

LEARNING OBJECTIVES,
SUMMARY OVERVIEW,
AND PROBLEMS

EQUITY VALUATION: APPLICATIONS AND PROCESSES

PROBLEMS

1. Critique the statement: “No equity investor needs to understand valuation models because real-time market prices for equities are easy to obtain online.”
2. The reading defined intrinsic value as “the value of an asset given a hypothetically complete understanding of the asset’s investment characteristics.” Discuss why “hypothetically” is included in the definition and the practical implication(s).
3.
 - A. Explain why liquidation value is generally not relevant to estimating intrinsic value for profitable companies.
 - B. Explain whether making a going-concern assumption would affect the value placed on a company’s inventory.
4. Explain how the procedure for using a valuation model to infer market expectations about a company’s future growth differs from using the same model to obtain an independent estimate of value.
5. Example 1, based on a study of Intel Corporation that used a present value model (Cornell 2001), examined what future revenue growth rates were consistent with Intel’s stock price of \$61.50 just prior to its earnings announcement, and \$43.31 only five days later. The example states, “Using a conservatively low discount rate, Cornell estimated that Intel’s price before the announcement, \$61.50, was consistent with a forecasted growth rate of 20 percent a year for the subsequent 10 years and then 6 percent per year thereafter.” Discuss the implications of using a higher discount rate than Cornell did.

6. Discuss how understanding a company's business (the first step in equity valuation) might be useful in performing a sensitivity analysis related to a valuation of the company.
7. In a research note on the ordinary shares of the Milan Fashion Group (MFG) dated early July 2007 when a recent price was €7.73 and projected annual dividends were €0.05, an analyst stated a target price of €9.20. The research note did not discuss how the target price was obtained or how it should be interpreted. Assume the target price represents the expected price of MFG. What further specific pieces of information would you need to form an opinion on whether MFG was fairly valued, overvalued, or undervalued?
8. You are researching XMI Corporation (XMI). XMI has shown steady earnings per share growth (18 percent a year during the last seven years) and trades at a very high multiple to earnings (its P/E is currently 40 percent above the average P/E for a group of the most comparable stocks). XMI has generally grown through acquisition, by using XMI stock to purchase other companies whose stock traded at lower P/Es. In investigating the financial disclosures of these acquired companies and talking to industry contacts, you conclude that XMI has been forcing the companies it acquires to accelerate the payment of expenses before the acquisition deals are closed. As one example, XMI asks acquired companies to immediately pay all pending accounts payable, whether or not they are due. Subsequent to the acquisition, XMI reinstitutes normal expense payment patterns.
 - A. What are the effects of XMI's pre-acquisition expensing policies?
 - B. The statement is made that XMI's "P/E is currently 40 percent above the average P/E for a group of the most comparable stocks." What type of valuation model is implicit in that statement?

The following information relates to Questions 9–16

Guardian Capital is a rapidly growing US investment firm. The Guardian Capital research team is responsible for identifying undervalued and overvalued publicly traded equities that have a market capitalization greater than \$500 million.

Due to the rapid growth of assets under management, Guardian Capital recently hired a new analyst, Jack Richardson, to support the research process. At the new analyst orientation meeting, the director of research made the following statements about equity valuation at Guardian:

- Statement 1 "Analysts at Guardian Capital seek to identify mispricing, relying on price eventually converging to intrinsic value. However, convergence of the market price to an analyst's estimate of intrinsic value may not happen within the portfolio manager's investment time horizon. So, besides evidence of mispricing, analysts should look for the presence of a particular market or corporate event,—that is, a catalyst—that will cause the marketplace to re-evaluate the subject firm's prospects."
- Statement 2 "An active investment manager attempts to capture positive alpha. But mispricing of assets is not directly observable. It is therefore important that you understand the possible sources of perceived mispricing."
- Statement 3 "For its distressed securities fund, Guardian Capital screens its investable universe of securities for companies in financial distress."
- Statement 4 "For its core equity fund, Guardian Capital selects financially sound companies that are expected to generate significant positive free cash flow from core business operations within a multiyear forecast horizon."

Statement 5 “Guardian Capital’s research process requires analysts to evaluate the reasonableness of the expectations implied by the market price by comparing the market’s implied expectations to his or her own expectations.”

After the orientation meeting, the director of research asks Richardson to evaluate three companies that are retailers of men’s clothing: Diamond Co., Renaissance Clothing, and Deluxe Men’s Wear.

Richardson starts his analysis by evaluating the characteristics of the men’s retail clothing industry. He finds few barriers to new retail entrants, high intra-industry rivalry among retailers, low product substitution costs for customers, and a large number of wholesale clothing suppliers.

While conducting his analysis, Richardson discovers that Renaissance Clothing included three non-recurring items in their most recent earnings release: a positive litigation settlement, a one-time tax credit, and the gain on the sale of a non-operating asset.

To estimate each firm’s intrinsic value, Richardson applies appropriate discount rates to each firm’s estimated free cash flows over a ten-year time horizon and to the estimated value of the firm at the end of the ten-year horizon.

Michelle Lee, a junior technology analyst at Guardian, asks the director of research for advice as to which valuation model to use for VEGA, a fast growing semiconductor company that is rapidly gaining market share.

The director of research states that “the valuation model selected must be consistent with the characteristics of the company being valued.”

Lee tells the director of research that VEGA is not expected to be profitable for several more years. According to management guidance, when the company turns profitable, it will invest in new product development; as a result, it does not expect to initiate a dividend for an extended period of time. Lee also notes that she expects that certain larger competitors will become interested in acquiring VEGA because of its excellent growth prospects. The director of research advises Lee to consider that in her valuation.

9. Based on Statement 2, which of the following sources of perceived mispricing do active investment managers attempt to identify? The difference between:
 - A. intrinsic value and market price.
 - B. estimated intrinsic value and market price.
 - C. intrinsic value and estimated intrinsic value.
10. With respect to Statements 3 and 4, which of the following measures of value would the distressed securities fund’s analyst consider that a core equity fund analyst might ignore?
 - A. Fair value
 - B. Liquidation value
 - C. Fair market value
11. With respect to Statement 4, which measure of value is *most* relevant for the analyst of the fund described?
 - A. Liquidation value
 - B. Investment value
 - C. Going-concern value
12. According to Statement 5, analysts are expected to use valuation concepts and models to:
 - A. value private businesses.
 - B. render fairness opinions.
 - C. extract market expectations.

13. Based on Richardson's industry analysis, which of the following characteristics of men's retail clothing retailing would *positively* affect its profitability? That industry's:
 - A. entry costs.
 - B. substitution costs.
 - C. number of suppliers.
14. Which of the following statements about the reported earnings of Renaissance Clothing is *most accurate*? Relative to sustainable earnings, reported earnings are likely:
 - A. unbiased.
 - B. upward biased.
 - C. downward biased.
15. Which valuation model is Richardson applying in his analysis of the retailers?
 - A. Relative value
 - B. Absolute value
 - C. Sum-of-the-parts
16. Which valuation model would the director of research *most likely* recommend Lee use to estimate the value of VEGA?
 - A. Free cash flow
 - B. Dividend discount
 - C. P/E relative valuation

CHAPTER 2

RETURN CONCEPTS

PROBLEMS

1. A Canada-based investor buys shares of Toronto-Dominion Bank (Toronto: TD.TO) for C\$72.08 on 15 October 2007 with the intent of holding them for a year. The dividend rate was C\$2.11 per year. The investor actually sells the shares on 5 November 2007 for C\$69.52. The investor notes the following additional facts:
 - No dividends were paid between 15 October and 5 November.
 - The required return on TD.TO equity was 8.7 percent on an annual basis and 0.161 percent on a weekly basis.
 - A. State the lengths of the expected and actual holding-periods.
 - B. Given that TD.TO was fairly priced, calculate the price appreciation return (capital gains yield) anticipated by the investor given his initial expectations and initial expected holding period.
 - C. Calculate the investor's realized return.
 - D. Calculate the realized alpha.
2. The estimated betas for AOL Time Warner (NYSE: AOL), J.P. Morgan Chase & Company (NYSE: JPM), and The Boeing Company (NYSE: BA) are 2.50, 1.50, and 0.80, respectively. The risk-free rate of return is 4.35 percent, and the equity risk premium is 8.04 percent. Calculate the required rates of return for these three stocks using the CAPM.
3. The estimated factor sensitivities of TerraNova Energy to Fama–French factors and the risk premia associated with those factors are given in the table below:

	Factor Sensitivity	Risk Premium (%)
Market factor	1.20	4.5
Size factor	−0.50	2.7
Value factor	−0.15	4.3

- A. Based on the Fama–French model, calculate the required return for TerraNova Energy using these estimates. Assume that the Treasury bill rate is 4.7 percent.
 - B. Describe the expected style characteristics of TerraNova based on its factor sensitivities.
4. Newmont Mining (NYSE: NEM) has an estimated beta of -0.2 . The risk-free rate of return is 4.5 percent, and the equity risk premium is estimated to be 7.5 percent. Using the CAPM, calculate the required rate of return for investors in NEM.
5. An analyst wants to account for financial distress and market-capitalization as well as market risk in his cost of equity estimate for a particular traded company. Which of the following models is *most appropriate* for achieving that objective?
 - A. The capital asset pricing model (CAPM).
 - B. The Fama–French model.
 - C. A macroeconomic factor model.
6. The following facts describe Larsen & Toubro Ltd's component costs of capital and capital structure. Based on the information given, calculate Larsen & Toubro's WACC.

Component Costs of Capital	(%)
Cost of equity based on the CAPM:	15.6
Pretax cost of debt:	8.28
Tax rate:	30
Target weight in capital structure:	Equity 80, Debt 20

The following information relates to Questions 7–12

An equity index is established in 2001 for a country that has relatively recently established a market economy. The index vendor constructed returns for the five years prior to 2001 based on the initial group of companies constituting the index in 2001. Over 2004 to 2006, a series of military confrontations concerning a disputed border disrupted the economy and financial markets. The dispute is conclusively arbitrated at the end of 2006. In total, ten years of equity market return history is available as of the beginning of 2007. The geometric mean return relative to 10-year government bond returns over 10 years is 2 percent per year. The forward dividend yield on the index is 1 percent. Stock returns over 2004 to 2006 reflect the setbacks, but economists predict the country will be on a path of a 4 percent real GDP growth rate by 2009. Earnings in the public corporate sector are expected to grow at a 5 percent per year real growth rate. Consistent with that, the market P/E ratio is expected to grow at 1 percent per year. Although inflation is currently high at 6 percent per year, the long-term forecast is for an inflation rate of 4 percent per year. Although the yield curve has usually been upward sloping, currently the government yield curve is inverted; at the short-end, yields are 9 percent, and at 10-year maturities yields are 7 percent.

7. The inclusion of index returns prior to 2001 would be expected to:
 - A. bias the historical equity risk premium estimate upwards.
 - B. bias the historical equity risk premium estimate downwards.
 - C. have no effect on the historical equity risk premium estimate.

8. The events of 2004 to 2006 would be expected to:
 - A. bias the historical equity risk premium estimate upwards.
 - B. bias the historical equity risk premium estimate downwards.
 - C. have no effect on the historical equity risk premium estimate.
9. In the current interest rate environment, using a required return estimate based on the short-term government bond rate and a historical equity risk premium defined in terms of a short-term government bond rate would be expected to:
 - A. bias long-term required return on equity estimates upwards.
 - B. bias long-term required return on equity estimates downwards.
 - C. have no effect on long-term required return on equity estimates.
10. A supply side estimate of the equity risk premium as presented by The Ibbotson–Chen earnings model is *closest* to:
 - A. 3.2 percent.
 - B. 4.0 percent.
 - C. 4.3 percent.
11. Common stock issues in the above market with average systematic risk are *most likely* to have required rates of return:
 - A. between 2 percent and 7 percent.
 - B. between 7 and 9 percent.
 - C. 9 percent or greater.
12. Which of the following statements is *most accurate*? If two equity issues have the same market risk but the first issue has higher leverage, greater liquidity, and a higher required return, the higher required return is *most likely* the result of the first issue's:
 - A. greater liquidity.
 - B. higher leverage.
 - C. higher leverage and greater liquidity.

Questions 13 through 19 relate to Horizon Asset Management

Judy Chen is the primary portfolio manager of the global equities portfolio at Horizon Asset Management. Lars Johansson, a recently hired equity analyst, has been assigned to Chen to assist her with the portfolio.

Chen recently sold shares of Novo-Gemini, Inc. from the portfolio. Chen tasks Johansson with assessing the return performance of Novo-Gemini, with specific trade information provided in Exhibit 1.

EXHIBIT 1 Novo-Gemini, Inc. Trade Details

1. Novo-Gemini shares were purchased for \$20.75 per share.
2. At the time of purchase, research by Chen suggested that Novo-Gemini shares were expected to sell for \$29.00 per share at the end of a 3-year holding period.
3. At the time of purchase, the required return for Novo-Gemini based upon the capital asset pricing model (CAPM) was estimated to be 12.6% on an annual basis.
4. Exactly 3 years after the purchase date, the shares were sold for \$30.05 per share.
5. No dividends were paid by Novo-Gemini over the 3-year holding period.

Chen explains to Johansson that, at the time of purchase, the CAPM used to estimate a required return for Novo-Gemini incorporated an unadjusted historical equity risk premium estimate for the US equity market. Chen notes that the US equities market has experienced a meaningful string of favorable inflation and productivity surprises in the past. She asks Johansson whether the historical equity risk premium should have been adjusted before estimating the required return for Novo-Gemini.

For another perspective on the reward to bearing risk, Chen asks Johansson to calculate a forward-looking equity risk premium for the US equity market using data on the S&P 500 index in Exhibit 2.

EXHIBIT 2 S&P 500 Index Data

Dividend yield, based on year-ahead aggregate forecasted dividends	1.2%
Consensus long-term earnings growth rate	4%
20-year US government bond yield	3%

Chen is now considering adding shares of Bezak, Inc. to the portfolio. Chen asks Johansson to calculate Bezak's weighted average cost of capital using the CAPM with the information provided in Exhibit 3.

EXHIBIT 3 Bezak, Inc.

Pretax cost of debt	4.9%
Long-term debt as a percent of total capital, at market value	25%
Marginal tax rate	30%
Bezak, Inc. beta	2.00
Estimated equity risk premium	5.5%
Risk-free rate	3.0%

Lastly, Chen asks Johansson to evaluate Twin Industries, a privately owned US company that may initiate a public stock offering. Johansson decides to adapt CAPM to estimate the required return on equity for Twin Industries. Using the MSCI / Standard & Poor's Global Industry Classification Standard (GICS), Johansson identifies a publicly traded peer company with an estimated beta of 1.09 that is much larger but otherwise similar to Twin Industries. Twin Industries is funded 49% by debt, while the publicly traded peer company is funded 60% by debt.

13. Based upon Exhibit 1, the expected three-year holding period return for Novo-Gemini Inc. at the time of purchase was *closest* to:
 - A. 39.76%.
 - B. 42.76%.
 - C. 44.82%.
14. Based upon Exhibit 1, the realized three-year holding period return for Novo-Gemini Inc. was *closest* to:
 - A. 39.76%.
 - B. 42.76%.
 - C. 44.82%.

15. Based on the historical record of surprises in inflation and productivity, the historical equity risk premium for the US equity market, if it is used as an estimate of the forward-looking equity risk premium, should *most likely* be:
 - A. left unchanged.
 - B. adjusted upward.
 - C. adjusted downward.
16. Based on Exhibit 2, the forward-looking estimate for the US equity risk premium is *closest* to:
 - A. 2.2%.
 - B. 5.8%.
 - C. 8.2%.
17. Based on Exhibit 3, and assuming interest on debt is tax-deductible, the weighted average cost of capital (WACC) for Bezak, Inc. is *closest* to:
 - A. 10.87%.
 - B. 11.36%.
 - C. 13.61%.
18. The estimate of beta for Twin Industries is *closest* to:
 - A. 0.44.
 - B. 0.85.
 - C. 0.89.
19. A potential weakness of Johansson's approach to estimating the required return on equity for Twin Industries is that the return estimate:
 - A. does not include a size premium.
 - B. may overstate potential returns over the long term.
 - C. does not consider systematic risk arising from the economics of the industry.

INTRODUCTION TO INDUSTRY AND COMPANY ANALYSIS

PROBLEMS

1. Which of the following is *least likely* to involve industry analysis?
 - A. Sector rotation strategy.
 - B. Top-down fundamental investing.
 - C. Tactical asset allocation strategy.
2. A sector rotation strategy involves investing in a sector by:
 - A. making regular investments in it.
 - B. investing in a pre-selected group of sectors on a rotating basis.
 - C. timing investment to take advantage of business-cycle conditions.
3. Which of the following information about a company would *most likely* depend on an industry analysis? The company's:
 - A. dividend policy.
 - B. competitive environment.
 - C. trends in corporate expenses.
4. Which industry classification system uses a three-tier classification system?
 - A. Russell Global Sectors.
 - B. Industry Classification Benchmark.
 - C. Global Industry Classification Standard.
5. In which sector would a manufacturer of personal care products be classified?
 - A. Health care.
 - B. Consumer staples.
 - C. Consumer discretionary.

6. Which of the following statements about commercial and government industry classification systems is *most* accurate?
 - A. Many commercial classification systems include private for-profit companies.
 - B. Both commercial and government classification systems exclude not-for-profit companies.
 - C. Commercial classification systems are generally updated more frequently than government classification systems.
7. Which of the following is *not* a limitation of the cyclical/non-cyclical descriptive approach to classifying companies?
 - A. A cyclical company may have a growth component in it.
 - B. Business-cycle sensitivity is a discrete phenomenon rather than a continuous spectrum.
 - C. A global company can experience economic expansion in one part of the world while experiencing recession in another part.
8. A company that is sensitive to the business cycle would *most likely*:
 - A. not have growth opportunities.
 - B. experience below-average fluctuation in demand.
 - C. sell products that the customer can purchase at a later date if necessary.
9. Which of the following factors would *most likely* be a limitation of applying business-cycle analysis to global industry analysis?
 - A. Some industries are relatively insensitive to the business cycle.
 - B. Correlations of security returns between different world markets are relatively low.
 - C. One region or country of the world may experience recession while another region experiences expansion.
10. Which of the following statements about peer groups is *most* accurate?
 - A. Constructing a peer group for a company follows a standardized process.
 - B. Commercial industry classification systems often provide a starting point for constructing a peer group.
 - C. A peer group is generally composed of all the companies in the most narrowly defined category used by the commercial industry classification system.
11. With regard to forming a company's peer group, which of the following statements is *not* correct?
 - A. Comments from the management of the company about competitors are generally not used when selecting the peer group.
 - B. The higher the proportion of revenue and operating profit of the peer company derived from business activities similar to the subject company, the more meaningful the comparison.
 - C. Comparing the company's performance measures with those for a potential peer-group company is of limited value when the companies are exposed to different stages of the business cycle.
12. When selecting companies for inclusion in a peer group, a company operating in three different business segments would:
 - A. be in only one peer group.
 - B. possibly be in more than one peer group.
 - C. not be included in any peer group.

13. An industry that *most likely* has both high barriers to entry and high barriers to exit is the:
 - A. restaurant industry.
 - B. advertising industry.
 - C. automobile industry.
14. Which factor is *most likely* associated with stable market share?
 - A. Low switching costs.
 - B. Low barriers to entry.
 - C. Slow pace of product innovation.
15. Which of the following companies *most likely* has the greatest ability to quickly increase its capacity?
 - A. Restaurant.
 - B. Steel producer.
 - C. Legal services provider.
16. A population that is rapidly aging would *most likely* cause the growth rate of the industry producing eye glasses and contact lenses to:
 - A. decrease.
 - B. increase.
 - C. not change.
17. If over a long period of time a country's average level of educational accomplishment increases, this development would *most likely* lead to the country's amount of income spent on consumer discretionary goods to:
 - A. decrease.
 - B. increase.
 - C. not change.
18. If the technology for an industry involves high fixed capital investment, then one way to seek higher profit growth is by pursuing:
 - A. economies of scale.
 - B. diseconomies of scale.
 - C. removal of features that differentiate the product or service provided.
19. Which of the following life-cycle phases is typically characterized by high prices?
 - A. Mature.
 - B. Growth.
 - C. Embryonic.
20. In which of the following life-cycle phases are price wars *most likely* to be absent?
 - A. Mature.
 - B. Decline.
 - C. Growth.
21. When graphically depicting the life-cycle model for an industry as a curve, the variables on the axes are:
 - A. price and time.
 - B. demand and time.
 - C. demand and stage of the life cycle.

22. Which of the following is *most likely* a characteristic of a concentrated industry?
 - A. Infrequent, tacit coordination.
 - B. Difficulty in monitoring other industry members.
 - C. Industry members attempting to avoid competition on price.
23. Which of the following industry characteristics is generally *least likely* to produce high returns on capital?
 - A. High barriers to entry
 - B. High degree of concentration
 - C. Short lead time to build new plants
24. An industry with high barriers to entry and weak pricing power *most likely* has:
 - A. high barriers to exit.
 - B. stable market shares.
 - C. significant numbers of issued patents.
25. Economic value is created for an industry's shareholders when the industry earns a return:
 - A. below the cost of capital.
 - B. equal to the cost of capital.
 - C. above the cost of capital.
26. Which of the following industries is *most likely* to be characterized as concentrated with strong pricing power?
 - A. Asset management.
 - B. Alcoholic beverages.
 - C. Household and personal products.
27. Which of the following industries is *most likely* to be considered to have the lowest barriers to entry?
 - A. Oil services.
 - B. Confections and candy.
 - C. Branded pharmaceuticals.
28. With respect to competitive strategy, a company with a successful cost leadership strategy is *most likely* characterized by:
 - A. a low cost of capital.
 - B. reduced market share.
 - C. the ability to offer products at higher prices than competitors.
29. When conducting a company analysis, the analysis of demand for a company's product is *least likely* to consider the:
 - A. company's cost structure.
 - B. motivations of the customer base.
 - C. product's differentiating characteristics.
30. Which of the following statements about company analysis is *most* accurate?
 - A. The complexity of spreadsheet modeling ensures precise forecasts of financial statements.
 - B. The interpretation of financial ratios should focus on comparing the company's results over time but not with competitors.
 - C. The corporate profile would include a description of the company's business, investment activities, governance, and strengths and weaknesses.

CHAPTER 4

INDUSTRY AND COMPANY ANALYSIS

PROBLEMS

The following information relates to Questions 1–6

Angela Green, an investment manager at Horizon Investments, intends to hire a new investment analyst. After conducting initial interviews, Green has narrowed the pool to three candidates. She plans to conduct second interviews to further assess the candidates' knowledge of industry and company analysis.

Prior to the second interviews, Green asks the candidates to analyze Chrome Network Systems, a company that manufactures internet networking products. Each candidate is provided Chrome's financial information presented in Exhibit 1.

EXHIBIT 1 Chrome Network Systems Selected Financial Information (in millions of \$)

	Year Ended:		
	2010	2011	2012
Net sales	46.8	50.5	53.9
Cost of sales	18.2	18.4	18.8
Gross profit	28.6	32.1	35.1
Selling, general, and administrative (SG&A) expenses	19.3	22.5	25.1
Operating income	9.3	9.6	10.0
Interest expense	0.5	0.7	0.6
Income before provision for income tax	8.8	8.9	9.4
Provision for income taxes	2.8	2.8	3.1
Net income	6.0	6.1	6.3

Green asks each candidate to forecast the 2013 income statement for Chrome and to outline the key assumptions used in their analysis. The job candidates are told to include Horizon's

economic outlook for 2013 in their analysis, which assumes nominal GDP growth of 3.6%, based on expectations of real GDP growth of 1.6% and inflation of 2.0%.

Green receives the models from each of the candidates and schedules second interviews. To prepare for the interviews, Green compiles a summary of the candidates' key assumptions in Exhibit 2.

EXHIBIT 2 Summary of Key Assumptions Used in Candidates' Models

Metric	Candidate A	Candidate B	Candidate C
Net sales	Net sales will grow at the average annual growth rate in net sales over the 2010–2012 time period.	Industry sales will grow at the same rate as nominal GDP, but Chrome will have a 2 percentage points decline in market share.	Net sales will grow 50 basis points slower than nominal GDP.
Cost of sales	2013 gross margin will be same as the average annual gross margin over the 2010–2012 time period.	2013 gross margin will decline as costs increase by expected inflation.	2013 gross margin will increase by 20 basis points from 2012.
Selling, general, and administrative (SG&A) expenses	2013 SG&A/net sales ratio will be the same as the average ratio over the 2010–2012 time period.	2013 SG&A will grow at the rate of inflation.	2013 SG&A/net sales ratio will be the same as the 2012 ratio.
Interest expense	2013 interest expense assumes the effective interest rate will be the same as the 2012 rate.	2013 interest expense will be the same as the 2012 interest expense.	2013 interest expense will be the same as the average expense over the 2010–2012 time period.
Income taxes	2013 effective tax rate will be the same as the 2012 rate.	2013 effective tax rate will equal the blended statutory rate of 30%.	2013 effective tax rate will be the same as the average effective tax rate over the 2010–2012 time period.

- Based on Exhibit 1, which of the following provides the strongest evidence that Chrome displays economies of scale?
 - Increasing net sales
 - Profit margins that are increasing with net sales
 - Gross profit margins that are increasing with net sales
- Based on Exhibit 2, the job candidate *most likely* to be using a bottom-up approach to model net sales is:
 - Candidate A.
 - Candidate B.
 - Candidate C.
- Based on Exhibit 2, the modeling approach used by Candidate B to project future net sales is *most accurately* classified as a:
 - hybrid approach.
 - top-down approach.
 - bottom-up approach.
- Based on Exhibits 1 and 2, Candidate C's forecast for cost of sales in 2013 is *closest* to:
 - \$18.3 million.
 - \$18.9 million.
 - \$19.3 million.

5. Based on Exhibits 1 and 2, Candidate A's forecast for selling, general, and administrative expenses in 2013 is *closest* to:
 - A. \$23.8 million.
 - B. \$25.5 million.
 - C. \$27.4 million.
6. Based on Exhibit 2, forecasted interest expense will reflect changes in Chrome's debt level under the forecast assumptions used by:
 - A. Candidate A.
 - B. Candidate B.
 - C. Candidate C.

The following information relates to Questions 7–12

Nigel French, an analyst at Taurus Investment Management, is analyzing Archway Technologies, a manufacturer of luxury electronic auto equipment, at the request of his supervisor, Lukas Wright. French is asked to evaluate Archway's profitability over the past five years relative to its two main competitors, which are located in different countries with significantly different tax structures.

French begins by assessing Archway's competitive position within the luxury electronic auto equipment industry using Porter's five forces framework. A summary of French's industry analysis is presented in Exhibit 3.

EXHIBIT 3 Analysis of Luxury Electronic Auto Equipment Industry Using Porter's Five Forces Framework

Force	Factors to Consider
Threat of substitutes	Customer switching costs are high
Rivalry	Archway holds 60% of world market share; each of its two main competitors holds 15%
Bargaining power of suppliers	Primary inputs are considered basic commodities, and there are a large number of suppliers
Bargaining power of buyers	Luxury electronic auto equipment is very specialized (non-standardized)
Threat of new entrants	High fixed costs to enter industry

French notes that for the year just ended (2014), Archway's cost of goods sold was 30% of sales. To forecast Archway's income statement for 2015, French assumes that all companies in the industry will experience an inflation rate of 8% on the cost of goods sold. Exhibit 4 shows French's forecasts relating to Archway's price and volume changes.

EXHIBIT 4 Archway's 2015 Forecasted Price and Volume Changes

Average price increase per unit	5.00%
Volume growth	−3.00%

After putting together income statement projections for Archway, French forecasts Archway's balance sheet items; he uses Archway's historical efficiency ratios to forecast the company's working capital accounts.

Based on his financial forecast for Archway, French estimates a terminal value using a valuation multiple based on the company's average price-to-earnings multiple (P/E) over the past five years. Wright discusses with French how the terminal value estimate is sensitive to key assumptions about the company's future prospects. Wright asks French:

"What change in the calculation of the terminal value would you make if a technological development that would adversely affect Archway was forecast to occur sometime beyond your financial forecast horizon?"

7. Which return metric should French use to assess Archway's five-year historic performance relative to its competitors?
 - A. Return on equity
 - B. Return on invested capital
 - C. Return on capital employed
8. Based on the current competitive landscape presented in Exhibit 3, French should conclude that Archway's ability to:
 - A. pass along price increases is high.
 - B. demand lower input prices from suppliers is low.
 - C. generate above-average returns on invested capital is low.
9. Based on the current competitive landscape presented in Exhibit 3, Archway's operating profit margins over the forecast horizon are *least likely* to:
 - A. decrease.
 - B. remain constant.
 - C. increase.
10. Based on Exhibit 4, Archway's forecasted gross profit margin for 2015 is *closest* to:
 - A. 62.7%.
 - B. 67.0%.
 - C. 69.1%.
11. French's approach to forecasting Archway's working capital accounts would be *most likely* classified as a:
 - A. hybrid approach.
 - B. top-down approach.
 - C. bottom-up approach.
12. The *most appropriate* response to Wright's question about the technological development is to:
 - A. increase the required return.
 - B. decrease the price-to-earnings multiple.
 - C. decrease the perpetual growth rate.

The following information relates to Questions 13–18

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