Questions 13–18 relate to Martin Hagemann.

Martin Hagemann, CFA, works for a large brokerage firm in Frankfurt, Germany. Hagemann has been hired by Tryssen AG, a global research-based company that is preparing to go public after a long history of operating privately. The need to raise substantial amounts of capital to fund research and development activities is seen as the key motivation for the change in policy. Tryssen is engaged in the discovery, development, manufacture, marketing, and sale of medical products.

Hagemann's first task is to recommend an exchange upon which Tryssen stock can be traded. One possibility is the Deutsche Bourse. The Deutsche Bourse operates primarily as a continuous order-driven system. Another alternative that Tryssen is considering is to list on a different exchange that operates as a price-driven system.

As an alternative, Tryssen may choose to list as an American Depository Receipt (ADR). ADRs are negotiable U.S. securities that usually represent a non-U.S. based company's publicly traded equity. Although typically denominated in U.S. dollars, depository receipts can also be denominated in euros. Depository receipts can be eligible to trade on all U.S. stock exchanges as well as on many European stock exchanges.

The increasing demand for depository receipts is driven by the desire of individual and institutional investors to diversify their portfolios, reduce risk, and invest internationally in the most efficient manner possible. While most investors recognize the benefits of global diversification, there are many challenges presented when investing directly in local trading markets. Obstacles can include inefficient trade settlements, uncertain custody services, and costly currency conversions. Depository receipts overcome many of the inherent operational and custodial hurdles inherent in international investing. Tryssen has decided to access the U.S. market by involving itself in an ADR program. Tryssen has decided to save itself a lot of trouble, however, by not complying with SEC registration and reporting requirements.

As an alternative to ADRs, investors interested in increasing their exposure to international investments can choose to acquire exchange traded funds (ETFs). Hagemann researches the advantages and disadvantages of ETFs.

Execution costs are always a concern, and perhaps even more so for international investors. At the present time, Tryssen AG is most concerned with how reliably it can estimate trading costs. As part of the cost estimation process, Hagemann is asked to provide a report on the advantages and disadvantages of techniques used to reduce execution costs.

Trysse AG proceeds to list on the Frankfurt exchange, and a U.S. affiliate of Hagemann's company starts to aggressively promote the stock. A U.S. investor buys 200 shares of Tryssen at a price of €20 per share. At time of purchase, the exchange rate is €1 = \$1.15. One month later Tryssen pays a dividend of €0.25 per share, and investors are subject to a withholding tax of 20%. The U.S. investor is eligible to claim a tax credit of $0.06 per share. At the time the dividend was paid, the shares had jumped to €24 each and the U.S. dollar had weakened to €1 = $1.20. The shares were sold just after the dividend was paid.

13. Which type of ADR is Tryssen *most likely* to undertake?
    A. Sponsored Level I ADR.
    B. Sponsored Level II ADR.
    C. Sponsored Level III ADR.

14. Which of the following *best* describes a comparative advantage of a price-driven system over an order-driven system?
    A. Price-driven trading is less costly to administer.
    B. Price-driven systems generally provide better liquidity for large block trades.
    C. In a price-driven system, the dealer receives a free option when a firm quote is posted.

15. Which of the following alternatives *best* describes the main benefits of ETFs?
    A. Available domestically; liquid; low cost.
    B. Available domestically; diversified; liquid; low cost; tax efficient.
    C. Low cost; tax efficient; provides an active return in excess of a benchmark.

16. Which of the following combinations *best* describes the four most important execution costs in increasing order of estimation reliability?
    A. Opportunity costs; market impact; commissions; fees and taxes.
    B. Opportunity costs; commissions; fees and taxes; market impact.
    C. Commissions; fees and taxes; market impact; opportunity costs.

17. Which of the following represents a correct advantage and a correct disadvantage for the indicated approach that is aimed at reducing execution costs?
    A. Internal crossing can result in best execution but opportunities are rare.
    B. Principal trades assure immediacy but result in large opportunity costs.
    C. The use of futures reduces opportunity costs but involves additional risk.

18. The capital gain for the U.S. investor in Tryssen stock and the dividend *after* adjusting for the withholding tax but *before* the tax credit are *closest* to:

	Capital gain	Adjusted dividend
A.	$720	$48
B.	$1,160	$48
C.	$1,160	$60

Questions 19–24 relate to JS Investments.

Bryan Galloway is a strategist for JS Investments, a small money management firm. His goal is to analyze industries to determine whether there is justification for over- or under-weighting. His supervisor, Robyn Black, CFA, has asked that he document the process he uses to make his recommendations. However, just to be sure that Galloway understands industry analysis, Black asks him to provide examples of supply and demand analysis. Galloway makes the following two statements to prove that he understands the issue:

Statement 1: In analyzing supply in the tire and rubber industry, it is clear that the sale of each additional automobile will result in the sale of approximately two winter tires.

Statement 2: In analyzing demand for services in the healthcare industry, for every 100 new hospital beds required, 20 additional doctors are needed.

Black is not entirely confident in Galloway's abilities to analyze various industries, but decides to allow him to continue with his analysis.

Four of the largest holdings for JS Investments are a tobacco company, a soda drink company, an oil company, and a cable TV company. Black is worried that government intervention will have a serious impact on future growth for these companies and asks Galloway to further research each of the industries involved. However, just to make sure Galloway can handle this project, Black first asks him to review the basics of industry analysis.

In reviewing the factors affecting pricing considerations, Galloway concludes that all of the following are of direct importance:

Factor 1: Price changes in key supply inputs.

Factor 2: Product segmentation.

Factor 3: Ease of entry into the industry.

Factor 4: Degree of industry concentration.

Galloway also makes the following statements about the characteristics of the phases of the industrial life cycle:

Characteristic 1: Participants compete for market share in a stable industry.

Characteristic 2: Changing tastes have an important impact on the industry.

Characteristic 3: It is not clear that a product will be accepted in the industry.

Characteristic 4: Proper execution of strategy is critical.

Each of the phases is represented by one characteristic.

19. Which of the following choices *best* describes all the elements that Galloway should consider in doing an analysis of external factors in an industry analysis?
    A. Technology; government; social; demographic; foreign.
    B. Social; demographic; foreign; pricing; degree of concentration.
    C. Government; technology; end users; degree of concentration; ease of entry.

20. Excluding external factors, industry analysis is *best* described as including:
    A. industry classification; profitability analysis; innovation turnover.
    B. industry classification; demand analysis; supply analysis; profitability analysis.
    C. profitability analysis; competition analysis; innovation turnover; industry classification.

21. Are the two statements regarding supply and demand analysis correct or incorrect?
    A. Both statements are correct.
    B. Only one of the statements is correct.
    C. Both statements are incorrect.

22. For which of the following global industries would U.S. government involvement *most likely* represent an example of a negative external influence?
    A. The oil industry.
    B. The tobacco industry.
    C. The cable TV industry.

23. Did Galloway correctly identify the factors that directly affect pricing considerations?
    A. Yes.
    B. No, changing tastes do not have a direct impact on pricing.
    C. No, competition for market share in a stable industry is not a pricing consideration.

24. What life cycle phase *most appropriately* reflects Characteristic 1 and Characteristic 3?
    A. Mature and pioneer.
    B. Mature and growth.
    C. Decline and growth

Questions 25–30 relate to Amie Lear.

Amie Lear, CFA, is a quantitative analyst employed by a brokerage firm. She has been assigned by her supervisor to cover a number of different equity and debt investments. One of the investments is Taylor, Inc. (Taylor), a manufacturer of a wide range of children's toys. Based on her extensive analysis, she determines that her expected return on the stock, given Taylor's risks, is 10%. In applying the capital asset pricing model (CAPM), the result is a 12% rate of return.

For her analysis of the returns of Devon, Inc. (Devon), a manufacturer of high-end sports apparel, Lear intends to use the Fama-French model (FFM). Devon is a small-cap growth stock that has traded at a low market-to-book value in recent years. Lear's analysis has provided a wealth of quantitative information to consider. The return on a value-weighted market index minus the risk-free rate is 5.5%, the small-cap return premium is 3.1%, the value return premium is 2.2%, and the liquidity premium is 3.3%. The risk-free rate is 3.4%. The market, size, relative value, and liquidity betas for Devon are 0.7, –0.3, 1.4, and 1.2, respectively. In estimating the appropriate equity risk premium, Lear has chosen to use the Gordon growth model.

Lear's assistant, Doug Saunders, presents her with a report on macroeconomic multifactor models that includes the following two statements:

Statement 1: Business cycle risk represents the unexpected change in the difference between the return of risky corporate bonds and government bonds.

Statement 2: Confidence risk represents the unexpected change in the level of real business activity.

Lear is also attempting to determine the most appropriate method for determining the required return for Densmore, Inc. (Densmore), a closely held company that is considering a debt issue within the next year. The company has not previously issued debt securities to the public, relying instead on bank financing. She realizes that there are a number of models to consider, including the CAPM, multifactor models, and build-up models.

25. Based on Lear's analysis, Taylor's stock is *most likely* to be:
    A. correctly valued.
    B. overvalued.
    C. undervalued.

26. According to the FFM, the estimate of the required return for Devon is *closest* to:
    A. 9.4%.
    B. 11.8%.
    C. 13.4%.

27. Lear's choice of the Gordon growth model is an example of which of the following types of estimates of the equity risk premium?
    A. Historical estimate.
    B. Forward-looking estimate.
    C. Macroeconomic model estimate.

28. Which of the following approaches/methods is *most appropriate* for Lear to consider in determining the required return for Densmore?
    A. Build-up method.
    B. Risk premium approach.
    C. Bond-yield plus risk premium method.

29. Are Saunders' statements regarding the macroeconomic multifactor models correct?
    A. Both statements are incorrect.
    B. Only Statement 1 is correct.
    C. Only Statement 2 is correct.

30. Which of the following statements regarding the models used to estimate the required return is *most accurate*?
    A. A strength of the capital asset pricing model (CAPM) is that it usually has high explanatory power.
    B. A strength of multifactor models is their relative simplicity and ease of calculation.
    C. A weakness of build-up models is that they typically use historical values as estimates that may not be relevant to current market conditions.

11. **B** $g = r - \frac{[B_0 \times (ROE - r)]}{V_0 - B_0}$

B_0 = [(2,100,000 + 2,081,000)] / 130,000 = \$32.16

r = cost of equity = 12.8%

$g = 0.128 - \frac{[32.16 \times (0.14 - 0.128)]}{36 - 32.16}$

= 0.0275 = 2.75%

(Study Session 12, LOS 45.g)

12. **A** The clean surplus relationship (i.e., ending book value = beginning book value + net income – dividends) may not hold when items bypass the income statement and affect equity directly. Foreign currency gains and losses under the current rate method bypass income statement and are reported under shareholders equity as CTA. Changes in the market value of trading securities are included in net income and do not violate the clean surplus relationship. Changes in working capital do not bypass the income statement. [Usually, changes in working capital do not affect the income statement. When they do (e.g., inventory writeoffs, bad debts, etc.), the income statement will not be bypassed.] (Study Session 12, LOS 45.l)

13. **A** Since Tryssen is involved in the ADR program, this is a sponsored ADR. However, since there is no compliance with SEC registration and reporting requirements, this is a Level I sponsored ADR where shares can only be traded over the counter but not on NASDAQ. Sponsored ADRs that comply with SEC registration and reporting requirements are classified as either Level II (where shares can be listed on an official U.S. exchange or on NASDAQ) or as Level III (capital may be raised in the United States via a public offering of the ADRs). (Study Session 10, LOS 36.e)

14. **B** It is generally difficult to execute block trades on order-driven systems due to the lack of depth in the market. Order-driven systems do tend to be less costly to operate, however. There is no central order book in a price-driven system; instead, dealers post bid-ask quotes. Finally, in a price-driven system, the dealer provides rather than receives a free option when a firm quote is posted. (Study Session 10, LOS 36.b)

15. **B** ETFs are available domestically in developed markets. They provide benefits from diversification, as well as being liquid, available at low cost, and tax efficient. However, since they are designed to match a benchmark, they do not provide active returns above a stated benchmark. (Study Session 10, LOS 36.h)

16. **A** When a decision to trade is made, there is an opportunity cost associated with a delay in or a failure to complete the trade. This is the most difficult of the three costs to estimate reliably. Estimation of market impact is somewhat more reliable than the opportunity cost principally because there are fewer factors upon which the estimation depends. The easiest class of execution cost to estimate relates to commissions, fees, and taxes. These costs are generally quite explicit. (Study Session 10, LOS 36.d)

17. **C** The use of futures will reduce the opportunity cost element of execution costs but will also create basis risk if the correlation between the futures contract and the price of the traded security is low. The internal crossing technique is expected to minimize costs but it will not generate the best execution, which is generally associated with an agency trade. With external crossing, anonymity is an advantage. Finally, principal trades minimize opportunity costs. (Study Session 10, LOS 36.d)

18. **B** \$ paid = number of shares × price paid in euros × exchange rate \$/€
= 200 × €20 × \$1.15/€ = \$4,600

\$ received = 200 × €24 × \$1.20/€ = \$5,760

capital gain = \$5,760 – \$4,600 = \$1,160

adjusted dividend = number of shares × dividend in euros × exchange rate \$/€ × (1 – withholding tax)

= 200 × €0.25 × \$1.20/€ × (1 – 0.2) = \$48. (Study Session 10, LOS 36.c)

19. **A** External factors that are important in an industry analysis are technology, government, social, demographic, and foreign. (Study Session 11, LOS 40.d)

20. **B** Apart from external factors, a thorough industry analysis depends on an industry classification, an analysis of demand, an analysis of supply, and a profitability analysis. (Study Session 11, LOS 40.a)

21. **C** The inference in Statement 1 relates to demand, not supply. In Statement 2, the inference relates to supply, not demand. Hence both statements regarding inferences are incorrect. (Study Session 11, LOS 40.e)

22. **B** The U.S. government has taken an active stance against the tobacco industry by declaring it to be a drug and decreeing that the FDA should have jurisdiction over the industry. (Study Session 11, LOS 40.d)

23. **A** The four factors that contribute to pricing as listed in the relevant topic review are: product segmentation, degree of industry concentration, ease of industry entry, and price changes in key supply inputs. Galloway has correctly identified all four. (Study Session 11, LOS 40.f)

24. **A** The four phases that correspond to the order of the listed statements are mature, decline, pioneer, and growth. (Study Session 11, LOS 40.b)

25. **B** Since the required return (12%) as determined by CAPM is greater than Lear's expected return (10%), then Taylor's stock is overvalued. (Study Session 10, LOS 37.a)

26. **A** Required return under FFM = risk-free rate + market beta (equity risk premium) + size beta (small-cap return premium) + value beta (value-return premium)

= 3.4% + 0.7(5.5%) + –0.3(3.1%) + 1.4(2.2%) = 9.4%

Note: The liquidity factor is only applicable to the Pastor-Stambaugh (PS) model. The PS model is otherwise the same as the FFM, save for the addition of the liquidity factor. (Study Session 10, LOS 37.d)

27. **B** The Gordon growth model is a popular method to generate forward-looking estimates using current information and expectations concerning economic and financial variables.

    A historical estimate of the equity risk premium consists of the difference between the historical mean return for a broad-based equity market index and a risk-free rate over a given time period.

    A macroeconomic model estimate of the equity risk premium is based on the relationships between macroeconomic variables and financial variables.
    (Study Session 10, LOS 37.b, c, d)

28. **A** The build-up method is usually applied to closely held companies (such as Densmore) where betas are not readily obtainable.

    The risk premium approach requires betas for its calculations; betas are generally not readily available for closely held companies.

    The bond-yield plus risk premium method is appropriate only if the company has publicly traded debt. The method simply adds a risk premium to the yield to maturity of the company's long-term debt. (Study Session 10, LOS 37.d)

29. **A** Neither of Saunder's statements is correct. *Confidence risk* represents the unexpected change in the difference between the return of risky corporate bonds and government bonds. *Business cycle risk* represents the unexpected change in the level of real business activity. (Study Session 10, LOS 37.d)

30. **C** A weakness (not strength) of the CAPM is its low explanatory power in some cases. Multifactor models usually have higher explanatory power than the CAPM since they use more than one factor, whereas CAPM uses only one factor.

    A weakness (not strength) of multifactor models is that they are typically more complex to use. (Study Session 10, LOS 37.f)

31. **B** The Eurodollar contract is a more effective instrument to hedge LIBOR-based investments because the Eurodollar contract is a LIBOR-based contract. The T-bill contract is based on T-bill rates, which are not perfectly correlated with LIBOR rates, so hedging a LIBOR investment with a T-bill futures contract results in a less effective hedge. Reichmann should take a long position in the Eurodollar contract. If interest rates decrease, his yield on the LIBOR-based security will fall, but the decrease will be offset by gains on a long position in a Eurodollar futures contract. (Study Session 16, LOS 61.g)

32. **A** The interest rate cap pays off when interest rates rise above the cap rate, so a long position in a cap will hedge the risk of an increase in interest rates. A call option on an interest rate also pays off when the index rate at maturity is greater than the strike rate, so a long position in the call option will also hedge the risk of an increase in interest rates. (Study Session 17, LOS 62.a and 64.a)

33. **B** floor payoff = $30,000,000 × (0.060 – 0.058) = $60,000

    (Study Session 17, LOS 64.b)

34. **B** The value of the 2-year floor is equal to the value of a comparable 1-year European put option (a 1-year "floorlet") plus the value of a comparable 2-year put option (a 2-year "floorlet"). A 1-year floorlet with an annual payoff is the same as a 1-year put option on annual LIBOR. Therefore the value of the 2-year put option is equal to the value of the 2-year floor less the value of the 1-year put option: $285,000 – $90,000 = $195,000.
    (Study Session 17, LOS 64.b)