LO.a: Compare top-down, bottom-up, and hybrid approaches for developing inputs to equity valuation models.

1. Pharma Inc. is a large-cap company in the pharmaceutical industry. Rudy is an analyst at Bears Investment and is forecasting Pharma Inc.'s revenue for valuation purposes. He estimates the total market for drugs and calculates Pharma Inc.'s market share to be 12%. The drug market is expected to grow to USD 25 billion next year from the current level of USD 20 billion. Based on the total market value and Pharma Inc.'s market share, Rudy calculates Pharma Inc.'s revenue for next year. The adopted approach is *most likely* classified as a:
   A. top-down approach.
   B. bottom-up approach.
   C. hybrid approach.

2. Which of the following is *not* an example of a bottom-up approach to forecasting revenue?
   A. Time series forecast.
   B. Return on capital based forecast.
   C. Growth relative to GDP growth.

LO.b: Compare "growth relative to GDP growth" and "market growth and market share" approaches to forecasting revenue.

3. Which of the following statements is *least likely* true?
   A. In the growth relative to GDP growth approach, the company's position in the industrial lifecycle is an important input to determine growth.
   B. In the market growth and market share approach, the analysis involves estimating first the revenue growth in a particular market.
   C. Both the "growth relative to GDP growth" and "market growth and market share" approaches begin with estimating the growth in company's capacity.

4. Which of the following is an example of a top-down approach to forecasting revenue?
   A. Growth relative to GDP growth.
   B. Market growth and market share.
   C. Both growth relative to GDP growth and market growth and market share.

LO.c: Evaluate whether economies of scale are present in an industry by analyzing operating margins and sales levels.

5. ABC Ltd. is a leading manufacturer of shoes. Over the past three years the company has seen rapid growth in revenue and margins which has led to higher profits. Upon a closer examination of the financial statements, an analyst finds that the output of the company has declined over the last three years due to production issues but the company has been able to raise prices as competitors withdrew from market. At the same time, raw material prices fell due to oversupply. Which of the following statements is *most likely* true?
   A. The company has seen growth in revenue and margins so is experiencing economies of scale.

B. The increase in profits is not attributable to economies of scale.
C. The benefits of economies of scale will decrease if the company's raw material costs increase.

LO.d: Forecast the following costs: cost of goods sold, selling general and administrative costs, financing costs, and income taxes.

6. John Don, an analyst at Prime Capital, is forecasting the earnings of B&B Foods for the upcoming year. He collects the information related to the recent income statement given below:

B&B Foods Income Statement for the Year 2015

	$ '000
Sales	50,000
Cost of Goods Sold	24,000
Gross Profit	**26,000**
Selling Expenses	5,000
Administrative Expenses	8,000
Finance Cost	4,000
Profit before tax	**9,000**
Taxation expense	2,700
Profit after tax	**6,300**

- Sales are expected to grow by 20%.
- Gross profit margin is expected to increase by 0.5%.
- Selling expenses to remain constant as a percentage of sales.
- Administrative expenses are expected to increase by 10%.
- The total debt at the beginning of 2015 was $50,000,000 and during the year the company repaid $4,000,000 of its debt outstanding.

The expected profit after tax for the next year (2016) is *closest* to:
A. $9,600
B. $8,800
C. $9,100

LO.e: Describe approaches to balance sheet modeling.

7. Dura Cement is a large cement producer which provides its product to customers on credit. The company usually maintains its receivables at 60 days of sales. In the coming year, the management forecasts that sales are expected to decline as demand remains weak. The company decides to allow longer payment periods to customers. Which of the following statements is *most likely* correct?
A. Receivables will decrease.
B. Receivables will increase.
C. The impact on receivables is uncertain.

8. XYZ Co. plans to maintain its total debt-to-asset ratio at 40%. Last year, the total debt amounted to $50,000. This year the company expects to generate an after-tax profit of $5,000

which will be retained. XYZ also plans to raise fresh equity worth $15,000. The total debt by the end of the year is expected to be:

A. $63,333
B. $58,000
C. $50,000

LO.f: Describe the relationship between return on invested capital and competitive advantage.

9. Which of the following is *most likely* to increase return on invested capital?
   A. Discounts offered to increase sales.
   B. Product awareness leads to higher earnings without new investment.
   C. Increase in government regulations.

10. When comparing performance of companies in countries with different tax structures, which of the following is the *most* useful metric?
    A. Return on equity.
    B. Return on invested capital.
    C. Return on capital employed.

11. Which of the following statements is true?
    A. Return on invested capital is defined as net operating profit divided by the difference between operating assets and operating liabilities
    B. High and persistent levels of ROIC may indicate competitive advantage.
    C. ROIC is unaffected by economies of scale

LO.g: Explain how competitive factors affect prices and costs.

12. Which of the following will *least likely* result in greater pricing power for companies in an industry?
    A. Availability of fewer substitutes.
    B. High switching costs.
    C. Identical product offerings.

13. Which of the following will *most likely* result in lower input costs for a company?
    A. Fewer options available for raw material.
    B. Large relative size of the supplier.
    C. Fragmented supplier industry.

LO.h: Judge the competitive position of a company based on a Porter's five forces analysis.

14. Rene Co. sells plastic crockery. It operates in a market where customers have low switching costs and products are not very different. However, capital investment is not very high. The company *most likely*:
    A. faces low threat of new entrants.
    B. finds it difficult to exit the industry.

C. has low pricing power.

15. Which of the following *most likely* causes a lower threat of new entrants to an industry?
    A. The presence of higher returns than other industries.
    B. Higher investment costs relative to other industries.
    C. Absence of government regulations.

LO.i: Explain how to forecast industry and company sales and costs when they are subject to price inflation or deflation.

16. Which of the following would find it the easiest to pass on inflation cost to customers?
    A. A packaged milk supplier selling to large retail stores.
    B. A bespoke suit designer serving high end customers.
    C. A tool supplier operating in an industry with many suppliers.

17. Company A sells two products X and Y. Sales volume and price data along with expected price inflation for each is given below:

	X	Y
Total Sales	$75,000	$105,000
Expected volumetric growth	6%	8%
Expected price change	5%	-2%

The total expected sales of Company A are *closest* to:
    A. $185,000
    B. $195,000
    C. $205,000

LO.j: Evaluate the effects of technological developments on demand, selling prices, costs, and margins.

18. Which of the following can be affected by technological changes?
    A. Demand of a product only.
    B. Quantity supplied of a product only.
    C. Both demand and quantity supplied of a product.

LO.k: Explain considerations in the choice of an explicit forecast horizon.

19. Which of the following statements is *most likely* true?
    A. Projected holding period is not a relevant factor in the choice of a forecast period.
    B. Cyclicality of an industry is not a relevant factor in the choice of a forecast period.
    C. Investor's portfolio turnover is a relevant factor in the choice of a forecast period.

LO.l: Explain an analyst's choices in developing projections beyond the short-term forecast horizon.

20. Which of the following factors should an analyst *most likely* consider while establishing a terminal value multiple?

A. Historical multiples even if future growth differs from past.
B. Comparative multiples of other industries.
C. Long-term growth expectations and required rates of return of the company under consideration

21. Which of the following statements is *most likely* true?
    A. Cash flow used to calculate the terminal value as a perpetuity should not be a normalized cash flow.
    B. Economic disruptions, regulations and technology can be potential inflection points in developing a long term forecast.
    C. The type of industry is irrelevant when determining a long term growth rate.

22. Which of the following is *least likely* a method used to calculate terminal value for a company expected to last indefinitely?
    A. Historical-multiples approach.
    B. DCF approach.
    C. Liquidation value.

LO.m: Demonstrate the development of a sales-based pro forma company model.

23. Which of the following is *most likely* a starting point in developing a pro forma company model?
    A. Industry overview.
    B. Medium term cash flow forecast.
    C. Estimating terminal value.

24. Which of the following statements is *most likely* true?
    A. Revenue forecasts can be done with a combination of top-down and bottom-up approaches.
    B. A bottom-up approach to forecasting revenue is more accurate than a top-down approach because it focuses on the company's individual product forecasts.
    C. A top-down approach to forecasting revenue is more accurate than a bottom-up approach because it focuses on important economic variables impacting the company.

25. Company D made sales of $65,000 last year and cost of goods sold were $39,000. Sales are expected to increase by 10% whereas costs of goods sold are expected to decline by 1% as a percentage of sales. The expected gross margin is *closest* to:
    A. 40%
    B. 41%
    C. 42%

Solutions

1. A is correct. The mentioned approach is the market growth and market share approach which is a top-down approach. Section 2.1.1.

2. C is correct. Growth relative to GDP growth is a top-down approach. Section 2.1.2.

3. C is correct. This statement is not true because estimating capacity growth is a bottom-up approach whereas both "growth relative to GDP growth" and "market growth and market share" approaches are top-down approaches. Section 2.1.1.

4. C is correct. Both growth relative to GDP growth and market growth and market share are examples of top-down approaches. Section 2.1.1.

5. B is correct. The increase in margins is due to lower raw material costs and higher per unit price. This does not constitute economies of scale as economies of scale occur when the company's average costs per unit of a good or service produced falls as production increases. Section 2.2.

6. C is correct. The calculation in ($ thousands) is as follows:

	2015	Comment	2016
Sales	50,000	Increase by 20%	60,000
Cost of Goods Sold	24,000	Difference between Sales and COGS	28,500
Gross Profit	26,000	52% margin last year, 52.5% next year	31,500
Selling Expenses	5,000	10% as percentage of sales	6,000
Administrative Expenses	8,000	Increase by 10%	8,800
Finance Cost	4,000	50,000,000 debt implies 8% interest, next year finance cost would be 8% x 46,000,000	3,680
Profit before tax	9,000		13,020
Taxation expense	2,700	30% tax rate	3,906
Profit after tax	6,300		9,114

Sections 2.2, 2.3.

7. C is correct. As sales will decrease but receivable days will increase, the impact on receivables is uncertain. Section 2.5.

8. A is correct. Based on a debt-to-asset ratio of 0.40 and debt of $50,000, the value of assets is = $125,000 out of which equity is 125,000 - 50,000 = $75,000. The profit and fresh issue will increase equity by $20,000 from 75,000 to 95,000. As equity is 60% of assets, total assets will be 95,000/0.6 = 158,333. Hence debt will be 158,333 - 95,000 = 63,333. Section 2.5.

9. B is correct. Higher earnings without capital investment increases return on capital. Discounts offered do not guarantee higher sales and ROIC. Increase in regulations usually result in tighter profit margins. Section 2.5.

10. C is correct. The return on capital employed (ROCE) is a pre-tax return measure that can be useful in the peer comparison of companies in countries with different tax structures. Section 2.5.

11. B is correct. High and consistent ROIC implies a competitive advantage. Section 2.5.

12. C is correct. A uniform or identical product offerings by incumbent companies limits pricing power. Section 3.

13. C is correct. When suppliers are fragmented, they have limited pricing power therefore input costs are likely to be lower. Section 3.

14. C is correct. When switching costs are low and product offerings are more or less identical, pricing power of companies is limited. Section 3.

15. B is correct. When higher investment costs exist, competitors generally find it difficult to enter the industry. Section 3.

16. B is correct. A customized suit supplier sells unique products where inflation can be passed on easily to customers. A tool supplier will find it difficult to do so due to large number of competing suppliers and a milk supplier to large retail stores will have low bargaining power due to the large size of the customer. Section 3.

17. B is correct. Total expected sales for X =$75{,}000(1.06)(1.05) = \$83{,}475.$. Total expected sales for Y =$105{,}000(1.08)(1-0.02) = \$111{,}132.$ Total expected sales for Company A = $\$83{,}475 + \$111{,}132 = \$194{,}607.$ Section 4.1.2.

18. C is correct. Both demand and/or quantity supplied of a product can be affected by technological changes. Section 5.

19. C is correct. Investor's portfolio turnover is a relevant factor in the choice of a forecast period. Section 6.

20. C is correct. Long term growth rates and required return should be considered when developing terminal value multiples. Past multiples can often be a poor estimate of terminal value multiples when business dynamics are subject to change. Comparative multiples should be used from the same industry as the subject company. Section 6.

21. B is correct. It is true that economic disruptions, regulations and technology can be potential inflection points in developing a long-term forecast. Section 6.

22. C is correct. Liquidation value represents value from selling the company's assets. It is not used for companies expected to last indefinitely. Section 6.

23. A is correct. A model typically starts with an industry overview. Short term cash flow forecasts are then done followed by medium term forecasts. Terminal value calculation is typically done at the very end. Section 7.1.

24. A is correct. Revenue forecasts can be done with a combination of top-down and bottom-up approaches. Neither approach can be labeled more accurate than the other. Section 7.3.1.

25. B is correct. Expected sales are 65,000 x 1.1 = $71,500. Last year cost of goods sold were 39,000/65,000 = 60% of sales. Next year they would be 59% of sales = 71,500 x 0.59 = 42,185. Gross profit would be 71,500 - 42,185 = 29,315. Gross margin would be 29,315/71,500 = 41%. Section 7.3.2.