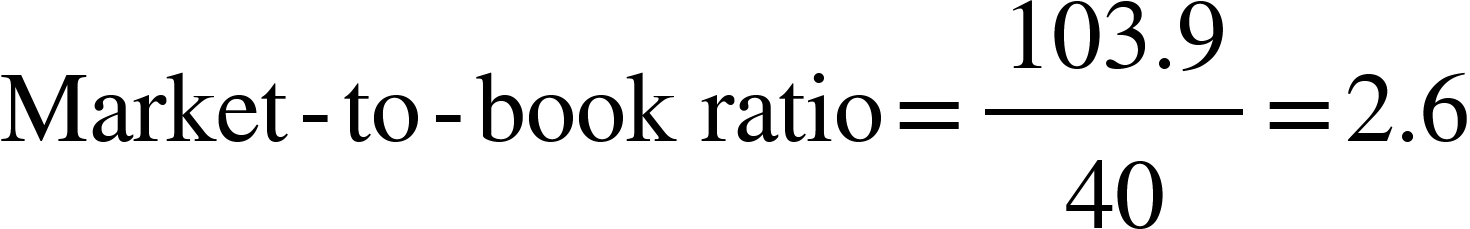
b. Cash flow for the next four years: less $37.5 million ( 7.5  10  40) this year, and add   
$2.5 million ( 7.5  10) for the three following years.

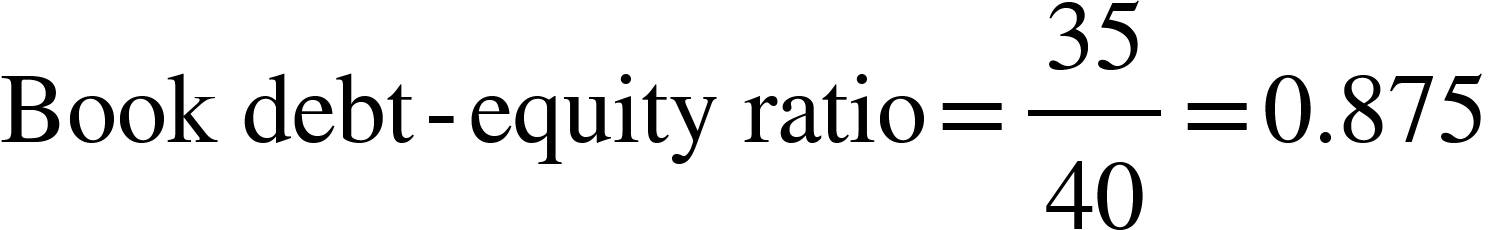
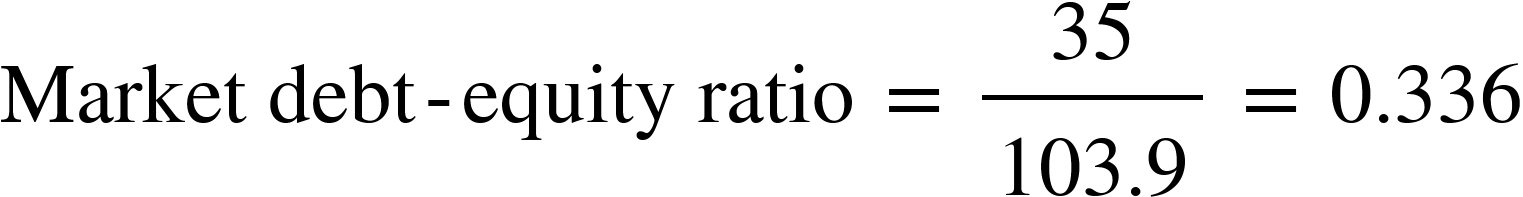
**Evaluate:** For the next four years, the investment in the cyclo-converter will increase Nokela’s depreciation expense by $10 million and will reduce after-tax earnings by $7.5 million per year. Depreciation expense is a non-cash expense (it is an accrual that recognizes that the value of the asset, which has already been paid for, is declining in value) that the firm does not have to pay out. Because every dollar of depreciation expense lowers Nokela’s taxable income by a dollar, its tax savings therefore are 25 cents on the dollar. The $10 million in depreciation expense in the next four years will lower Nokela’s tax bill by $2.5 million ($10 million × 0.25) per year.

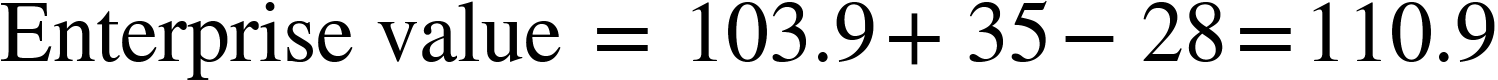
**19.**  **Plan:** The problem presents us with some raw financial information for General Electric. While useful, this raw financial information is not well suited to support financial analysis of General Electric and to answer questions as such, how has the stock market valued GE? How much debt does GE use relative to the equity financing that GE uses? How valuable, in today’s dollars, is GE?

To answer these and other questions we must compute key ratios and current market values as opposed to historical cost values.

**Execute:**

a. {"mathml":"<mml:math style=\"font-family:stix;font-size:16px;\" xmlns:m=\"http://schemas.openxmlformats.org/officeDocument/2006/math\" xmlns:mml=\"http://www.w3.org/1998/Math/MathML\"><mml:mstyle mathsize=\"16px\"><mml:mi>Market</mml:mi><mml:mo>&#xA0;</mml:mo><mml:mi>capitalization</mml:mi><mml:mo>=</mml:mo><mml:mn>1.1</mml:mn><mml:mi>&#xA0;</mml:mi><mml:mi>billion</mml:mi><mml:mo>&#xD7;</mml:mo><mml:mi mathvariant=\"normal\">$</mml:mi><mml:mn>94.47</mml:mn><mml:mo>=</mml:mo><mml:mi mathvariant=\"normal\">$</mml:mi><mml:mn>103.9</mml:mn><mml:mi>&#xA0;</mml:mi><mml:mi>billion</mml:mi></mml:mstyle></mml:math>"} 

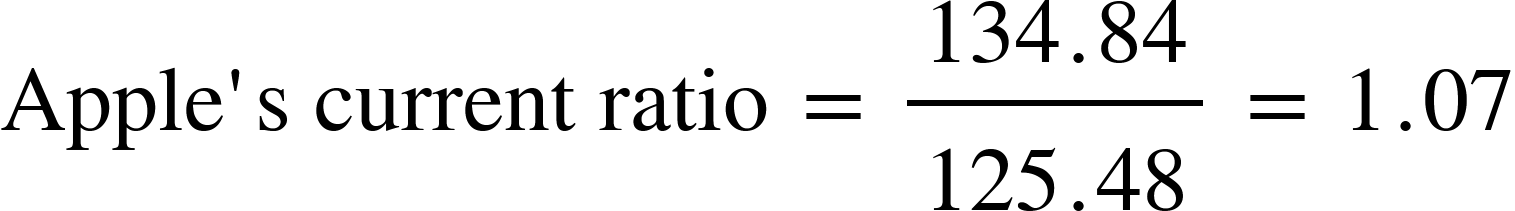
b.   
 

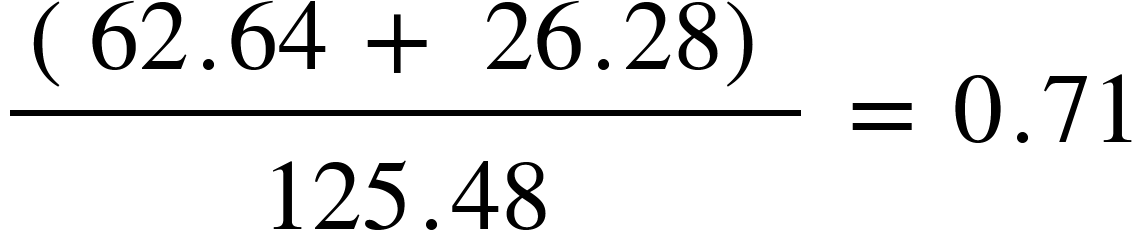
c.  (billion)

**Evaluate:** GE has a market-to-book ratio of 2.6. Over time, equity investors invested $40B in GE; today that equity investment is worth $103.9B (or 2.6 times more). This indicates that equity investors expect moderate results in the future.

GE has a book debt-equity ratio of 0.875. Over time, equity investors invested $40B in GE, and debt investors invested $35B (or 0.875 times equity). This would indicate that GE is moderately financed with debt. These are book values; due to GE’s higher market capitalization (in part (a) above, we calculated that GE’s equity is valued at $103.9B in today’s dollars), the market d-e ratio shows GE is slightly less levered.

GE has an enterprise value of $110.9B. In today’s dollars, investors value the entire company at this value.

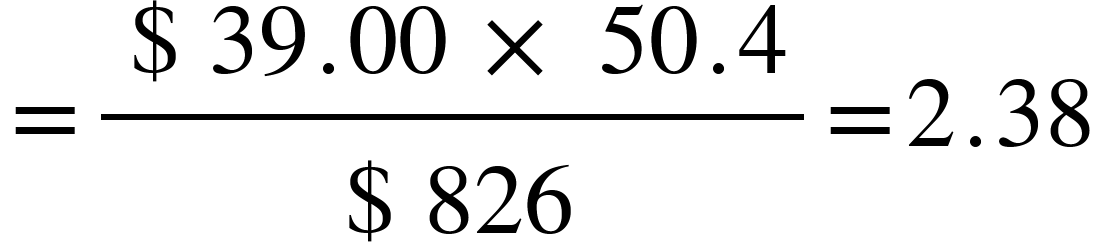
**9.9. 920.** a. 

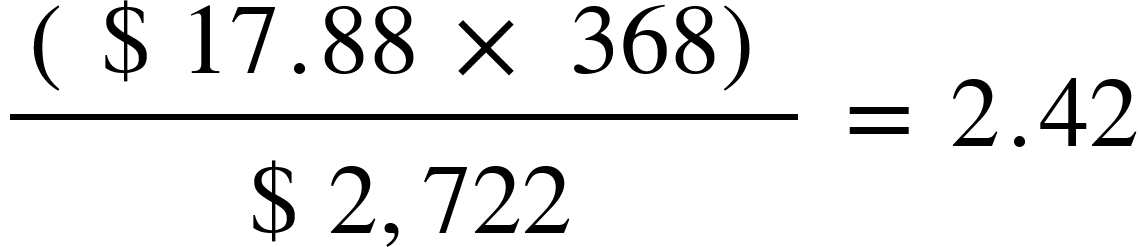
b. Apple’s quick ratio = .

c. Apple’s higher current and quick ratios demonstrate that it has higher asset liquidity than does Hewlett-Packard. This means that in a pinch, Apple has more liquidity to draw on than does Hewlett-Packard.

**21.** **Plan:** The table presents raw data about ANF and GPS. Although useful, this information does not easily tell us how the stock market values each of these firms alone and by comparison. To accomplish this, we will compute the market-to-book ratio of each firm and then compare them.

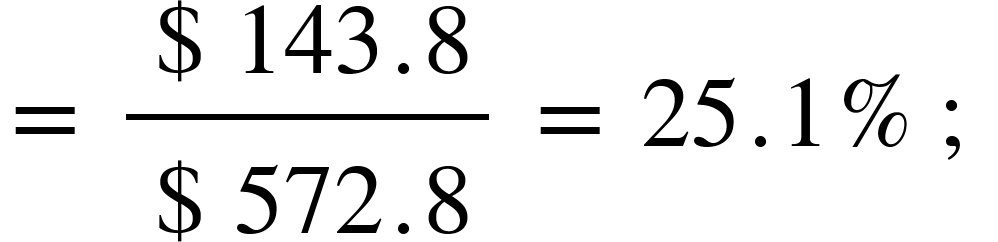
**Execute:**

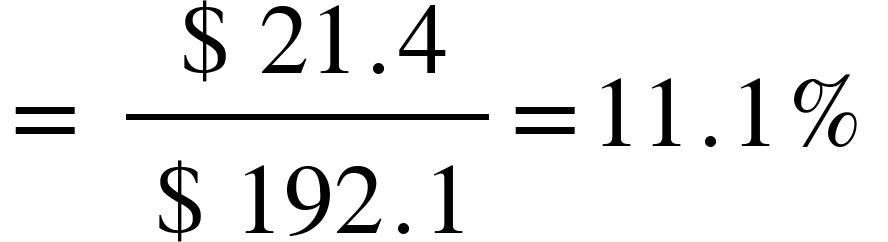
a. ANF’s market-to-book ratio 

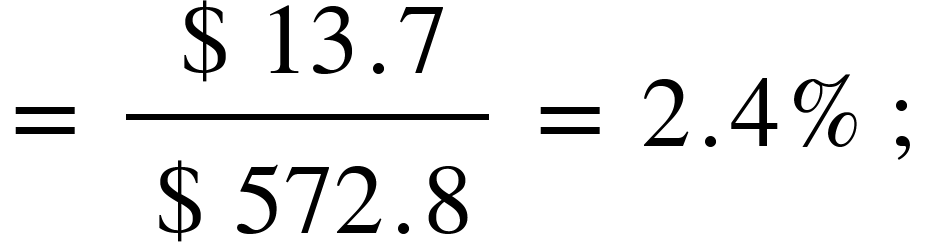
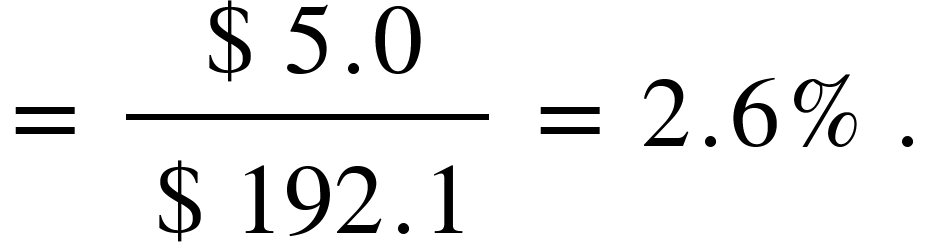
GPS’s market-to-book ratio = 

b. The market outlook on GPS and Abercrombie and Fitch is roughly the same.

**Evaluate:** The market values, in a relative sense, the outlook of GPS favorably than Abercrombie and Fitch. For every dollar of equity invested in GPS, the market values that dollar today at $2.79 versus $0.89 for a dollar invested in ANF. Equity investors are willing to pay relatively more today for shares of GPS than for ANF because they expect GPS to produce superior performance in the future.

22. a. Walmart’s gross margin 

Costco’s gross margin 

b. Walmart’s net margin Costco’s net margin 

c. Walmart had better gross profitability, but worse a worse net margin in 2021.

**23.** **Plan:** We can use Eqs. 2.9, 2.10, and 2.11 to compute Local’s margins. The problem gives us the necessary inputs.

**Execute:**

a. Gross Margin 

b. Operating Margin 

c. Net Profit Margin 

**Evaluate:** Local is profitable. You can see how the margins decrease as you move down the income statement because each successive margin takes into account more costs.

**24.** **Plan:** Selling expenses do not affect the gross margin, but the increase in such expenses will decrease the other margins.

**Execute:**

Gross margin would not change.

Operating Margin 

Net Profit Margin 

**Evaluate:** Gross margin only accounts for cost of good sold. The effect of the additional selling expenses can be seen in the reduced operating and net profit margins.

**25.** **Plan:** Only the net profit margin accounts for interest expense, so both the gross and operating margins will be unaffected.

**Execute:**

Gross margin would not change.

Operating margin would not change.

Net Profit Margin 

**Evaluate:** If you were focused only on the gross and operating margins, you would not see the impact of the increased interest expense, which shows-up in the net profit margin.

**26.** Using operating income as a multiple of interest to compute interest coverage, we have the following: operating income = 0.10 × $30 million = $3 million, so its interest coverage is   
$3 million/$1 million = 3 times.

**27.** **Plan:** First, we must compute Ladders’ net income using the fact that net profit margin is net income/sales. Then we can compute the ROE as net income/book equity and the ROA as net income/book assets.

**Execute:**

First, compute Ladders’ net income: 0.05 × $50 million  $2.5 million.

ROE  Net Income/Book Equity  $2.5 million/$40 million  6.25%

ROA  Net Income/Book Assets  $2.5 million/($30 million  $40 million)  3.57%

**Evaluate:** ROE measures the net income (to shareholders) as a percentage of the book value of their investment. ROA measures the net income (to shareholders) as a percentage of the book value of all the assets used to generate the income. A firm with positive book equity and some debt will always have a lower ROA than ROE. ROA and ROE will be the same for a firm with no liabilities.

**28.** **Plan:** Using the information provided and Eqs. 2.15 to 2.18, we can compute all the efficiency ratios for JPJ.

**Execute:**

Accounts Receivable Days 

Fixed Asset Turnover 

(Total) Asset Turnover 

Inventory Turnover 

**Evaluate:** These ratios allow you to evaluate how efficiently JPJ is utilizing its assets and how quickly it is collecting its accounts receivables.

**29. Plan:** Using the 10% growth rate, we can compute the new sales number, and then the 5% growth rate will give us the new assets number. We can then recompute the asset turnover ratios.

**Execute:**

Sales  1,000,000(1.10)  1,100,000

Assets  5,000,000(1.05)  5,250,000

Fixed assets  3,000,000(1.05)  3,150,000

Fixed Asset Turnover 

(Total) Asset Turnover 

**Evaluate:** Because sales are growing faster than assets, we see that efficiency of asset utilization is increasing—the turnover ratios are higher.

**30.** **Plan:** We are given some data about Global’s financial results in 2023. Global launched a marketing campaign that increased sales but also decreased operating margins. We must calculate the effects of these changes on revenues, net income, and stock price.

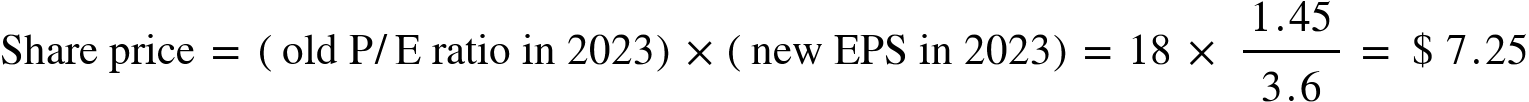
**Execute:**

a. Revenues in 2023  1.15 × 186.7  $214.705 million  
EBIT in 2023  4.50% × 214.705  $9.66 million (there is no other income)

b. Net income in 2023  EBIT  interest expenses  taxes

 (9.66  7.7) × (1  24%)

 $1.49 million

c. 

**Evaluate:** The new aggressive marketing campaign succeeded in raising revenues by 15%. Unfortunately, operating margins fell from 5.57% to 4.50%, which reduced EBIT and net income. As a result, the stock price fell from $10 to $7.25. The new marketing campaign destroyed stockholder value and is therefore a failure.

**31. Plan:** The table presents raw data about Debt, Equity, Operating Income, and Interest Expense. Although useful, this information does not easily tell us how much financial leverage each of these firms alone and by comparison is using. It also does not tell us how well each firm is able to support its debt. To accomplish this, we will compute various leverage ratios of each firm and then compare them.

**Execute:**

a. **Firm A: **  
**Firm B: **

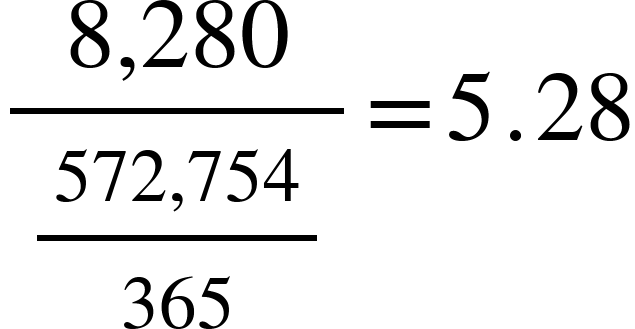
b. **Firm A: **  
**Firm B: **

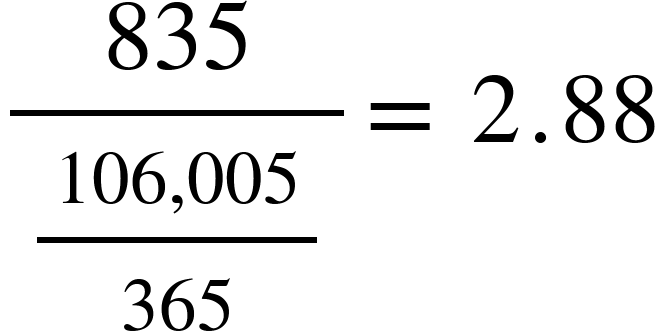
c. **Firm A: **  
**Firm B: **

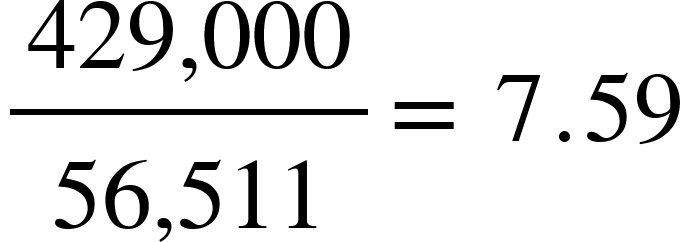
**Evaluate:** Firm B has a lower coverage ratio and will have slightly more difficulty meeting its debt obligations than Firm A.

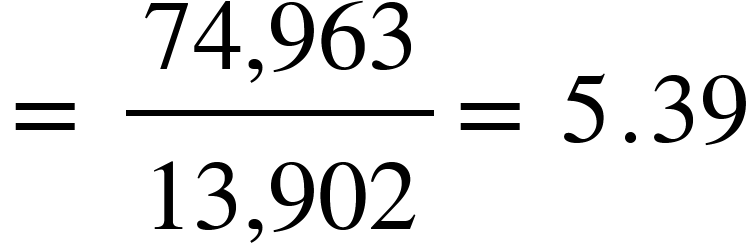
**32. Plan:** The table presents raw data about Sales, Accounts Receivable, and Inventory data for Walmart and Target. Although useful, this information does not tell us easily how well each firm is managing its Accounts Receivable and Inventory in general and in comparison with each other. To accomplish this, we will compute the relevant ratios of each firm and then compare them.

**Execute:**

a. Walmart: Accounts Receivable Days = 

Target: Accounts Receivable Days = 

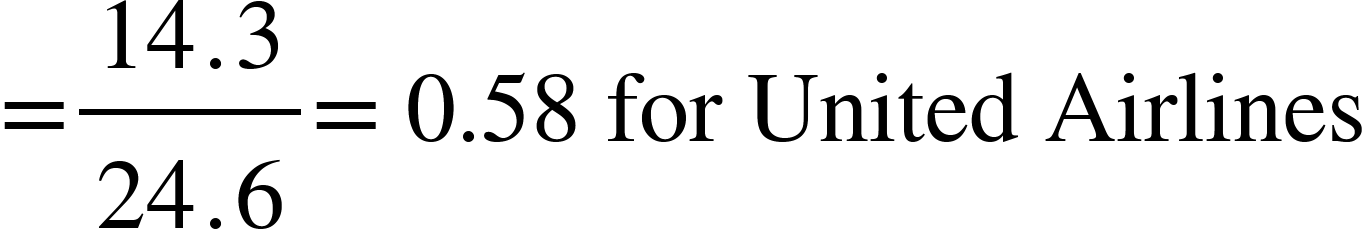
b. Walmart: Inventory Turnover = 

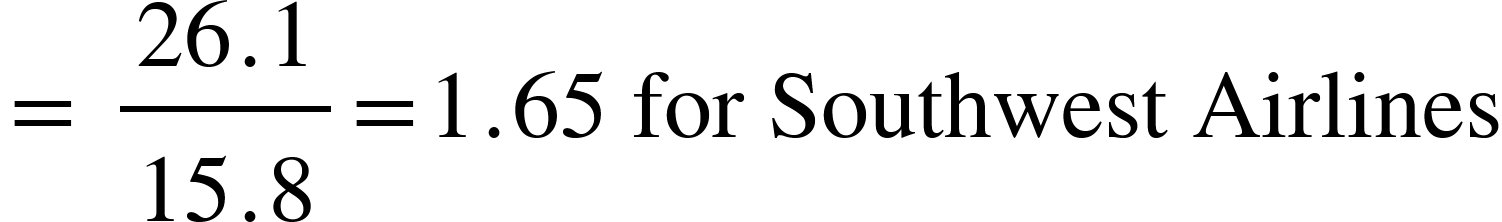
Target: Inventory Turnover 

c. Target is managing its accounts receivables more efficiently (shorter AR days), but Target is managing its inventory more efficiently (more AR turnover).

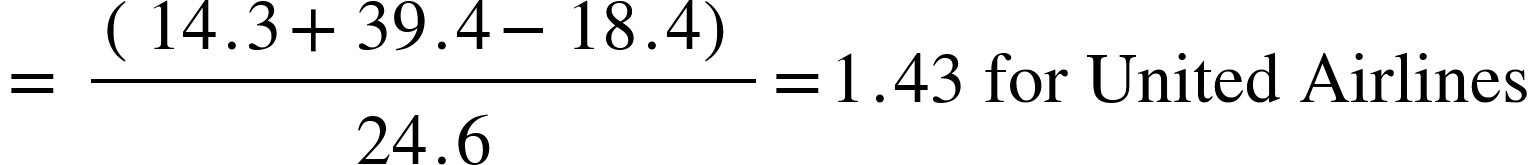
**Evaluate:** Target is managing its accounts receivable more efficiently, while Walmart is managing its inventory more efficiently, as shown by the above ratios. Walmart collects its accounts receivable in 5.28 days as opposed to 2.88 days for Target. However, Walmart turns over its inventory 7.59 times a year, as opposed to 5.39 times for Target.

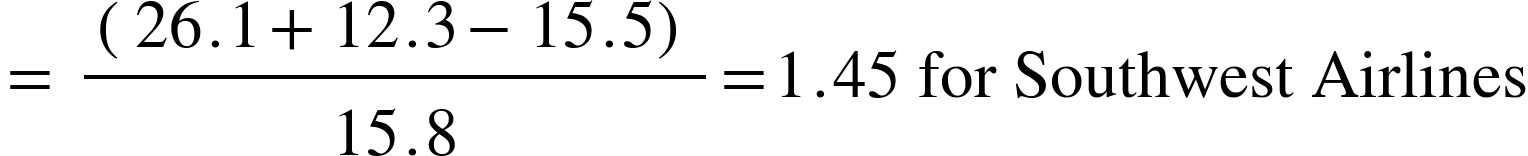
**33.** a. Market capitalization-to-revenue ratio





b. Enterprise value-to-revenue ratio





c. The market capitalization-to-revenue ratio cannot be meaningfully compared when the firms have different amounts of leverage because market capitalization measures only the value of the firm’s equity. The enterprise value-to-revenue ratio is therefore more useful when the firm’s leverage is quite different, as it is here.

**34.** Plan: Use the DuPont Identity to perform the analysis:   
Net Profit Margin × Total Asset Turnover × Total Assets/Equity

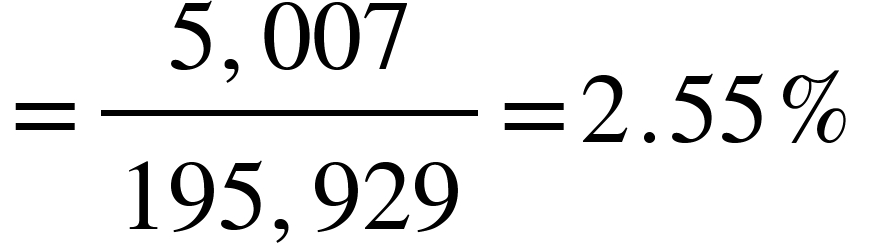
**Execute:**

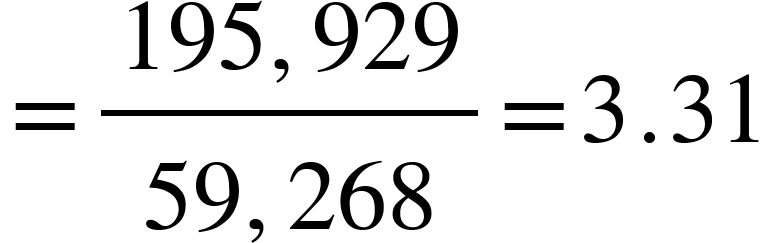
a. 3.5% × 1.8 × 44/18  15.4%

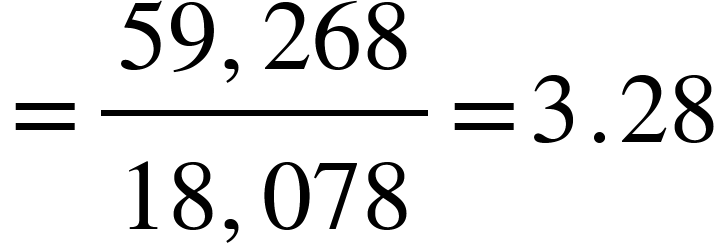
b. 4% × 1.8 × 44/18  17.6%

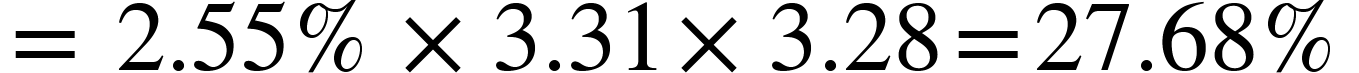
c. 4% × (1.8 × 1.2) × 44/18  21.1%

**Evaluate:** The analysis demonstrates different ways that a company can increase its overall ROE—by increasing its net profit margin or its asset turnover.

**35.** a. Costco’s Net Profit Margin 

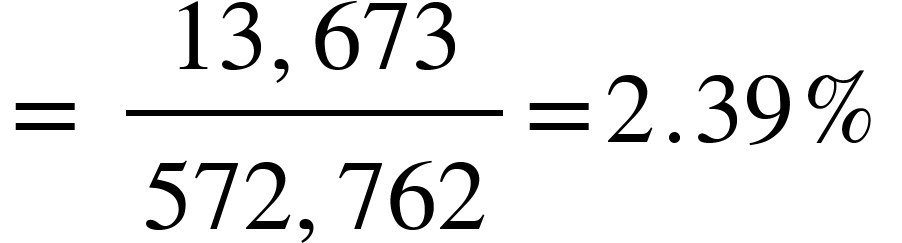
Costco’s Asset Turnover 

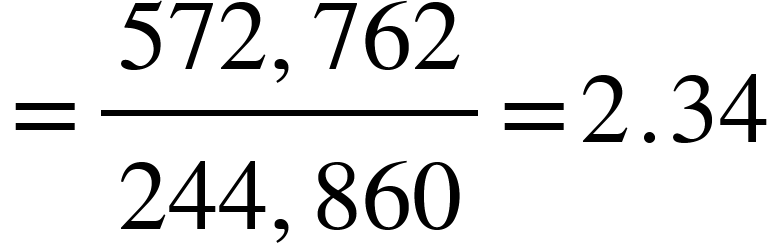
Costco’s Equity Multiplier 

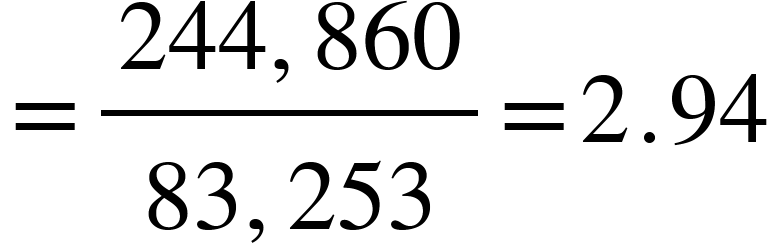
b. Costco’s ROE (DuPont) 

c. Costco’s revised ROE 2.55% × 3.43 × 3.28 28.68%

Costco’s would need to increase asset turnover to almost 3.43 times.

**36.** Net Profit Margin 

Asset Turnover 

Equity Multiplier 

Walmart’s ROE (DuPont)  2.39% × 2.34 × 2.94  16.44%

The two firms’ ROEs differ because Costco has a higher profitability, asset turnover, and equity multiplier.

**37. Plan:** You are presented with a large amount of financial information over several years about a company. You are asked to analyze this information around issues of profitability and book and market values of equity for your boss.

**Execute:**

a. The book value of the equity decreased by $2.101 billion compared to that at the end of the previous quarter and was negative.

b. Because the book value of equity is negative in this case, the company’s market-to-book ratio and its book debt-equity ratio are not meaningful. Its market debt-equity ratio may be used in comparison.

c. Information from the statement of cash flows helped explain that the decrease of book value of equity resulted from an increase in debt that was used to repurchase $2.110 billion worth of the firm’s shares.

d. Negative book value of equity does not necessarily mean the firm is unprofitable. Loss in gross profit is only one possible cause. If a firm borrows to repurchase shares or invest in intangible assets (such as R&D), it can have a negative book value of equity.

**Evaluate:** The company issued debt to buy back $2.11 billion in equity. Obviously, that resulted in a large increase in outstanding debt and a large decline in outstanding equity. This resulted in the book value of the company’s equity being negative. On the surface, a negative book value of equity would suggest an unprofitable if not failed firm. The reality in this case is much more complicated.

**38.** a. KPMG certified Costco’s financial statements.

b. W. Craig Jelinek, Hamilton E. James, Richard A. Galanti, Daniel M. Hines, Susan L. Decker, Kenneth D. Denman, Sally Jewell, Charles T. Munger, Jeffrey S. Raikes, John W. Stanton, and Mary (Maggie) A. Wilderotter certified Costco’s financial statements.