

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. Shareholders 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 statement 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 filings. Yahoo finance also provides some analysis such as charts and key statistics. For Canadian filings, www.sedar.com is the preferred source.

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 2014 to 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.

- \$5,462 million (cash) and \$6,190 million (short-term investments/marketable securities) for a total of \$11,652 million
- \$993 million of accounts receivable
- \$36,422 million of total assets
- \$9,450 million of total liabilities, no debt
- \$26,972 million of book value of equity

2-7.

- Cash: \$126.5 million
- Total assets: \$2,203.95 million
- Total liabilities: \$1,049.5 million; long-term debt: \$352.4 million
- Book value of Tim Hortons' equity: \$1,154.43 million

2-8.

- 2005 market capitalization: 10.6 billion shares \times \$36.00/share = \$381.6 billion. 2009 market capitalization: 10.5 billion shares \times \$10.80/share = \$113.4. The change over the period is \$113.4 – \$381.6 = –\$268.2 billion.
- 2005 market-to-book = $\frac{381.6}{113} = 3.38$. 2009 market-to-book = $\frac{113.4}{105} = 1.08$. The change over the period is: 1.08 – 3.38 = -2.3.
- 2005 book debt–equity = $\frac{370}{113} = 3.27$. 2009 book debt–equity = $\frac{524}{105} = 4.99$. The change over the period is: 4.99 – 3.27 = 1.72.
2005 market debt–equity = $\frac{370}{381.6} = 0.97$. 2009 market debt–equity = $\frac{524}{113.4} = 4.62$. The change over the period is: 4.62 – 0.97 = 3.65.
- 2005 enterprise value = \$381.6 – 13 + 370 = \$738.6 billion. 2009 enterprise value = \$113.4 – 48 + 524 = \$589.4 billion. The change over the period is: \$589.4 – 738.6 = –\$149.2 billion.

2-9.

- Apple's current ratio = $\frac{18.75}{6.99} = 2.68$
- Apple's quick ratio = $\frac{18.75 - 0.25}{6.99} = 2.65$
- Apple has significantly more liquid assets than Dell relative to current liabilities.

2-10.

$$a. \text{ ANF's market-to-book ratio} = \frac{75.01 \times 86.67}{1,458} = 4.46$$

$$\text{GPS's market-to-book ratio} = \frac{20.09 \times 798.22}{5,194} = 3.09$$

- b. In a relative sense, the market values the outlook of Abercrombie and Fitch more favourably than it does The Gap. For every dollar of equity invested in ANF, the market values that dollar today at \$4.59 versus \$3.09 for a dollar invested in the GPS. Equity investors are willing to pay relatively more today for shares of ANF than for GPS because they expect ANF to produce superior performance in the future.

2-11.

$$a. \text{ Revenues (2011)} = \$2,852.97 \text{ million. Increase in revenues} = \frac{2,852.97}{2,536.50} - 1 = 12.477\%$$

$$b. \text{ Operating margin (2011)} = \frac{553.43}{2,852.97} = 19.398\%$$

$$\text{Operating margin (2010)} = \frac{523.71}{2,536.50} = 20.647\%$$

$$\text{Net profit margin (2011)} = \frac{382.81}{2,852.97} = 13.418\%$$

$$\text{Net profit margin (2010)} = \frac{623.96}{2,536.50} = 24.599\%$$

Both margins decreased compared with the year before.

- c. The diluted earnings per share in 2011 was \$2.35. The number of shares used in this calculation of diluted EPS was 162.6 million.

2-12.

$$a. \text{ Revenues in 2016} = 1.15 \times 186.7 = \$214.705 \text{ million.}$$

$$\text{EBIT} = 4.50\% \times 214.705 = \$9.66 \text{ million (there is no other income).}$$

$$b. \text{ Net Income in 2016} = \text{EBIT} - \text{Interest Expenses} - \text{Taxes} = (9.66 - 7.7) \times (1 - 26\%) = \$1.45 \text{ million.}$$

$$c. \text{ Share price} = (\text{P/E Ratio in 2015}) \times (\text{EPS in 2016}) = 25.2 \times \left(\frac{1.45}{3.6} \right) = \$10.15$$

2-13.

- 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 $35\% \times \$10 \text{ million} = \3.5 million . Thus, earnings would decline by $10 - 3.5 = \$6.5 \text{ million}$. 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 $2 \times 35\% = \$0.7 \text{ million}$, earnings would be lower by $2 - 0.7 = \$1.3 \text{ million}$ for each of the next 5 years.

2-14.

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.

2-15.

- a. If Quisco develops the product in-house, its earnings would fall by $\$500 \times (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 $\$0.80 \times 6.5$ 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.

2-16.

- a. Market capitalization-to-revenue ratio

$$= \frac{1.7}{23.8} = 0.07 \text{ for American Airlines}$$

$$= \frac{2.2}{13.1} = 0.17 \text{ for British Airways}$$

- b. Enterprise value-to-revenue ratio

$$= \frac{(1.7 + 11.1 - 4.6)}{23.8} = 0.35 \text{ for American Airlines}$$

$$= \frac{(2.2 + 4.7 - 2.6)}{13.1} = 0.33 \text{ for British Airways}$$

- 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.

2-17.

a.
$$\text{Net profit margin} = \frac{11,165}{284,822} = 3.92\%$$

$$\text{Asset Turnover} = \frac{284,822}{176,352} = 1.62$$

$$\text{Asset Multiplier} = \frac{176,352}{143,907} = 1.23$$

- b. Peet's ROE (DuPont) = $3.92\% \times 1.62 \times 1.23 = 7.81\%$
- c. Peet's revised ROE = $3.92\% \times 1.83 \times 1.23 = 8.82\%$.
Peet's would need to increase asset turnover to 1.83 times.
- d. Peet's maintained ROE = $2.92\% \times 2.18 \times 1.23 = 7.83\%$.
To maintain ROE at 7.81%, asset turnover would need to increase to 2.18 times (differences due to rounding).

2-18.

$$\text{Net profit margin} = \frac{315.5}{10,383.0} = 3.04\%$$

$$\text{Asset Turnover} = \frac{10,383}{5,672.6} = 1.83$$

$$\text{Asset Multiplier} = \frac{5,673.6}{2,490.9} = 2.28$$

$$\text{Starbucks's ROE (DuPont)} = 3.04\% \times 1.83\% \times 2.28\% = 12.67\%$$

The two firms' ROEs differ mainly because the firms have different asset multipliers, implying that the difference in the ROE might be due to leverage.

2-19.

- a. $3.5 \times 1.8 \times 44/18 = 15.4\%$
- b. $4 \times 1.8 \times 44/18 = 17.6\%$
- c. $4 \times (1.8 \times 1.2) \times 44/18 = 21.1\%$

2-20.

- a. Net cash provided by operating activities was \$25.444 million in 2008.
- b. Depreciation and amortization expenses were \$15.133 million in 2008.
- c. Net cash *used* in new property and equipment was $25.930 - 0.067 = \$25.863$ million in 2008.

- d. Net cash of $\$3.138 - 20.627 = -\17.489 million was raised from the net sale of shares of its stock in 2008 (i.e., more shares were repurchased than sold).

2-21. 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.

2-22.

- a. Heinz's cumulative earnings over these four quarters was \$918 million. Its cumulative cash flows from operating activities was \$1.19 billion.
- b. Fraction of cash from operating activities used for investment over the four quarters:

	29-Oct-08	30-Jul-08	30-Apr-08	30-Jan-08	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:

	29-Oct-08	30-Jul-08	30-Apr-08	30-Jan-08	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	-1,050,885
CFI/CFO	-203.39%	-95.85%	79.32%	37.73%	14.58%

2-23.

- a. Revenues: increase by \$5 million
- b. Earnings: increase by \$3 million
- c. Receivables: increase by \$4 million
- d. Inventory: decreases by \$2 million
Cash: increases by \$3 million (earnings) - \$4 million (receivables) + \$2 million (inventory) = \$1 million (cash).

2-24.

- a. Earnings for the next four years would have to deduct the depreciation expense. After taxes, this would lead to a decline of $10 \times (1 - 40\%) = \$6$ million each year for the next four years.
- b. Cash flow for the next four years: less \$36 million $(-6 + 10 - 40)$ this year, and add \$4 million $(-6 + 10)$ for three following years.

2-25.

- a. The book value of Clorox's equity decreased by \$2.101 billion compared with that at the end of the previous quarter, and was negative.

- b. Because the book value of equity is negative in this case, Clorox'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.

2-26.

- a. Peet's net income in 2008 after deducting the fair value of options granted to employees was \$11.165 million, whereas if stock-based compensation had not been deducted, it would have been $11.165 + 2.711 = \$13.876$ million.
- b. Peet's inventory at the end of 2008 was \$26.124 million.
- c. The fair value of Peet's marketable securities at the end of 2008 was \$8.600 million.
- d. Peet's leases its Emeryville, California, administrative offices and its retail stores and certain equipment under operating leases that expire from 2009 through 2019. The minimum lease payments due in 2009 are \$15.222 million.
- e. Peet's granted 351,464 shares of stock options in 2008 (note 8).
- f. Sales from whole bean coffee, tea, and related products were \$151.059 million or 53.0%, and from beverages and pastries was \$133.763 million or 47.0%. (Note 11)

2-27.

- a. Deloitte & Touche LLP audited these financial statements.
- b. Peet's chief executive officer, chief financial officer, and board of directors certified the financial statements.

2-28. By reclassifying \$3.85 billion of 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.

Chapter 2

Introduction to Financial Statement Analysis

I. Learning Objectives

- 2-1 Define the periodic reports required by the provincial securities commissions and the SEC; describe where they can be found (SEDAR); briefly describe GAAP and the auditor's role along with listing the major financial statements required under IFRS for publicly traded firms; compare IFRS to US GAAP.
- 2-2 Describe the balance sheet and define depreciation, book value, and goodwill.
- 2-3 Discuss the difference between book value of shareholders' equity and market value of shareholders' equity; explain why the two numbers are almost never the same. Compute market-to-book, debt-equity, enterprise value, current and quick ratios.
- 2-4 Describe the components of the Income Statement and compute the following measures: gross profit, operating expenses, operating income, EBIT and EPS.
- 2-5 Compute the following measures, and describe their usefulness in assessing firm performance: gross margin, operating margin, net profit margin, asset turnover and working capital days, EBITDA, interest coverage, return on equity, the Dupont identity, equity multiplier and P/E ratio. Ensure ratios used for comparisons are not mismatched.
- 2-6 Distinguish between cash flow, as reported on the statement of cash flows, and accrual-based income, as reported on the income statement. Describe the three sections of the statement of cash flows: Operating, Investment and Financing activities.
- 2-7 Explain the importance of the notes to the financial statements.
- 2-8 List and describe the financial scandals described in the text, along with the new legislation designed to reduce that type of fraud.

II. Chapter Overview

This chapter reviews the five main financial statements and discusses some useful financial ratios. The chapter closes with a look at some recent financial scandals.

2.1 The Disclosure of Financial Information

This section briefly describes the interim financial reports required by provincial securities commissions and the SEC. It provides the SEDAR web address to access these reports. It defines GAAP, the role of an auditor and the five statements IFRS requires public companies to produce: a balance sheet, statement of comprehensive income (income statement), statement of cash flows, the statement of changes in equity and notes including accounting policy. It includes a summary of steps taken toward standardizing financial statements across countries via International Financial Reporting Standards (IFRS) while comparing US GAAP to IFRS.

2.2 The Balance Sheet

The balance sheet, or statement of financial position, lists the firm's assets and liabilities. This section describes current assets, long-term assets, current liabilities and long-term liabilities, and shareholders' equity and provides the major account names within each component. The authors emphasize the difference between book value of equity and market capitalization, and provide an explanation of each. Example 2.1 demonstrates this difference, numerically.

2.3 Balance Sheet Analysis

The tools that use the balance sheet to assess the firm's value and leverage and short-term cash needs include:

- a. The market-to-book ratio, which is often used to classify firms as value stocks or growth stocks.
- b. The debt-equity ratio, a measure of the firm's leverage.
- c. Enterprise value, which assesses the value of underlying business assets, not including cash. Example 2.2 shows how to calculate enterprise value.
- d. The current and quick ratios, which help determine whether or not working capital is sufficient.

2.4 The Income Statement (and Income Statement Analysis)

The income statement lists the firm's revenues and expenses over a period of time. The earnings calculations can be broken apart as we move down the income statement into: gross profit, operating expenses, earnings before interest and taxes (EBIT) and earnings before taxes and net income. Earnings per share (and diluted earnings per share) are often calculated to assess the size of net income relative to that of similar firms.

2.5 Income Statement Analysis

Profitability ratios, such as gross margin, operating margin and net profit margin, are often used to measure the fraction of revenue available to common shareholders. Examples of ratios that use both income statement and balance sheet items are asset turnover and working capital ratios, such as accounts receivable days (or average collection period) and accounts payable days. EBITDA is often used to express how much cash a firm generates from operations while leverage ratios such as interest coverage, which is also a mixed ratio, are used to reflect the relationship between earnings and interest payments. Investment returns are measured by return on equity (ROE) or return on assets, although both these measures are flawed because of their reliance on book value measures. The Dupont identity expresses ROE in terms of the firm's profitability, efficiency and leverage. It can be restated as the return on assets times the equity multiplier. Example 2.3 uses the Dupont identity to compare the ROE of Wal-Mart to Target, while Example 2.4 computes profitability and valuation ratios, including the price-earnings ratio.

2.6 The Statement of Cash Flows

The statement of cash flows converts accrual-based income into cash flow by utilizing the income statement and balance sheet. Cash flows are separated into operating activities, investment activities, and financing activities. Example 2.5 shows the impact of depreciation on cash flows.

2.7 Other Financial Statement Information

The management discussion and analysis (MD&A) section of the financial statements provides management's interpretation of the planned activities of the firm. The statement of shareholders' equity provides detailed information about additions to or reductions in the shareholders' equity accounts. The statement of comprehensive income combines the income statement information with other pertinent information not reported there. Notes to the financial statements are an integral part of the statements as they provide details on subsidiaries and product line, stock-based compensation plans, types of debt including leases and principal payments, acquisitions, taxes and risk management, all of which are necessary for correct interpret of the statements. Example 2.6 uses the sales by business segment note to report sales by product category and find the sales unit with the highest growth.

2.8 Accounting Manipulation

Abuse of financial reporting rules does occur, Enron and WorldCom being two of the most notorious examples from the past decade. Enron sold assets at inflated prices to other firms, together with a promise to buy back assets at an even higher future price. Worldcom reclassified \$3.85 billion in expenses as long-term investment. The U.S. Sarbanes-Oxley Act, passed in 2002, holds CFOs and CEOs accountable for the firm's financial statements. Canadian regulators adopted similar measures in 2005.

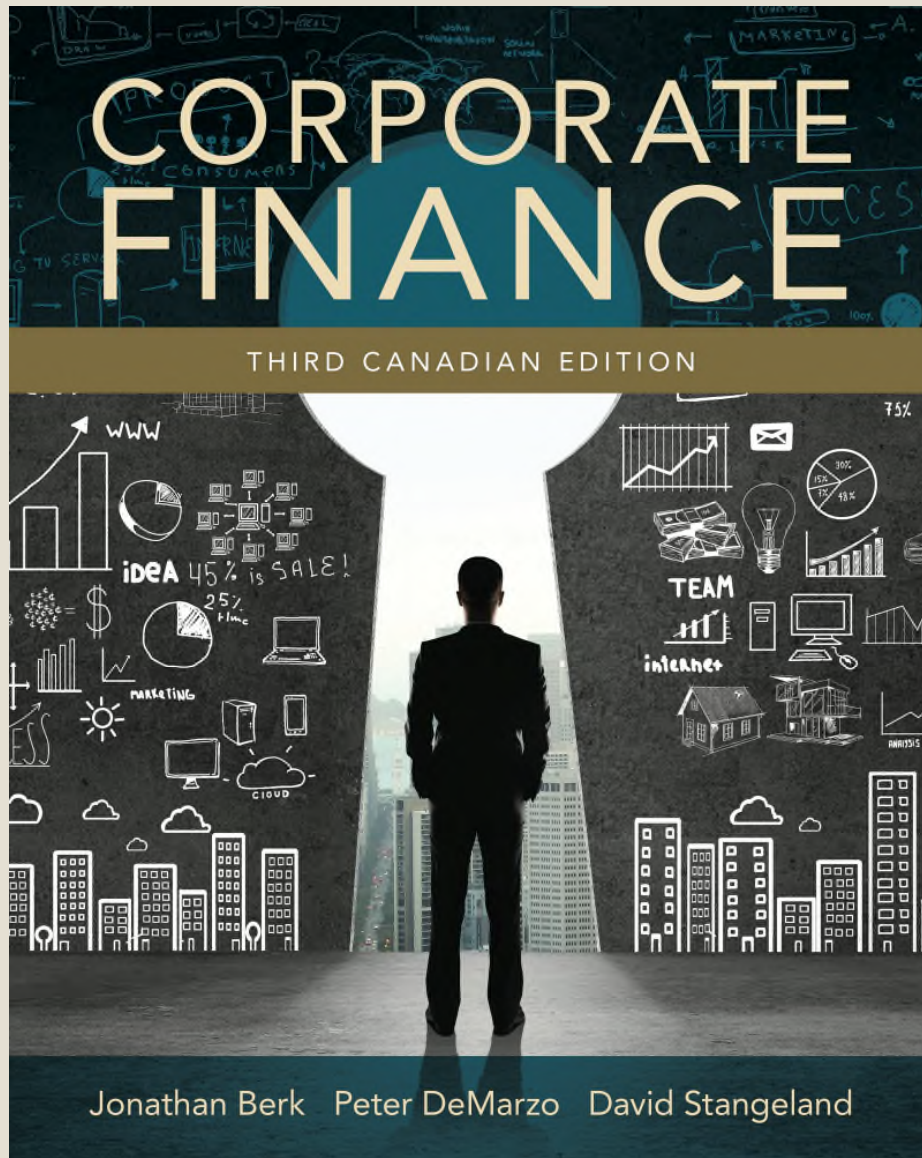
III. MyFinanceLab Activities

Text Section	Text Section Title	Problems	Learning Objectives Covered	Text Page Reference
2.1	The Disclosure of Financial Information	1 to 3	2.1	23 - 24
2.2	The Balance Sheet	4 to 7	2.2	24 - 28
2.3	Balance Sheet Analysis	8 to 10	2.3	28 - 31
2.4	The Income Statement	11 to 19	2.4	31 - 33
2.5	Income Statement Analysis	11 to 19	2.5	33 - 37
2.6	The Statement of Cash Flows	20 to 24	2.6	38 - 40
2.7	Other Financial Statement Information	25 and 26	2.7	41 - 43
2.8	Accounting Manipulation	27and 28	2.8	44 - 46

IV. Spreadsheet Solutions in Excel

The following problems for Chapter 2 have spreadsheet versions of the problems available: 2-12 and 2-13, along with the needed Global Conglomerate Corporation Balance Sheet and Income Statement (Tables 2-1 and 2-2).

These spreadsheets are available on the Instructor's Resource CD-ROM or can be downloaded from the Pearson online catalogue at <http://catalogue.pearsoned.ca/>. If you do not have a login and password for this website, contact your Pearson sales representative.



Chapter 2

Introduction to Financial Statement Analysis

Chapter Outline

2.1 The Disclosure of Financial Information

2.2 The Balance Sheet

2.3 Balance Sheet Analysis

2.4 Income Statement

2.5 Income Statement Analysis

2.6 The Statement of Cash Flows

2.7 Other Financial Statement Information

2.8 Accounting Manipulation

Learning Objectives

1. Define the periodic reports required by the provincial securities commissions and the SEC; briefly describe GAAP and the auditor's role along with listing the five major financial statements required under IFRS for publicly traded firms; compare IFRS to US GAAP.
2. Define depreciation, book value, and goodwill.
3. Discuss the difference between book value of shareholders' equity and market value of shareholders' equity; explain why the two numbers are almost never the same.
4. Compute the following measures, and describe their usefulness in assessing firm performance: the market-to-book ratio, debt-equity ratio, the enterprise value, earnings per share, operating margin, EBIT, net profit margin, accounts receivable days, accounts payable days, EBITDA, interest coverage ratio, return on equity, return on assets and price-earnings ratio.

Learning Objectives (cont'd)

5. Describe the importance of ensuring that valuation ratios are consistent with one another in terms of the inclusion of debt in the numerator and the denominator.
6. Distinguish between cash flow, as reported on the statement of cash flows, and accrual-based income, as reported on the income statement; discuss the importance of cash flows to investors, relative to accrual-based income.
7. Explain the importance of the notes to the financial statements.
8. List and describe the financial scandals described in the text, along with the new legislation designed to reduce that type of fraud.

2.1 The Disclosure of Financial Information

- Financial Statements
 - Firm-issued accounting reports with past performance information
 - The reporting process is centralized nationally through the System for Electronic Document Analysis and Retrieval (SEDAR)
 - Filed with their provincial securities commission
 - Interim financial statements
 - Quarterly
 - Annual reports
 - Annual

2.1 The Disclosure of Financial Information (cont'd)

- Preparation of Financial Statements
 - Generally Accepted Accounting Principles (GAAP)
 - Auditor
 - Neutral third party that checks a firm's financial statements
- Types of Financial Statements under IFRS
 - Every publically traded company is required to produce 5 types of financial statements

2.1 The Disclosure of Financial Information (cont'd)

- Types of Financial Statements
 - Balance Sheet
 - Statement of Comprehensive Income (includes Income Statement)
 - Statement of Cash Flows
 - Statement of Changes in Equity
 - Notes Including Accounting Policies

2.2 The Balance Sheet

- In IFRS it is referred to as the Statement of Financial Position
- A snapshot in time of the firm's financial position
- The Balance Sheet Identity:

$$\text{Assets} = \text{Liabilities} + \text{Shareholders' Equity}$$

2.2 The Balance Sheet (cont'd)

- Assets
 - How the firm uses its capital
 - What the company owns
- Liabilities
 - What the company owes
- Shareholders' Equity
 - The difference between the value of the firm's assets and liabilities

Table 2.1

TABLE 2.1
**GLOBAL CONGLOMERATE CORPORATION BALANCE SHEET
FOR 2015 AND 2014**

GLOBAL CONGLOMERATE CORPORATION					
Consolidated Balance Sheet					
As at December 31 (in \$ millions)					
Assets	2015	2014	Liabilities and Shareholders' Equity	2015	2014
<u>Current Assets</u>			<u>Current Liabilities</u>		
Cash	21.2	19.5	Accounts payable	29.2	24.5
Accounts receivable	18.5	13.2	Notes payable/short-term debt	3.5	3.2
Inventories	15.3	14.3	Current maturities of long-term debt	13.3	12.3
Other current assets	<u>2.0</u>	<u>1.0</u>	Other current liabilities	<u>2.0</u>	<u>4.0</u>
Total current assets	57.0	48.0	Total current liabilities	48.0	44.0
<u>Long-Term Assets</u>			<u>Long-Term Liabilities</u>		
Land	22.2	20.7	Long-term debt	99.9	76.3
Buildings	36.5	30.5	Capital lease obligations	—	—
Equipment	39.7	33.2	Total debt	99.9	76.3
Less: accumulated depreciation	<u>(18.7)</u>	<u>(17.5)</u>	Future income tax	7.6	7.4
Net property, plant, and equipment	79.7	66.9	Other long-term liabilities	—	—
Goodwill	20.0	20.0	Total long-term liabilities	107.5	83.7
Other long-term assets	<u>21.0</u>	<u>14.0</u>	Total Liabilities	155.5	127.7
Total long-term assets	120.7	100.9	Shareholders' Equity	22.2	21.2
Total Assets	177.7	148.9	Total Liabilities and Shareholders' Equity	177.7	148.9

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2.2 The Balance Sheet (cont'd)

- Assets
 - Current Assets: Cash or could be converted into cash within one year
 - Cash
 - Marketable securities
 - Accounts receivable
 - Inventories
 - Other current Assets
 - Pre-paid expenses

2.2 The Balance Sheet (cont'd)

- Assets
 - Long-Term Assets
 - Net property, plant, & equipment
 - Book Value
 - Depreciation
 - Goodwill
 - Write-down
 - Other long-term assets

2.2 The Balance Sheet (cont'd)

- Liabilities
 - Current Liabilities: Due to be paid within the next year
 - Accounts payable
 - Notes payable
 - Short-term debt
 - Current maturities of long-term debt
 - Other current liabilities
 - Taxes payable
 - Wages payable

2.2 The Balance Sheet (cont'd)

- Liabilities
 - Long-term liabilities
 - Long-term debt
 - Capital leases
 - Future income tax

2.2 The Balance Sheet (cont'd)

- Net Working Capital
 - Current assets – Current liabilities

2.2 The Balance Sheet (cont'd)

- Shareholders' Equity
 - Book Value of Equity
 - Book Value of Assets – Book Value of Liabilities
 - Could possibly be negative
 - Market Value of Equity (Market Capitalization)
 - Market price per share × number of shares outstanding
 - Cannot be negative

Example 2.1

EXAMPLE 2.1

MARKET VERSUS BOOK VALUE

Problem

If Global Conglomerate Corporation has 3.6 million shares outstanding, and these shares are trading for a price of \$14 per share, what is Global's market capitalization? How does the market capitalization compare to Global's book value of equity?

Example 2.1 (cont'd)

Solution

Global's market capitalization is $3.6 \text{ million shares} \times \$14/\text{share} = \$50.4 \text{ million}$. This market capitalization is significantly higher than Global's book value of equity of \$22.2 million. In fact, the ratio of its market value to its book value is $50.4 / 22.2 = 2.27$, meaning that investors are willing to pay more than twice the amount Global's shares are "worth" according to their book value.

2.3 Balance Sheet Analysis

- Balance Sheet Analysis
 - Liquidation Value
 - Value of the firm if all assets were sold and liabilities paid
 - Market-to-Book Ratio

$$\text{Market-to-Book Ratio} = \frac{\text{Market Value of Equity}}{\text{Book Value of Equity}}$$

- Value Stocks
 - Low M/B ratios
- Growth stocks
 - High M/B ratios

2.3 Balance Sheet Analysis(cont'd)

- Balance Sheet Analysis

- Debt-Equity Ratio

- Measures a firm's leverage

$$\text{Debt-Equity Ratio} = \frac{\text{Total Debt}}{\text{Total Equity}}$$

- Using book values versus market values

- Enterprise Value

$$\text{Enterprise Value} = \text{Market Value of Equity} + \text{Debt} - \text{Cash}$$

Example 2.2

EXAMPLE 2.2

COMPUTING ENTERPRISE VALUE

Problem

On December 31, 2011, BCE Inc.'s share price was \$42.47, and it had 775.4 million shares outstanding, a market-to-book ratio of 2.23, a book debt–equity ratio of 1.0046, and cash of \$130 million. What was BCE's market capitalization? What was its enterprise value?

Example 2.2 (cont' d)

Solution

BCE had a market capitalization of $\$42.47/\text{share} \times 775.4 \text{ million shares} = \$32,931.24 \text{ million}$. We divide the market value of equity by BCE's market-to-book ratio to calculate BCE's book value of equity as $\$32,931.24 \text{ million} / 2.23 = \$14,767.37 \text{ million}$. Given a book debt-equity ratio of 1.0046, BCE had total debt of $1.0046 \times \$14,767.37 = \$14,835.30 \text{ million}$. Thus, BCE's enterprise value was $\$32,931.24 \text{ million} + \$14,835.30 \text{ million} - \$130 \text{ million} = \$47,636.54 \text{ million}$.

2.3 Balance Sheet Analysis(cont'd)

- Other Balance Sheet Information
 - Current Ratio
 - Current Assets / Current Liabilities
 - Quick Ratio
 - (Current Assets – Inventories) / Current Liabilities

2.4 The Income Statement

- In IFRS it is referred to as the Statement of Financial Performance
- Lists the firm's revenues and expenses over a period of time.
- The income statement is also called a statement of earnings, a statement of operations, or a profit and loss statement.
- Net income or earnings is the “bottom” line of the income statement.

Table 2.2

GLOBAL CONGLOMERATE CORPORATION INCOME STATEMENT FOR 2015 AND 2014

TABLE 2.2

GLOBAL CONGLOMERATE CORPORATION		
Income Statement		
Year ended December 31 (in \$ millions, except per share amounts)		
	2015	2014
Total sales	186.7	176.1
Cost of sales	(153.4)	(147.3)
Gross Profit	33.3	28.8
Selling, general, and administrative expenses	(13.5)	(13.0)
Research and development	(8.2)	(7.6)
Depreciation and amortization	(1.2)	(1.1)
Operating Income	10.4	7.1
Other income	—	—
Earnings Before Interest and Taxes (EBIT)	10.4	7.1
Interest expense	(7.7)	(4.6)
Earnings Before Taxes (EBT)	2.7	2.5
Taxes	(0.7)	(0.6)
Net Income	2.0	1.9
Earnings per share:	\$0.556	\$0.528
Diluted earnings per share:	\$0.526	\$0.500

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2.4 The Income Statement (cont'd)

- Earnings Calculations:
 - Gross Profit
 - Operating Expenses
 - Earnings Before Interest and Taxes
 - Earnings Before Taxes and Net Income

2.4 The Income Statement (cont'd)

- Earnings per Share

$$\text{EPS} = \frac{\text{Net Income}}{\text{Shares Outstanding}} = \frac{\$2.0 \text{ Million}}{3.6 \text{ Million Shares}} = \$0.556 \text{ per Share}$$

- Diluted EPS

- Stock options
- Convertible bonds

2.5 Income Statement Analysis

- Profitability Ratios

- Gross Margin

$$\text{Gross Margin} = \frac{\text{Gross Profit}}{\text{Sales}}$$

- Operating Margin

$$\text{Operating Margin} = \frac{\text{Operating Income}}{\text{Sales}}$$

- Net Profit Margin

$$\text{Net Profit Margin} = \frac{\text{Net Income}}{\text{Total Sales}}$$

2.5 Income Statement Analysis (cont'd)

- Asset Turnover and Working Capital Days

$$\text{Asset Turnover} = \frac{\text{Total Sales}}{\text{Total Assets}}$$

$$\text{Accounts Receivable Days} = \frac{\text{Accounts Receivable}}{\text{Average Daily Sales}}$$

- EBITDA
 - Earnings before interest, taxes, depreciation, and amortization
 - Reflects the cash a firm has earned from its operations

2.5 Income Statement Analysis (cont'd)

- Leverage Ratios
 - Operating income / Interest expense
 - EBIT / Interest expense
 - EBITDA / Interest expense

2.5 Income Statement Analysis (cont'd)

- Investment Returns

- ROE

$$\text{Return on Equity} = \frac{\text{Net Income}}{\text{Book Value of Equity}}$$

- ROA

- Net Income / Total Assets

- DuPont Identity

$$\text{ROE} = \underbrace{\left(\frac{\text{Net Income}}{\text{Sales}} \right)}_{\text{Net Profit Margin}} \times \underbrace{\left(\frac{\text{Sales}}{\text{Total Assets}} \right)}_{\text{Asset Turnover}} \times \left(\frac{\text{Total Assets}}{\text{Book Value of Equity}} \right)_{\text{Equity Multiplier}}$$

Return on Assets

Example 2.3

EXAMPLE 2.3

DETERMINANTS OF ROE

Problem

For the fiscal year ended January 31, 2012, Wal-Mart Stores had sales of \$446.950 billion, net income of \$15.699 billion, assets of \$193.406 billion, and a book value of equity of \$75.761 billion. For the same period, Target (TGT) had sales of \$68.466 billion, net income of \$2.929 billion, total assets of \$46.630 billion, and a book value of equity of \$15.821 billion. Compare these firms' profitability, asset turnover, equity multipliers, and return on equity during this period. If Target had been able to match Wal-Mart's asset turnover in that fiscal year, what would its ROE have been?

Example 2.3 (cont'd)

Solution

Wal-Mart's net profit margin was $15.699 / 446.950 = 3.512\%$, which was below Target's net profit margin of $2.929 / 68.466 = 4.278\%$. On the other hand, Wal-Mart used its assets more efficiently, with an asset turnover of $446.950 / 193.406 = 2.311$ times, compared to only $68.466 / 46.630 = 1.468$ times for Target. Finally, Target had greater leverage (in terms of book value), with an equity multiplier of $46.630 / 15.821 = 2.947$, relative to Wal-Mart's equity multiplier of $193.406 / 75.761 = 2.553$. Next, let's compute the ROE of each firm directly and by using the DuPont Identity:

$$\text{Wal-Mart ROE} = \frac{15.699}{75.761} = 20.72\% \text{ Or } \text{ROE} = 3.512\% \times 2.311 \times 2.553 = 20.72\%$$

$$\text{Target ROE} = \frac{2.929}{15.821} = 18.51\% \text{ Or } \text{ROE} = 4.278\% \times 1.468 \times 2.947 = 18.51\%$$

Note that due to its lower asset turnover, Target had a lower ROE than Wal-Mart despite its higher net profit margin and leverage. If Target had been able to match Wal-Mart's asset turnover, its ROE would have been $4.278\% \times 2.311 \times 2.947 = 29.14\%$.

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2.5 Income Statement Analysis (cont'd)

- Valuation Ratios
 - P/E Ratio

$$\text{P/E Ratio} = \frac{\text{Market Capitalization}}{\text{Net Income}} = \frac{\text{Share Price}}{\text{Earnings per Share}}$$

Example 2.4

EXAMPLE 2.4

COMPUTING PROFITABILITY AND VALUATION RATIOS

Problem

Consider the following data from December 31, 2011, for CP and CN Rail (\$ millions):

	Canadian Pacific Railway Limited (CP)	Canadian National Railway Company (CNR)
Revenues	5,177	9,028
Operating Income	967	3,296
Net Income	570	2,457
Market Capitalization	11,732	35,434
Cash	47	101
Debt	4,745	6,576

Compare CP's and CN's operating margins, net profit margins, P/E ratios, and the ratios of enterprise value to operating income and sales.

Example 2.4 (cont'd)

Solution

CP had an operating margin of $967 / 5177 = 18.7\%$, a net profit margin of $570 / 5177 = 11.0\%$, and a P/E ratio of $11,732 / 570 = 20.6$. Its enterprise value was $\$11,732 \text{ million} + \$4745 \text{ million} - \$47 \text{ million} = \$16,430 \text{ million}$, which has a ratio of $16,430 / 967 = 17.0$ to operating income and $16,430 / 5177 = 3.2$ to revenues.

CN had an operating margin of $3296 / 9028 = 36.5\%$, a net profit margin of $2457 / 9028 = 27.2\%$, and a P/E ratio of $35,434 / 2457 = 14.4$. Its enterprise value was $\$35,434 \text{ million} + \$6576 \text{ million} - \$101 \text{ million} = \$41,909 \text{ million}$, which has a ratio of $41,909 / 3296 = 12.7$ to operating income and $41,909 / 9028 = 4.6$ to sales.

CP's net profit margin was somewhat lower than CN's, explaining the difference in the ratio of enterprise value to sales. CP's P/E ratio is higher than CN's; this may indicate that CP is relatively overvalued or that market participants expect that CP has more room for improvement in earnings than does CN.

2.6 The Statement of Cash Flows

- Net Income typically does NOT equal the amount of Cash the firm has earned.
 - Non-Cash Expenses
 - Depreciation and amortization
 - Uses of Cash not on the Income Statement
 - Investment in Property, plant, and equipment

2.6 The Statement of Cash Flows (cont'd)

- Three Sections
 - Operating activity
 - Investment activity
 - Financing activity

Table 2.3

GLOBAL CONGLOMERATE CORPORATION STATEMENT OF CASH FLOWS FOR 2015 AND 2014

TABLE 2.3

GLOBAL CONGLOMERATE CORPORATION		
Statement of Cash Flows		
Year ended December 31 (in \$ millions)		
	2015	2014
Operating activity		
Net income	2.0	1.9
Depreciation and amortization	1.2	1.1
Other non-cash items	(2.8)	(1.0)
Cash effect of changes in		
Accounts receivable	(5.3)	(0.3)
Accounts payable	4.7	(0.5)
Inventory	(1.0)	(1.0)
Cash from Operating Activities	(1.2)	0.2
Investment activity		
Capital expenditures	(14.0)	(4.0)
Acquisitions and other investing activity	(7.0)	(2.0)
Cash from Investing Activities	(21.0)	(6.0)
Financing activity		
Dividends paid	(1.0)	(1.0)
Sale or purchase of stock	—	—
Increase in short-term borrowing	1.3	3.0
Increase in long-term borrowing	23.6	2.5
Cash from Financing Activities	23.9	4.5
Change in Cash	1.7	(1.3)

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2.6 The Statement of Cash Flows (cont'd)

- Operating Activity
 - Adjusts net income by all non-cash items related to operating activities and changes in net working capital

2.4 The Statement of Cash Flows (cont'd)

- Investing Activity
 - Capital expenditures
 - Buying or selling marketable securities
- Financing Activity
 - Changes in borrowings
 - Payment of dividends
 - Retained Earnings for the period

$$\text{Retained Earnings} = \text{Net Income} - \text{Dividends}$$

Example 2.5

EXAMPLE 2.5

THE IMPACT OF DEPRECIATION ON CASH FLOW

Problem

Suppose Global had an additional \$1 million depreciation expense in 2015. If Global's tax rate on pre-tax income is 26%, what would be the impact of this expense on Global's earnings? How would it impact Global's cash at the end of the year?

Example 2.5 (cont'd)

Solution

Depreciation is an operating expense, so Global's operating income, EBIT, and pre-tax income would fall by \$1 million. This decrease in pre-tax income would reduce Global's tax bill by $26\% \times \$1 \text{ million} = \0.26 million .⁹ Therefore, net income would fall by $\$1 \text{ million} - \$0.26 \text{ million} = \$0.74 \text{ million}$.

On the statement of cash flows, net income would fall by \$0.74 million, but we would add back the additional depreciation of \$1 million because it is not a cash expense. Thus, cash from operating activities would rise by $-\$0.74 \text{ million} + \$1 \text{ million} = \$0.26 \text{ million}$. Thus, Global's cash balance at the end of the year would increase by \$0.26 million, the amount of the tax savings that resulted from the additional depreciation deduction.

2.7 Other Financial Statement Information

- Management Discussion and Analysis (MD&A)
 - Off-Balance Sheet Transactions
- Statement of Shareholders' Equity
- The Statement of Comprehensive Income
- Notes to the Financial Statements

Example 2.6

EXAMPLE 2.6

SALES BY BUSINESS SEGMENT

Problem

In the notes to its financial statements, BCE Inc. (BCE) reported the following sales revenues by business segment as well as in total (\$ millions):

Segments	BCE Inc. Operating Revenues (\$ millions)	
	2011	2010
Bell Wireline	10,621	10,948
Bell Wireless	5,231	4,906
Bell Media*	1,542	0
Intersegment Eliminations	<u>-261</u>	<u>-185</u>
Bell (Total)	17,133	15,669
Bell Alliant	2,775	2,808
Intersegment Eliminations	<u>-411</u>	<u>-408</u>
BCE (Total)	<u>19,497</u>	<u>18,069</u>

* Bell Media is a new segment added in 2011 due to the acquisition of CTV in 2011.

Consider the three segments: Bell Wireline, Bell Wireless, and Bell Alliant. Which of these three BCE segments showed the highest percentage growth? If in 2012 BCE has the same percentage growth by segment as what occurred in 2011, what will each of these three segments' revenues be in 2012? Would you expect BCE's overall growth to be the same in 2012 as it was in 2011?

Example 2.6 (cont'd)

Solution

The percentage growth in sales in Bell Wireline was $(10,621 - 10,948) / 10,948 = -2.99\%$. The growth in sales in Bell Wireless was 6.62% and in Bell Alliant was -1.18% . Bell Wireless was the only segment that grew. BCE's total revenues grew by 7.90%, an amount greater than any of the segments; the reason for this was the acquisition of CTV which resulted in the new segment Bell Media.

If the growth rates in the three segments continue for another year, 2012 sales in Bell Wireline will be $10,621 \text{ million} \times [1 + (-0.0299)] = \$10,304 \text{ million}$ and the other segments will be $\$5578 \text{ million}$, and $\$2742 \text{ million}$, respectively. We would not expect BCE's overall growth to still be 7.90% for 2012 since much of that growth was due to the acquisition of CTV and the creation of the new segment Bell Media; it is unlikely that we will see a repeat of this each year.

2.8 Accounting Manipulation

- Enron
- WorldCom
- Sarbanes-Oxley Act (SOX)
- Canadian regulators adopted similar measurement that came into effect in 2005
- Bernard Madoff' s Ponzi Scheme

Questions?