Chapter 2

Introduction to Financial Statement Analysis

2-1. In a firm's annual report, five financial statements can be found: the balance sheet, the income statement, the statement of cash flows, the statement of stockholders' equity, and the statement of comprehensive income. Financial statements in the annual report are required to be audited by a neutral third party, who checks and ensures that the financial statements are prepared according to GAAP (or IFRS) and that the information contained is reliable.

2-2. 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. Each method will help find the same SEC filings or annual reports. Yahoo! Finance also provides some analysis through charts and key statistics.

2-4.

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 affect the balance sheet.

f. This event would not affect the balance sheet.

2-5. Global Conglomerate's book value of equity increased by $1 million from 2017 to 2018. 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.

Copyright © 2019 Pearson Canada Inc.

2-6.

a. Qualcomm had $7560 million in cash and $9761 million in short-term investments/marketable securities, leading to a total of $17,321 million.

b. Qualcomm's total accounts receivable were $1964 million.

c. Qualcomm's total assets were $50,796 million.

d. Qualcomm's total liabilities were $19,382 million, of which $9969 million was long-term debt.

e. The book value of Qualcomm's equity was $31,414 million.

2-7.

a. At the end of the fiscal year, Costco had cash and cash equivalents of $4801 million.

b. Costco's total assets were $33,440 million.

c. Costco's total liabilities were $22,597 million, and it had $6157 million in debt.

d. The book value of Costco's equity was $10,843 million.

2-8.

a. 2012 Market Capitalization = 10.6 billion shares × $17/share = $180.2 billion.
2015 Market Capitalization = 10.0 billion shares × $25/share = $250 billion.
The change over the period is: $250 – $180.2 = $69.8 billion.

b. 2012 Market-to-Book = 180.2 / 116 = 1.55.
2015 Market-to-Book = 250 / 128 = 1.95.
The change over the period is: 1.95 – 1.55 = 0.40.

c. 2012 Enterprise Value = $180.2 – 84 + 410 = $506.2 billion.
2015 Enterprise Value = $250 – 85 + 302 = $467 billion.
The change over the period is: $467 – $506.2 = –$39.2 billion.

2-9.

a. ANF's market-to-book ratio = (25.52 × 69.35) / 1390 = 1.27.

GPS's market-to-book ratio = (41.19 × 421) / 2983 = 5.81.

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

2-10.

a.

Year	2012	2013	2014	2015	2016
Shares Outstanding (millions)	55.0	55.0	55.0	55.0	55.0
Mydeco Stock Price	$7.92	$3.30	$5.25	$8.71	$10.89
Market Capitalization (millions)	$435.60	$181.50	$288.75	$479.05	$598.95

b.

Year	2012	2013	2014	2015	2016
Market Capitalization (millions)	$435.60	$181.50	$288.75	$479.05	$598.95
Stockholders' Equity	252.7	250.3	251.2	258.5	273.7
Market-to-book	1.72	0.73	1.15	1.85	2.19

Copyright © 2019 Pearson Canada Inc.

c.

Year	2012	2013	2014	2015	2016
Market Capitalization (millions)	$435.60	$181.50	$288.75	$479.05	$598.95
Cash	48.8	68.9	86.3	77.5	85.0
Long-term Debt	500.0	500.0	575.0	600.0	600.0
Enterprise Value	886.80	612.60	777.45	1,001.55	1,113.95

2-11.

a. Revenues in 2019 = 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 2015) × (EPS in 2016) = 25.2 × (1.45 / 3.6) = $10.15.

Note: Differences from spreadsheet solutions due to rounding.

2-12.

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

b. Operating Income = $3624 million.

c. Average tax rate = 1195 / 3604 = 33.16%.

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

2-13.

a.

Year	2012	2013	2014	2015	2016
Revenue	404.3	363.8	424.6	510.7	604.1
Revenue growth		-10.02%	16.71%	20.28%	18.29%

b.

Year	2012	2013	2014	2015	2016
Net Income	18.0	3.0	6.3	12.7	21.7
Net Income growth		-83.33%	110.00%	101.59%	70.87%

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%, but cost of goods sold only declined by 7%.

2-14. A repurchase does not impact earnings directly, so any change to EPS will come from a reduction in shares outstanding. 2016 shares outstanding = 55 – 4 × 2 = 47 million, EPS $= \frac{21.7}{47} = \$0.46$.

2.15. The equipment purchase does not impact net income directly. However, the increased depreciation expense and tax savings change net income.

Year	2013	2014	2015	2016
Net Income	3.0	6.3	12.7	21.7
Additional Depreciation		-4.0	-4.0	-4.0
Tax Savings		1.4	1.4	1.4
New Net Income	3.0	3.7	10.1	19.1

Copyright © 2019 Pearson Canada Inc.

2-16. 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 = $\frac{18}{404.3}$ = 4.45% .

Year	2012	2013	2014	2015	2016
Revenue	404.3	363.8	424.6	510.7	604.1
Net Profit Margin	4.45%	4.45%	4.45%	4.45%	4.45%
New Net Income	18.0	16.2	18.9	22.7	26.9
Shares Outstanding	55.0	55.0	55.0	55.0	55.0
New EPS	$0.33	$0.29	$0.34	$0.41	$0.49

2.17

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 35% × $10 million = $3.5 million. Thus, earnings would decline by 10 – 3.5 = $6.5 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 × 35% = $0.7 million, earnings would be lowered by 2 – 0.7 = $1.3 million for each of the next five years.

2-18.

a. If Quisco develops the product in-house, its earnings would fall by $500 × (1 – 35%) = $325 million. With no change to the number of shares outstanding, its EPS would decrease by $\$0.05 = \frac{\$325}{6500}$ 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. Since earnings without this transaction are $0.80 × 6.5 billion = $5.2 billion, its EPS with the purchase is $\frac{5.2}{6.55} = \$0.794$.

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.

a. Net cash provided by operating activities was $4285 million in fiscal year 2015.

b. Costco's depreciation and amortization expenses were $1127 million.

c. Net cash used in capital expenditures for property and equipment was $2393 million.

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

2-20.

a. Total cash flow from operations = 48.5 + 50.5 + 47.8 + 46.6 + 54 = $247.4 million.

b. Fraction of total cash flow spent on capital expenditures = (25 + 25 + 100 + 75 + 40) / 247.4 = 107.1%.

c. Fraction of total cash flow spent on dividends = (5.4 × 4 + 6.5) / 247.4 = 11.4%.

d. Retained earnings = Net Income – Dividends = (18 + 3 + 6.3 + 12.7 + 21.7) – (5.4 × 4 + 6.5) = $33.6 million.

Copyright © 2019 Pearson Canada Inc.

2-21.

a. Mydeco's net income was lowest in 2013 (net income was $3 million).

b. Mydeco reduced its cash reserves in 2015 (cash was reduced from $86.3 million to $77.5 million).

c. Mydeco needed to reduce cash (and also issue debt) to pay for large capital expenditures incurred 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 a reduction in accounts receivable and inventories.

2-22.

a. 2011 Cash = 2012 Cash – 2012 Change in Cash = 48.8 – 18.1 = $30.7 million.

b. 2011 Accounts Receivable = 88.6 + 3.9 = $92.5 million.
2011 Inventory = 33.7 – 2.9 = 30.8 million

c. 2011 Total Liabilities = 525.4 – 2.2 = $523.2 million.

d. 2011 property, plant, and equipment = 2012 property, plant, and equipment – 2012 capital expenditures + 2012 depreciation = 245.3 – 25 + 27.3 = $247.6 million

2-23. 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.

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).

2-25.

a. The depreciation expense would have to be deducted from the earnings for each of the next four years. After taxes, this would lead to a decline of 10 × (1 – 40%) = $6 million each year for the next four years.

b. Cash flow for the next four years will be computed by subtracting $36 million (–6 + 10 – 40) this year, and adding $4 million (–6 +10) for the three following years.

2-26.

a. Retained earnings = Net Income – Dividends Paid

Year	2012	2013	2014	2015	2016
Net Income	18.0	3.0	6.3	12.7	21.7
Dividends Paid	5.4	5.4	5.4	5.4	6.5
Retained Earnings	12.6	-2.4	0.9	7.3	15.2

b. 2011 stockholders' equity = 2012 stockholders' equity – 2012 retained earnings = 252.7 – 12.6 = $240.1 million.

Copyright © 2019 Pearson Canada Inc.

2-27.

a. Costco opened 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.

a.

Year	2012	2013	2014	2015	2016
Revenue	404.3	363.8	424.6	510.7	604.1
Gross Profit	216.0	190.0	218.4	263.9	310.7
Gross Margin	53.43%	52.23%	51.44%	51.67%	51.43%

b. None of the margins improved from 2012 to 2016.

Year	2012	2016
Revenue	404.3	604.1
Gross Profit	216.0	310.7
EBIT	61.4	72.8
Net Income	18.0	21.7
Gross Margin	53.43%	51.43%
EBIT Margin	15.19%	12.05%
Net Profit Margin	4.45%	3.59%

2-29.

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.

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.

a. 2012 accounts receivable days $= \dfrac{88.6}{404.3/365} = 80.0$.

2016 accounts receivable days $= \dfrac{86.1}{604.1/365} = 52.0$.

Copyright © 2019 Pearson Canada Inc.

b. 2012 inventory days $= \dfrac{33.7}{188.3/365} = 65.3$.

2016 inventory days $= \dfrac{35.3}{293.4/365} = 43.9$.

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

2-32

a. 2012 accounts payable days $= \dfrac{18.7}{188.3/365} = 36.2$.

2016 accounts payable days $= \dfrac{31.7}{293.4/365} = 39.4$.

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

2-33.

a. Mydeco increased its debt from $500 million in 2012 to $600 million in 2016 (by $100 million).

b. 2012 EBITDA/Interest coverage ratio $= \dfrac{61.4 + 27.3}{33.7} = 2.6$.

2016 EBITDA/Interest coverage ratio $= \dfrac{72.8 + 38.6}{39.4} = 2.8$.

Mydeco's coverage ratio fell below 2 in 2013, when it was 1.96.

c. Overall, Mydeco's ability to meet its interest payments improved over this period, although it experienced a slight dip in 2013.

2-34.

a. 2012 book debt-equity ratio $= \dfrac{500}{252.7} = 1.98$.

2016 book debt-equity ratio $= \dfrac{600}{273.7} = 2.19$.

b. 2012 market debt-equity ratio $= \dfrac{500}{435.6} = 1.15$.

2016 market debt-equity ratio $= \dfrac{600}{599.0} = 1.00$.

c. 2012 debt-to-enterprise value ratio $= \dfrac{500}{886.8} = 0.56$.

2016 debt-to-enterprise value ratio $= \dfrac{600}{1113} = 0.54$.

Copyright © 2019 Pearson Canada Inc.

2-35.

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 × 10.6) = 2.28.

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

2-36.

a. **Firm A:** Market debt-equity ratio $= \frac{500}{400} = 1.25$.

Firm B: Market debt-equity ratio $= \frac{80}{40} = 2.00$.

b. **Firm A:** Book debt-equity ratio $= \frac{500}{300} = 1.67$.

Firm B: Book debt-equity ratio $= \frac{80}{35} = 2.29$.

c. **Firm A:** Interest coverage ratio $= \frac{100}{50} = 2.00$.

Firm B: Interest coverage ratio $= \frac{8}{7} = 1.14$.

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

2-37.

a.

Year	2012	2013	2014	2015	2016
Price	**$7.92**	**$3.30**	**$5.25**	**$8.71**	**$10.89**
Earnings per share	**$0.33**	**$0.05**	**$0.11**	**$0.23**	**$0.39**
PE ratio	**24.00**	**66.00**	**47.73**	**37.87**	**27.92**

The PE ratio was highest in 2013.

b.

Year	**2012**	**2013**	**2014**	**2015**	**2016**
Enterprise value	886.80	612.60	777.45	1,001.55	1,113.95
EBITDA	88.70	64.50	76.20	95.40	111.40
Enterprise value/EBITDA	10.00	9.50	10.20	10.50	10.00

The Enterprise Value to EBITDA ratio was the highest in 2015.

c. The different time patterns are caused by the rise in debt in 2015 and 2016 that increased the enterprise value of Mydeco and reduced the earnings per share due to increased interest expense. In addition, the very small value of earnings per share in 2013 increased the PE ratio despite the decrease in price.

Copyright © 2019 Pearson Canada Inc.

2-38.

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 ratios 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 the firms' leverage values are quite different, as it is here.

2-39.

a.

Year	2012	2013	2014	2015	2016
Net Income	18.0	3.0	6.3	12.7	21.7
Stockholders' Equity	252.7	250.3	251.2	258.5	273.7
ROE	7.12%	1.20%	2.51%	4.91%	7.93%

b.

Year	2012	2013	2014	2015	2016
Net Income+Interest Expense	51.7	35.9	38.5	50.1	61.1
Book Value of Assets	778.1	774.6	855.2	893.4	915.1
ROA	6.64%	4.63%	4.50%	5.61%	6.68%

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

Here we have calculated ROA using Net Income + Interest Expense, to reflect the total earnings of both equity and debt investors in the firm. ROA is sometimes calculated using only Net Income, or Net Income + After-tax Interest Expense. See fn. 14 in Chapter 2.

2-40.

$$2012\ \text{ROIC} = \frac{61.4 \times (1 - 0.35)}{252.7 + 500 - 48.8} = 5.67\%.$$

$$2016\ \text{ROIC} = \frac{72.8 \times (1 - 0.35)}{273.7 + 600 - 85} = 6.00\%.$$

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

2-41.

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.

Copyright © 2019 Pearson Canada Inc.

2-42.

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. Compared to Costco, 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, Walmart has a smaller ROE that is driven by its lower asset turnover and leverage.

2-43.

a. Current ROE = 3.5 × 1.8 × 44 / 18 = 15.4%.

b. New ROE after increase in profit margin = 4 × 1.8 × 44 / 18 = 17.6%.

c. New ROE after increase in revenues = 4 × (1.8 × 1.2) × 44 / 18 = 21.1%.

2-44.

a. KPMG LLP certified Costco's financial statements.

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

2-45. 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 will save more on taxes, which results in higher cash flows, and thus is better for the firm's investors.

Copyright © 2019 Pearson Canada Inc.