Chapter 2
Introduction to Financial Statement Analysis

2-1. What four financial statements can be found in a firm's 10-K filing? What checks are there on the accuracy of these statements?

In a firm's 10-K filing, four financial statements can be found: the balance sheet, income statement, statement of cash flows, and 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.

2-2. Who reads financial statements? List at least three different categories of people. For each category, provide an example of the type of information they might be interested in and discuss why.

Users of financial statements include present and potential investors, financial analysts, and other interested outside parties (such as lenders, suppliers and other trade creditors, and customers). Financial managers within the firm also use the financial statements when making financial decisions.

Investors. Investors are concerned with the risk inherent in, and return provided by, their investments. Bondholders use the firm's financial statements to assess the ability of the company to make its debt payments.Stockholders use the statements to assess the firm's profitability and ability to make future dividend payments.

Financial analysts. Financial analysts gather financial information, analyze it, and make recommendations. They read financial statements to determine a firm's value and project future earnings, so that they can provide guidance to businesses and individuals to help them with their investment decisions.

Managers. Managers use financial statements to look at trends in their own business, and to compare their own results with that of competitors.

2-3. Find the most recent financial statements for Starbucks' corporation (SBUX) using the following sources:

a. From the company's Web site www.starbucks.com (*Hint:* Search for "investor relations.")

b. From the SEC Web site www.sec.gov. (*Hint:* Search for company filings in the EDGAR database.)

c. From the Yahoo! Finance Web site http://finance.yahoo.com.

d. From at least one other source. (*Hint:* Enter "SBUX 10K" at www.google.com.)

Each method will help find the same SEC filings. Yahoo! Finance also provides some analysis such as charts and key statistics.

2-4. Consider the following potential events that might have taken place at Global Conglomerate on December 30, 2015. For each one, indicate which line items in Global's balance sheet would be affected and by how much. Also indicate the change to Global's book value of equity. (In all cases, ignore any tax consequences for simplicity.)

a. Global used $20 million of its available cash to repay $20 million of its long-term debt.

b. A warehouse fire destroyed $5 million worth of uninsured inventory.

c. Global used $5 million in cash and $5 million in new long-term debt to purchase a $10 million building.

d. A large customer owing $3 million for products it already received declared bankruptcy, leaving no possibility that Global would ever receive payment.

e. Global's engineers discover a new manufacturing process that will cut the cost of its flagship product by over 50%.

f. A key competitor announces a radical new pricing policy that will drastically undercut Global's prices.

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 affect the balance sheet.

f. This event would not affect the balance sheet.

2-5. What was the change in Global Conglomerate's book value of equity from 2014to 2015 according to Table 2.1? Does this imply that the market price of Global's shares increased in 2015? Explain.

Global Conglomerate's book value of equity increased by $1 million from 2014to 2015. 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 historical cost of the firm's assets, but on investors' expectation of the firm's future performance. There are many events that may affect Global's future profitability, and hence its share price, that do not show up on the balance sheet.

2-6. Use EDGAR to find Qualcomm's 10-K filing for 2015. From the balance sheet, answer the following questions:

a. How much did Qualcomm have in cash and short-term investments?

b. What were Qualcomm's total accounts receivable?

c. What were Qualcomm's total assets?

d. What were Qualcomm's total liabilities? How much of this was long-term debt?

e. What was the book value of Qualcomm's equity?

a. $7,560 million (cash) and $9,761 million (short-term investments/marketable securities) for a total of $17,321 million

b. $1,964 million

c. $50,796 million

d. $19,382 million, $9,969 million.

e. $31,414 million.

2-7. Find online the annual 10-K report for Costco Wholesale Corporation (COST) for fiscal year 2015 (filed in October 2015). Answer the following questions from their balance sheet:

a. How much cash did Costco have at the end of the fiscal year?

b. What were Costco’s total assets?

c. What were Costco’s total liabilities? How much debt did Costco have?

d. What was the book value of Costco’s equity?

a. At the end of the fiscal year, Costco had cash andcash equivalents of $4,801 million.

b. Costco’stotal assets were $33,440million.

c. Costco’stotal liabilities were $22,597 million, and it had $6,157 million in debt.

d. Thebook value of Costco’s equity was $10,843 million.

2-8. In early 2012, General Electric (GE) had a book value of equity of $109 billion, 10.3 billionshares outstanding, and a market price of $9.66 per share. GE also had cash of $40 billion, andtotal debt of $530 billion. Three years later, in early 2015, GE had a book value of equity of$112 billion, 10.9 billion shares outstanding with a market price of $16.59 per share, cash of$85 billion, and total debt of $417 billion. Over this period, what was the change in GE’s

a. market capitalization?

b. market-to-book ratio?

c. enterprise value?

a. 2012 Market Capitalization: 10.3 billion shares × $9.66/share =$99.5 billion. 2015 Market Capitalization: 10.9 billion shares × $16.59/share = $180.8.The change over the period is $180.8– $99.5 = $81.3 billion.

b. 2012Market-to-Book = 99.5/109 = 0.91. 2015 Market-to-Book = 180.8/112 = 1.61. The change over the period is: 1.61 – 0.91 = 0.70.

e. 2012Enterprise Value = $109– 40 + 530 = $599 billion. 2015 Enterprise Value = $112 – 85 + 417 = $444 billion. The change over the period is: $599 – $444 = –$155 billion.

2-9. In early-2015, Abercrombie & Fitch (ANF) had a book equity of $1390 million, a price per share of $25.52, and 69.35 million shares outstanding. At the same time, The Gap (GPS) had a book equity of $2983 million, a share price of $41.19, and 421 million shares outstanding.

a. What is the market-to-book ratio of each of these clothing retailers?

b. What conclusions can you draw by comparing the two ratios?

a. ANF’s market-to-book ratio = (25.52 x 69.35)/1,390 = 1.27.

GPS’s market-to-book ratio = (41.19 x 421)/2,983 = 5.81.

b. For the market, the outlook of Abercrombie and Fitch is less favorable than that of The Gap. For every dollar of equity invested in ANF, the market values that dollar today at $1.27versus $5.81 for a dollar invested in the GPS. Equity investors are willing to pay relatively less today for shares of ANF than for GPS because they expect GPS to produce superior performance in the future.

2-10. See Table 2.5 showing financial statement data and stock price data for Mydeco Corp.

a. What is Mydeco’s market capitalization at the end of each year?

b. What is Mydeco’s market-to-book ratio at the end of each year?

c. What is Mydeco’s enterprise value at the end of each year?

2012–2016 Financial Statement Data and Stock Price Data for Mydeco Corp.

TABLE 2.5 2012–2016 Financial Statement Data and Stock Price Data for Mydeco Corp.

Mydeco Corp. 2012–2016	(All data as of fiscal year end; in $ million)				
Income Statement	**2012**	**2013**	**2014**	**2015**	**2016**
Revenue	401.9	361.6	429.6	513.6	602.6
Cost of Goods Sold	(192.1)	(175.4)	(207.1)	(248.3)	(295.8)
Gross Profit	209.8	186.2	222.5	265.3	306.8
Sales and Marketing	(65.0)	(64.4)	(84.3)	(104.9)	(121.1)
Administration	(61.8)	(57.1)	(59.0)	(66.9)	(79.8)
Depreciation & Amortization	(27.5)	(26.3)	(32.5)	(38.3)	(40.1)
EBIT	55.5	38.4	46.7	55.2	65.8
Interest Income (Expense)	(32.4)	(31.8)	(32.0)	(37.0)	(40.9)
Pretax Income	23.1	6.6	14.7	18.2	24.9
Income Tax	(8.1)	(2.3)	(5.1)	(6.4)	(8.7)
Net Income	15.0	4.3	9.6	11.8	16.2
Shares outstanding (millions)	56.8	56.8	56.8	56.8	56.8
Earnings per share	$0.26	$0.08	$0.17	$0.21	$0.29
Balance Sheet	**2012**	**2013**	**2014**	**2015**	**2016**
Assets					
Cash	49.4	68.0	91.7	80.4	83.6
Accounts Receivable	87.6	70.6	69.3	77.4	84.2
Inventory	33.5	32.2	27.3	30.2	35.8
Total Current Assets	170.5	170.8	188.3	188.0	203.6
Net Property, Plant & Equip.	244.3	243.3	306.1	349.6	347.9
Goodwill & Intangibles	365.5	365.5	365.5	365.5	365.5
Total Assets	780.3	779.6	859.9	903.1	917.0
Liabilities & Stockholders' Equity					
Accounts Payable	18.8	18.8	22.4	27.1	30.3
Accrued Compensation	7.6	6.3	7.5	7.7	9.4
Total Current Liabilities	26.4	25.1	29.9	34.8	39.7
Long-term Debt	498.9	498.9	572.2	597.5	597.5
Total Liabilities	525.3	524	602.1	632.3	637.2
Stockholders' Equity	255.0	255.6	257.8	270.8	279.8
Total Liabilities & Stockholders' Equity	780.3	779.6	859.9	903.1	917.0
Statement of Cash Flows	**2012**	**2013**	**2014**	**2015**	**2016**
Net Income	15.0	4.3	9.6	11.8	16.2
Depreciation & Amortization	27.5	26.3	32.5	38.3	40.1
Chg. in Accounts Receivable	3.9	17.0	1.3	(8.1)	(6.8)
Chg. in Inventory	(2.9)	1.3	4.9	(2.9)	(5.6)
Chg. in Payables & Accrued Comp.	1.7	(1.3)	4.8	4.9	4.9
Cash from Operations	45.2	47.6	53.1	44.0	48.8
Capital Expenditures	(26.6)	(23.8)	(97.5)	(75.4)	(40.0)
Cash from Investing Activities	(26.6)	(23.8)	(97.5)	(75.4)	(40.0)
Dividends Paid	(5.2)	(5.2)	(5.2)	(5.2)	(5.6)
Sale (or purchase) of stock	—	—	—	—	—
Debt Issuance (Pay Down)	—	—	73.3	25.3	—
Cash from Financing Activities	(5.2)	(5.2)	68.1	20.1	(5.6)
Change in Cash	13.4	18.6	23.7	(11.3)	3.2
Mydeco Stock Price	$7.02	$3.55	$5.86	$8.33	$11.57

a.

Year	2012	2013	2014	2015	2016
Shares Outstanding (millions)	56.8	56.8	56.8	56.8	56.8
Stock Price	$7.02	$3.55	$5.86	$8.33	$11.57
Market capitalization (millions)	$398.7	$201.6	$332.8	$473.1	$657.2

b.

Year	2012	2013	2014	2015	2016
Market capitalization (millions)	$398.7	$201.6	$332.8	$473.1	$657.2
Stockholders' Equity (millions)	$255.0	$255.6	$257.8	$270.8	$279.8
Market-to-book	1.56	0.79	1.29	1.75	2.35

c.

Year	2012	2013	2014	2015	2016
Market capitalization (millions)	$398.7	$201.6	$332.8	$473.1	$657.2
Cash (millions)	$49.4	$68.0	$91.7	$80.4	$83.6
Long-term Debt (millions)	$498.9	$498.9	$572.2	$597.5	$597.5
Enterprise value (millions)	$848.2	$632.5	$813.3	$990.2	$1,171.1

2-11. Suppose that in 2016, Global launches an aggressive marketing campaign that boosts sales by 15%. However, their operating margin falls from 5.57% to 4.50%. Suppose that they have no other income, interest expenses are unchanged, and taxes are the same percentage of pretax income as in 2015.

a. What is Global's EBIT in 2016?

b. What is Global'snet income in 2016?

c. If Global's P/E ratio and number of shares outstanding remains unchanged, what is Global's share price in 2016?

a. Revenues in 2016 = 1.15 × 186.7 = $214.705 million.

EBIT = 4.50% × 214.705 = $9.66 million (there is no other income).

b. Net Income = EBIT – Interest Expenses – Taxes = (9.66 – 7.7) × (1 – 26%) = $1.45 million.

c. Share price = (P/E Ratio in 20015) x (EPS in 2016) = 25.2 x (1.45/3.6) = $10.15.

Note: Differences from spreadsheet solutions due to rounding.

2-12. Find online the annual 10-K report for Costco Wholesale Corporation (COST) for fiscal year 2015 (filed in October 2015). Answer the following questions from their income statement:

a. What were Costco's revenues for fiscal year 2015? By what percentage did revenues grow from the prior year?

b. What was Costco's operating income for the fiscal year?

c. What was Costco's average tax rate for the year?

d. What were Costco's diluted earnings per share in fiscal year 2015? What number of shares is this EPS based on?

a. Revenues = $116,199 million. Revenue growth = (116,199/112,640) – 1 = 3.16%.

b. Operating Income = $3,624 million.

c. Average tax rate = 1,195/3,604 = 33.16%.

d. The diluted earnings per share in 2015was $5.37. The number of shares used in this calculation of diluted EPS was 442.72 million.

2-13. **See Table 2.5 showing financial statement data and stock price data for Mydeco Corp.**

a. By what percentage did Mydeco's revenues grow each year from 2013 to 2016?

b. By what percentage did net income grow each year?

c. Why might the growth rates of revenues and net income differ?

a.

Year	2012	2013	2014	2015	2016
Revenue (millions)	$401.9	$361.6	$429.6	$513.6	$602.6
Revenue growth		–10.0%	18.8%	19.6%	17.3%

b.

Year	2012	2013	2014	2015	2016
Net Income (millions)	$15.0	$4.3	$9.6	$11.8	$16.2
Net income growth		–71.3%	123.3%	22.9%	37.3%

c. Net Income growth rate differs from revenue growth rate because cost of goods sold and other expenses can move at different rates than revenues. For example, revenues declined in 2013 by 10%, however, cost of goods sold only declined by 9%.

2-14. **See Table 2.5 showing financial statement data and stock price data for Mydeco Corp. SupposeMydeco repurchases 2.3 million shares each year from 2013 to 2016. What would its earningsper share be in years 2013–2016? (Assume Mydeco pays for the shares using its available cashand that Mydeco earns no interest on its cash balances.)**

A repurchase does not impact earnings directly, so any change to EPS will come from a reduction in shares outstanding.

Year	2012	2013	2014	2015	2016
Shares Outstanding (millions)	56.8	54.5	52.2	49.9	47.6
Net Income (millions)	$15.0	$4.3	$9.6	$11.8	$16.2
EPS	$0.26	$0.08	$0.18	$0.24	$0.34

2-15. **See Table 2.5 showing financial statement data and stock price data for Mydeco Corp. SupposeMydeco had purchased additional equipment for $12.3 million at the end of 2013, and thisequipment was depreciated by $4.1 million per year in 2014, 2015, and 2016. Given Mydeco'stax rate of 35%, what impact would this additional purchase have had on Mydeco's net incomein years 2013–2016? (Assume the equipment is paid for out of cash and that Mydeco earns nointerest on its cash balances.)**

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

Year	2012	2013	2014	2015	2016
Net Income	$15.0	$4.3	$9.6	$11.8	$16.2
Additional Depreciation			–$4.1	–$4.1	–$4.1
Tax savings			$1.4	$1.4	$1.4
New Net Income (millions)	$15.0	$4.3	$6.9	$9.1	$13.5

2-16. **See Table 2.5 showing financial statement data and stock price data for Mydeco Corp. SupposeMydeco's costs and expenses had been the same fraction of revenues in 2013–2016 as they werein 2012. What would Mydeco's EPS have been each year in this case?**

If Mydeco's costs and expenses had been the same fraction of revenues in 2013–2016 as they were in 2012, then their net profit margins would have been equal.

2012 net profit margin = 15/401.9 = 3.73%.

Year	2012	2013	2014	2015	2016
Revenue	$401.9	$361.6	$429.6	$513.6	$602.6
Net Profit Margin	3.7%	3.7%	3.7%	3.7%	3.7%
New Net Income	$15.0	$13.5	$16.0	$19.2	$22.5
Shares Outstanding	56.8	56.8	56.8	56.8	56.8
New EPS	$0.26	$0.24	$0.28	$0.34	$0.40

2-17. Suppose a firm's tax rate is 30%.

a. What effect would a $10 million operating expense have on thisyears earnings? What effectwould it have on next year's earnings?

b. What effect would a $10 million capital expense have on thisyears earnings if the capitalexpenditure is depreciated at a rate of $2 million per year for five years? What effect wouldit have on next year's earnings?

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 30% × $10 million = $3 million. Thus, earnings would decline by 10 – 3 = $7 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 × 30% = $0.6 million, earnings would be lower by 2 – 0.6 = $1.4 million for each of the next 5 years.

2-18. Quisco Systems has 6.17 billion shares outstanding and a share price of $18.96. Quisco is consideringdeveloping a new networking product in-house at a cost of $509 million. Alternatively,Quisco can acquire a firm that already has the technology for $893 million worth (at the currentprice) of Quisco stock. Suppose that absent the expense of the new technology, Quisco willhave EPS of $0.83.

a. Suppose Quisco develops the product in-house. What impact would the development costhave on Quisco's EPS? Assume all costs are incurred this year and are treated as an R&Dexpense, Quisco's tax rate is 35%, and the number of shares outstanding is unchanged.

b. Suppose Quisco does not develop the product in-house but instead acquires the technology.What effect would the acquisition have on Quisco's EPS this year? (Note that acquisitionexpenses do not appear directly on the income statement. Assume the firm was acquired atthe start of the year and has no revenues or expenses of its own, so that the only effect onEPS is due to the change in the number of shares outstanding.)

c. Which method of acquiring the technology has a smaller impact on earnings? Is this method cheaper? Explain.

a. If Quisco develops the product in-house, its earnings would fall by $509 × (1 – 35%) = $330.85 million. With no change to the number of shares outstanding, its EPS would decrease by ($330.9/6,170) = $0.054 to $0.776. (Assume the new product would not change this year's revenues.)

b. If Quisco acquires the technology for $893 million worth of its stock, it will issue $893/18.96 = 47.10 million new shares. Since earnings without this transaction are $0.83 × 6.17 billion = $5.12 billion, its EPS with the purchase is 5,121/(6,170 + 47.10) = $0.82.

c. 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.

2-19. Find online the annual 10-K report for Costco Wholesale Corporation (COST) for fiscal year 2015 (filed in October 2015). Answer the following questions from their cash flow statement:

a. How much cash did Costco generate from operating activities in fiscal year 2015?

b. What was Costco depreciation and amortization expense?

c. How much cash was invested in new property and equipment (net of any sales)?

d. How much did Costco raise from the sale of shares of its stock (net of any purchases)?

a. Net cash provided by operating activities was \$4,285 million in fiscal year 2015.

b. Depreciation and amortization expenses were \$1,127 million.

c. Net cash used in capital expenditures for property and equipment was \$2,393 million.

d. Costco raised nothing from the sale of shares of its stock, while it spent \$481 million on the purchase of common stock.Costco raised –\$481 million from the sale of its shares of stock (net of any purchases).

2-20. See Table 2.5 showing financial statement data and stock price data for Mydeco Corp.

a. From 2012 to 2016, what was the total cash flow from operations that Mydeco generated?

b. What fraction of the total in (a) was spent on capital expenditures?

c. What fraction of the total in (a) was spent paying dividends to shareholders?

d. What was Mydeco's total retained earnings for this period?

a. Total cash flow from operations = 45.2 + 47.6 + 53.1 + 44 + 48.8 = \$238.7 million.

b. Total fraction spent on capital expenditures = (26.6 + 23.8 + 97.5 + 75.4 + 40)/238.7 = 110.3%.

c. Total fraction spent on dividends = (5.2 × 4 + 5.6)/238.7 = 11.06%.

d. Retained earnings = Net Income – Dividends = (15 + 4.3 + 9.6 + 11.8 + 16.2) – (5.2 × 4 + 5.6) = \$30.5 million.

2-21. See Table 2.5 showing financial statement data and stock price data for Mydeco Corp.

a. In what year was Mydeco's net income the lowest?

b. In what year did Mydeco need to reduce its cash reserves?

c. Why did Mydeco need to reduce its cash reserves in a year when net income was reasonably high?

a. In 2013 (net income was \$4.3 million).

b. 2015 (cash was reduced from 91.7 to 80.4).

c. Mydeco needed to reduce cash (it also issued debt) to pay for large capital expenditures in 2014 and 2015. In addition, even though net income was reasonably high, cash from operations was at the lowest amount in the five-year period due to an increase in accounts receivable and inventories.

2-22. See Table 2.5 showing financial statement data and stock price data for Mydeco Corp. Use the data from the balance sheet and cash flow statement in 2012 to determine the following:

a. How much cash did Mydeco have at the end of 2011?

b. What were Mydeco's accounts receivable and inventory at the end of 2011?

c. What were Mydeco's total liabilities at the end of 2011?

d. Assuming goodwill and intangibles were equal in 2011 and 2012, what wasMydeco's net property, plant, and equipment at the end of 2011?

a. 20011 Cash = 2012 Cash – 2012 Change in Cash = 49.4 – 13.4 = \$36 million.

b. 2011 Accounts Receivable = 87.6 – 3.9 = $83.7 million; 2011 inventory = 33.5 – (-2.9) = $36.4 million

c. 2011 Total Liabilities = 525.3 – 1.7 = $523.6 million.

d. 2011 net property, plant, and equipment = 2012 net property, plant, and equipment – 2012 capital expenditures + 2012 depreciation = 244.3 – 26.6 + 27.5 = $245.2 million

2-23. Can a firm with positive net income run out of cash? Explain.

A firm can have positive net income but still run out of cash. For example, to expand its current production, a profitable company may spend more on investment activities than it generates from operating activities and financing activities. Net cash flow for that period would be negative, although its net income is positive. It could also run out of cash if it spends a lot on financing activities, perhaps by paying off other maturing long-term debt, repurchasing shares, or paying dividends.

2-24. Suppose your firm receives a $4.1 million order on the last day of the year. You fill the order with $2.9 million worth of inventory. The customer picks up the entire order the same day and pays $1.5 million upfront in cash; you also issue a bill for the customer to pay the remaining balance of $2.6 million in 30 days. Suppose your firm's tax rate is 0% (i.e., ignore taxes). Determine the consequences of this transaction for each of the following:

a. Revenues

b. Earnings

c. Receivables

d. Inventory

e. Cash

a. Revenues: increase by $4.1 million

b. Earnings: increase by 4.1 – 2.9 = $1.2 million

c. Receivables: increase by $2.6 million

d. Inventory: decrease by $2.9 million

e. Cash: increase by $1.2 million (earnings) – $2.6 million (receivables) + $2.9 million (inventory) = $1.5 million (cash).

2-25. Nokela Industries purchases a $38.5 million cyclo-converter. The cyclo-converter will be depreciated by $7.7 million per year over four years, starting this year. Suppose Nokela's tax rate is 40%.

a. What impact will the cost of the purchase have on earnings for each of the next five years?

b. What impact will the cost of the purchase have on the firm's cash flow for the next five years?

a. To calculate the impact on earnings for the next five years, we would have to deduct the depreciation expense. After taxes, this would lead to a decline of 7.7 × (1 – 40%) = $4.62 million each year for the next five years.

b. Cash flow for the next five years: less $35.42 million (–4.62 + 7.7 – 38.5) this year, and add $3.08 million (–4.62 + 7.7) for the four following years.

2-26. See Table 2.5 showing financial statement data and stock price data for Mydeco Corp.

a. What were Mydeco's retained earnings each year?

b. Using the data from 2012, what was Mydeco's total stockholders' equity in 2011?

a. Retained earnings = Net Income – Dividends Paid

Year	2012	2013	2014	2015	2016
Net Income	$15.0	$4.3	$9.6	$11.8	$16.2
Dividends Paid	–$5.2	–$5.2	–$5.2	–$5.2	–$5.6
Retained Earnings (millions)	$9.8	–$0.9	$4.4	$6.6	$10.6

b. 2011 stockholders' equity = 2012 stockholders' equity – 2012 retained earnings = 255 – 9.8 = $245.2 million.

2-27. Find online the annual 10-K report for Costco Wholesale Corporation (COST) for fiscal year 2015 (filed in October 2015). Answer the following questions from the notes to their financial statements:

a. How many stores did Costco open outside of the U.S. in 2015?

b. What property does Costco lease? What are the minimum lease payments due in 2016?

c. What was Costco's worldwide member renewal rate for 2015? What proportion of Costco cardholders had Gold Star memberships in 2015?

d. What fraction of Costco's 2015 sales came from gas stations, pharmacy, food court, and optical? What fraction came from apparel and small appliances?

a. Costcoopened 11 stores outside of the U.S. in 2015.

b. Costco leases land and/or buildings at warehouses and certain other office and distribution facilities.The minimum lease payments due in 2016 are $211 million.

c. Costco had a worldwide member renewal rate of 88% for 2015. 34,000/81,300 = 42% of Costco cardholders had Gold Star memberships in 2015.

d. 16% of Costco's 2015 sales came from gas stations, pharmacy, food court, and optical.11% of Costco's 2015 sales came from apparel and small appliances.

2-28. See Table 2.5 showing financial statement data and stock price data for Mydeco Corp.

a. What were Mydeco's gross margins each year?

b. Comparing Mydeco's gross margin, EBIT margin, and net profit margin in 2012 and 2016, which margins improved?

a.

Year	2012	2013	2014	2015	2016
Revenue	$401.9	$361.6	$429.6	$513.6	$602.6
Gross Profit	$209.8	$186.2	$222.5	$265.3	$306.8
Gross Margin	52.2%	51.5%	51.8%	51.7%	50.9%

b. None of the margins improved from 2012 to 2016

Year	2012	2013	2014	2015	2016
Revenue	$401.9	$361.6	$429.6	$513.6	$602.6
Gross Profit	$209.8	$186.2	$222.5	$265.3	$306.8
EBIT	$55.5	$38.4	$46.7	$55.2	$65.8
Net Income	$15.0	$4.3	$9.6	$11.8	$16.2
Gross Margin	52.2%	51.5%	51.8%	51.7%	50.9%
EBIT Margin	13.8%	10.6%	10.9%	10.7%	10.9%
Net Profit Margin	3.7%	1.2%	2.2%	2.3%	2.7%

2-29. For fiscal year end 2015, Walmart Stores, Inc. (WMT) had revenue of $485.65 billion, gross profit of $120.57billion, and net income of $16.36 billion. Costco Wholesale Corporation (COST) had revenue of $116.20 billion, gross profit of $15.13 billion, and net income of $2.38 billion.

a. Compare the gross margins for Walmart and Costco.

b. Compare the net profit margins for Walmart and Costco.

c. Which firm was more profitable in 2015?

a. Walmart's gross margin = 120.57/485.65 = 24.83%; Costco's gross margin =15.13/116.20 = 13.02%.

b. Walmart's net margin = 16.36/485.65 = 3.37%; Costco's net margin = 2.38/116.20 = 2.05%.

c. Walmart was more profitable in 2015.

2-30. At the end of 2015, Apple had cash and short-term investments of $41.60 billion, accounts receivable of $35.89 billion, current assets of $89.38 billion, and current liabilities of $80.61 billion.

a. What was Apple's current ratio?

b. What was Apple's quick ratio?

c. What is Apple's cash ratio?

d. At the end of 2015, HPQ had a cash ratio of 0.35, a quick ratio of 0.73 and a current ratio of 1.15. What can you say about the asset liquidity of Apple relative to HPQ?

a. Apple's current ratio = 89.38/80.61 = 1.11.

b. Apple's quick ratio = (41.60 + 35.89)/80.61 = 0.96.

c. Apple's cash ratio = 41.60/80.61 = 0.52.

d. Apple generally has more liquid assets than HPQ relative to current liabilities, with the exception of a slightly lower current ratio due to a lower proportion of inventory.

2-31. See Table 2.5 showing financial statement data and stock price data for Mydeco Corp.

a. How did Mydeco's accounts receivable days change over this period?

b. How did Mydeco's inventory days change over this period?

c. Based on your analysis, has Mydeco improved its management of its working capital during this time period?

a. 2012 accounts receivable days = 365 × 87.6 / 401.9 = 79.56.

2016 accounts receivable days = 365 × 84.2 / 602.6 = 51.00.

b. 2012 inventory days = 365 × 33.5 / 192.1 = 63.65.

2016 inventory days = 365 × 35.8 / 295.8 = 44.18.

c. Between 2012 and 2016, Mydeco improved its working capital management by reducing both accounts receivable days and inventory days.

2-32 See Table 2.5 showing financial statement data and stock price data for Mydeco Corp.

a. Compare accounts payable days in 2012 and 2016.

b. Did this change in accounts payable days improve or worsen Mydeco's cash position in 2016?

a. 2012 accounts payable days = 365 × 18.8 / 192.1 = 35.72.

2016 accounts payable days = 365 × 30.3 / 295.8 = 37.39.

b. Accounts payable days increased from 2012 to 2016, which improved the cash position of Mydeco

2-33. See Table 2.5 showing financial statement data and stock price data for Mydeco Corp.

a. By how much did Mydeco increase its debt from 2012 to 2016?

b. What was Mydeco's EBITDA/Interest coverage ratio in 2012 and 2016? Did its coverage ratio ever fall below 2?

c. Overall, did Mydeco's ability to meet its interest payments improve or decline over this period?

a. Mydeco increased its debt from $498.9 million in 2012 to $595.5 million in 2016 (by $98.6 million).

b. Interest coverage ratio = (EBIT + Depreciation) / Interest expense

Year	2012	2013	2014	2015	2016
EBIT	$55.5	$38.4	$46.7	$55.2	$65.8
Depreciation & Amortization	$27.5	$26.3	$32.5	$38.3	$40.1
Interest Expense	$32.4	$31.8	$32.0	$37.0	$40.9
Interest Coverage ratio	2.56	2.03	2.48	2.53	2.59

Mydeco's coverage ratio did not fall below 2 between 2012 and 2016

c. Overall, Mydeco's ability to meet its interest payments remained relatively constant, although it experienced a slight dip in 2013.

2-34. See Table 2.5 showing financial statement data and stock price data for Mydeco Corp.

a. How did Mydeco's book debt-equity ratio change from 2012 to 2016?

b. How did Mydeco's market debt-equity ratio change from 2012 to 2016?

c. Compute Mydeco's debt-to-enterprise value ratio to assess how the fraction of its business that is debt financed has changed over the period.

a.

Year	2012	2013	2014	2015	2016
Long-term Debt	$498.9	$498.9	$572.2	$597.5	$597.5
Stockholders' Equity	$255.0	$255.6	$257.8	$270.8	$279.8
Book debt-equity ratio	1.96	1.95	2.22	2.21	2.14

b.

Year	2012	2013	2014	2015	2016
Long-term Debt	$498.9	$498.9	$572.2	$597.5	$597.5
Market capitalization (millions)	$398.7	$201.6	$332.8	$473.1	$657.2
Market debt-equity ratio	1.25	2.47	1.72	1.26	0.91

c.

Year	2012	2013	2014	2015	2016
Long-term Debt	$498.9	$498.9	$572.2	$597.5	$597.5
Enterprise value	$848.2	$632.5	$813.3	$990.2	$1,171.1
Debt-to-enterprise value ratio	0.59	0.79	0.70	0.60	0.51

2-35. Use the data in Problem 8 to determine the change, from 2012 to 2015, in GE's

a. book debt-equity ratio?

b. market debt-equity ratio?

a. 2012 book debt-equity ratio = 410/116 = 3.53.

2015 book debt-equity ratio = 302/128 = 2.36

b. 2012 market debt-equity ratio = 410/(17 x 10.6) = 2.28.

2015 market debt-equity ratio = 302/(25 x 10) = 1.21.

2-36. You are analyzing the leverage of two firms and you note the following (all values in millions of dollars):

	Debt	Book Equity	Market Equity	EBIT	Interest Expense
Firm A	495.8	297.7	401.1	106.8	45.2
Firm B	83.8	38.3	35.9	8.4	7.5

a. What is the market debt-to-equity ratio of each firm?

b. What is the book debt-to-equity ratio of each firm?

c. What is the interest coverage ratio of each firm?

d. Which firm may have more difficulty meeting its debt obligations? Explain.

a. **Firm A:** Market debt-equity ratio = 495.8/401.1 = 1.24

Firm B: Market debt-equity ratio = 83.8/35.9 = 2.33

b. **Firm A:** Book debt-equity ratio = 495.8/297.9 = 1.66

Firm B: Book debt-equity ratio = 83.8/38.3 = 2.19

c. **Firm A:** Interest coverage ratio = 106.8/45.2 = 2.36

Firm B: Interest coverage ratio = 8.4/7.5 = 1.12

d. Firm B has a lower coverage ratio and will have more difficulty meeting its debt obligations than Firm A.

2-37. See Table 2.5 showing financial statement data and stock price data for Mydeco Corp.

a. Compute Mydeco's PE ratio each year from 2012 to 2016. In which year was it the highest?

b. What was Mydeco's Enterprise Value to EBITDA ratio each year? In which year was it the highest?

c. What might explain the differing time pattern of the two valuation ratios?

a.

Year	2012	2013	2014	2015	2016
Stock Price	$7.02	$3.55	$5.86	$8.33	$11.57
EPS	$0.26	$0.08	$0.17	$0.21	$0.29
PE ratio	27.0	44.4	34.5	39.7	39.9

The PE ratio was highest in 2013.

b.

Year	2012	2013	2014	2015	2016
Enterprise value	$848.2	$632.5	$813.3	$990.2	$1,171.1
EBIT	$55.5	$38.4	$46.7	$55.2	$65.8
Depreciation & Amortization	$27.5	$26.3	$32.5	$38.3	$40.1
Enterprise value-to-EBITDA ratio	10.2	9.8	10.3	10.6	11.1

The enterprise value/EBITDA ratio was the highest in 2016.

c. The different time patterns are caused by a change in the leverage ratio (increasing debt) that occurred in 2014 and 2015 and reduced the earnings per share due to increased interest expense. The PE ratio is sensitive to changes in leverage, while the enterprise value/EBITDA ratio is not.

2-38. In early-2015, United Airlines (UAL) had a market capitalization of $24.8 billion, debt of $12.8 billion, and cash of $5.5 billion. United also had annual revenues of $38.9 billion. Southwest Airlines (LUV) had a market capitalization of $28.8 billion, debt of $2.7 billion, cash of $2.9 billion, and annual revenues of $18.6 billion.

a. Compare the market capitalization-to-revenue ratio (also called the price-to-sales ratio) for United Airlines and Southwest Airlines.

b. Compare the enterprise value-to-revenue ratio for United Airlines and Southwest Airlines.

c. Which of these comparisons is more meaningful? Explain.

a. Market capitalization-to-revenue ratio:

= 24.8/38.9 = 0.64 for United Airlines.

= 28.8/18.6 = 1.55 for Southwest Airlines.

b. Enterprise value-to-revenue ratio:

= (24.8 – 5.5 + 12.8)/38.9 = 0.83 for United Airlines.

= (28.8 – 2.9 + 2.7)/18.6 = 1.54 for Southwest Airlines.

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

2-39. See Table 2.5 showing financial statement data and stock price data for Mydeco Corp.

a. Compute Mydeco'sROE each year from 2012 to 2016.

b. Compute Mydeco'sROA each year from 2012 to 2016.

c. Which return is more volatile? Why?

a.

Year	2012	2013	2014	2015	2016
Net Income	$15.0	$4.3	$9.6	$11.8	$16.2
Stockholders' Equity	$255.0	$255.6	$257.8	$270.8	$279.8
ROE	5.9%	1.7%	3.7%	4.4%	5.8%

b.

Year	2012	2013	2014	2015	2016
Net Income	$15.0	$4.3	$9.6	$11.8	$16.2
Interest Expense	$32.4	$31.8	$32.0	$37.0	$40.9
Total Assets	$780.3	$779.6	$859.9	$903.1	$917.0
Enterprise value-to-EBITDA ratio	6.1%	4.6%	4.8%	5.4%	6.2%

c. ROE is more volatile. Mydeco's debt level causes a large portion of EBIT to go to interest expense (which is relatively constant). This magnifies the volatility of earnings left over for shareholders through net income. ROA adjusts net income by including interest expense, and thus is less sensitive to leverage.

2-40. See Table 2.5 showing financial statement data and stock price data for Mydeco Corp. Was Mydecoable to improve its ROIC in 2016 relative to what it was in 2012?

$$2012 \text{ ROIC} = \frac{55.5 \times (1 - 0.35)}{255.0 + 498.9 - 49.4} = 5.12\%.$$

$$2016 \text{ ROIC} = \frac{65.8 \times (1 - 0.35)}{279.8 + 597.5 - 83.6} = 5.39\%.$$

Mydeco was able to improve its ROIC in 2016 relative to 2012.

2-41. For fiscal year 2015, Costco Wholesale Corporation had a net profit margin of 2.05%, asset turnover of 3.48, and a book equity multiplier of 3.15.

a. Use this data to compute Costco's ROE using the DuPont Identity.

b. If Costco's managers wanted to increase its ROE by one percentage point, how much higher would their asset turnover need to be?

c. If Costco's net profit margin fell by one percentage point, by how much would their asset turnover need to increase to maintain their ROE?

a. Costco's ROE (DuPont) = 2.05% × 3.48 × 3.15 = 22.47%.

b. Costco's new asset turnover =23.47%/(2.05% × 3.15) = 3.63 or an increase of 3.63 – 3.48 = 0.15.

c. Costco's new asset turnover = 22.47%/(1.05% × 3.15) = 6.79 or an increase of 6.79 – 3.48 = 3.31.

2-42. For fiscal year 2015, Walmart Stores Inc. (WMT) had total revenues of $484.65 billion, net income of $16.36 billion, total assets of $203.49 billion, and total shareholder's equity of $81.39 billion.

a. Calculate Wal-Mart's ROE directly, and using the DuPont Identity.

b. Comparing with the data for Costco in problem 41, use the DuPont Identity to understand the difference between the two firms' ROEs.

a. Walmart's ROE = 16.36/81.39 = 20.10%.

Walmart's net profit margin = 16.36/484.65 = 3.38%.

Walmart's asset turnover = 484.65/203.49 = 2.38.

Walmart's equity multiplier = 203.49/81.39 = 2.50.

Walmart's ROE (DuPont) = 3.38% × 2.38 × 2.50=20.11% (difference due to rounding).

b. Walmart has a superior profit margin, but a lower asset turnover and a lower equity multiplier (which could represent less leverage). Despite the higher profit margin, it has a smaller ROE that is driven by it's lower asset turnover and leverage.

2-43. Consider a retailing firm with a net profit margin of 3.1%, a total asset turnover of 1.85, total assets of $44.4 million, and a book value of equity of $18.2 million.

a. What is the firm's current ROE?

b. If the firm increased its net profit margin to 3.6%, what would be its ROE?

c. If, in addition, the firm increased its revenues by 23% (while maintaining this higher profit margin and without changing its assets or liabilities), what would be its ROE?

a. 3.1% × 1.85 × 44.4/18.2 = 14.0%.

b. 3.6% × 1.85 × 44.4/18.2 = 16.2%.

c. 3.6% × (1.85 × 1.23) × 44.4/18.2 = 20.0%.

2-44. Find online the annual 10-K report for Costco Wholesale Corporation (COST) for fiscal year 2015 (filed in October 2015).

a. Which auditing firm certified these financial statements?

b. Which officers of Costco's certified the financial statements?

a. KPMG LLP certified Costco's financial statements.

b. W. Craig Jelinek, President and CEO and Richard A. Galanti, Executive Vice President and CFOcertified Costco's financial statements.

2-45. WorldCom reclassified $3.85 billion of operating expenses as capital expenditures. Explain the effect this reclassification would have on WorldCom's cash flows. (*Hint:* Consider taxes.)

WorldCom's actions were illegal and clearly designed to deceive investors. But if a firm could legitimately choose how to classify an expense for tax purposes, which choice is truly better for the firm's investors?

By reclassifying $3.85 billion operating expenses as capital expenditures, WorldCom increased its net income but lowered its cash flow for that period. If a firm could legitimately choose how to classify an expense, expensing as much as possible in a profitable period rather than capitalizing them will save more on taxes, which results in higher cash flows, and thus is better for the firm's investors.