CFA Institute®
CFA Program

FINANCIAL STATEMENT ANALYSIS, CORPORATE ISSUERS

CFA® Program Curriculum
2023 • LEVEL 1 • VOLUME 3

Financial Statement Analysis

SOLUTIONS

1. C is correct. IAS No. 1 states that expenses may be categorized by either nature or function.

2. C is correct. Cost of goods sold is a classification by function. The other two expenses represent classifications by nature.

3. C is correct. Gross margin is revenue minus cost of goods sold. Answer A represents net income and B represents operating income.

4. B is correct. Under IFRS, income includes increases in economic benefits from increases in assets, enhancement of assets, and decreases in liabilities.

5. B is correct. Net revenue is revenue for goods sold during the period less any returns and allowances, or $1,000,000 minus $100,000 = $900,000.

6. A is correct. Apex is not the owner of the goods and should only report its net commission as revenue.

7. C is correct. Under the converged accounting standards, the incremental costs of obtaining a contract and certain costs incurred to fulfill a contract must be capitalized. If a company expensed these incremental costs in the years prior to adopting the converged standards, all else being equal, its profitability will appear higher under the converged standards.

8. B is correct. Under the first in, first out (FIFO) method, the first 10,000 units sold came from the October purchases at £10, and the next 2,000 units sold came from the November purchases at £11.

9. C is correct. Under the weighted average cost method:

October purchases	10,000 units	$100,000
November purchases	5,000 units	$55,000
Total	15,000 units	$155,000

$155,000/15,000 units = $10.3333
$10.3333 × 12,000 units = $124,000

10. B is correct. The last in, first out (LIFO) method is not permitted under IFRS. The other two methods are permitted.

11. A is correct. Straight-line depreciation would be ($600,000 – $50,000)/10, or $55,000.

12. C is correct. Double-declining balance depreciation would be $600,000 × 20 percent (twice the straight-line rate). The residual value is not subtracted from the initial book value to calculate depreciation. However, the book value (carrying amount) of the asset will not be reduced below the estimated residual value.

13. C is correct. This would result in the highest amount of depreciation in the first year and hence the lowest amount of net income relative to the other choices.

14. A is correct. A fire may be infrequent, but it would still be part of continuing operations and reported in the profit and loss statement. Discontinued operations relate to a decision to dispose of an operating division.

15. C is correct. If a company changes an accounting policy, the financial statements for all fiscal years shown in a company's financial report are presented, if practical, as if the newly adopted accounting policy had been used throughout the entire period; this retrospective application of the change makes the financial results of any prior years included in the report comparable. Notes to the financial statements describe the change and explain the justification for the change.

16. C is correct. The weighted average number of shares outstanding for 2009 is 1,050,000. Basic earnings per share would be $1,000,000 divided by 1,050,000, or $0.95.

17. A is correct. Basic and diluted EPS are equal for a company with a simple capital structure. A company that issues only common stock, with no financial instruments that are potentially convertible into common stock has a simple capital structure. Basic EPS is calculated using the weighted average number of shares outstanding.

18. C is correct.

    Diluted EPS = (Net income)/(Weighted average number of shares outstanding + New common shares that would have been issued at conversion)

    = $200,000,000/[50,000,000 + (2,000,000 × 2)]

    = $3.70

    The diluted EPS assumes that the preferred dividend is not paid and that the shares are converted at the beginning of the period.

19. B is correct. The formula to calculate diluted EPS is as follows:

    Diluted EPS = (Net income – Preferred dividends)/[Weighted average number of shares outstanding + (New shares that would have been issued at option exercise – Shares that could have been purchased with cash received upon exercise) × (Proportion of year during which the financial instruments were outstanding)].

    The underlying assumption is that outstanding options are exercised, and then the proceeds from the issuance of new shares are used to repurchase shares already outstanding:

    Proceeds from option exercise = 100,000 × $20 = $2,000,000

    Shares repurchased = $2,000,000/$25 = 80,000

    The net increase in shares outstanding is thus 100,000 – 80,000 = 20,000. Therefore, the diluted EPS for CWC = ($12,000,000 – $800,000)/2,020,000 = $5.54.

20. B is correct. LB has warrants in its capital structure; if the exercise price is less than the weighted average market price during the year, the effect of their conversion is to increase the weighted average number of common shares outstanding, causing diluted EPS to be lower than basic EPS. If the exercise price is equal to the weighted average market price, the number of shares issued equals the number of shares repurchased. Therefore, the weighted average number of common shares outstanding is not affected and diluted EPS equals basic EPS. If the exercise price is greater than the weighted average market price, the effect of their conversion is anti-dilutive. As such, they are not included in the calculation of basic EPS. LB's basic EPS is $1.22 [= ($3,350,000 – $430,000)/2,400,000]. Stock dividends are treated as having been issued retroactively to the beginning of the period.

21. A is correct. With stock options, the treasury stock method must be used. Under that method, the company would receive $100,000 (10,000 × $10) and would repurchase 6,667 shares ($100,000/$15). The shares for the denominator would be:

Shares outstanding	1,000,000
Options exercises	10,000
Treasury shares purchased	(6,667)
Denominator	1,003,333

22. A is correct. When a company has stock options outstanding, diluted EPS is calculated as if the financial instruments had been exercised and the company had used the proceeds from the exercise to repurchase as many shares possible at the weighted average market price of common stock during the period. As a result, the conversion of stock options increases the number of common shares outstanding but has no effect on net income available to common shareholders. The conversion of convertible debt increases the net income available to common shareholders by the after-tax amount of interest expense saved. The conversion of convertible preferred shares increases the net income available to common shareholders by the amount of preferred dividends paid; the numerator becomes the net income.

23. B is correct. Common size income statements facilitate comparison across time periods (time-series analysis) and across companies (cross-sectional analysis) by stating each line item of the income statement as a percentage of revenue. The relative performance of different companies can be more easily assessed because scaling the numbers removes the effect of size. A common size income statement states each line item on the income statement as a percentage of revenue. The standardization of each line item makes a common size income statement useful for identifying differences in companies' strategies.

24. C is correct. Comprehensive income includes both net income and other comprehensive income.

    Other comprehensive income = Unrealized gain on available-for-sale securities – Unrealized loss on derivatives accounted for as hedges + Foreign currency translation gain on consolidation

    = $5 million – $3 million + $2 million

    = $4 million

    Alternatively,

    Comprehensive income – Net income = Other comprehensive income

    Comprehensive income = (Ending shareholders equity – Beginning shareholders equity) + Dividends

    = ($493 million – $475 million) + $1 million

    = $18 million + $1 million = $19 million

    Net income is $15 million so other comprehensive income is $4 million.

25. A is correct. Other comprehensive income includes items that affect shareholders' equity but are not reflected in the company's income statement. In consolidating the financial statements of foreign subsidiaries, the effects of translating

the subsidiaries' balance sheet assets and liabilities at current exchange rates are included as other comprehensive income.

SOLUTIONS

1. B is correct. Assets are resources controlled by a company as a result of past events.

2. A is correct. Assets = Liabilities + Equity and, therefore, Assets – Liabilities = Equity.

3. B is correct. The balance sheet omits important aspects of a company's ability to generate future cash flows, such as its reputation and management skills. The balance sheet measures some assets and liabilities based on historical cost and measures others based on current value. Market value of shareholders' equity is updated continuously. Shareholders' equity reported on the balance sheet is updated for reporting purposes and represents the value that was current at the end of the reporting period.

4. B is correct. Balance sheet information is as of a specific point in time, and items measured at current value reflect the value that was current at the end of the reporting period. For all financial statement items, an item should be recognized in the financial statements only if it is probable that any future economic benefit associated with the item will flow to or from the entity and if the item has a cost or value that can be measured with reliability.

5. A is correct. A classified balance sheet is one that classifies assets and liabilities as current or non-current and provides a subtotal for current assets and current liabilities. A liquidity-based balance sheet broadly presents assets and liabilities in order of liquidity.

6. A is correct. A liquidity-based presentation, rather than a current/non-current presentation, may be used by such entities as banks if broadly presenting assets and liabilities in order of liquidity is reliable and more relevant.

7. C is correct. A contra asset account is netted against (i.e., reduces) the balance of an asset account. The allowance for doubtful accounts reduces the balance of accounts receivable. Accumulated depreciation, not depreciation expense, is a contra asset account. Sales returns and allowances create a contra account that reduce sales, not an asset.

8. C is correct. Under IFRS, inventories are carried at historical cost, unless net realizable value of the inventory is less. Under US GAAP, inventories are carried at the lower of cost or market.

9. C is correct. Paying rent in advance will reduce cash and increase prepaid expenses, both of which are assets.

10. B is correct. Payments due within one operating cycle of the business, even if they will be settled more than one year after the balance sheet date, are classified as current liabilities. Payment received in advance of the delivery of a good or service creates an obligation or liability. If the obligation is to be fulfilled at least one year after the balance sheet date, it is recorded as a non-current liability, such as deferred revenue or deferred income. Payments that the company has the unconditional right to defer for at least one year after the balance sheet may be classified as non-current liabilities.

11. B is correct. The cash received from customers represents an asset. The obligation to provide a product in the future is a liability called "unearned income" or

"unearned revenue." As the product is delivered, revenue will be recognized and the liability will be reduced.

12. C is correct. Accrued liabilities are expenses that have been reported on a company's income statement but have not yet been paid.

13. C is correct. Both the cost of inventory and property, plant, and equipment include delivery costs, or costs incurred in bringing them to the location for use or resale.

14. B is correct. Goodwill is a long-term asset, and the others are all current assets.

15. A is correct. Initially, goodwill is measured as the difference between the purchase price paid for an acquisition and the fair value of the acquired, not acquiring, company's net assets (identifiable assets less liabilities).

16. B is correct. For financial assets classified as trading securities, unrealized gains and losses are reported on the income statement and flow to shareholders' equity as part of retained earnings.

17. C is correct. For financial assets classified as available for sale, unrealized gains and losses are not recorded on the income statement and instead are part of *other* comprehensive income. Accumulated other comprehensive income is a component of Shareholders' equity

18. A is correct. Financial assets classified as held to maturity are measured at amortised cost. Gains and losses are recognized only when realized.

19. A is correct. Current liabilities are those liabilities, including debt, due within one year. Preferred refers to a class of stock. Convertible refers to a feature of bonds (or preferred stock) allowing the holder to convert the instrument into common stock.

20. B is correct. The non-controlling interest in consolidated subsidiaries is shown separately as part of shareholders' equity.

21. C is correct. The item "retained earnings" is a component of shareholders' equity.

22. B is correct. Share repurchases reduce the company's cash (an asset). Shareholders' equity is reduced because there are fewer shares outstanding and treasury stock is an offset to owners' equity.

23. B is correct. Vertical common-size analysis involves stating each balance sheet item as a percentage of total assets. Total assets are the sum of total liabilities (£35 million) and total stockholders' equity (£55 million), or £90 million. Total liabilities are shown on a vertical common-size balance sheet as (£35 million/£90 million) ≈ 39%.

24. B is correct. Common-size analysis (as presented in the reading) provides information about composition of the balance sheet and changes over time. As a result, it can provide information about an increase or decrease in a company's financial leverage.

25. C is correct. Impairment write-downs reduce equity in the denominator of the debt-to-equity ratio but do not affect debt, so the debt-to-equity ratio is expected to increase. Impairment write-downs reduce total assets but do not affect revenue. Thus, total asset turnover is expected to increase.

26. A is correct. The current ratio provides a comparison of assets that can be turned

into cash relatively quickly and liabilities that must be paid within one year. The other ratios are more suited to longer-term concerns.

27. A is correct. The cash ratio determines how much of a company's near-term obligations can be settled with existing amounts of cash and marketable securities.

28. C is correct. The debt-to-equity ratio, a solvency ratio, is an indicator of financial risk.

29. B is correct. The quick ratio ([Cash + Marketable securities + Receivables] ÷ Current liabilities) is 1.07 ([= €4,011 + €990 + €5,899] ÷ €10,210). As noted in the text, the largest component of the current financial assets are loans and other financial receivables. Thus, financial assets are included in the quick ratio but not the cash ratio.

30. B is correct. The financial leverage ratio (Total assets ÷ Total equity) is 1.66 (= €42,497 ÷ €25,540).

31. C is correct. The presence of goodwill on Company A's balance sheet signifies that it has made one or more acquisitions in the past. The current, cash, and quick ratios are lower for Company A than for the sector average. These lower liquidity ratios imply above-average liquidity risk. The total debt, long-term debt-to-equity, debt-to-equity, and financial leverage ratios are lower for Company B than for the sector average. These lower solvency ratios imply below-average solvency risk.

    Current ratio is (35/35) = 1.00 for Company A, versus (48/28) = 1.71 for the sector average.

    Cash ratio is (5 + 5)/35 = 0.29 for Company A, versus (7 + 2)/28 = 0.32 for the sector average.

    Quick ratio is (5 + 5 + 5)/35 = 0.43 for Company A, versus (7 + 2 + 12)/28 = 0.75 for the sector average.

    Total debt ratio is (55/100) = 0.55 for Company B, versus (63/100) = 0.63 for the sector average.

    Long-term debt-to-equity ratio is (20/45) = 0.44 for Company B, versus (28/37) = 0.76 for the sector average.

    Debt-to-equity ratio is (55/45) = 1.22 for Company B, versus (63/37) = 1.70 for the sector average.

    Financial leverage ratio is (100/45) = 2.22 for Company B, versus (100/37) = 2.70 for the sector average.

32. A is correct. The quick ratio is defined as (Cash and cash equivalents + Marketable securities + receivables) ÷ Current liabilities. For Company A, this calculation is (5 + 5 + 5)/35 = 0.43.

33. C is correct. The financial leverage ratio is defined as Total assets ÷ Total equity. For Company B, total assets are 100 and total equity is 45; hence, the financial leverage ratio is 100/45 = 2.22.

34. A is correct. The cash ratio is defined as (Cash + Marketable securities)/Current liabilities. Company A's cash ratio, (5 + 5)/35 = 0.29, is higher than (5 + 0)/25 = 0.20 for Company B.

SOLUTIONS

1. B is correct. Operating, investing, and financing are the three major classifications of activities in a cash flow statement. Revenues, expenses, and net income are elements of the income statement. Inflows, outflows, and net flows are items of information in the statement of cash flows.

2. B is correct. Purchases and sales of long-term assets are considered investing activities. Note that if the transaction had involved the exchange of a building for other than cash (for example, for another building, common stock of another company, or a long-term note receivable), it would have been considered a significant non-cash activity.

3. B is correct. The purchase and sale of securities held for trading are considered operating activities even for companies in which this activity is not a primary business activity.

4. C is correct. Non-cash transactions, if significant, are reported as supplementary information, not in the investing or financing sections of the cash flow statement.

5. C is correct. Because no cash is involved in non-cash transactions, these transactions are not incorporated in the cash flow statement. However, non-cash transactions that significantly affect capital or asset structures are required to be disclosed either in a separate note or a supplementary schedule to the cash flow statement.

6. C is correct. Payment of dividends is a financing activity under US GAAP. Payment of interest and receipt of dividends are included in operating cash flows under US GAAP. Note that IFRS allow companies to include receipt of interest and dividends as either operating or investing cash flows and to include payment of interest and dividends as either operating or financing cash flows.

7. C is correct. Interest expense is always classified as an operating cash flow under US GAAP but may be classified as either an operating or financing cash flow under IFRS.

8. C is correct. Taxes on income are required to be separately disclosed under IFRS and US GAAP. The disclosure may be in the cash flow statement or elsewhere.

9. C is correct. The primary argument in favor of the direct method is that it provides information on the specific sources of operating cash receipts and payments. Arguments for the indirect method include that it mirrors a forecasting approach and it is easier and less costly

10. A is correct. Under the indirect method, the operating section would begin with net income and adjust it to arrive at operating cash flow. The other two items would appear in the operating section under the direct method.

11. A is correct. The operating section may be prepared under the indirect method. The other sections are always prepared under the direct method.

12. C is correct. The amount of cash collected from customers during the quarter is equal to beginning accounts receivable plus revenues minus ending accounts receivable: $66 million + $72 million – $55 million = $83 million. A reduction in accounts receivable indicates that cash collected during the quarter was greater than revenue on an accrual basis.

13. A is correct. Revenues of $100 million minus the increase in accounts receivable of $10 million equal $90 million cash received from customers. The increase in accounts receivable means that the company received less in cash than it reported as revenue.

14. A is correct.

    Operating cash flows = Cash received from customers – (Cash paid to suppliers + Cash paid to employees + Cash paid for other operating expenses + Cash paid for interest + Cash paid for income taxes)

    Cash received from customers = Revenue + Decrease in accounts receivable

    = $37 + $3 = $40 million

    Cash paid to suppliers = Cost of goods sold + Increase in inventory + Decrease in accounts payable

    = $16 + $4 + $2 = $22 million

    Therefore, the company's operating cash flow = $40 – $22 – Cash paid for salaries – Cash paid for interest – Cash paid for taxes = $40 – $22 – $6 – $2 – $4 = $6 million.

15. C is correct. Cost of goods sold of $80 million plus the increase in inventory of $5 million equals purchases from suppliers of $85 million. The increase in accounts payable of $2 million means that the company paid $83 million in cash ($85 million minus $2 million) to its suppliers.

16. A is correct. Cost of goods sold of $75 million less the decrease in inventory of $6 million equals purchases from suppliers of $69 million. The increase in accounts payable of $2 million means that the company paid $67 million in cash ($69 million minus $2 million).

17. C is correct. Beginning salaries payable of $3 million plus salaries expense of $20 million minus ending salaries payable of $1 million equals $22 million. Alternatively, the expense of $20 million plus the $2 million decrease in salaries payable equals $22 million.

18. C is correct. Cash received from customers = Sales + Decrease in accounts receivable = 254.6 + 4.9 = 259.5. Cash paid to suppliers = Cost of goods sold + Increase in inventory – Increase in accounts payable = 175.9 + 8.8 – 2.6 = 182.1.

19. C is correct. Interest expense of $19 million less the increase in interest payable of $3 million equals interest paid of $16 million. Tax expense of $6 million plus the decrease in taxes payable of $4 million equals taxes paid of $10 million.

20. A is correct. The amount of cash paid to suppliers is calculated as follows:

    = Cost of goods sold – Decrease in inventory – Increase in accounts payable

    = $27,264 – $501 – $1,063

    = $25,700.

21. A is correct. Selling price (cash inflow) minus book value equals gain or loss on sale; therefore, gain or loss on sale plus book value equals selling price (cash inflow). The amount of loss is given—$2 million. To calculate the book value of the equipment sold, find the historical cost of the equipment and the accumulated

depreciation on the equipment.

- Beginning balance of equipment of $100 million plus equipment purchased of $10 million minus ending balance of equipment of $105 million equals the historical cost of equipment sold, or $5 million.
- Beginning accumulated depreciation of $40 million plus depreciation expense for the year of $8 million minus ending balance of accumulated depreciation of $46 million equals accumulated depreciation on the equipment sold, or $2 million.
- Therefore, the book value of the equipment sold was $5 million minus $2 million, or $3 million.
- Because the loss on the sale of equipment was $2 million, the amount of cash received must have been $1 million.

22. A is correct. The increase of $42 million in common stock and additional paid-in capital indicates that the company issued stock during the year. The increase in retained earnings of $15 million indicates that the company paid $10 million in cash dividends during the year, determined as beginning retained earnings of $100 million plus net income of $25 million minus ending retained earnings of $115 million, which equals $10 million in cash dividends.

23. B is correct. An addition to net income is made when there is a loss on the retirement of debt, which is a non-operating loss. A gain on the sale of an asset and a decrease in deferred tax liability are both subtracted from net-income.

24. B is correct. All dollar amounts are in millions. Net income (NI) for 2018 is $35. This amount is the increase in retained earnings, $25, plus the dividends paid, $10. Depreciation of $25 is added back to net income, and the increases in accounts receivable, $5, and in inventory, $3, are subtracted from net income because they are uses of cash. The decrease in accounts payable is also a use of cash and, therefore, a subtraction from net income. Thus, cash flow from operations is $25 + $10 + $25 – $5 – $3 – $7 = $45.

25. B is correct. To derive operating cash flow, the company would make the following adjustments to net income: Add depreciation (a non-cash expense) of $2 million; add the decrease in accounts receivable of $3 million; add the increase in accounts payable of $5 million; and subtract the increase in inventory of $4 million. Total additions would be $10 million, and total subtractions would be $4 million, which gives net additions of $6 million.

26. C is correct. An overall assessment of the major sources and uses of cash should be the first step in evaluating a cash flow statement.

27. B is correct. The primary source of cash is operating activities. Cash flow provided by operating activity totaled €13,796 million in the most recent year. The primary use of cash is investing activities (total of €10,245 million). Dividends paid are classified as a financing activity.

28. B is correct. An appropriate method to prepare a common-size cash flow statement is to show each line item on the cash flow statement as a percentage of net revenue. An alternative way to prepare a statement of cash flows is to show each item of cash inflow as a percentage of total inflows and each item of cash outflows as a percentage of total outflows.

29. B is correct. Free cash flow to the firm can be computed as operating cash flows plus after-tax interest expense less capital expenditures.

30. A is correct. This ratio is an interest coverage ratio, measuring a company's ability to meet its interest obligations and indicating a company's solvency. This coverage ratio is based on cash flow information; another common coverage ratio uses a measure based on the income statement (earnings before interest, taxes, depreciation, and amortisation).

SOLUTIONS

1. C is correct. Cross-sectional analysis involves the comparison of companies with each other for the same time period. Technical analysis uses price and volume data as the basis for investment decisions. Time-series or trend analysis is the comparison of financial data across different time periods.

2. C is correct. The company's problems with its inventory management system causing duplicate orders would likely result in a higher amount of inventory and would, therefore, result in a decrease in inventory turnover. A more efficient inventory management system and a write off of inventory at the beginning of the period would both likely decrease the average inventory for the period (the denominator of the inventory turnover ratio), thus increasing the ratio rather than decreasing it.

3. B is correct. A write off of receivables would decrease the average amount of accounts receivable (the denominator of the receivables turnover ratio), thus increasing this ratio. Customers with weaker credit are more likely to make payments more slowly or to pose collection difficulties, which would likely increase the average amount of accounts receivable and thus decrease receivables turnover. Longer payment terms would likely increase the average amount of accounts receivable and thus decrease receivables turnover.

4. A is correct. The average accounts receivable balances (actual and desired) must be calculated to determine the desired change. The average accounts receivable balance can be calculated as an average day's credit sales times the DSO. For the most recent fiscal year, the average accounts receivable balance is $15.62 million [= ($300,000,000/365) × 19]. The desired average accounts receivable balance for the next fiscal year is $16.03 million (= ($390,000,000/365) × 15). This is an increase of $0.41 million (= 16.03 million – 15.62 million). An alternative approach is to calculate the turnover and divide sales by turnover to determine the average accounts receivable balance. Turnover equals 365 divided by DSO. Turnover is 19.21 (= 365/19) for the most recent fiscal year and is targeted to be 24.33 (= 365/15) for the next fiscal year. The average accounts receivable balances are $15.62 million (= $300,000,000/19.21), and $16.03 million (= $390,000,000/24.33). The change is an increase in receivables of $0.41 million

5. C is correct. The analyst is *unlikely* to reach the conclusion given in Statement C because days of sales outstanding increased from 23 days in FY1 to 25 days in FY2 to 28 days in FY3, indicating that the time required to collect receivables has increased over the period. This is a negative factor for Spherion's liquidity. By contrast, days of inventory on hand dropped over the period FY1 to FY3, a positive for liquidity. The company's increase in days payable, from 35 days to 40 days, shortened its cash conversion cycle, thus also contributing to improved liquidity.

6. C is correct. Solvency ratios are used to evaluate the ability of a company to meet its long-term obligations. An analyst is more likely to use activity ratios to evaluate how efficiently a company uses its assets. An analyst is more likely to use liquidity ratios to evaluate the ability of a company to meet its short-term obligations.

7. A is correct. The company is becoming increasingly less solvent, as evidenced by its debt-to-equity ratio increasing from 0.35 to 0.50 from FY3 to FY5. The amount of a company's debt and equity do not provide direct information about

the company's liquidity position.

Debt to equity:

FY5: 2,000/4,000 = 0.5000

FY4: 1,900/4,500 = 0.4222

FY3: 1,750/5,000 = 0.3500

8. C is correct. The decline in the company's equity indicates that the company may be incurring losses, paying dividends greater than income, or repurchasing shares. Recall that Beginning equity + New shares issuance – Shares repurchased + Comprehensive income – Dividends = Ending equity. The book value of a company's equity is not affected by changes in the market value of its common stock. An increased amount of lending does not necessarily indicate that lenders view a company as increasingly creditworthy. Creditworthiness is not evaluated based on how much a company has increased its debt but rather on its willingness and ability to pay its obligations. (Its financial strength is indicated by its solvency, liquidity, profitability, efficiency, and other aspects of credit analysis.)

9. A is correct. Company A's current ratio of 4.0 (= $40,000/$10,000) indicates it is more liquid than Company B, whose current ratio is only 1.2 (= $60,000/$50,000). Company B is more solvent, as indicated by its lower debt-to-equity ratio of 30 percent (= $150,000/$500,000) compared with Company A's debt-to-equity ratio of 200 percent (= $60,000/$30,000).

10. A is correct. The current ratio is a liquidity ratio. It compares the net amount of current assets expected to be converted into cash within the year with liabilities falling due in the same period. A current ratio of 1.0 would indicate that the company would have just enough current assets to pay current liabilities.

11. C is correct. The fixed charge coverage ratio is a coverage ratio that relates known fixed charges or obligations to a measure of operating profit or cash flow generated by the company. Coverage ratios, a category of solvency ratios, measure the ability of a company to cover its payments related to debt and leases.

12. C is correct. Assuming no changes in other variables, an increase in average assets (an increase in the denominator) would decrease ROA. A decrease in either the effective tax rate or interest expense, assuming no changes in other variables, would increase ROA.

13. C is correct. The company's efficiency deteriorated, as indicated by the decline in its total asset turnover ratio from 1.11 {= 4,390/[(4,384 + 3,500)/2]} for FY10 to 0.87 {= 11,366/[(12,250 + 13,799)/2]} for FY14. The decline in the total asset turnover ratio resulted from an increase in average total assets from GBP3,942 [= (4,384 + 3,500)/2] for FY10 to GBP13,024.5 for FY14, an increase of 230 percent, compared with an increase in revenue from GBP4,390 in FY10 to GBP11,366 in FY14, an increase of only 159 percent. The current ratio is not an indicator of efficiency.

14. B is correct. Comparing FY14 with FY10, the company's solvency deteriorated, as indicated by a decrease in interest coverage from 10.6 (= 844/80) in FY10 to 8.4 (= 1,579/188) in FY14. The debt-to-asset ratio increased from 0.14 (= 602/4,384) in FY10 to 0.27 (= 3,707/13,799) in FY14. This is also indicative of deteriorating solvency. In isolation, the amount of profits does not provide enough information to assess solvency.

15. C is correct. Comparing FY14 with FY10, the company's liquidity improved, as indicated by an increase in its current ratio from 0.71 [= (316 + 558)/1,223] in FY10 to 0.75 [= (682 + 1,634)/3,108] in FY14. Note, however, comparing only

current investments with the level of current liabilities shows a decline in liquidity from 0.26 (= 316/1,223) in FY10 to 0.22 (= 682/3,108) in FY14. Debt-to-assets ratio and interest coverage are measures of solvency not liquidity.

16. B is correct. Comparing FY14 with FY10, the company's profitability deteriorated, as indicated by a decrease in its net profit margin from 11.0 percent (= 484/4,390) to 5.7 percent (= 645/11,366). Debt-to-assets ratio is a measure of solvency not an indicator of profitability. Growth in shareholders' equity, in isolation, does not provide enough information to assess profitability.

17. C is correct. The company's net profit margin has decreased and its financial leverage has increased. ROA = Net profit margin × Total asset turnover. ROA decreased over the period despite the increase in total asset turnover; therefore, the net profit margin must have decreased.
    ROE = Return on assets × Financial leverage. ROE increased over the period despite the drop in ROA; therefore, financial leverage must have increased.

18. C is correct. The increase in the average tax rate in FY12, as indicated by the decrease in the value of the tax burden (the tax burden equals one minus the average tax rate), offset the improvement in efficiency indicated by higher asset turnover) leaving ROE unchanged. The EBIT margin, measuring profitability, was unchanged in FY12 and no information is given on liquidity.

19. C is correct. The difference between the two companies' ROE in 2010 is very small and is mainly the result of Company A's increase in its financial leverage, indicated by the increase in its Assets/Equity ratio from 2 to 4. The impact of efficiency on ROE is identical for the two companies, as indicated by both companies' asset turnover ratios of 1.5. Furthermore, if Company A had purchased newer equipment to replace older, depreciated equipment, then the company's asset turnover ratio (computed as sales/assets) would have declined, assuming constant sales. Company A has experienced a significant decline in its operating margin, from 10 percent to 7 percent which, all else equal, would not suggest that it is selling more products with higher profit margins.

20. A is correct. The P/E ratio measures the "multiple" that the stock market places on a company's EPS.

21. B is correct. In general, a creditor would consider a decrease in debt to total assets as positive news. A higher level of debt in a company's capital structure increases the risk of default and will, in general, result in higher borrowing costs for the company to compensate lenders for assuming greater credit risk. A decrease in either interest coverage or return on assets is likely to be considered negative news.

22. B is correct. The results of an analyst's financial analysis are integral to the process of developing forecasts, along with the analysis of other information and judgment of the analysts. Forecasts are not limited to a single point estimate but should involve a range of possibilities.

SOLUTIONS

1. C is correct. Transportation costs incurred to ship inventory to customers are an expense and may not be capitalized in inventory. (Transportation costs incurred to bring inventory to the business location can be capitalized in inventory.) Storage costs required as part of production, as well as costs incurred as a result of normal waste of materials, can be capitalized in inventory. (Costs incurred as a result of abnormal waste must be expensed.)

2. B is correct. Inventory expense includes costs of purchase, costs of conversion, and other costs incurred in bringing the inventories to their present location and condition. It does not include storage costs not required as part of production.

3. C is correct. The storage costs for inventory awaiting shipment to customers are not costs of purchase, costs of conversion, or other costs incurred in bringing the inventories to their present location and condition and are not included in inventory. The storage costs for the chocolate liquor occur during the production process and are thus part of the conversion costs. Excise taxes are part of the purchase cost.

4. C is correct. The carrying amount of inventories under FIFO will more closely reflect current replacement values because inventories are assumed to consist of the most recently purchased items. FIFO is an acceptable, but not preferred, method under IFRS. Weighted average cost, not FIFO, is the cost formula that allocates the same per unit cost to both cost of sales and inventory.

5. B is correct. Inventory turnover = Cost of sales/Average inventory = 41,043/7,569.5 = 5.42. Average inventory is (8,100 + 7,039)/2 = 7,569.5.

6. B is correct. For comparative purposes, the choice of a competitor that reports under IFRS is requested because LIFO is permitted under US GAAP.

7. A is correct. The carrying amount of the ending inventory may differ because the perpetual system will apply LIFO continuously throughout the year, liquidating layers as sales are made. Under the periodic system, the sales will start from the last layer in the year. Under FIFO, the sales will occur from the same layers regardless of whether a perpetual or periodic system is used. Specific identification identifies the actual products sold and remaining in inventory, and there will be no difference under a perpetual or periodic system.

8. B is correct. The cost of sales is closest to CHF 4,550. Under FIFO, the inventory acquired first is sold first. Using Exhibit 4, a total of 310 cartons were available for sale (100 + 40 + 70 + 100) and 185 cartons were sold (50 + 100 + 35), leaving 125 in ending inventory. The FIFO cost would be as follows:

   100 (beginning inventory) × 22 = 2,200

   40 (4 February 2009) × 25 = 1,000

   45 (23 July 2009) × 30 = 1,350

   Cost of sales = 2,200 + 1,000 + 1,350 = CHF 4,550

9. A is correct. Gross profit will most likely increase by CHF 7,775. The net realisable value has increased and now exceeds the cost. The write-down from 2017 can be reversed. The write-down in 2017 was 9,256 [92,560 × (4.05 – 3.95)].

IFRS require the reversal of any write-downs for a subsequent increase in value of inventory previously written down. The reversal is limited to the lower of the subsequent increase or the original write-down. Only 77,750 kilograms remain in inventory; the reversal is 77,750 × (4.05 − 3.95) = 7,775. The amount of any reversal of a write-down is recognised as a reduction in cost of sales. This reduction results in an increase in gross profit.

10. C is correct. Using the FIFO method to value inventories when prices are rising will allocate more of the cost of goods available for sale to ending inventories (the most recent purchases, which are at higher costs, are assumed to remain in inventory) and less to cost of sales (the oldest purchases, which are at lower costs, are assumed to be sold first).

11. B is correct. Cinnamon uses the weighted average cost method, so in 2018, 5,000 units of inventory were 2017 units at €10 each and 50,000 were 2008 purchases at €11. The weighted average cost of inventory during 2008 was thus (5,000 × 10) + (50,000 × 11) = 50,000 + 550,000 = €600,000, and the weighted average cost was approximately €10.91 = €600,000/55,000. Cost of sales was €10.91 × 45,000, which is approximately €490,950.

12. C is correct. Zimt uses the FIFO method, and thus the first 5,000 units sold in 2018 depleted the 2017 inventory. Of the inventory purchased in 2018, 40,000 units were sold and 10,000 remain, valued at €11 each, for a total of €110,000.

13. A is correct. Zimt uses the FIFO method, so its cost of sales represents units purchased at a (no longer available) lower price. Nutmeg uses the LIFO method, so its cost of sales is approximately equal to the current replacement cost of inventory.

14. B is correct. Nutmeg uses the LIFO method, and thus some of the inventory on the balance sheet was purchased at a (no longer available) lower price. Zimt uses the FIFO method, so the carrying value on the balance sheet represents the most recently purchased units and thus approximates the current replacement cost.

15. B is correct. In a declining price environment, the newest inventory is the lowest-cost inventory. In such circumstances, using the LIFO method (selling the newer, cheaper inventory first) will result in lower cost of sales and higher profit.

16. B is correct. In a rising price environment, inventory balances will be higher for the company using the FIFO method. Accounts payable are based on amounts due to suppliers, not the amounts accrued based on inventory accounting.

17. C is correct. The write-down reduced the value of inventory and increased cost of sales in 2017. The higher numerator and lower denominator mean that the inventory turnover ratio as reported was too high. Gross margin and the current ratio were both too low.

18. A is correct. The reversal of the write-down shifted cost of sales from 2018 to 2017. The 2017 cost of sales was higher because of the write-down, and the 2018 cost of sales was lower because of the reversal of the write-down. As a result, the reported 2018 profits were overstated. Inventory balance in 2018 is the same because the write-down and reversal cancel each other out. Cash flow from operations is not affected by the non-cash write-down, but the higher profits in 2018 likely resulted in higher taxes and thus lower cash flow from operations.

19. B is correct. LIFO will result in lower inventory and higher cost of sales. Gross margin (a profitability ratio) will be lower, the current ratio (a liquidity ratio) will be lower, and inventory turnover (an efficiency ratio) will be higher.

20. A is correct. LIFO will result in lower inventory and higher cost of sales in periods of rising costs compared to FIFO. Consequently, LIFO results in a lower gross profit margin than FIFO.

21. B is correct. The LIFO method increases cost of sales, thus reducing profits and the taxes thereon.

22. A is correct. US GAAP do not permit inventory write-downs to be reversed.

23. A is correct. A perpetual inventory system updates inventory values and quantities and cost of goods sold continuously to reflect purchases and sales. The ending inventory of 800 units consists of 300 units at $20 and 500 units at $17.

    (300 × $20) + (500 × $17) = $14,500

24. A is correct. In an environment with falling inventory costs and declining inventory levels, periodic LIFO will result in a higher ending inventory value and lower cost of goods sold versus perpetual LIFO and perpetual FIFO methods. This results in a lower inventory turnover ratio, which is calculated as follows:

    Inventory turnover ratio = Cost of goods sold/Ending inventory

    The inventory turnover ratio using periodic LIFO is $39,000/$16,000 = 244% or 2.44 times.

    The inventory turnover ratio using perpetual LIFO is 279% or 2.79 times, which is provided in Exhibit 1 (= 40,500/14,500 from previous question).

    The inventory turnover for perpetual FIFO is $41,400/$13,600 = 304% or 3.04 times.

25. B is correct. During a period of rising inventory costs, a company using the FIFO method will allocate a lower amount to cost of goods sold and a higher amount to ending inventory as compared with the LIFO method. The inventory turnover ratio is the ratio of cost of sales to ending inventory. A company using the FIFO method will produce a lower inventory turnover ratio as compared with the LIFO method. The current ratio (current assets/current liabilities) and the gross profit margin [gross profit/sales = (sales less cost of goods sold)/sales] will be higher under the FIFO method than under the LIFO method in periods of rising inventory unit costs.

26. B is correct. During a period of rising inventory prices, a company using the LIFO method will have higher cost of cost of goods sold and lower inventory compared with a company using the FIFO method. The inventory turnover ratio will be higher for the company using the LIFO method, thus making it appear more efficient. Current assets and gross profit margin will be lower for the company using the LIFO method, thus making it appear less liquid and less profitable.

27. B is correct. In an environment of declining inventory unit costs and constant or increasing inventory quantities, FIFO (in comparison with weighted average cost or LIFO) will have higher cost of goods sold and lower net income and inventory. Because both inventory and net income are lower, total equity is lower, resulting in a higher debt-to-equity ratio.

28. B is correct. Crux's adjusted inventory turnover ratio must be computed using cost of goods sold (COGS) under FIFO and excluding charges for increases in

valuation allowances.

COGS (adjusted) = COGS (LIFO method) – Charges included in cost of goods sold for inventory write-downs – Change in LIFO reserve

= $3,120 million – 13 million – (55 million – 72 million)

= $3,124 million

Note: Minus the change in LIFO reserve is equivalent to plus the decrease in LIFO reserve. The adjusted inventory turnover ratio is computed using average inventory under FIFO.

Ending inventory (FIFO) = Ending inventory (LIFO) + LIFO reserve

Ending inventory 2018 (FIFO) = $480 + 55 = $535

Ending inventory 2017 (FIFO) = $465 + 72 = $537

Average inventory = ($535 + 537)/2 = $536

Therefore, adjusted inventory turnover ratio equals:

Inventory turnover ratio = COGS/Average inventory = $3,124/$536 = 5.83

29. B is correct. Rolby's adjusted net profit margin must be computed using net income (NI) under FIFO and excluding charges for increases in valuation allowances.

NI (adjusted) = NI (FIFO method) + Charges, included in cost of goods sold for inventory write-downs, after tax

= $327 million + 15 million × (1 – 30%)

= $337.5 million

Therefore, adjusted net profit margin equals:

Net profit margin = NI/Revenues = $337.5/$5,442 = 6.20%

30. A is correct. Mikko's adjusted debt-to-equity ratio is lower because the debt (numerator) is unchanged and the adjusted shareholders' equity (denominator) is higher. The adjusted shareholders' equity corresponds to shareholders' equity under FIFO, excluding charges for increases in valuation allowances. Therefore, adjusted shareholders' equity is higher than reported (unadjusted) shareholders' equity.

31. C is correct. Mikko's and Crux's gross margin ratios would better reflect the current gross margin of the industry than Rolby because both use LIFO. LIFO recognizes as cost of goods sold the cost of the most recently purchased units, therefore, it better reflects replacement cost. However, Mikko's gross margin ratio best reflects the current gross margin of the industry because Crux's LIFO reserve is decreasing. This could reflect a LIFO liquidation by Crux which would distort gross profit margin.

32. B is correct. The FIFO method shows a higher gross profit margin than the LIFO method in an inflationary scenario, because FIFO allocates to cost of goods sold the cost of the oldest units available for sale. In an inflationary environment, these units are the ones with the lowest cost.

33. A is correct. An inventory write-down increases cost of sales and reduces profit

and reduces the carrying value of inventory and assets. This has a negative effect on profitability and solvency ratios. However, activity ratios appear positively affected by a write-down because the asset base, whether total assets or inventory (denominator), is reduced. The numerator, sales, in total asset turnover is unchanged, and the numerator, cost of sales, in inventory turnover is increased. Thus, turnover ratios are higher and appear more favorable as the result of the write-down.

34. B is correct. Finished goods least accurately reflect current prices because some of the finished goods are valued under the "last-in, first-out" ("LIFO") basis. The costs of the newest units available for sale are allocated to cost of goods sold, leaving the oldest units (at lower costs) in inventory. ZP values raw materials and work in process using the weighted average cost method. While not fully reflecting current prices, some inflationary effect will be included in the inventory values.

35. C is correct. FIFO inventory = Reported inventory + LIFO reserve = ¥608,572 + 10,120 = ¥618,692. The LIFO reserve is disclosed in Note 2 of the notes to consolidated financial statements.

36. A is correct. The inventory turnover ratio would be lower. The average inventory would be higher under FIFO and cost of products sold would be lower by the increase in LIFO reserve. LIFO is not permitted under IFRS.

    Inventory turnover ratio = Cost of products sold ÷ Average inventory

    2018 inventory turnover ratio as reported = 10.63
    = ¥5,822,805/[(608,572 + 486,465)/2].

    2018 inventory turnover ratio adjusted to FIFO as necessary = 10.34
    = [¥5,822,805 – (19,660 – 10,120)]/[(608,572 + 10,120 + 486,465 + 19,660)/2].

37. A is correct. No LIFO liquidation occurred during 2018; the LIFO reserve increased from ¥10,120 million in 2008 to ¥19,660 million in 2018. Management stated in the MD&A that the decrease in inventories reflected the impacts of decreased sales volumes and fluctuations in foreign currency translation rates.

38. C is correct. Finished goods and raw materials inventories are lower in 2018 when compared to 2017. Reduced levels of inventory typically indicate an anticipated business contraction.

39. B is correct. The decrease in LIFO inventory in 2018 would typically indicate that more inventory units were sold than produced or purchased. Accordingly, one would expect a liquidation of some of the older LIFO layers and the LIFO reserve to decrease. In actuality, the LIFO reserve *increased* from ¥10,120 million in 2017 to ¥19,660 million in 2018. This is not to be expected and is likely caused by the increase in prices of raw materials, other production materials, and parts of foreign currencies as noted in the MD&A. An analyst should seek to confirm this explanation.

40. B is correct. If prices have been decreasing, write-downs under FIFO are least likely to have a significant effect because the inventory is valued at closer to the new, lower prices. Typically, inventories valued using LIFO are less likely to incur inventory write-downs than inventories valued using weighted average cost or FIFO. Under LIFO, the *oldest* costs are reflected in the inventory carrying value on the balance sheet. Given increasing inventory costs, the inventory carrying values under the LIFO method are already conservatively presented at the oldest

and lowest costs. Thus, it is far less likely that inventory write-downs will occur under LIFO; and if a write-down does occur, it is likely to be of a lesser magnitude.

41. A is correct. LIFO reserve is the FIFO inventory value less the LIFO inventory value. In periods of rising inventory unit costs, the carrying amount of inventory under FIFO will always exceed the carrying amount of inventory under LIFO. The LIFO reserve may increase over time as a result of the increasing difference between the older costs used to value inventory under LIFO and the more recent costs used to value inventory under FIFO. When inventory unit levels are decreasing, the company will experience a LIFO liquidation, reducing the LIFO reserve.

42. B is correct. The adjusted COGS under the FIFO method is equal to COGS under the LIFO method less the increase in LIFO reserve:

    COGS (FIFO) = COGS (LIFO) – Increase in LIFO reserve

    COGS (FIFO) = £50,800 – (£4,320 – £2,600)

    COGS (FIFO) = £49,080

43. C is correct. Karp's inventory under FIFO equals Karp's inventory under LIFO plus the LIFO reserve. Therefore, as of 31 December 2018, Karp's inventory under FIFO equals:

    Inventory (FIFO method) = Inventory (LIFO method) + LIFO reserve

    = $620 million + 155 million

    = $775 million

44. B is correct. Karp's cost of goods sold (COGS) under FIFO equals Karp's cost of goods sold under LIFO minus the increase in the LIFO reserve. Therefore, for the year ended 31 December 2018, Karp's cost of goods sold under FIFO equals:

    COGS (FIFO method) = COGS (LIFO method) – Increase in LIFO reserve

    = $2,211 million – (155 million – 117 million)

    = $2,173 million

45. A is correct. Karp's net income (NI) under FIFO equals Karp's net income under LIFO plus the after-tax increase in the LIFO reserve. For the year ended 31 December 2018, Karp's net income under FIFO equals:

    NI (FIFO method) = NI (LIFO method) + Increase in LIFO reserve × (1 – Tax rate)

    = $247 million + 38 million × (1 – 20%)

    = $277.4 million

    Therefore, the increase in net income is:

    Increase in NI = NI (FIFO method) – NI (LIFO method)

    = $277 million – 247 million

    = $30.4 million

46. B is correct. Karp's retained earnings (RE) under FIFO equals Karp's retained earnings under LIFO plus the after-tax LIFO reserve. Therefore, for the year ended 31 December 2018, Karp's retained earnings under FIFO equals:

    RE (FIFO method) = RE (LIFO method) + LIFO reserve × (1 – Tax rate)

    = $787 million + 155 million × (1 – 20%)

    = $911 million

    Therefore, the increase in retained earnings is:

    Increase in RE = RE (FIFO method) – RE (LIFO method)

    = $911 million – 787 million

    = $124 million

47. A is correct. The cash ratio (cash and cash equivalents ÷ current liabilities) would be lower because cash would have been less under FIFO. Karp's income before taxes would have been higher under FIFO, and consequently taxes paid by Karp would have also been higher and cash would have been lower. There is no impact on current liabilities. Both Karp's current ratio and gross profit margin would have been higher if FIFO had been used. The current ratio would have been higher because inventory under FIFO increases by a larger amount than the cash decreases for taxes paid. Because the cost of goods sold under FIFO is lower than under LIFO, the gross profit margin would have been higher.

48. B is correct. If Karp had used FIFO instead of LIFO, the debt-to-equity ratio would have decreased. No change in debt would have occurred, but shareholders' equity would have increased as a result of higher retained earnings.

49. A is correct. When the number of units sold exceeds the number of units purchased, a company using LIFO will experience a LIFO liquidation. If inventory unit costs have been rising from period-to-period and a LIFO liquidation occurs, it will produce an increase in gross profit as a result of the lower inventory carrying amounts of the liquidated units (lower cost per unit of the liquidated units).

50. A is correct. IFRS allow the inventories of producers and dealers of agricultural and forest products, agricultural produce after harvest, and minerals and mineral products to be carried at net realisable value even if above historical cost. (US GAAP treatment is similar.)

51. B is correct. Under IFRS, the reversal of write-downs is required if net realisable value increases. The inventory will be reported on the balance sheet at £1,000,000. The inventory is reported at the lower of cost or net realisable value. Under US GAAP, inventory is carried at the lower of cost or market value. After a write-down, a new cost basis is determined and additional revisions may only reduce the value further. The reversal of write-downs is not permitted.

52. A is correct. IFRS require the reversal of inventory write-downs if net realisable values increase; US GAAP do not permit the reversal of write-downs.

53. C is correct. Activity ratios (for example, inventory turnover and total asset turnover) will be positively affected by a write down to net realizable value because the asset base (denominator) is reduced. On the balance sheet, the inventory carrying amount is written down to its net realizable value and the loss in value (expense) is generally reflected on the income statement in cost of goods sold, thus reducing gross profit, operating profit, and net income.

54. B is correct. Both US GAAP and IFRS require disclosure of the amount of inventories recognized as an expense during the period. Only US GAAP allows the LIFO method and requires disclosure of any material amount of income resulting from the liquidation of LIFO inventory. US GAAP does not permit the reversal of prior-year inventory write downs.

55. B is correct. A significant increase (attributable to increases in unit volume rather than increases in unit cost) in raw materials and/or work-in-progress inventories may signal that the company expects an increase in demand for its products. If the growth of finished goods inventories is greater than the growth of sales, it could indicate a decrease in demand and a decrease in future earnings. A substantial increase in finished goods inventories while raw materials and work-in-progress inventories are declining may signal a decrease in demand for the company's products.

SOLUTIONS

1. B is correct. Only costs necessary for the machine to be ready to use can be capitalized. Therefore, Total capitalized costs = 12,980 + 1,200 + 700 + 100 = $14,980.

2. C is correct. When property and equipment are purchased, the assets are recorded on the balance sheet at cost. Costs for the assets include all expenditures required to prepare the assets for their intended use. Any other costs are expensed. Costs to train staff for using the machine are not required to prepare the property and equipment for their intended use, and these costs are expensed.

3. B is correct. When a company constructs an asset, borrowing costs incurred directly related to the construction are generally capitalized. If the asset is constructed for sale, the borrowing costs are classified as inventory.

4. A is correct. Borrowing costs can be capitalized under IFRS until the tangible asset is ready for use. Also, under IFRS, income earned on temporarily investing the borrowed monies decreases the amount of borrowing costs eligible for capitalization. Therefore, Total capitalized interest = (500 million × 14% × 2 years) – 10 million = 130 million.

5. B is correct. A product patent with a defined expiration date is an intangible asset with a finite useful life. A copyright with no expiration date is an intangible asset with an indefinite useful life. Goodwill is no longer considered an intangible asset under IFRS and is considered to have an indefinite useful life.

6. C is correct. An intangible asset with a finite useful life is amortized, whereas an intangible asset with an indefinite useful life is not.

7. A is correct. The costs to internally develop intangible assets are generally expensed when incurred.

8. C is correct. Under both International Financial Reporting Standards (IFRS) and US GAAP, if an item is acquired in a business combination and cannot be recognized as a tangible asset or identifiable intangible asset, it is recognized as goodwill. Under US GAAP, assets arising from contractual or legal rights and assets that can be separated from the acquired company are recognized separately from goodwill.

9. A is correct. In the fiscal year when long-lived equipment is purchased, the assets on the balance sheet increase and depreciation expense on the income statement increases because of the new long-lived asset.

10. B is correct. Company Z's return on equity based on year-end equity value will be 6.1%. Company Z will have an additional £200,000 of expenses compared with Company X. Company Z expensed the printer for £300,000 rather than capitalizing the printer and having a depreciation expense of £100,000 like Company X. Company Z's net income and shareholders' equity will be £150,000 lower (= £200,000 × 0.75) than that of Company X.

$$\text{ROE} = \left(\frac{\text{Net income}}{\text{Shareholders' Equity}}\right)$$
$$= £600,000/£9,850,000$$
$$= 0.61 = 6.1\%$$

11. C is correct. Expensing rather than capitalising an investment in long-term assets

will result in higher expenses and lower net income and net profit margin in the current year. Future years' incomes will not include depreciation expense related to these expenditures. Consequently, year-to-year growth in profitability will be higher. If the expenses had been capitalised, the carrying amount of the assets would have been higher and the 2009 total asset turnover would have been lower.

12. C is correct. In 2010, switching to an accelerated depreciation method would increase depreciation expense and decrease income before taxes, taxes payable, and net income. Cash flow from operating activities would increase because of the resulting tax savings.

13. B is correct. 2009 net income and net profit margin are lower because of the impairment loss. Consequently, net profit margins in subsequent years are likely to be higher. An impairment loss suggests that insufficient depreciation expense was recognized in prior years, and net income was overstated in prior years. The impairment loss is a non-cash item and will not affect operating cash flows.

14. A is correct. The estimated average remaining useful life is 20.75 years.

    Estimate of remaining useful life = Net plant and equipment ÷ Annual depreciation expense

    Net plant and equipment = Gross P & E – Accumulated depreciation

    = €6000 – €1850 = €4150

    Estimate of remaining useful life = Net P & E ÷ Depreciation expense

    = €4150 ÷ €200 = 20.75

15. C is correct. The decision to capitalise the costs of the new computer system results in higher cash flow from operating activities; the expenditure is reported as an outflow of investing activities. The company allocates the capitalised amount over the asset's useful life as depreciation or amortisation expense rather than expensing it in the year of expenditure. Net income and total assets are higher in the current fiscal year.

16. B is correct. Alpha's fixed asset turnover will be lower because the capitalised interest will appear on the balance sheet as part of the asset being constructed. Therefore, fixed assets will be higher and the fixed asset turnover ratio (total revenue/average net fixed assets) will be lower than if it had expensed these costs. Capitalised interest appears on the balance sheet as part of the asset being constructed instead of being reported as interest expense in the period incurred. However, the interest coverage ratio should be based on interest payments, not interest expense (earnings before interest and taxes/interest payments), and should be unchanged. To provide a true picture of a company's interest coverage, the entire amount of interest expenditure, both the capitalised portion and the expensed portion, should be used in calculating interest coverage ratios.

17. A is correct. Accelerated depreciation will result in an improving, not declining, net profit margin over time, because the amount of depreciation expense declines each year. Under straight-line depreciation, the amount of depreciation expense will remain the same each year. Under the units-of-production method, the amount of depreciation expense reported each year varies with the number of units produced.

18. B is correct. The estimated average total useful life of a company's assets is calculated by adding the estimates of the average remaining useful life and the average

age of the assets. The average age of the assets is estimated by dividing accumulated depreciation by depreciation expense. The average remaining useful life of the asset base is estimated by dividing net property, plant, and equipment by annual depreciation expense.

19. C is correct. The impairment loss is a non-cash charge and will not affect cash flow from operating activities. The debt to total assets and fixed asset turnover ratios will increase, because the impairment loss will reduce the carrying amount of fixed assets and therefore total assets.

20. A is correct. In an asset revaluation, the carrying amount of the assets increases. The increase in the asset's carrying amount bypasses the income statement and is reported as other comprehensive income and appears in equity under the heading of revaluation surplus. Therefore, shareholders' equity will increase but net income will not be affected, so return on equity will decline. Return on assets and debt to capital ratios will also decrease.

21. A is correct. If the company uses the straight-line method, the depreciation expense will be one-fifth (20 percent) of the depreciable cost in Year 1. If it uses the units-of-production method, the depreciation expense will be 19 percent (2,000/10,500) of the depreciable cost in Year 1. Therefore, if the company uses the straight-line method, its depreciation expense will be higher and its net income will be lower.

22. C is correct. The operating income or earnings before interest and taxes will be lowest for the method that results in the highest depreciation expense. The double-declining balance method results in the highest depreciation expense in the first year of use.

    Depreciation expense:

    Straight line = €1,500/5 = €300.

    Double-declining balance = €1,500 × 0.40 = €600.

    Units of production = €1,500 × 0.15 = €225.

23. C is correct. If Martinez wants to minimize tax payments in the first year of the machine's life, he should use an accelerated method, such as the double-declining balance method.

24. A is correct. Using the straight-line method, depreciation expense amounts to

    Depreciation expense = (1,200,000 – 200,000)/8 years = 125,000.

25. B is correct. Using the units-of-production method, depreciation expense amounts to

    Depreciation expense = (1,200,000 – 200,000) × (135,000/800,000) = 168,750.

26. C is correct. Shifting at the end of Year 2 from double-declining balance to straight-line depreciation methodology results in depreciation expense being the same in each of Years 3, 4, and 5. Shifting to the straight-line methodology at the beginning of Year 3 results in a greater depreciation expense in Year 4 than would

have been calculated using the double-declining balance method.

Depreciation expense Year 4 (Using double-declining balance method all five years)

= 2 × Annual depreciation % using straight-line method × Carrying amount at end of Year 3

= 40% × $43,200

Depreciation expense Year 4 with switch to straight-line method in Year 3

= 1/3 × Remaining depreciable cost at start of Year 3

= 1/3 × $72,000

= $24,000

27. A is correct. The straight-line method is the method that evenly distributes the cost of an asset over its useful life because amortization is the same amount every year.

28. A is correct. A higher residual value results in a lower total depreciable cost and, therefore, a lower amount of amortization in the first year after acquisition (and every year after that).

29. B is correct. Using the straight-line method, accumulated amortization amounts to

Accumulated amortization = [(2,300,000 – 500,000)/3 years] × 2 years

= 1,200,000

30. B is correct. Using the units-of-production method, depreciation expense amounts to

Depreciation expense = 5,800,000 × (20,000/175,000) = 662,857

31. B is correct. As shown in the following calculations, under the double-declining balance method, the annual amortization expense in Year 4 is closest to ¥9.9 million.

Annual amortization expense = 2 × Straight-line amortization rate × Net book value.

Amortization expense Year 4 = 33.3% × ¥29.6 million = ¥9.9 million.

32. A is correct. As shown in the following calculations, at the end of Year 4, the difference between the net book values calculated using straight-line versus double-declining balance is closest to €81,400.

Net book value end of Year 4 using straight-line method = €600,000 – [4 × (€600,000/6)] = €200,000.

Net book value end of Year 4 using double-declining balance method = €600,000 $(1 - 33.33\%)^4 \approx$ €118,600.

33. B is correct. In this case, the value increase brought about by the revaluation should be recorded directly in equity. The reason is that under IFRS, an increase in value brought about by a revaluation can only be recognized as a profit to the extent that it reverses a revaluation decrease of the same asset previously recognized in the income statement.

34. B is correct. The impairment loss equals £3,100,000.

    Impairment = max(Fair value less costs to sell; Value in use) – Net carrying amount

    = max(16,800,000 – 800,000; 14,500,000) – 19,100,000

    = –3,100,000.

35. B is correct. Under IFRS, an impairment loss is measured as the excess of the carrying amount over the asset's recoverable amount. The recoverable amount is the higher of the asset's fair value less costs to sell and its value in use. Value in use is a discounted measure of expected future cash flows. Under US GAAP, assessing recoverability is separate from measuring the impairment loss. If the asset's carrying amount exceeds its undiscounted expected future cash flows, the asset's carrying amount is considered unrecoverable and the impairment loss is measured as the excess of the carrying amount over the asset's fair value.

36. C is correct. The carrying amount of the asset on the balance sheet is reduced by the amount of the impairment loss, and the impairment loss is reported on the income statement.

37. B is correct. The result on the sale of the vehicle equals

    Gain or loss on the sale = Sale proceeds – Carrying amount

    = Sale proceeds – (Acquisition cost – Accumulated depreciation)

    = 85,000 – {100,000 – [((100,000 – 10,000)/9 years) × 3 years]}

    = 15,000.

38. A is correct. Gain or loss on the sale = Sale proceeds – Carrying amount. Rearranging this equation, Sale proceeds = Carrying amount + Gain or loss on sale. Thus, Sale price = (12 million – 2 million) + (–3.2 million) = 6.8 million.

39. A is correct. The gain or loss on the sale of long-lived assets is computed as the sales proceeds minus the carrying amount of the asset at the time of sale. This is true under the cost and revaluation models of reporting long-lived assets. In the absence of impairment losses, under the cost model, the carrying amount will equal historical cost net of accumulated depreciation.

40. B is correct. IFRS do not require acquisition dates to be disclosed.

41. A is correct. IFRS do not require fair value of intangible assets to be disclosed.

42. C is correct. Under US GAAP, companies are required to disclose the estimated amortization expense for the next five fiscal years. Under US GAAP, there is no reversal of impairment losses. Disclosure of the useful lives—finite or indefinite and additional related details—is required under IFRS.

43. B is correct. Investment property earns rent. Investment property and property, plant, and equipment are tangible and long-lived.

44. C is correct. When a company uses the fair value model to value investment property, changes in the fair value of the property are reported in the income statement—not in other comprehensive income.

45. A is correct. Investment property earns rent. Inventory is held for resale, and

property, plant, and equipment are used in the production of goods and services.

46. C is correct. A company will change from the fair value model to either the cost model or revaluation model when the company transfers investment property to property, plant, and equipment.

47. A is correct. Under both the revaluation model for property, plant, and equipment and the fair model for investment property, the asset's fair value must be able to be measured reliably. Under the fair value model, net income is affected by all changes in the asset's fair value. Under the revaluation model, any increase in an asset's value to the extent that it reverses a previous revaluation decrease will be recognized on the income statement and increase net income.

48. A is correct. Under IFRS, when using the cost model for its investment properties, a company must disclose useful lives. The method for determining fair value, as well as reconciliation between beginning and ending carrying amounts of investment property, is a required disclosure when the fair value model is used.

SOLUTIONS

1. A is correct. The taxes a company must pay in the immediate future are taxes payable.

2. C is correct. Because the differences between tax and financial accounting will correct over time, the resulting deferred tax liability, for which the expense was charged to the income statement but the tax authority has not yet been paid, will be a temporary difference. A valuation allowance would only arise if there was doubt over the company's ability to earn sufficient income in the future to require paying the tax.

3. C is correct. Higher reported tax expense relative to taxes paid will increase the deferred tax liability, whereas lower reported tax expense relative to taxes paid increases the deferred tax asset.

4. B is correct. If the liability is expected to reverse (and thus require a cash tax payment) the deferred tax represents a future liability.

5. A is correct. The capitalization will result in an asset with a positive tax base and zero carrying value. The amortization means the difference is temporary. Because there is a temporary difference on an asset resulting in a higher tax base than carrying value, a deferred tax asset is created.

6. B is correct. The difference is temporary, and the tax base will be lower (because of more rapid amortization) than the carrying value of the asset. The result will be a deferred tax liability.

7. A is correct. The advances represent a liability for the company. The carrying value of the liability exceeds the tax base (which is now zero). A deferred tax asset arises when the carrying value of a liability exceeds its tax base.

8. A is correct. A lower tax rate would increase net income on the income statement, and because the company has a net deferred tax liability, the net liability position on the balance sheet would also improve (be smaller).

9. C is correct. The reduction in the valuation allowance resulted in a corresponding reduction in the income tax provision.

10. B is correct. The net deferred tax liability was smaller in Year 3 than it was in Year 2, indicating that in addition to meeting the tax payments provided for in Year 3 the company also paid taxes that had been deferred in prior periods.

11. C is correct. Accounting items that are not deductible for tax purposes will not be reversed and thus result in permanent differences.

12. C is correct. Tax credits that directly reduce taxes are a permanent difference, and permanent differences do not give rise to deferred tax.

13. B is correct. The valuation allowance is taken against deferred tax assets to represent uncertainty that future taxable income will be sufficient to fully utilize the assets. By decreasing the allowance, Zimt is signaling greater likelihood that future earnings will be offset by the deferred tax asset.

14. C is correct. The valuation allowance is taken when the company will "more likely than not" fail to earn sufficient income to offset the deferred tax asset. Because

the valuation allowance equals the asset, by extension the company expects *no* taxable income prior to the expiration of the deferred tax assets.

15. A is correct. If the liability will not reverse, there will be no required tax payment in the future and the "liability" should be treated as equity.

16. C is correct. The deferred tax liability should be excluded from both debt and equity when both the amounts and timing of tax payments resulting from the reversals of temporary differences are uncertain.

17. B is correct. The income tax provision in Year 3 was $54,144, consisting of $58,772 in current income taxes, of which $4,628 were deferred.

18. B is correct. The effective tax rate of 30.1 percent ($56,860/$189,167) was higher than the effective rates in Year 2 and Year 3.

19. A is correct. In Year 3 the effective tax rate on foreign operations was 24.2 percent [($28,140 + $124)/$116,704] and the effective US tax rate was [($30,632 – $4,752)/$88,157] = 29.4 percent. In Year 2 the effective tax rate on foreign operations was 26.2 percent and the US rate was 35.9 percent. In Year 1 the foreign rate was 24.1 percent and the US rate was 35.5 percent.

20. C is correct. The income tax provision at the statutory rate of 34 percent is a benefit of $112,000, suggesting that the pre-tax income was a loss of $112,000/0.34 = ($329,412). The income tax provision was $227,000. ($329,412) – $227,000 = ($556,412).

21. C is correct. Accounting expenses that are not deductible for tax purposes result in a permanent difference, and thus do not give rise to deferred taxes.

22. B is correct. Over the three-year period, changes in the valuation allowance reduced cumulative income taxes by $1,670,000. The reductions to the valuation allowance were a result of the company being "more likely than not" to earn sufficient taxable income to offset the deferred tax assets.

SOLUTIONS

1. B is correct. The company receives €1 million in cash from investors at the time the bonds are issued, which is recorded as a financing activity.

2. B is correct. The effective interest rate is greater than the coupon rate and the bonds will be issued at a discount.

3. A is correct. Under US GAAP, expenses incurred when issuing bonds are generally recorded as an asset and amortised to the related expense (legal, etc.) over the life of the bonds. Under IFRS, they are included in the measurement of the liability. The related cash flows are financing activities.

4. C is correct. The bonds will be issued at a premium because the coupon rate is higher than the market interest rate. The future cash outflows, the present value of the cash outflows, and the total present value are as follows:

Date	Interest Payment ($)	Present Value at Market Rate 5% ($)		Present Value at Market Rate 5% ($)	Total Present Value ($)
31 December 2015	60,000.00	57,142.86			
31 December 2016	60,000.00	54,421.77			
31 December 2017	60,000.00	51,830.26			
31 December 2018	60,000.00	49,362.15			
31 December 2019	60,000.00	47,011.57			
31 December 2020	60,000.00	44,772.92			
31 December 2021	60,000.00	42,640.88			
31 December 2022	60,000.00	40,610.36			
31 December 2023	60,000.00	38,676.53			
31 December 2024	60,000.00	36,834.80	1,000,000.00	613,913.25	
		463,304.10		613,913.25	1,077,217.35
					Sales Proceeds

The following illustrates the keystrokes for many financial calculators to calculate sales proceeds of $1,077,217.35:

Calculator Notation	Numerical Value for This Problem
N	10
% *i* or I/Y	5
FV	$1,000,000.00
PMT	$60,000.00
PV compute	X

Thus, the sales proceeds are reported on the balance sheet as an increase in long-term liability, bonds payable of $1,077,217.

5. A is correct. The bonds payable reported at issue is equal to the sales proceeds. The interest payments and future value of the bond must be discounted at the market interest rate of 3% to determine the sales proceeds.

Date	Interest Payment	Present Value at Market Rate (3%)	Face Value Payment	Present Value at Market Rate (3%)	Total Present Value
31 December 2015	$125,000.00	$121,359.22			
31 December 2016	$125,000.00	$117,824.49			
31 December 2017	$125,000.00	$114,392.71	$5,000,000.00	$4,575,708.30	
Total		$353,576.42		$4,575,708.30	$4,929,284.72

The following illustrates the keystrokes for many financial calculators to calculate sales proceeds of $4,929,284.72:

Calculator Notation	Numerical Value for This Problem
N	3
% *i* or I/Y	3.0
FV	$5,000,000.00
PMT	$125,000.00
PV compute	X

6. B is correct. The market interest rate at the time of issuance is the effective interest rate that the company incurs on the debt. The effective interest rate is the discount rate that equates the present value of the coupon payments and face value to their selling price. Consequently, the effective interest rate is 5.50%.

7. B is correct. The bonds will be issued at a discount because the market interest rate is higher than the stated rate. Discounting the future payments to their present value indicates that at the time of issue, the company will record £978,938 as both a liability and a cash inflow from financing activities. Interest expense in 2010 is £58,736 (£978,938 times 6.0 percent). During the year, the company will pay cash of £55,000 related to the interest payment, but interest expense on the income statement will also reflect £3,736 related to amortisation of the initial discount (£58,736 interest expense less the £55,000 interest payment). Thus, the value of the liability at 31 December 2010 will reflect the initial value (£978,938) plus the amortised discount (£3,736), for a total of £982,674. The cash outflow of £55,000 may be presented as either an operating or financing activity under IFRS.

8. A is correct. The coupon rate on the bonds is higher than the market rate, which indicates that the bonds will be issued at a premium. Taking the present value of each payment indicates an issue date value of €10,210,618. The interest expense is determined by multiplying the carrying amount at the beginning of the period (€10,210,618) by the market interest rate at the time of issue (6.0 percent) for an interest expense of €612,637. The value after one year will equal the beginning value less the amount of the premium amortised to date, which is the difference between the amount paid (€650,000) and the expense accrued (€612,637) or €37,363. €10,210,618 – €37,363 = €10,173,255 or €10.17 million.

9. A is correct. The future cash outflows, the present value of the cash outflows, and the total present value are as follows:

Date	Interest Payment (€)	Present Value at Market Rate 6% (€)		Present Value at Market Rate 6% (€)	Total Present Value (€)
31 December 2015	700,000.00	660,377.36			
31 December 2016	700,000.00	622,997.51			
31 December 2017	700,000.00	587,733.50			
31 December 2018	700,000.00	554,465.56			
31 December 2019	700,000.00	523,080.72			
31 December 2020	700,000.00	493,472.38			
31 December 2021	700,000.00	465,539.98			
31 December 2022	700,000.00	439,188.66			
31 December 2023	700,000.00	414,328.92			
31 December 2024	700,000.00	390,876.34	10,000,000.00	5,583,947.77	
		5,152,060.94		5,583,947.77	10,736,008.71
					Sales Proceeds

The following illustrates the keystrokes for many financial calculators to calculate sales proceeds of €10,736,008.71:

Calculator Notation	Numerical Value for This Problem
N	10
% *i* or I/Y	6
FV	$10,000,000.00
PMT	$700,000.00
PV compute	X

The interest expense is calculated by multiplying the carrying amount at the beginning of the year by the effective interest rate at issuance. As a result, the interest expense at 31 December 2015 is €644,161 (€10,736,008.71 × 6%).

10. C is correct. The future cash outflows, the present value of the cash outflows, and the total present value are as follows:

Date	Interest Payment ($)	Present Value at Market Rate 5% ($)		Present Value at Market Rate 5% ($)	Total Present Value ($)
31 December 2015	1,200,000	1,142,857.14			
31 December 2016	1,200,000	1,088,435.37			
31 December 2017	1,200,000	1,036,605.12			
31 December 2018	1,200,000	987,242.97			
31 December 2019	1,200,000	940,231.40	30,000,000	23,505,785.00	
		5,195,372.00		23,505,785.00	28,701,157.00
					Sales Proceeds

The following illustrates the keystrokes for many financial calculators to calculate sales proceeds of $28,701,157.00:

Calculator Notation	Numerical Value for This Problem
N	5

Calculator Notation	Numerical Value for This Problem
% *i* or I/Y	5
FV	$30,000,000.00
PMT	$1,200,000.00
PV compute	X

The following table illustrates interest expense, premium amortization, and carrying amount (amortized cost) for 2015.

Year	Carrying Amount (beginning of year)	Interest Expense (at effective interest rate of 5%)	Interest Payment (at coupon rate of 4%)	Amortization of Discount	Carrying Amount (end of year)
2015	$28,701,157.00	$1,435,057.85	$1,200,000.00	$235,057.85	$28,936,214.85

The carrying amount at the end of the year is found by adding the amortization of the discount to the carrying amount at the beginning of the year. As a result, the carrying amount on 31 December 2015 is $28,936,215.

Alternatively, the following illustrates the keystrokes for many financial calculators to calculate the carrying value at the end of first year of $28,936, 215:

Calculator Notation	Numerical Value for This Problem
N	4
% *i* or I/Y	5
FV	$30,000,000.00
PMT	$1,200,000.00
PV compute	X

11. B is correct. The interest expense for a given year is equal to the carrying amount at the beginning of the year times the effective interest of 4%. Under the effective interest rate method, the difference between the interest expense and the interest payment (based on the coupon rate and face value) is the discount amortized in the period, which increases the carrying amount annually. For 2017, the interest expense is the beginning carrying amount ($1,944,499) times the effective interest of 4%.

Year	Carrying Amount (beginning)	Interest Expense (at effective interest of 4%)	Interest Payment (at coupon rate of 3%)	Amortization of Discount	Carrying Amount (end of year)
2015	$1,910,964	$76,439	$60,000.00	$16,439	$1,927,403
2016	$1,927,403	$77,096	$60,000.00	$17,096	$1,944,499
2017	$1,944,499	$77,780	$60,000.00	$17,780	$1,962,279

12. B is correct. The amortization of the premium equals the interest payment minus the interest expense. The interest payment is constant and the interest expense decreases as the carrying amount decreases. As a result, the amortization of the premium increases each year.

13. B is correct. Under the straight-line method, the bond premium is amortized equally over the life of the bond. The annual interest payment is $165,000 ($3,000,000 × 5.5%) and annual amortization of the premium under the straight-line method is $13,616 [($3,040,849 – $3,000,000)/3)]. The interest

expense is the interest payment less the amortization of the premium ($165,000 – $13,616 = $151,384).

14. A is correct. The value of the liability for zero-coupon bonds increases as the discount is amortised over time. Furthermore, the amortised interest will reduce earnings at an increasing rate over time as the value of the liability increases. Higher relative debt and lower relative equity (through retained earnings) will cause the debt-to-equity ratio to increase as the zero-coupon bonds approach maturity.

15. A is correct. When interest rates rise, bonds decline in value. Thus, the carrying amount of the bonds being carried on the balance sheet is higher than the market value. The company could repurchase the bonds for less than the carrying amount, so the economic liabilities are overestimated. Because the bonds are issued at a fixed rate, there is no effect on interest coverage.

16. C is correct. A gain of €3.3 million (carrying amount less amount paid) will be reported on the income statement.

17. B is correct. If a company decides to redeem a bond before maturity, bonds payable is reduced by the carrying amount of the debt. The difference between the cash required to redeem the bonds and the carrying amount of the bonds is a gain or loss on the extinguishment of debt. Because the call price is 104 and the face value is $1,000,000, the redemption cost is 104% of $1,000,000 or $1,040,000. The company's loss on redemption would be $50,000 ($990,000 carrying amount of debt minus $1,040,000 cash paid to redeem the callable bonds).

18. C is correct. Affirmative covenants require certain actions of the borrower. Requiring the company to perform regular maintenance on equipment pledged as collateral is an example of an affirmative covenant because it requires the company to do something. Negative covenants require that the borrower not take certain actions. Prohibiting the borrower from entering into mergers and preventing the borrower from issuing excessive additional debt are examples of negative covenants.

19. C is correct. Covenants protect debtholders from excessive risk taking, typically by limiting the issuer's ability to use cash or by limiting the overall levels of debt relative to income and equity. Issuing additional equity would increase the company's ability to meet its obligations, so debtholders would not restrict that ability.

20. C is correct. The non-current liabilities section of the balance sheet usually includes a single line item of the total amount of a company's long-term debt due after 1 year, and the current liabilities section shows the portion of a company's long-term debt due in the next 12 months. Notes to the financial statements generally present the stated and effective interest rates and maturity dates for a company's debt obligations

21. C is correct. Beginning with fiscal year 2019, lessees report a right-of-use asset and a lease liability for all leases longer than one year. An exception under IFRS exists for leases when the underlying asset is of low value.

22. C is correct. When a lease is classified as an operating lease, the underlying asset remains on the lessor's balance sheet. The lessor will record a depreciation expense that reduces the asset's value over time.

23. A is correct. A sales-type lease treats the lease as a sale of the asset, and revenue is recorded at the time of sale equal to the value of the leased asset. Under

a direct financing lease, only interest income is reported as earned. Under an operating lease, revenue from lease receipts is reported when collected.

24. C is correct. Lessor accounting for an operating lease under US GAAP is similar to that under IFRS: Over the lease term, the lessor recognizes lease receipts as income and recognizes related costs, including depreciation of the leased asset, as expenses. Under IFRS, at inception of a finance lease—not an operating lease—the lessor derecognizes the underlying leased asset and recognizes a lease asset comprising the lease receivable and relevant residual value. Further, an IFRS-reporting lessor will recognize selling profit at the beginning of all leases that are not classified as operating leases. In contrast, a US GAAP–reporting lessor will recognize selling profit only on sales-type leases at the beginning of the lease term.

25. A is correct. An operating lease is an agreement that allows the lessee to use an asset for a period of time. Thus, an operating lease is similar to renting an asset, whereas a finance lease is equivalent to the purchase of an asset by the lessee that is directly financed by the lessor.

26. B is correct. A lessee's accounting for a long-term finance lease under US GAAP and after lease inception includes recording depreciation expense on the right-of-use asset, recognizing interest expense on the lease liability, and reducing the balance of the lease liability for the portion of the lease payments that represents repayment of the lease liability. A lessee's accounting for an operating lease under US GAAP and after lease inception will recognize a single lease expense, which is a straight-line allocation of the cost of the lease over its term.

27. A is correct. Under the revised reporting standards under IFRS and US GAAP, a lessee must recognize an asset and a lease liability at inception of each of its leases (with an exception for short-term leases). The lessee reports a "right-of-use" (ROU) asset and a lease liability, calculated essentially as the present value of fixed lease payments, on its balance sheet. Thus, at lease inception, the company will record a lease liability on the balance sheet of €47,250,188.

28. B is correct. The company will report a net pension obligation of €1 million equal to the pension obligation (€10 million) less the plan assets (€9 million).

29. A is correct. A company that offers a defined benefit plan makes payments into a pension fund and the retirees are paid from the fund. The payments that a company makes into the fund are invested until they are needed to pay retirees. If the fair value of the fund's assets is higher than the present value of the estimated pension obligation, the plan has a surplus and the company's balance sheet will reflect a net pension asset. Because the fair value of the fund's assets is $1,500,000,000 and the present value of estimated pension obligations is $1,200,000,000, the company will present a net pension asset of $300,000,000 on its balance sheet.

30. C is correct. The financial leverage ratio is calculated as follows:

$$\frac{\text{Average total assets}}{\text{Average shareholder's equity}} = \frac{\$45,981 \text{ million}}{\$18,752 \text{ million}} = \$2.452 \text{ million}$$

31. B is correct. Company B has the lowest debt-to-equity ratio, indicating the lowest financial leverage, and the highest interest coverage ratio, indicating the greatest number of times that EBIT covers interest payments.

32. A is correct because the debt-to-assets (total debt)/(total assets) ratio is (1,258 + 321)/(8,750) = 1,579/8,750 = 0.18

SOLUTIONS

1. B is correct. Financial reporting quality pertains to the quality of information in financial reports. High-quality financial reporting provides decision-useful information, which is relevant and faithfully represents the economic reality of the company's activities. Earnings of high quality are sustainable and provide an adequate level of return. Highest-quality financial reports reflect both high financial reporting quality and high earnings quality.

2. C is correct. Financial reporting quality pertains to the quality of the information contained in financial reports. High-quality financial reports provide decision-useful information that faithfully represents the economic reality of the company. Low-quality financial reports impede assessment of earnings quality. Financial reporting quality is distinguishable from earnings quality, which pertains to the earnings and cash generated by the company's actual economic activities and the resulting financial condition. Low-quality earnings are not sustainable and decrease company value.

3. B is correct. Financial reporting quality pertains to the quality of the information contained in financial reports. If financial reporting quality is low, the information provided is of little use in assessing the company's performance. Financial reporting quality is distinguishable from earnings quality, which pertains to the earnings and cash generated by the company's actual economic activities and the resulting financial condition.

4. B is correct. Earnings quality pertains to the earnings and cash generated by the company's actual economic activities and the resulting financial condition. Low-quality earnings are likely not sustainable over time because the company does not expect to generate the same level of earnings in the future or because earnings will not generate sufficient return on investment to sustain the company. Earnings that are not sustainable decrease company value. Earnings quality is distinguishable from financial reporting quality, which pertains to the quality of the information contained in financial reports.

5. A is correct. Earnings that result from non-recurring activities are unsustainable. Unsustainable earnings are an example of lower-quality earnings. Recognizing earnings that result from non-recurring activities is neither a biased accounting choice nor indicative of lower quality financial reporting because it faithfully represents economic events.

6. B is correct. At the top of the quality spectrum of financial reports are reports that conform to GAAP, are decision useful, and have earnings that are sustainable and offer adequate returns. In other words, these reports have both high financial reporting quality and high earnings quality.

7. A is correct. Financial reports span a quality continuum from high to low based on decision-usefulness and earnings quality (see Exhibit 2 of the reading). The lowest-quality reports portray fictitious events, which may misrepresent the company's performance and/or obscure fraudulent misappropriation of the company's assets.

8. B is correct. Deferring research and development (R&D) investments into the next reporting period is an example of earnings management by taking a *real* action.

9. B is correct. High-quality financial reports offer useful information, meaning in-

formation that is relevant and faithfully represents actual performance. Although low earnings quality may not be desirable, if the reported earnings are representative of actual performance, they are consistent with high-quality financial reporting. Highest-quality financial reports reflect both high financial reporting quality and high earnings quality.

10. B is correct. Aggressive accounting choices aim to enhance the company's reported performance by inflating the amount of revenues, earnings, and/or operating cash flow reported in the period. Consequently, the financial performance for that period would most likely exhibit an upward bias.

11. C is correct. Accounting choices are considered conservative if they decrease the company's reported performance and financial position in the period under review. Conservative choices may increase the amount of debt reported on the balance sheet. They may decrease the revenues, earnings, and/or operating cash flow reported for the period and increase those amounts in later periods.

12. A is correct. Conservatism reduces the possibility of litigation and, by extension, litigation costs. Rarely, if ever, is a company sued because it understated good news or overstated bad news. Accounting conservatism is a type of bias in financial reporting that decreases a company's reported performance. Conservatism directly conflicts with the characteristic of neutrality.

13. A is correct. Managers often have incentives to meet or beat market expectations, particularly if management compensation is linked to increases in stock prices or to reported earnings.

14. B is correct. Managers may be motivated to understate earnings in the reporting period and increase the probability of meeting or exceeding the next period's earnings target.

15. C is correct. Typically, conditions of opportunity, motivation, and rationalization exist when individuals issue low-quality financial reports. Rationalization occurs when an individual is concerned about a choice and needs to be able to justify it to herself or himself. If the manager is concerned about a choice in a financial report, she or he may ask for other opinions to convince herself or himself that it is okay.

16. C is correct. In a period of strong financial performance, managers may pursue accounting choices that increase the probability of exceeding earnings forecasts for the next period. By accelerating expense recognition or delaying revenue recognition, managers may inflate earnings in the next period and increase the likelihood of exceeding targets.

17. B is correct. Motivation can result from pressure to meet some criteria for personal reasons, such as a bonus, or corporate reasons, such as concern about future financing. Poor internal controls and an inattentive board of directors offer opportunities to issue low-quality financial reports.

18. A is correct. The possibility of bond covenant violations may motivate managers to inflate earnings in the reporting period. In so doing, the company may be able to avoid the consequences associated with violating bond covenants.

19. A is correct. Opportunities to issue low-quality financial reports include internal conditions, such as an ineffective board of directors, and external conditions, such as accounting standards that provide scope for divergent choices. Pressure to achieve a certain level of performance and corporate concerns about future financing are examples of motivations to issue low-quality financial reports.

Typically, three conditions exist when low-quality financial reports are issued: opportunity, motivation, and rationalization.

20. C is correct. An audit is intended to provide assurance that the company's financial reports are presented fairly, thus providing discipline regarding financial reporting quality. Regulatory agencies usually require that the financial statements of publicly traded companies be audited by an independent auditor to provide assurance that the financial statements conform to accounting standards. Privately held companies may also choose to obtain audit opinions either voluntarily or because an outside party requires it. An audit is not typically intended to detect fraud. An audit is based on sampling and it is possible that the sample might not reveal misstatements.

21. B is correct. If a company uses a non-GAAP financial measure in an SEC filing, it is required to provide the most directly comparable GAAP measure with equivalent prominence in the filing. In addition, the company is required to provide a reconciliation between the non-GAAP measure and the equivalent GAAP measure. Similarly, IFRS require that any non-IFRS measures included in financial reports must be defined and their potential relevance explained. The non-IFRS measures must be reconciled with IFRS measures.

22. B is correct. If a company wants to increase reported earnings, the company's managers may reduce the allowance for uncollected accounts and the related expense reported for the period. Decreasing the useful life of depreciable assets would increase depreciation expense and decrease earnings in the reporting period. Classifying a purchase as an expense, rather than capital expenditure, would decrease earnings in the reporting period. The use of accrual accounting may result in estimates in financial reports, because all facts associated with events may not be known at the time of recognition. These estimates can be grounded in reality or managed by the company to present a desired financial picture.

23. A is correct. Managers can temporarily show a higher cash flow from operations by stretching the accounts payable credit period. In other words, the managers delay payments until the next accounting period. Applying all non-cash discount amortization against interest capitalized causes reported interest expenses and operating cash outflow to be higher, resulting in a lower cash flow provided by operations. Shifting the classification of interest paid from financing to operating cash flows lowers the cash flow provided by operations.

24. B is correct. Bias in revenue recognition can lead to manipulation of information presented in financial reports. Addressing the question as to whether revenue is higher or lower than the previous period is not sufficient to determine if there is bias in revenue recognition. Additional analytical procedures must be performed to identify warning signals of accounting malfeasance. Barter transactions are difficult to value properly and may result in bias in revenue recognition. Policies that make it easier to prematurely recognize revenue, such as before goods are shipped to customers, may be a warning sign of accounting malfeasance.

25. C is correct. If a company's days sales outstanding (DSO) is increasing relative to competitors, this may be a signal that revenues are being recorded prematurely or are even fictitious. There are numerous analytical procedures that can be performed to provide evidence of manipulation of information in financial reporting. These warning signs are often linked to bias associated with revenue recognition and expense recognition policies.

26. B is correct. If the ratio of cash flow to net income for a company is consistently below 1 or has declined repeatedly over time, this may be a signal of manipula-

tion of information in financial reports through aggressive accrual accounting policies. When net income is consistently higher than cash provided by operations, one possible explanation is that the company may be using aggressive accrual accounting policies to shift current expenses to later periods.

27. C is correct. To extrapolate historical earnings trends, an analyst should consider making pro forma analytical adjustments of prior years' earnings to reflect in those prior years a reasonable share of the current period's restructuring and impairment charges.

Corporate Issuers

SOLUTIONS

1. Private companies can go public through a process known as the initial public offering (IPO). This means that the company is offering its shares to all investors for the first time. An investment bank (or group of investment banks) acts as the underwriter of the offering, meaning that they guarantee the sale of the shares for the issuer. Once the IPO process is completed, the shares are listed on an exchange and available for trading. Another way a private company can go public is through a direct listing (DL), which is a process that does not involve underwriters or the issuance of new shares.

   Private companies can also go public indirectly by being acquired by another company that is already public or through a special purpose acquisition company (SPAC). A SPAC is a publicly-listed holding company created for the sole purpose of acquiring a private company.

2. Two common ways for public companies to go private are the leverage buyout (LBO) and management buyout (MBO). An LBO occurs when an outside investor or group of investors borrows money to purchase all of the equity of the public company. A premium to the market price must be paid to convince all shareholders to agree to the LBO. The investors typically pledge the assets of the company against the loan.

   An MBO is similar, except that the investors are part of the company's management team. Another way for a public company to go private is to be acquired by a private company. Once a company goes private, its shares are no longer listed on an exchange. A public company can also be acquired by another public company. When this happens, shares of the acquired company are delisted from the exchange; however, shares of the acquiring company remain listed.

3. B and C are correct.

   A is incorrect. If they are run well, nonprofits can generate profits; however, all profits must be reinvested in promoting the mission of the organization.

   B is correct. In contrast to public companies, private company shares do not trade on an exchange, so no visible valuation or price transparency exists for the company. Private company shares are not liquid. This means that transferring ownership from seller to buyer is more difficult than it is for a public company.

   C is correct. In many countries, if there are a large number of shareholders (usually greater than 50), the company is categorized as a public company and subject to more onerous regulatory requirements whether or not it is listed on a stock exchange.

4. B is correct. From the issuer's perspective, bonds are riskier than stocks for the same reason bonds are safer than stocks for investors. Bonds increase risk to the corporation by increasing leverage. If the company is struggling and cannot meet its promised obligations to bondholders, bondholders have the legal standing to force certain actions upon the corporation, such as bankruptcy and liquidation.

5. A is correct; the statement is true. If a company fails to meet its obligation to bondholders and ultimately needs to petition the courts for bankruptcy protection, a potential alternative to asset liquidation to maximize proceeds for debt repayment is business reorganization. Following that path through the legal process as opposed to transactions in private or public markets, the company can be reorganized with shareholders getting wiped out and bondholders becoming its new shareholders.

6. From an investor's perspective, debt is less risky than equity because the company has a contractual obligation to repay the debt but no obligation to repay equity capital. Furthermore, debtholders are entitled only to the promised interest payments and the return of principal. As a result, debtholders would prefer that the company invest in relatively safe projects that produce sufficient returns to service the debt. They see no added benefit of taking greater risks that might generate larger returns. The gains to equityholders, however, are unlimited. As a result, equityholders prefer that the company invest in projects that might be riskier but that have the potential to produce much larger returns.

7. Reason 1. Mergers and acquisitions are partly responsible. When a public company is acquired by a private company or by another public company, there is one less public company.

   Reason 2. LBOs and MBOs are also responsible since they are structured to take public companies private.

   Reason 3. Many private companies choose to remain private. Greater ease in accessing capital in private markets (venture capital, private equity, and private debt) has enabled companies to source the capital they might need and avoid the regulatory burden associated with being a public company.

SOLUTIONS

1. B is correct. Compared with other stakeholder groups, customers tend to be less affected by or concerned with a company's financial performance.

2. A is correct. Shareholder and manager interests can diverge with respect to risk tolerance. In some cases, shareholders with diversified investment portfolios can have a fairly high risk tolerances because specific company risk can be diversified away. Managers are typically more risk averse in their corporate decision making to better protect their employment status.

3. B is correct. Often, policies on related-party transactions require that such transactions or matters be voted on by the board (or shareholders), excluding the director holding the interest.

4. B is correct. The election of directors is considered an ordinary resolution and, therefore, requires only a simple majority of votes to be passed.

5. C is correct. The risks of poor corporate governance have long been understood by analysts and shareholders. In contrast, the practice of considering environmental and social factors has been slower to take hold.

6. A is correct. A specific concern among investors of energy companies is the existence of "stranded assets," which are carbon-intensive assets at risk of no longer being economically viable because of changes in regulation or investor sentiment.

7. C is correct. Material environmental effects can arise from strategic or operational decisions based on inadequate governance processes or errors in judgment. For example, oil spills, industrial waste contamination events, and local resource depletion can result from poor environmental standards, breaches in safety standards, or unsustainable business models. Such events can be costly in terms of regulatory fines, litigation, clean-up costs, reputational risk, and resource management.

8. C is correct. *Responsible investing* is the broadest (umbrella) term used to describe investment strategies that incorporate environmental, social, and governance (ESG) factors into their approaches.

9. A is correct. Social factors considered in ESG implementation generally pertain to the management of the human capital of a business, including data privacy and security.

10. A is correct. Negative screening refers to the practice of excluding certain sectors, companies, or practices that do not meet specific ESG criteria based on the investor's values, ethics, or preferences.

11. B is correct. While leverage increases risk for all stakeholders, shareholders generally benefit through higher potential returns. Senior management typically benefits through equity-based compensation. For non-management employees, equity-based compensation is likely to be small to non-existent.

12. C is correct. Corporate governance is the arrangement of checks, balances, and incentives a company needs to minimize and manage the conflicting interests between insiders and external shareholders.

13. B is correct. The board typically ensures that the company has an appropriate

enterprise risk management system in place.

14. B is correct. A common law system offers better protection of shareholder interests than does a civil law system.

SOLUTIONS

1. C is correct. Financial forecasts are normally part of a more detailed business plan. A business model should convey how the business makes money, so unit economics (i.e., per-unit revenue and costs) are a key element of a business model. Based on the product and market, the target market (who the business serves), the channel strategy (where they purchase), and the total cost of ownership, including maintenance after purchase, would also be key business model elements.

2. C is correct. A business model that assumes premium pricing must address why customers will be willing to pay a premium, normally because of some type of differentiation. It is less likely (although not impossible) that a price premium could be sustained in a category where pricing is set in the market (A), where a small change in price causes a large change in demand (another way to describe the price taker scenario; D), or when a firm is trying to scale up to a competitive size (B).

3. E is correct. All these statements are true, in most cases, for a platform business. A platform business is defined as a business based on network effects—that is, where the value of its service or product is enhanced by the addition of customers or users. While many think of platform businesses as being web-based or software-based, there are many older business models that qualify, such as brokerage and exchange businesses and transportation and communication networks. The value creation for a platform business is external to the company that created the product or service. When the business is launched, it has no customers, which can make the launch challenging—one reason why many platform startups employ a "freemium" pricing strategy to attract users quickly.

4. E is correct. The resume preparation service benefits from the network effects on various online job sites, but the service is not the source of those network effects. Each of the other businesses (A, B, C, and D) becomes more valuable to its customers as it attracts users. A stock exchange is valuable and worth joining because many securities trade on it. The telephone network is very useful because most people are on it. A classified advertising website becomes more useful as it attracts more listings. An airfare price comparison website is valuable to airlines because it has many shoppers and valuable to shoppers because it features prices for multiple airlines and routes.

5. C is correct. A supply chain includes all the steps involved in producing and delivering a physical product to the end customer, regardless of whether those steps are performed by a single firm. A value chain includes only those functions performed by a single firm, but it also includes functions that are valuable to customers but may not involve physical transformation or handling of the product. The bicycle delivery service is a source of value to customers, so it is part of the flower shop's value proposition, but it is performed by a third party, so it is not part of the flower shop value chain but, rather, is part of its supply chain. The answering service is not a step in the physical goods flow, so it is not a part of the supply chain.

6. C is correct. A social network for model train collectors involves a single group of users and thus is closest to a one-side network. The others involve two user groups: employers and job-seekers in A, men and women in B, and homeowners and contractors in D.

7. A is correct. Unit costs normally include direct labor costs. A unit cost analysis

should be considered in most business models, although in some cases, they will be close to zero (for example, digital media). If unit costs are non-zero, they must be taken into account when calculating the break-even point. In D, there are no direct labor costs, so the unit cost calculation is reasonable. (The lemonade stand is staffed, and no extra labor is required to pour the lemonade.)

8. B is correct. Macro risk is likely to be highest with a Swedish mining equipment manufacturer since product demand is very sensitive to the global economy. With the coffee plantation in Brazil, the call center outsourcing business based in India, and the Swedish mining equipment manufacturer, there is also exchange rate risk that could impact profitability and competitiveness.

9. C is correct. An oil well drilling service company operates in a highly competitive industry, where demand is difficult to forecast and is very sensitive to macro risk. Industry risk is therefore likely to be high. The toll road and the pest control services company have recurring, predictable revenues with significant "moats" or barriers to competition.

10. Option 1 (Demand falls gradually due to a declining population) matches with B (Macro risk). That demand falls gradually due to a declining population is a macro risk because it impacts all business and economic activities.

    Option 2 (Consumer tastes shift to favor locally manufactured apparel) matches with C (Industry risk). That consumer tastes shift to favor locally manufactured apparel is an industry risk that impacts all apparel manufacturing business in similar fashion.

    Option 3 (The company faces uncertainty about future demand as it hires a new chief designer and makes changes to its top-selling products) matches with A (Company-specific risk). That the company faces uncertainty about future demand as it hires a new chief designer and makes changes to its top-selling products is a company-specific risk because it is within the company management's direct control and does not impact other businesses.

11. C is correct. A company with consistent operating margins and a stable market share in a highly specialized business embarks on a significant and ambitious strategic change. Its success will depend entirely on how well management succeeds in delivering on its objective by improving margins (either by increasing prices or reducing costs) and taking market share from its competitors. Considering the relatively small size of the business, it may be difficult. Considering that many manufacturing businesses in the same industry typically operate around similar margins, any margin improvement may be difficult. That a manufacturer replaces aging factory machinery with similar but more efficient equipment is not an example of execution risk; it is part of regular improvement and capital investment. That a marketer of high-fashion pet accessories tests the market to see if there is demand for glamourous dog harnesses made with faux fur is a standard and common expansion of an existing product line with limited risk.

12. A is correct. Reducing prices decreases the business's margin, and as such, it increases its sensitivity to changes in demand, revenue, and costs and its operating leverage. The choice between debt and equity financing has no bearing on operating leverage, although it should be noted that interest expenses on debt are contractually determined payments, while dividends are discretionary payments. Using casual labor rather than a salaried work force reduces the fixed employee expenses, which reduces operating leverage.

13. C is correct. Entering a sale–leaseback transaction for the company's head office building increases financial leverage. The company sells assets with the obligation to repurchase the assets in the future as well as make lease payments. These

transactions increase its financial leverage. Additionally, sale and leaseback transactions reduce the business's overall asset base, which, in turn, reduces its ability to add more debt should the company need to raise debt. Cutting prices reduces the profit margin for the business, thereby increasing operating leverage. Replacing short-term debt with long-term debt does not change financial leverage: Debt, irrespective of maturity, is simply debt.

SOLUTIONS

1. B is correct. Costs to finance the investment are taken into account when the cash flows are discounted at the appropriate COC; including interest costs in the cash flows would result in double-counting the cost of debt.

2. C is correct. The NPV sums the investment's expected cash flows (CF) discounted at the opportunity COC. The NPV calculation is

$$\text{NPV} = \sum_{t=0}^{N} \frac{\text{CF}_t}{(1+r)^t},$$

where
CF_t = the expected net cash flow at time t
N = the investment's projected life
r = the discount rate or opportunity COC

3. A is correct.

$$\text{NPV} = -\$2.2 + \frac{\$1.3}{(1.08)} + \frac{\$1.6}{(1.08)^2} + \frac{\$1.9}{(1.08)^3} + \frac{\$0.8}{(1.08)^4} = \$2.47 \text{ million}.$$

4. C is correct. The IRR is computed by identifying all cash flows and solving for the rate that makes the NPV of those cash flows equal to zero.

5. B is correct. Using either the IRR function in Excel or a financial calculator, IRR is determined by setting the NPV equal to zero for the cash flows shown in the following table.

Year	0	1	2	3
Cash flow (GBP)	–1,000	200	200	900

6. C is correct.

$$\text{NPV} = -50,000 + \frac{15,000}{1.08} + \frac{15,000}{1.08^2} + \frac{20,000}{1.08^3} + \frac{10,000}{1.08^4} + \frac{5,000}{1.08^5}.$$
$$\text{NPV} = -50,000 + 13,888.89 + 12,860.08 + 15,876.64 + 7,350.30 + 3,402.92.$$
$$\text{NPV} = -50,000 + 53,378.83 = 3,378.83.$$

Using either the IRR function in Excel or a financial calculator, the IRR is 10.88%.

7. B is correct.

$$\text{NPV} = \sum_{t=0}^{3} \frac{\text{CF}_t}{(1+r)^t} = -100 + \frac{40}{1.20} + \frac{80}{1.20^2} + \frac{120}{1.20^3} = \$58.33.$$

8. C is correct. Using a financial calculator or the trial and error method, the IRR is 28.79%. The COC, which is stated as 10%, is not used to solve the problem.

		Present Value			
Year	Cash Flow	28.19%	28.39%	28.59%	28.79%
0	–150,000	–150,000	–150,000	–150,000	–150,000
1	100,000	78,009	77,888	77,767	77,646

		Present Value			
Year	**Cash Flow**	**28.19%**	**28.39%**	**28.59%**	**28.79%**
2	120,000	73,025	72,798	72,572	72,346
Total		1,034	686	338	−8

Year	**0**	**1**	**2**
Cash flow	−150,000	100,000	120,000

Using the IRR function in Excel results in a more precise IRR of 28.7854% with a total present value closer to zero.

9. A is correct.

$$\text{NPV} = -750 + \sum_{t=1}^{7} \frac{175}{1.10^t} = -750 + 851.97 = 101.97 \text{ million won.}$$

Using either the IRR function in Excel or a financial calculator, the IRR is 14.02%. Using a financial calculator, present value is −750, $N = 7$, and PMT = 175.

10. B is correct. The IRR would stay the same because both the initial outlay and the after-tax cash flows double, so the return on each dollar invested would remain the same. All the cash flows and their present values double. The difference between the total present value of the future cash flows and the initial outlay (the NPV) also doubles.

11. C is correct. There are many factors that can affect the stock price, including whether Ms. Ndereba's analysis indicates that the project is more or less profitable than investors expected.

12. A is correct. Because all Bearing's projects have a positive NPV, they are all providing a return that is greater than the opportunity COC. Therefore, the ROIC must be greater than the COC.

13. C is correct. When valuing mutually exclusive investments, the decision should be made with the NPV method because this method uses the most realistic discount rate—namely, the opportunity cost of funds. In this example, the reinvestment rate for the NPV method (here, 10%) is more realistic than the reinvestment rate for the IRR method (here, 21.86% or 18.92%).

14. B is correct. For these investments, a discount rate of 13.16% would yield the same NPV for both (an NPV of 6.73).

15. C is correct. Discount rates of 0% and approximately 61.8% both give an NPV of zero.

Rate	**0%**	**20%**	**40%**	**60%**	**61.8%**	**80%**	**100%**
NPV	0.00	4.40	3.21	0.29	0.00	−3.02	−6.25

16. C is correct. Expansion projects increase the scale of a firm's existing activities and/or extend a firm's reach into new product or service categories and markets, in the hopes of generating longer-term expected gains. Regulatory/compliance projects are required for the business to continue operations but otherwise might not be undertaken by a company. Going concern projects benefit the company through improved efficiencies and cost savings over time.

17. B is correct.
If demand is "high," the NPV is as follows:

$$\text{NPV} = -190 + \sum_{t=1}^{10} \frac{40}{1.10^t} = \text{C\$55.78 million.}$$

If demand is "low," the NPV is

$$\text{NPV} = -190 + \sum_{t=1}^{10} \frac{20}{1.10^t} = -\text{C\$67.11 million.}$$

The expected NPV is 0.50(55.78) + 0.50(−67.11) = −C$5.66 million.

18. B is correct. The additional NPV of adding shifts if demand is "high" is

$$\text{NPV} = \sum_{t=2}^{10} \frac{5}{1.10^t} = \text{C\$26.18 million.}$$

If demand is "low," the production-flexibility option will not be exercised. The optimal decision is to add shifts only if demand is high.
Because the production-flexibility option is exercised only when demand is high, which happens 50% of the time, the expected present value of adding shifts is

NPV = 0.50(26.18) = CAD3.09 million.

The total NPV of the initial project and the production-flexibility option is

NPV = –CAD5.66 million + CAD13.09 million = CAD7.43 million.

The option to add shifts, handled optimally, adds sufficient value to make this a positive-NPV project.

19. B is correct. In valuing investments, expected cash flows should be discounted at required rates of return that reflect their risk, not at a risk-free rate that ignores risk. NPV is superior to IRR. Choosing projects based on IRR might cause the company to concentrate on short-term investments that do not maximize the company's NPV.

SOLUTIONS

1. C is correct. Although accounts payable do not charge an explicit interest rate, the cost of accounts payable is reflected in the costs of the services or products purchased and in the costs of any discounts not taken. Accounts payable can have a very high implicit cost. Similarly, equity financing is not free. A required return is expected on shareholder financing just as on any other form of financing.

2. C is correct. A revolver is a short-term borrowing facility in which a bank allows the firm to borrow and repay loans during the life of the line of credit.

3. A is correct. SOA must issue 19 million of bonds.

Source	Amount (local, millions)
Accounts payable	6
Bank loan against receivables	8
Short-term note	14
Net income + depreciation – dividends	28
Total sources	56

The firm requires 75 million of financing in local currency terms. Given that the planned sources (before bond financing or repurchases) total 56 million, SOA will need to issue 19 million of new bonds.

4. C is correct. In a moderate approach, XY1 would attempt to match the duration of the assets with the liabilities. This would allow the company to use long-term financing for permanent working capital needs while at the same time looking to minimize interest expense through the use of more flexible short-term financing on an as-needed basis.

5. C is correct. Kwam must sell the entire real estate property because the two primary sources (marketable securities and bonds) will not raise the needed €120 million. A is incorrect because it assumes a fractional real estate sale. The real estate sale will raise a net of €63 million (€70 million minus 10% liquidation expenses). To raise the rest of the funds needed (€120 million – €63 million = €57 million), Kwam can sell €57 million of marketable securities, which have minimal liquidation/brokerage costs.

6. C is correct. A longer average collection period will certainly occur. Higher cash balances and a lower level of uncollectible accounts will not occur.

7. B is correct. Reducing the average collection period would speed up receipts and improve the firm's liquidity position. The other two suggestions would worsen the firm's liquidity position.

8. A is correct. Relative to peers, Company H has the highest set of ratios. Relative to historical average ratios, Company H's recent ratios show the greatest increases. The cash ratio is the most relevant for judging liquidity, and Company H's cash ratio is quite high.

9. C is correct. Company S's cash conversion cycle nearly doubled over recent years, while the cash conversion cycles for Companies H and J are nearly unchanged. The days of inventory on hand and days of receivables both increased substan-

tially for Company S, and its days of payables outstanding decreased very slightly. The net effect was the large increase in the cash conversion cycle. Although changes occurred in the components of the cash conversion cycles for Companies H and J, the net effect on their cash conversion cycles was small.

10. C is correct. Accounts payable and accruals are internal and a source of cash as they are payments not yet made to suppliers, employees, or other related parties. Lines of credit are external sources of financing. Accounts receivable and inventory are internal uses of cash since a company must access financing to purchase inventory and lend to its customers.