

202012 CFA 二级押题—题目

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Ethical and Professional Standards

The following information relates to 1-6

Jason Richard, CFA, is a portfolio manager at Atlantic Investments with discretionary authority over all of his account. Richard manages 25 emerging market pension funds, he recently had the opportunity to buy 100,000 shares in a publicly listed company whose prospects are considered "above industry norm" by most analysts. The company's shares rarely trade because most managers use a buy-and-hold strategy because of the company's small free float. Before placing the order with his dealer, Richard allocated the shares to be purchased according to the weighted value of each of his clients' portfolios. When it came time to execute the trades, the dealer was able to purchase only 50,000 shares.

After work, Richard meets with Jimmy Lan, one of his best friends, at a bar in the financial district. Jimmy Lan, CFA, is a technology analyst at Pacific Securities, Inc. and is a leading authority on Japanese technology companies. Lan's clients include many leading Japanese equity managers. While still employed at Pacific, Lan makes plans during the weekends to join Atlantic Investments. His plans consist of contacting officials of Atlantic Investments and submitting resume. Once he feels ready to join Atlantic, Lan provides Pacific with his resignation notice. Two weeks later after leaving Pacific, Lan constructs earnings models of the technology companies he previously covered, using the knowledge and experience gained while at Pacific. He then contacts former clients by using public sources and encourages them to become clients of his new firm.

While at a bar, Richard and Lan overhears several employees of a competitor discuss how they will manipulate down the price of a thinly traded micro-cap stock's price over the next few days. Richard's clients have large positions of this stock, so when he arrives at work the next day, he immediately sells all of these holdings. Because he had determined the micro-cap stock was suitable for all of her accounts at its previously higher price, Richard buys back his client's original exposure at the end of the week at the new, lower price.

The following week, Richard plans to manage the portfolios of several family members in exchange for a percentage of each portfolio's profits. Because his family members have extensive portfolios requiring substantial attention, they have requested that Richard provide the services

outside of his employment with Atlantic. Richard notifies his employer in writing of his prospective outside employment. Two weeks later, Richard begins managing the family members' portfolios.

Richard develops an analytical model while he is employed by the former employer three years ago. While at the firm, he systematically documents the assumptions that make up the model as well as his reasoning behind the assumptions. After Richard is hired to be the portfolio manager of Atlantic, Richard takes copies of the records supporting his model to his new firm.

In the next months, Lan's former employer---Pacific Securities lost 5 of its 10 most senior managers, all of whom have cited systemic unethical business practices as the reason for their leaving.

1. To prevent violating any CFA Institute Standards, it would be most appropriate for Richard to reallocate the 50,000 shares purchased by:
 - A. reducing each pension fund's allocation proportionately.
 - B. distributing them equally among all the pension fund portfolios.
 - C. allocating randomly but giving funds left out priority on the next similar type trade.
2. Are Lan's actions regarding in compliance with the Code and Standards?
 - A. No, because the names of former clients, modeling skills, and experience gained by Lan are confidential information of Pacific Securities.
 - B. Yes, assuming he is not in breach of any non-compete agreement signed while at Pacific Securities.
 - C. No, because he is prohibited from engaging in activities related to starting his new business while still employed by Pacific Securities.
3. When trading the micro-cap stocks, Richard least likely violates the CFA Institute Standard relating to:
 - A. Material Nonpublic Information.

- B. Preservation of Confidentiality.
 - C. Market Manipulation.
4. By managing family members' portfolios, which of the following CFA Institute Standards of Professional Conduct has Richard violated?
- A. Conflicts of Interest.
 - B. Additional Compensation.
 - C. Both Additional Compensation and Conflicts of Interest.
5. By taking copies of the records of the analytical model, Richard least likely violates the CFA Institute Standard of Professional Conduct concerning
- A. Record retention
 - B. Loyalty to employer.
 - C. Independence and objectivity
6. To curtail staff turnover by encouraging ethical behavior, it would be least appropriate for Pacific to do which of the following?
- A. Implement a whistleblowing policy
 - B. Encourage staff retention with increased benefits
 - C. Create, implement and monitor a corporate code of ethics

The following information relates to 7-12

Kim Tang, CFA, is a consultant reviewing a hedge fund, CleanTech Research Fund. CleanTech invests in high-risk and volatile “clean technology” companies. CleanTech has adopted the CFA Institute Code of Ethics and Standards of Professional Conduct.

Tang examines the various forms of advertising used by CleanTech to attract new clients. In one of its advertising messages, CleanTech states, “We have a very experienced research team and are proud they are all CFA’s. Several of our managers serve as volunteers for CFA Institute. CFA Institute recognizes their expertise, and as a result, you can rely on our team for superior performance results.”

In reviewing CleanTech’s marketing brochure, Tang reads the following statements:

Statement 1 The share prices of companies in the clean technology sector have increased recently because of the growing awareness of climate change issues and the rising cost of energy. There are many risks in this sector, some of which include new technology that is unproven. Also, the addition or removal of government incentives can make markets dysfunctional. Nevertheless, it is our opinion that returns in this area will continue to be above average for several years. In fact, our proprietary investment analytics software has determined that investments in green transportation companies are likely to double in value in the next six months based on a multiple factor regression analysis. Key risks associated with analytics software include the fact that they rely on historical data and that a set of unknown factors could interfere with the anticipated results. We will earn a 200% return over the next year on one of our solar power company investments based on sales projections we prepared, assuming that last year’s generous tax incentives stay in place.

Statement 2 The CleanTech fund invests in publicly traded and highly liquid companies and is recommended only for investors who are able to assume a high level of risk. Last month, we invested in EnergyAlgae, a “green energy” company. The fund has benefited from the trade because EnergyAlgae partnered with a global energy firm

early last year to create oil from algae. And EnergyAlgae's market capitalization quadrupled shortly after the partnership was formed. Recently, EnergyAlgae also patented a waste plastic-to-oil process that produces oil at less than \$30 a barrel. One of the founders of CleanTech is on the board of EnergyAlgae, and information he gave us on the company's patent process led us to purchase additional stock in EnergyAlgae before the patent became widely publicized with the release of the company's semiannual financial report.* (*Information supporting the statements made in this communication is available upon request.)

When Tang asks CleanTech's founders for supporting documents related to their investment in EnergyAlgae, she is told that this information is based on third-party research from Slar Brokerage (Slar), who maintains all necessary records. Tang completes a due diligence exercise on this research and learns that Slar has used sound assumptions and rigor in its analysis of EnergyAlgae. In particular, Tang learned that Slar used, at a minimum, the following attributes to form the basis of the recommendation: the company's past three years of operational history, current stage of the industry's business cycle, an annual research update, a historical financial analysis, and a one- year earnings forecast.

Tang also learns that the founders of CleanTech are majority shareholders of Slar, which underwrote the public offering of EnergyAlgae. Additionally, CleanTech's analysts inform Tang that they did not need to look at the quality of Slar's research because one of their former colleagues recently left CleanTech and established the research department at the brokerage firm.

In researching EnergyAlgae, Tang finds that potential customers and suppliers of EnergyAlgae are highly skeptical of the claims made regarding the company's respective products. She also contacts several energy companies and is unable to locate anyone who has even heard of EnergyAlgae. When Tang reviews CleanTech's trading activity in EnergyAlgae shares, she finds that CleanTech liquidated its position in EnergyAlgae soon after CleanTech's portfolio managers presented positive views on EnergyAlgae in a number of media interviews. In addition, many of CleanTech's employees also sold their shares in EnergyAlgae immediately after CleanTech sold its shares of the company. The share price of EnergyAlgae dropped dramatically after the stock sales

made by CleanTech and its employees.

7. CleanTech's advertising is least likely in violation of the CFA Institute Standards of Professional Conduct with respect to:
- A. expected performance results.
 - B. managers' volunteer activities.
 - C. use of the CFA designation.
8. In Statement 1, CleanTech management most likely violated the CFA Institute Standards of Professional Conduct with regard to their comments on:
- A. investment analytics software.
 - B. clean technology sector returns.
 - C. solar power company investment.
9. In Statement 2, CleanTech least likely violated which of the following Standards of Professional Conduct?
- A. Suitability
 - B. Material Nonpublic Information
 - C. Misrepresentation
10. To be in compliance with the CFA Institute Standards of Professional Conduct, CleanTech should most likely question the validity of Slar's research on EnergyAlgae for deficiencies in which of the following areas?
- A. Operational analysis
 - B. Earnings projections
 - C. Annual research update
11. Tang's most appropriate course of action concerning the relationship between CleanTech and

Slar is to recommend that CleanTech:

- A. communicate relevant information to all clients.
- B. explain the ownership structure to all clients.
- C. sever the relationship immediately.

12. The EnergyAlgae trades are least likely to have violated the CFA Institute Standards of Professional Conduct with regard to:

- A. the adverse and skeptical opinions of EnergyAlgae products.
- B. the order in which the shares were traded.
- C. share price distortion because of positive media presentations.

Quantitative

The following information relates to 13-17

Anh Liu is an analyst researching whether a company's debt burden affects investors' decision to short the company's stock. She calculates the short interest ratio (the ratio of short interest to average daily share volume, expressed in days) for 50 companies as of the end of 2016 and compares this ratio with the companies' debt ratio (the ratio of total liabilities to total assets, expressed in decimal form).

Liu provides a number of statistics in Exhibit 1. She also estimates a simple regression to investigate the effect of the debt ratio on a company's short interest ratio. The results of this simple regression, including the analysis of variance (ANOVA), are shown in Exhibit 2.

In addition to estimating a regression equation, Liu graphs the 50 observations using a scatterplot, with the short interest ratio on the vertical axis and the debt ratio on the horizontal axis.

Exhibit 1 Summary Statistics		
Statistic	Debt Ratio X_i	Short Interest Ratio Y_i
Sum	19.8550	192.3000
Average	0.3971	3.8460
Sum of squared deviations from the mean	$\sum_{i=1}^n (X_i - \bar{X})^2 = 2.2225$	$\sum_{i=1}^n (Y_i - \bar{Y})^2 = 412.2042$
Sum of cross-products of deviations from the mean	$\sum_{i=1}^n (X_i - \bar{X})(Y_i - \bar{Y}) = -9.2430$	

Exhibit 2 Regression of the Short Interest Ratio on the Debt Ratio			
ANOVA	Degrees of Freedom (df)	Sum of Squares (SS)	Mean Square (MS)

Regression	1	38.4404	?
Residual	48	373.7638	?
Total	49	412.2042	
	Coefficients	Standard Error	t-Statistic
Intercept	5.4975	?	6.5322
Debt ratio	-4.1589	?	-2.2219

13. The correlation between sample X and sample Y is *closest* to:
- A. -0.3053
- B. -0.4944
- C. -0.0101
14. What is the standard error of the intercept?
- A. 1.1882
- B. 1.8718
- C. 0.8416
15. The upper bound for the 95% confidence interval for the coefficient on the debt ratio in the regression is closest to:
- A. -1.0199
- B. -0.3947
- C. 1.4528
16. Based on Exhibit 1, the standard error of the estimate is closest to:
- A. 7.7867
- B. 2.7905

C. 6.2000

17. Based on Liu's regression results in Exhibit 2, the F-statistic for testing whether the slope coefficient is equal to zero is closest to:

A. -2.2219

B. 3.5036

C. 4.9367

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The following information relates to 18-21

Max Busse is an analyst in the research department of a large hedge fund. He was recently asked to develop a model to predict the future exchange rate between two currencies. Busse gathers monthly exchange rate data from the most recent 10-year period and runs a regression based on the following AR(1) model specification:

Regression 1: $x_t = b_0 + b_1x_{t-1} + \varepsilon_t$, where x_t is the exchange rate at time t .

Based on his analysis of the time series and the regression results, Busse reaches the following conclusions:

Conclusion 1 The variance of x_t increases over time.

Conclusion 2 The mean-reverting level is undefined.

Conclusion 3 b_0 does not appear to be significantly different from 0.

Busse decides to do additional analysis by first-differencing the data and running a new regression.

Regression 2: $y_t = b_0 + b_1y_{t-1} + \varepsilon_t$, where $y_t = x_t - x_{t-1}$.

Exhibit 1 shows the regression results.

Exhibit 1 First-Differenced Exchange Rate AR(1) Model: Month-End Observations			
Regression Statistics			
R ²	0.0017		
Standard error	7.3336		
Observations	118		
Durbin–Watson	1.9937		
	Coefficient	Standard Error	t-Statistic
Intercept	−0.8803	0.6792	−1.2960
$x_{t-1} - x_{t-2}$	0.0412	0.0915	0.4504

Autocorrelations of the Residual			
Lag	Autocorrelation	Standard Error	t-Statistic
1	0.0028	0.0921	0.0300
2	0.0205	0.0921	0.2223
3	0.0707	0.0921	0.7684
4	0.0485	0.0921	0.5271

Note: The critical t-statistic at the 5% significance level is 1.98.

Busse runs a different regression. These regression results, along with quarterly sales data for the past five quarters, are presented in Exhibits 3 and 4, respectively.

Exhibit 3	Coefficient	Standard Error	t-Statistic
Intercept	0.0092	0.0087	1.0582
$\ln \text{Sales}_{t-1} - \ln \text{Sales}_{t-2}$	-0.1279	0.1137	-1.1252
$\ln \text{Sales}_{t-4} - \ln \text{Sales}_{t-5}$	0.7239	0.1093	6.6209

Exhibit4	Most Recent Quarterly Sales Data (in billions)
Dec 2015 (Sales_{t-1})	\$3.868
Sept 2015 (Sales_{t-2})	\$3.780
June 2015 (Sales_{t-3})	\$3.692
Mar 2014 (Sales_{t-4})	\$3.836
Dec 2014 (Sales_{t-5})	\$3.418

Exhibit 5	Analysis Summary of Stock Prices for Three Transportation Stocks and the Price of Oil				
	Unit Root?	Linear or Exponential	Serial Correlation	ARCH(1)?	Comments

		Trend?	of Residuals in Trend Model?		
Company #1	Yes	Exponential	Yes	Yes	Not co-integrated with oil price
Company #2	Yes	Linear	Yes	No	Co-integrated with oil price
Company #3	No	Exponential	Yes	No	Not co-integrated with oil price
Oil price	Yes				

18. Based on the regression results in Exhibit 1, the original time series of exchange rates:
- A. has a unit root.
 - B. exhibits stationarity.
 - C. can be modeled using linear regression.
19. Based on the regression output in Exhibit 3 and sales data in Exhibit 4, the forecasted value of quarterly sales for March 2016 for PoweredUP is closest to:
- A. \$4.193 billion.
 - B. \$4.205 billion.
 - C. \$4.231 billion.
20. Based on Exhibit 5, for which company would the regression of stock prices on oil prices be expected to yield valid coefficients that could be used to estimate the long-term relationship between stock price and oil price?
- A. Company #1
 - B. Company #2
 - C. Company #3

21. Based on Exhibit 5, which single time-series model would most likely be appropriate for Busse to use in predicting the future stock price of Company #3?
- A. Log-linear trend model
 - B. First-differenced AR(2) model
 - C. First-differenced log AR(1) model

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The following information relates to 22-24

Carlos Martin, a recent graduate of the financial engineering program at a well-known university, has just been hired by Jubilación S.L., a Madrid-based firm that specializes in retirement planning. He has been asked to develop a machine learning (ML) tool to help assign each client to one of the firm's five strategic investment portfolios.

To build the training set with 50 defined features, 300 randomly selected working-age clients will be asked a set of open-ended questions by Lucia Fernandez, a market researcher. The resulting answers will include demographic data, information about risk preferences, and other retirement details. A Jubilación analyst will assign each individual in the sample to one of the five portfolios. Martin initially plans to perform machine learning analysis and use the model to assign new clients to the appropriate portfolio based on their responses to the questions.

Fernandez delivers the completed set of interview data to Martin. After some preliminary analysis, Martin decides that he is ready to develop the algorithm the chatbot will use to advise clients as to which of its five strategic investment portfolios is best for meeting their retirement goals. Martin notes that the final dataset has 50 features, and he is concerned that some of them are likely to be correlated, which may lead to model misstatement. He considers three methods to address this issue:

Method 1 Combine variables using the ensemble model.

Method 2 Use the bootstrap aggregating (bagging) method.

Method 3 Employ principal components analysis.

22. Martin's initial planned machine learning analysis is best described as a form of:

- A. categorical learning.
- B. supervised learning.
- C. unsupervised learning.

23. If Martin were to use a k-nearest neighbor model, the value for k would be closest to:

- A. 5.

- B. 50.
- C. 300.

24. Which of the methods Martin considers to address potential feature correlation is the most suitable?

- A. Method 1
- B. Method 2
- C. Method 3

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Economics

The following information relates to 25

Anna Goldsworthy is the chief financial officer of a manufacturing firm headquartered in the United Kingdom. She is responsible for overseeing exposure to price risk in both the commodity and currency markets. Goldsworthy is settling her end-of-quarter transactions and creating reports. Her intern, Scott Underwood, assists her in this process.

Goldsworthy must purchase MXN 27,000,000 to pay an invoice at the end of the quarter. In addition to the quotes from Dealer A in Exhibit 1, Underwood contacts Dealer B, who provides a bid/offer price of GBP/MXN 0.0366/0.0372. To check whether the dealer quotes are reflective of an efficient market, Underwood examines whether the prices allow for an arbitrage profit.

Exhibit 1 Dealer A's Spot Exchange Rates

Currency Pair (Price/Base)	Spot Exchange Rates		
	Bid	Offer	Midpoint
JPY/GBP	187.39	187.43	187.41
MXN/USD	17.147	17.330	17.239
GBP/EUR	0.7342	0.7344	0.7343
USD/EUR	1.1572	1.1576	1.1574
USD/GBP	1.5762	1.5766	1.5764

25. Using the quotes from Dealer A and B, the triangular arbitrage profit on a transaction of MXN 27,000,000 would be closest to:

- A. GBP 0.
- B. GBP 5,400.
- C. GBP 10,800.

The following information relates to 26

Robert Williams is a junior analyst at Anderson Brothers, a large Wall Street brokerage firm. He reports to Will McDonald, the chief economist for Anderson Brothers. McDonald provides economic research, forecasts, and interpretation of economic data to all of Anderson's investment departments, as well as to the firm's clients. McDonald has asked Williams to analyze economic trends in the country of Bundovia. Bundovia has strict capital controls limiting the flow of capital into and out of the country. The currency of Bundovia is the Bunco (BUN).

McDonald believes that the Bundovian economy is experiencing a hyper-inflationary environment and that the Bundovian government is poised to follow a restrictive monetary and fiscal policy to combat high inflation.

26. Based on McDonald's beliefs about Bundovian government monetary and fiscal policies, under the Mundell-Fleming model the Bunco is most likely expected to:

- A. Depreciate
- B. Appreciate
- C. Remain unchanged in value.

The following information relates to 27-29

Charles Hollingsworth is an investment strategist at Drawbridge Asset Partners (Drawbridge), an international investment firm. He is meeting with equity analyst Andrew Gillibrand and fixed-income analyst Eliana Navarro to discuss new investment opportunities and the economic factors they should consider as they make their investment selections.

Hollingsworth begins the meeting with the following statement:

“Earlier in the year, Drawbridge hedged a long exposure to the Australian dollar (AUD) by selling AUD 5 million forward against the US dollar (USD); the all-in forward price was 0.8940 (USD/AUD). It is now three months prior to the settlement date, and I want to mark the forward position to market.”

Exhibit 1 Current Foreign Exchange Data

Spot rate (USD/AUD)	0.9062/0.9066
Three-month points	-36.8/-36.4
Three-month Libor (AUD)	2.88%
Three-month Libor (USD)	0.23%

Exhibit 1 provides information about current rates in the foreign exchange markets.

On completion of the agenda items relating to the foreign exchange markets, Hollingsworth and his team move on to new investment opportunities. They begin with a discussion about the relationship between economic growth and the performance of equity and debt markets.

Gillibrand: “When we consider our equity investments over the long term, our primary focus should be on the rate of GDP growth. For longer time horizons, changes in earnings and the price/earnings multiple are relatively less important in determining appreciation in the stock market.”

Navarro: “When we look at our fixed-income investments, we should keep in mind that higher rates of potential GDP growth will translate into higher real interest rates and higher expected real asset returns.”

Hollingsworth: “Anticipating changes in potential GDP can be quite lucrative for us because credit rating agencies often use the growth of potential GDP as an input in evaluating sovereign

risk. In general, there is an inverse relationship between estimated potential GDP growth and credit quality.”

conversation then turns to the topic of convergence. Navarro says: “Even though Country B’s per capita growth is expected to exceed that of Country A for some time, according to the neoclassical model, eventually both countries will experience the same growth rate because the model assumes all countries have access to the same technology.”

27. The mark-to-market value for Drawbridge’s forward position is closest to:

- A. –USD44,774.
- B. –USD44,800.
- C. –USD42,576.

28. Which of the statements about economic growth and the performance of equity and debt markets is the least accurate?

- A. Navarro’s
- B. Hollingsworth’s
- C. Gillibrand’s

29. Navarro’s statement about the convergence of growth between Country A and Country B is best described as:

- A. conditional convergence.
- B. club convergence.
- C. absolute convergence.

The following information relates to 30

Central Aldorria (CA) is a country located close to the equator with farming and manufacturing interests. CA has ocean to its east and west but has plenty of fresh water flowing through the central part of the country that is dammed by farmers for irrigation purposes. As part of a compromise for ending a civil war 50 years earlier, the farmers, rather than the central government, effectively own the rights to the fresh water.

Since the end of the civil war, manufacturing firms that require fresh water have located downstream from the farms. The manufacturers frequently need to negotiate with the farmers to release water from the dams for a price.

Recently, a dispute between the country's manufacturing interests and farming interests arose over the price of water. The farmers believe the price is too low and have not let the dams release water, to the point that some fields have flooded. Correspondingly, the manufacturers insist that the price is fair and want the farmers to increase the availability of fresh water given the excess water available.

CA's president, Celina Suarez, has brought together representatives from both groups to consider a regulatory solution. Joseph Antoli represents the farmers, and Andrew Benez represents the manufacturers.

Suarez proposes having the legislature empower a new agency, the Water Regulatory Board (WRB), to deal with this conflict. The WRB would be funded by the government and would have seven members (three members representing the farmers, three members representing the manufacturers, and one appointed by the government). The WRB will determine the appropriate price and volume of water, with the agency's decisions being legally binding.

Antoli asks Suarez why the seventh member of the WRB would be a government appointee, and Suarez responds:

“The government-appointed member would prevent preferential treatment to either of the regulated groups. To prevent preferential treatment from developing over time, the government-appointed member will have only a three-year term and cannot serve consecutive terms.”

30. Suarez's justification for the seventh member of the WRB is best described as preventing regulatory:
- A. capture.
 - B. arbitrage.
 - C. competition.

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Financial Reporting and Analysis

The following information relates to 31

Anish Shah is doing a credit analysis on Silver Maple College (SMC), a mid-sized private university seeking to place a bond issue to finance a new sports facility on campus. Today Shah is interested in determining the full extent of SMC's obligations, and its ability to support those obligations from operating cash flows. SMC is established as a not-for-profit organization and prepares its financial statements using IFRS.

Shah starts his analysis by looking at SMC's post-employment plans. He has found the following description of the plans offered and has prepared summary information about the plans from the university's 2015 Notes to the Financial Statements (Exhibits 1, 2). To assess the long-term credit risk of SMC, Shah wants to determine the potential risk exposure presented from each post-employment plan and the associated future cash flows expected, as well as the current level of funding for each plan.

Exhibit 1: Post-Employment Plan Assets in \$ thousands

	December 31, 2015	
	Pension Plan A	Health Care Plan
Fair value, beginning of year	40,900	0
Interest income on plan assets	1,636	
Remeasurement gains recognized in other comprehensive income	1,841	
Employer contribution	3,150	950
Participant contribution	1,250	
Benefit paid	(2,080)	(950)
Fair value, end of year	46,697	0

Exhibit 2: Post-Employment Plan expenses and Other Information in \$ thousands

	December 31, 2015	
	Pension Plan A	Health Care Plan

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Current service cost	1,850	300
Net interest expense	712	276
Net retirement expense for the year	2,562	576
Actual return on plan assets	3,477	0

Total expense under Pension Plan B was \$2,400 thousand and employer contributions made under that plan in 2015 were \$2,750 thousand.

31. In 2015, SMC's total cash outflow related to post-employment costs (in thousands) is closest to:

- A. \$5,780.
- B. \$4,100.
- C. \$6,850.

The following information relates to 32-34

Mark Crawley is an analyst at a London, England based private equity firm and is reviewing the firm's file on Thames Air Plc (Thames), a company for which it provides financing. Thames uses IFRS in the preparation of its financial statements. Thames is a relatively new airline based in the United Kingdom specializing in flights and vacation packages to Mediterranean locations, primarily Spain. Thames sells most of its flights and vacation packages to British residents in British pounds (GBP) and considers the costs of local competitors' packages when determining its prices. Costs are incurred in multiple currencies:

- wage costs are primarily in GBP
- typical of the industry airline fuel and lease costs are normally priced in US dollars (USD)
- the landing fees paid at the vacation area airports are in the local currency, primarily euros (EUR)

First, Crawley turns his attention to the effect of the transactions undertaken in various currencies by Thames.

- He reviews the change in the exchange rate for the US dollar to British pound during 2015 (Exhibit 1) and wonders what the effect of this change was on Thames' operating income.
- At year-end (December 31) Thames had a large outstanding payable owing in Spain related to landing fees that were incurred there evenly over the final quarter. The company paid the amount in full on its due date of February 28th. Crawley observed that the EUR to GBP exchange rate had changed between when the costs were incurred and the year-end and again by the payment date (Exhibit 1).

Exhibit 1 Selected Exchange Rate Data

	£/\$ Close	£/€ Close
January 1, 2015	0.6400	
June 30, 2015		0.7200
December 31, 2015	0.6800	0.7500
February 28, 2016		0.7300

Average July 1 – December 31, 2015		0.7325
Average October 1 – December 31, 2015		0.7400

32. The functional currency of Thames is most likely the:
- A. Euro.
 - B. British pound.
 - C. US dollar.
33. Which of the following statements about the effect of the change in the US dollar to British pound exchange rate during the year is most accurate? Operating income for Thames would:
- A. decrease due to the negative effect on operating costs.
 - B. increase due to the positive effect on revenues.
 - C. increase due to the positive effect on operating costs.
34. Which of the following best describes the effect on Thames' financial statements of the payment terms related to the landing fees in Spain? Thames would:
- A. report an unrealized exchange loss at year-end.
 - B. defer recognizing any currency effects until the payable is paid.
 - C. adjust the landing fees expense to reflect the change in exchange rate when they are paid.

The following information relates to 35-38

Jim Loris is the Food and Beverage analyst at Eastern Trust & Investments. Jeremy Paul is an intern under Loris's supervision. Loris is planning on reviewing the financial statements of Atlantic Preserves, Inc., in the next few days. The company has recently signed a new collective agreement with its workers, and Loris is interested in seeing how the company's employment costs have been affected. The company prepares its financial statements in accordance with US GAAP, and the new collective agreement became effective 1 January 2014.

Paul extracts portions of the new collective agreement related to the pension plan and mentions to Loris that there have been two changes related to the plan:

- The benefit formula has been changed to $1.75\% \times \text{Final year's salary} \times \text{Number of years of service under the plan}$. Previously, the same formula was used, but with a factor of 1.65%.
- The vesting period has been changed from four years to three years.

Paul makes the following two comments about these changes to the pension plan:

1. The new formula will have a big impact on income because the past service costs that arise will be expensed immediately.
2. The change to a shorter vesting period will give rise to an actuarial gain.

Loris responds: "The past service costs that arise will be reported in other comprehensive income and amortized on the profit and loss statement over the average service lives of the employees."

Loris provides Paul with the information in Exhibit 1 about John Smith, an employee who has just started working for Atlantic, and other information taken from the company's pension plan disclosures. Loris asks Paul to calculate the pension liability arising from Smith.

Exhibit 1 Assumptions Relating to the Liability Arising from John Smith's Pension

Pension Plan Details and Assumptions	Employee Details
--------------------------------------	------------------

Annual wage increase	3.50%	Current salary	\$60,000
Discount rate	7.50%	Date hired	1 Jan. 2014
Pension Plan Benefit Payments		Expected retirement date	31 Dec. 2019
Annual payments are paid at year end and continue for the remainder of the retiree's life		Estimated final salary	\$71,261
		Estimated years in retirement	25

Following his calculation of the pension plan liability, Paul asks Loris two questions about the discount rate that is used:

1. Exhibit 1 does not mention how you determined the discount rate that was used. What rate is the most appropriate rate to use?
2. What would be the effect of using a higher discount rate on various components of the company's pension plan obligation?

Loris answers Paul's questions and then provides him with selected information from Note F of the 2013 Annual Report of Atlantic Preserves, shown in Exhibit 2. He tells Paul that he is aware that the company's actual return on pension plan assets exceeds its expected return and asks Paul to use the information in Exhibit 2 to calculate the net periodic pension cost and the total periodic pension cost for Atlantic for 2013.

Exhibit 2 Selected Information form Note F of Atlantic's 2013 Annual Financial Statements
(\$ thousands)

Start-of-year pension obligations	72,544
Start-of-year plan assets	60,096
End-of-year pension obligations	74,077
End-of-year plan assets	61,812
Current service cost	1,151
Interest cost	5,441
Actual return on plan assets	5,888
Expected return on plan assets	4,597

Benefit paid to retired employees	5,059
Employer's contributions	887
Amortization of past service costs	272

35. At the end of Smith's second year of service, the estimated defined-benefit obligation arising from his employment is closest to:
- A. \$20,092.
 - B. \$27,802.
 - C. \$20,818.
36. The best answer to Paul's first question is to use the:
- A. company's before-tax cost of debt.
 - B. yield on high quality corporate bonds.
 - C. company's overall cost of capital.
37. The least appropriate answer to Paul's second question is that the:
- A. interest cost may either increase or decrease.
 - B. opening obligation would decrease.
 - C. current service cost would increase.
38. The amount of Atlantic Preserve's 2013 periodic pension cost reported in the income statement (in \$ thousands) is closest to:
- A. 1,995.
 - B. 976.
 - C. 2,267.

The following information relates to 39-42

Javier Casado, an analyst who manages funds for high-net-worth investors, is evaluating Bardem S.A. (Bardem) as a possible addition to a large investment portfolio. Bardem, based in Madrid, Spain, is a manufacturing firm that specializes in packaging materials. The company reports using IFRS, and its reporting currency is the Euro.

On 2 January 2016, Bardem purchased an 18% stake in the new bond issue of Papelco, a Spanish maker of specialty papers from whom Bardem buys inventory. The bonds, which mature on 31 December 2023, pay interest annually with a coupon rate of 4%. Bardem paid €5,000,000 for the debt, which had a par value of €4,800,000 reflecting a yield to maturity of 3.4%. Bardem classifies the investment as held-to-maturity. Casado is trying to determine the impact of the Papelco purchase, and wonders how it will affect Bardem's financial statements.

Casado learns that Bardem acquired a 25% stake in Ariana Shipping S.A. (Ariana) on 1 January 2017. Ariana, which is based in Greece, has bought packaging supplies from Bardem in the past based on catalog prices. Casado believes that the purchase will change the relationship between the two companies and will also affect Bardem's financial reporting. He mentions to a coworker, Ana Domingues, that the price paid by Bardem for the Ariana shares was €80 million.

Domingues tells Casado that Bardem's purchase of Ariana's equity will likely allow Bardem to influence Ariana's financial and operating performance. As a result, she states, Bardem will be required to use the equity method of accounting for this investment. Casado replies that the equity method of accounting is only required under IFRS for joint ventures or when the investee holds a seat on the associate's board of directors.

Bardem prepares the following table to examine the purchase more closely.

Exhibit 1 Book Values and Fair Values of Ariana Shipping Assets and Liabilities as of 31 December 2016 (€ millions)

	Book Value	Fair Value
Current assets	15	15
Plant and equipment	230	275

Land	100	115
Liabilities	110	110
Net assets	235	295

Domingues says that she is concerned that Bardem didn't sufficiently investigate Ariana before the purchase, given economic uncertainty surrounding Greek companies. She asks Casado what will happen to Bardem's financial statements if the value of Ariana is permanently impaired due to business losses or other demonstrable events. Casado replies that if the equity method is not required, then there will be no impact. However, if the equity method is used, he states:

1. Goodwill must be separately tested for impairment.
2. Impairment losses cannot be reversed even if fair value later increases.
3. Impairment losses exceeding the goodwill value are allocated pro-rata to the unit's non-cash assets.

39. The investment income that Bardem will report in 2016 from the Papelco debt is closest to:

- A. €170,000.
- B. €192,000.
- C. €200,000.

40. In the discussion about using the equity method to account for Bardem's purchase of Ariana, which statement is most accurate? The statement by:

- A. Domingues.
- B. Casado concerning joint ventures.
- C. Casado concerning board of directors' positions.

41. If Bardem does use the equity method of accounting for its purchase of Ariana, using Exhibit 1, the value of goodwill, in millions, arising from the purchase is closest to:

- A. €6.25.

B. €21.25.

C. €15.00.

42. Which of Casado's three statements regarding the potential impairment of the investment in Ariana is most accurate? Statement:

A. 2

B. 1

C. 3

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The following information relates to 43-46

Bogdan Andrei, an independent equity analyst, is working on his analysis of Galaxy Electronics Ltd. Galaxy is a manufacturer and distributor of foldable smartphones that focus on security, encryption, and identity protection. The company prepares its financial statements in accordance with US GAAP. From its inception in 2009, the company grew rapidly to 2013, but in early 2014 sales growth slowed significantly. Andrei is reviewing recent changes in the company's financial reporting to assess the company's quality of financial reporting and earnings.

Andrei starts with the notes he made following an update issued by Nadeen Bhatti, Galaxy's vice president of finance, on financial reporting changes Galaxy implemented in 2014.

- Galaxy produces its smart phones based on orders received. A 25% deposit is required for all orders, and then Galaxy manufactures and usually ships the units in two to four weeks. Some orders are placed even further in advance, and some shipments may not occur for up to two months following an order. Galaxy had been recording a sale when the product was shipped, but under Bhatti's revised policy, the revenue recognition point now occurs when the deposit is received. "If the products are made to order, then the critical event is the receipt of the order," she had explained.
- As of 31 August 2014, Galaxy received deposits of \$3 million for orders yet to be shipped.

Andrei compares the descriptions of warranty expenses from the 2013 and 2014 management discussion and analysis (MD&A), shown in Exhibit 1, and observes that similar information is included among the notes to the financial statements.

Exhibit 1 Excerpts from Galaxy's MD&A (\$ thousands)

2013 Warranties	2014 Warranties
The company provides a one-year warranty on its products and records it as a selling and administrative expense at the time of sale. The 2013 warranty expense recognized	<ul style="list-style-type: none"> • The company provides a one-year warranty on its products and records it as a selling and administrative expense at the time of sale. The 2013 warranty expense

is\$5,000	<p>recognized is\$5,000</p> <ul style="list-style-type: none"> The company also believes its production process has become very reliable. <p>Therefore, in 2014 warranty expense(\$2,000) is included in non-operating expenses.</p>
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Andrei next reviews the comparative financial information for Galaxy in Exhibit 2

Exhibit 2 Galaxy Electronics Ltd. (US\$ thousands) Condensed Income Statement Year Ended 31 August

	2014	2013	2012
Sales	\$100,000	\$95,000	\$65,000
Gross profit	53,000	47,500	31,200
Operating expenses	32,000	38,000	28,000
Non-operating expenses	4,400	2,700	3,000
Earning before taxes	16,600	6,800	200
Net income	11,122	4,556	134

Excerpts from Galaxy's Balance Sheet, 31 August

	2014	2013
Assets		
Cash and investments	\$21,122	\$25,000
Account receivable	25,000	13,500
Inventories	9,000	6,500
Prepays and deferrals	4,000	2,000
Total Current assets	59,122	47,000
Total assets	131,122	127,000

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Liabilities		
Accounts payable	\$15,000	\$11,000
Unearned revenue		4,000
Warranty provision	2,000	4,000
Current portion of long term debt	5,000	5,000
Total current liabilities	22,000	24,000
Long term debt	35,000	40,000
Total liabilities	57,000	64,000

Andrei prepares a Beneish Model analysis, shown in Exhibit 3, to assess the likelihood that Galaxy is manipulating its earnings. He recalls that an M-score of -1.78 corresponds to a probability of earnings manipulation of 3.8%.

Exhibit 3 Galaxy 2014 Beneish Model M-score Determination

Variable name	Variable	Value of variable	Beneish model coefficient	Contribution
Days sales in receivables index	DSRI	1.759	0.92	1.619
Gross margin index	GMI	0.943	0.528	0.498
Asset quality index	AQI	0.814	0.404	0.329
Sales growth index	SGI	1.053	0.892	0.939
Depreciation index	DEPI	0.932	0.115	0.107
SG & A expenses index	SGAI	0.95	-0.172	-0.163
Accruals	Accruals	0.107	4.67	0.499
Leverage index	LEVI	0.861	-3.270	-2.815

			Intercept	-4.84
			M-score	-3.83

43. Which of the following is most likely a warning sign of deteriorating earnings quality? The new policy relating to:
- warranty expenses.
 - compensation using stock grants.
 - revenue recognition.
44. The amount that the new revenue recognition policy contributed to gross profit in fiscal 2014 (\$ millions) is closest to:
- 4.8.
 - 1.6.
 - 6.4.
45. The best conclusion Andrei can make about the classification of warranty expenses in 2014 is that Galaxy's:
- earnings quality is lower.
 - financial reporting quality is lower.
 - return on sales is improved.
46. Which of the following from Andrei's Beneish M-score determination is the best indicator that Galaxy could be manipulating earnings?
- The total M-score
 - The days sales in receivable index
 - The leverage index

The following information relates to 47-48

Ali Saminder, CFA, has recently been hired by JJK Holdings, Inc. (JJK), a U.S.-based financial services holding company. JJK has global operations in commercial and investment banking alongside a significant wealth management division, JJK BMD. Saminder is currently on a six-month rotation working in the risk management division of JJK. She is seeking to become familiar with JJK's approach to risk management and the maintenance of an adequate capital base.

The document provided to Saminder JJK's approach to calculating regulatory capital. Extracts the document are shown in Exhibit 1.

Exhibit 1: Internal Memo—Regulatory capital calculation (extracts)

- Tier 1 capital is defined in accordance with global regulatory standards and is appropriately adjusted for intangible and deferred tax assets resulting from losses carried forward.
- Other tier 1 capital consists of irredeemable non-cumulative preferred stock with a fixed dividend of 4.3%.
- Consistent with local regulatory standards, Tier 2 capital is comprised of \$18,047m of subordinated debt maturing in five years, and a convertible bond issue convertible only at maturity at the end of 20X9 (convertible into common stock).
- JJK holding has a target tier 1 ratio of 15% and total capital ratio of 20%.
- 20X8 year-end figures are forecast as follows:

	20X8 (\$m)
Regulatory capital	
Common equity tier 1 capital	87,390
Additional tier 1 capital	16,401
Tier 2 capital	25,447
Total assets	510,948
Risk weighted assets	601,312

Saminder has also reviewed an internal memo outlining some key trends over the last three years that were labeled 'Possible concerns?' by a previous employee. However, it was not clear

from the document that trends if any were actual cause for concern. The trends included in the documents are shown in Exhibit 2.

Exhibit 2: Internal Memo—Three-Year Trends			
	20X5	20X6	20X7
	\$m	\$m	\$m
Assets under management ¹	139,398	118,957	108,086
Net outflows ²	100,483	112,482	196,429
High quality liquid assets	111,432	127,352	198,393
Available stable funding	376,092	376,653	388,624
Required stable funding	327,043	301,275	303,182
¹ Represents client assets managed by JJK BMD Trusts			
² 30-day liquidity needs in a stress scenario			

Saminder makes the following note using the data in Exhibit 2:

“Assets under management have decreased by a total of 22.5% over the three-year period, but these are client assets, require no capital funding, and hence are not a consideration for the risk analysis of the bank.”

47. Using forecasted data explicit targets given Exhibit 1, Saminder is most likely to conclude that JJK Holdings would:

- A. meet its targeted tier 1 ratio total capital ratio.
- B. meet its targeted 1 ratio not its targeted total capital.
- C. fail to meet either target.

48. Using the data in Exhibit 2, which of the following statements is most accurate?

- A. The number of days JJK can withstand a stress-level-volume of cash outflows decreased by three days from 2015 to 2017.
- B. The liquidity coverage ratio decreased in each of the two years.
- C. The trend in net stable funding ratio indicates an increase from 2015 to 2017 in highly liquid

funding available, compared to the level of funding required.

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Corporate finance

The following information relates to 49

Later, upon further investigation, Bubs and Nelson discover a provision that in the event of a takeover, the bondholders of Cindy's Sweets can immediately sell bonds back to the issuing company at a value of 20% above par making Cindy's Sweets an unlikely target for Tressell.

49. The provision related to the bonds of Cindy's Sweets that Bubs and Nelson discover is most accurately described as a:
- A. flip-in pill.
 - B. poison put.
 - C. "Pac-Man" defense.

The following information relates to 50-51

Carlyle asks her assistant, Richard Lee, to investigate whether Avignon might use its surplus cash for a share repurchase rather than for dividends. Lee, a junior analyst, comments that share repurchases can be beneficial for several reasons:

1. The distribution of cash among shareholders is equivalent to what would have otherwise been distributed to them as dividends.
2. Share repurchases provide greater flexibility to management than the payment of cash dividends.
3. When directly negotiated, share repurchases can be used to purchase stock for less than the current market price.

Lee believes that looking at other companies that have completed share repurchases could be helpful to his analysis. He looks at the history of SpeedyPro Inc. (“SpeedyPro”), a US-based industrial services company whose business depends heavily on the petroleum exploration and production sector. SpeedyPro made its first share repurchase in early 2017 using surplus cash. SpeedyPro’s selected financial information just prior to the repurchase is shown in Exhibit 1.

Exhibit 1 SpeedyPro, Inc. Selected Financial Information as of Year-End 2016	
Net income	\$124 million
EPS	\$1.24
Shares outstanding	100 million
Details of share repurchase	
Cash available for repurchase	\$836 million
Share price at time of repurchase	\$38.00
Premium over current share price for repurchase	10.0%

50. Which of Lee’s statements to Carlyle about share repurchases is least accurate?

A. Statement 2

- B. Statement 1
- C. Statement 3

51. If SpeedyPro had used all of its surplus cash to repurchase its shares, based on Exhibit 1, the percentage increase in EPS would have been closest to:

- A. 10%.
- B. 28%.
- C. 25%.

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The following information relates to 52

John Earl is a project analyst for Kames Inc. Earl is currently reviewing the projected annual income statements, shown in Exhibit 1, for the five-year life of Project #162 to determine the net present value (NPV) of the project using an annual discount rate of 10%.

Exhibit 1 Project #162 Forecasted Income Statements					
	Year 1	Year 2	Year 3	Year 4	Year 5
Sales	\$300,000	\$320,000	\$350,000	\$390,000	\$440,000
Cash operating expenses	210,000	224,000	245,000	273,000	308,000
Depreciation	30,000	30,000	30,000	30,000	30,000
Operating income	\$60,000	\$66,000	\$75,000	\$87,000	\$102,000
Interest expense	13,500	10,800	8,100	5,400	2,700
Taxable income	\$46,500	\$55,200	\$66,900	\$81,600	\$99,300
Tax expense (40%)	18,600	22,080	26,760	32,640	39,720
Net income	\$27,900	\$33,120	\$40,140	\$48,960	\$59,580

The project will require an increase in fixed assets of \$150,000 that will be fully depreciated. Current assets are expected to increase by \$80,000 and current liabilities are expected to increase by \$45,000.

This increase in net working capital will be recovered when the project is finished. And the Fixed assets will be sold at 10,000.

52. Given the information in Exhibit 1 and the notes following, the NPV (in thousands) for

Project #162 is closest to:

- A. 128.036
- B. 126.054
- C. 127.098

The following information relates to 53

Maturin said he would answer Jack's question later and continued: "I've been thinking that our current annual election of the board is not in the best interests of our shareholders, and we should be moving to a staggered board for the following reasons:

1. the company would be less likely to resist hostile takeover attempts with a staggered board,
2. it would ensure the continuity of the knowledge and experience in the company that is so essential for good corporate governance, and
3. it would provide board members more time in getting to understand the needs of shareholders and be in a better position to align their interests with them."

53. Which of Maturin's reasons for adopting a staggered board is most consistent with best practices of corporate governance?

- A. Reason 1
- B. Reason 2
- C. Reason 3

The following information relates to 54

Clifford Kloth is a member of a strategy team for Elemetrics Corporation. The team's task is to determine how to restructure the capital structure of Elemetrics which has deviated from its target capital structure by having proportionately too much debt. With the economy in a recession, alternatives to an issue of equity were being considered. In a meeting with upper management, Kloth began to present the team's suggested strategy proposal.

Kloth: "After careful consideration of many alternatives, the strategy team suggests reducing the dividend payout ratio of Elemetrics from 40% to 20%. Despite how variable earnings can be, the team believes the additional earnings retained by the firm will reduce the debt to target levels in a five year time span and reduce the cost of equity as the debt is decreased."

54. Based on the Modigliani and Miller Propositions without taxes, the initial statement by Kloth is most likely:
- A. correct.
 - B. incorrect, because Proposition I is violated.
 - C. incorrect, because Propositions I and II are violated.

Equity

The following information relates to 55

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 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.

55. 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.

The following information relates to 56

Gianna Peters is an investment analyst who focuses on dividend-paying stocks. Peters uses a discounted cash flow (DCF) approach to stock selection. Peters asks the team to examine the growth opportunities of three Canadian stocks currently held in the portfolio. These stocks are listed in Exhibit 1. Peters believes that the stocks are fairly valued.

Exhibit 1 Selected Stock Characteristics			
Stock	Required Rate of Return	Next Year's Forecasted EPS (C\$)	Current Price per Share (C\$)
ABTD	10.5%	7.30	80.00
BKKQ	8.0%	2.12	39.00
CPMN	12.0%	1.90	27.39

56. Based on Exhibit 1, the stock with the largest present value of growth opportunities (PVGO) is:

- A. ABTD.
- B. BKKQ.
- C. CPMN.

The following information relates to 57

Withers has assembled the data on Venus Company in Exhibit 2. After analyzing competitive pressures and financial conditions in the industry, she predicts that Venus Company will lose market share because of new entrants, but will stabilize within a few years. Beginning with a per share dividend of USD 3.15 in 2017, she develops two scenarios regarding the growth of dividends of Venus Company.

In Scenario 1, the growth rate will fall in a linear manner over the years 2018 through 2021 from 8% to 4%. Using the H-model, she calculates a value of USD 58.79 per share of Venus Company stock.

Exhibit 2 Venus Company Dividend Growth Scenarios

Scenario	Time period	Rate
Scenario 1	2018 through 2021	Declining linearly to 4%
	Beginning 2022	Remaining stable at 4%

57. Under her Scenario 1 and based on Exhibit 2, the required rate of return that Withers used for Venus Company stock valuation is closest to:

- A. 8.0%.
- B. 9.6%.
- C. 10.0%.

The following information relates to 58

Gurmeet Singh, an equity portfolio manager at a wealth management company, meets with junior research analyst Cindy Ho to discuss potential investments.

Singh and Ho also discuss the impact of dividends, share repurchases, and leverage on Sienna's free cash flow. Ho tells Singh the following:

Statement 1 Changes in leverage do not impact free cash flow.

Statement 2 Transactions between the company and its shareholders, such as the payment of dividends or share repurchases, do affect free cash flow.

58. Which of Ho's statements regarding free cash flow is (are) correct?

- A. Statement 1 only
- B. Statement 2 only
- C. Neither Statement 1 nor Statement 2

The following information relates to 59-60

Chan Mei Yee is valuing McLaughlin Corporation common shares using a free cash flow approach. Yee assembled information about McLaughlin from several sources. She begins her analysis by determining free cash flow to the firm (FCFF) and free cash flow to equity (FCFE) for the 2012 fiscal year, using the financial statements in Exhibits 1 and 2. McLaughlin's fiscal year ends 31 December.

Exhibit 1 McLaughlin Corporation Selected Financial Data (in millions, except per share amounts)	
For Year Ending 31 December	2012
Revenues	\$6,456
Earnings before interest, taxes, depreciation, and amortization (EBITDA)	1,349
Depreciation expense	243
Operating income	1,106
Interest expense	186
Pretax income	920
Income tax (32%)	294
Net income	\$626
Number of outstanding shares (millions)	411
2012 Earnings per share	\$1.52
2012 Dividends paid (millions)	\$148
2012 Dividends per share	\$0.36
2012 Fixed capital investment (millions)	\$535
Cost of equity	12.0%
Weighted average cost of capital	9.0%

Exhibit 2 McLaughlin Corporation Consolidated Balance Sheets (in millions)	
	as at 31 December

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	2012	2011
Cash and cash equivalents	\$32	\$21
Accounts receivable	413	417
Inventories	709	638
Other current assets	136	123
Total current assets	1,290	1,199
Current liabilities	\$2,783	\$2,678
Long-term debt	2,249	2,449
Common stockholders' equity	1,072	594
Total liabilities and stockholders' equity	\$6,104	\$5,721

59. McLaughlin's FCFF (\$ millions) for 2012 is closest to:

- A. \$418.
- B. \$485.
- C. \$460.

60. Assuming 2012 FCFF equals \$500 million, McLaughlin's FCFE (\$ millions) for 2012 is closest to:

- A. \$574.
- B. \$174.
- C. \$114.

The following information relates to 61

Elena Castovan is a junior analyst with Contralith Capital, a long-only equity investment manager. Castovan's assignment is to determine the intrinsic value of TTCI using both a single-stage and a multistage RI model. Selected data and assumptions for TTCI are presented in Exhibit 2.

Exhibit 2. Tantechi Ltd. (TTCI) Selected Financial Data	
Book value per share	€45.25
Market price per share	€126.05
Constant long-term ROE	12.00%
Constant long-term earnings growth rate	4.50%
Cost of equity	8.70%

For the multistage model, Castovan forecasts TTCI's ROE to be higher than its long-term ROE for the first three years. Forecasted earnings per share and dividends per share for TTCI are presented in Exhibit 3. Starting in Year 4, Castovan forecasts TTCI's ROE to revert to the constant long-term ROE of 12% annually. The terminal value is based on an assumption that residual income per share will be constant from Year 3 into perpetuity.

Exhibit 3. Tantechi Ltd. (TTCI) Forecasts of Earning and Dividends			
	Year 1	Year 2	Year 3
Earnings per share (€)	7.82	8.17	8.54
Dividends per share (€)	1.46	1.53	1.59

61. Based on Exhibits 2 and 3 and the multistage RI model, Castovan should estimate the intrinsic value of TTCI to be closest to:

- A. €54.88.
- B. €83.01.
- C. €85.71.

The following information relates to 62

Abhishek Alahtab is a junior equity analyst at Cleveland Investment Research, LLC, and follows regional small-cap stocks trading in the over-the-counter market. Amit Jatin, a senior equity analyst at Cleveland Investment Research, asks Alahtab to evaluate CRN and prepare a research report for updating the firm's recommendation about the stock. He gives Alahtab CRN's financial data, which are shown in Exhibits 1 and 2.

Exhibit 1 Income Statement Excerpts, Years Ending 31 December (\$ millions)

	2013	2012
EBITDA	275	250
Depreciation expense	82.5	75
Operating income	192.5	175
Interest expense	16	14.9
Income before taxes	176.5	160.2
Income taxes	56.5	48
Net income	120	112.1
Common dividend	48	44.8

Exhibit 2 Selected Balance Sheet Data, Years Ending 31 December (\$ millions)

Net investment in fixed capital		165.3
Net increase in working capital		-1.80
	2013	2012
Current assets	354.2	322
Accumulated depreciation	257.5	175
Notes payable	20	15
Long-term debt	157.5	150
Common stock (50 million shares outstanding)	800	800
Retained earnings	159.3	87.3
Total liabilities and equity	1,265.00	1,150.00

Ratios are calculated using year-end values

Upon a closer examination of the data and expectations of high growth from the increased tourism and transportation on the revitalized Cuyahoga River, Jatin suggests that Alahtab incorporate the following as inputs into his H-model and FCFE model computations:

- A growth rate of 20% per year over the next four years (2014 through 2017) and a 6% constant growth rate beyond 2017
- An estimate of FCFE of \$0.96 per share for 2014
- The addition of a small-firm risk premium of 2% to the rate of return on the stock
- A tax rate of 35%

62. Using the data in Exhibits 1 and 2 and the tax rate suggested by Jatin, CRN's FCFE per share for 2013 is closest to:

- A. \$0.85.
- B. \$0.82.
- C. \$0.92.

The following information relates to 63**Exhibit 1 Hattie's Apparel and Triway Textiles Selected Financial Information**

	Hattie's Apparel	Triway Textiles
Debt beta	0.00	0.00
Debt-to-equity ratio (market values)	45%	38%
Pretax cost of debt	9%	8%
Marginal tax rate	32%	32%
RMRF beta	0.82	0.75
SMB beta	0.75	0.00
HML beta	0.15	0.05
CAPM equity beta		0.75
Assumed constant growth rate (g)	3%	2.5%
Most recent price (P_0)	\$45.00	\$115.48
Most recent dividend (D_0)	\$2.75	8.45
Payout ratio	40%	55%

Exhibit 2 Additional Market Information

U.S. T-bill rate	1%
Equity risk premium	8%
Market capitalization factor	2%
Book-to-market factor	4%

63. Using the information reported in Exhibit 1 and Exhibit 2, the Fama–French estimate of the required return on equity for Hattie's Apparel is closest to:
- A. 8.0%.
- B. 8.7%.
- C. 9.7%.

The following information relates to 64

Andrea Risso is a junior analyst with AquistareFianco, an independent equity research firm. Risso's supervisor asks her to update, as of 1 January 2015, a quarterly research report for Centralino S.p.A., a telecommunications company headquartered in Italy. On that date, Centralino's common share price is €50 and its preferred shares trade for €5.25 per share.

Risso gathers information on Centralino. Exhibit 1 presents earnings and dividend data, and Exhibit 2 presents balance sheet data. Net sales were €3.182 billion in 2014. Risso estimates a required return of 15% for Centralino and forecasts growth in dividends of 6% into perpetuity.

Exhibit 1. Earnings and Dividends for Centralino, 2011–2015					
	2011	2012	2013	2014	2015(E)
Earnings per share (EPS, €)	4.93	5.25	4.46	5.64	6.00
Dividends per share (DPS, €)	2.45	2.60	2.60	2.75	2.91
Return on equity (ROE)	13.01%	13.71%	11.58%	14.21%	14.96%
Note: The data for 2011–2014 are actual and for 2015 are estimated.					

64. Based on Exhibit 1 and Risso's estimates of return and dividend growth, Centralino's justified forward P/E based on the Gordon growth dividend discount model is closest to:
- A. 5.4.
 - B. 5.7.
 - C. 8.3.

The following information relates to 65-66

Cátia Pinho is a supervisor in the equity research division of Suite Securities. Pinho asks Flávia Silveira, a junior analyst, to complete an analysis of Adesivo S.A., Enviado S.A., and Gesticular S.A.

Pinho directs Silveira to use a valuation metric that would allow for a meaningful ranking of relative value of the three companies' shares. Exhibit 1 provides selected financial information for the three companies.

Exhibit 1. Selected Financial Information for Adesivo, Enviado, and Gesticular (Brazilian Real, R\$)			
	Adesivo	Enviado	Gesticular
Stock's current price	14.72	72.20	132.16
Diluted EPS (last four quarters)	0.81	2.92	-0.05
Diluted EPS (next four quarters)	0.91	3.10	2.85
Dividend rate (annualized most recent dividend)	0.44	1.24	0.00

Silveira reviews underlying trailing EPS for Adesivo. Adesivo has basic trailing EPS of R\$0.84. Silveira finds the following note in Adesivo's financial statements:

“On a per share basis, Adesivo incurred in the last four quarters

- i. from a lawsuit, a non-recurring gain of R\$0.04; and
- ii. from factory integration, a non-recurring cost of R\$0.03 and a recurring cost of R\$0.01 in increased depreciation.”

Silveira notes that Adesivo is forecasted to pay semiannual dividends of R\$0.24 next year. Silveira estimates five-year earnings growth rates for the three companies, which are presented in Exhibit 2.

65. Based on Pinho's directive and the data from the last four quarters presented in Exhibit 1, the valuation metric that Silveira should use is the:

- A. price-to-earnings ratio (P/E).

- B. production-to-demand ratio (P/D).
- C. earnings-to-price ratio (E/P).

66. Based on Exhibit 1 and the note to Adesivo's financial statements, the trailing P/E for Adesivo using underlying EPS is closest to:

- A. 17.7.
- B. 18.2.
- C. 18.4.

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The following information relates to 67

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

67. Based on Exhibit 1, which of the following provides the strongest evidence that Chrome displays economies of scale?

- A. Increasing net sales
- B. Profit margins that are increasing with net sales
- C. Gross profit margins that are increasing with net sales

The following information relates to 68

Gertrude Fromm is a transportation sector analyst at Tucana Investments. She is conducting an analysis of Omikroon, N.V., a publicly traded European transportation company that manufactures and sells scooters and commercial trucks.

Fromm decides to use a five-year forecast horizon for Omikroon after considering the following factors:

Factor 1 The annual portfolio turnover at Tucana investments is 30%.

Factor 2 The electronic scooter industry is expected to grow rapidly over the next 10 years.

Factor 3 Omikroon has announced it would acquire a light truck manufacturer that will be fully integrated to its truck division by 2016 and will add 2% to its total revenues.

68. Which factor best justifies the five-year forecast horizon for Omikroon selected by Fromm?

- A. Factor 1
- B. Factor 2
- C. Factor 3

The following information relates to 69

Western Investment Analytics specializes in the valuation of thinly traded equities. Harriet Hilliard, one of Western's analysts, is currently working to establish the value of Hattie's Apparel, a small textile and clothing wholesaler headquartered in the southern United States. Hattie's Apparel is a publicly traded company; however, in a typical week fewer than 1,000 shares trade. Triway Textiles, Inc. is a NASDAQ-listed stock that very closely resembles Hattie's Apparel's business activities but is far more actively traded.

Exhibit 1 provides summary financial and economic data relating to Hattie's Apparel and Triway Textiles along with Hilliard's estimates of the responsiveness (i.e., the betas) of the companies to the factors of the Fama–French model [equity risk premium factor (RMRF); market capitalization factor (SMB); and book-to-market factor (HML)]. Exhibit 1 also includes a published estimate of the CAPM equity beta for Triway. Since Hattie's Apparel does not have a published estimate of its CAPM equity beta, as few analysts follow the stock, Hilliard computes it, noting the difference in leverage between Triway Textiles and Hattie's Apparel.

Exhibit 1 Hattie's Apparel and Triway Textiles Selected Financial Information		
	Hattie's Apparel	Triway Textiles
Debt beta	0.00	0.00
Debt-to-equity ratio (market values)	45%	38%
Pretax cost of debt	9%	8%
Marginal tax rate	32%	32%
RMRF beta	0.82	0.75
SMB beta	0.75	0.00
HML beta	0.15	0.05
CAPM equity beta		0.75
Assumed constant growth rate (g)	3%	2.5%
Most recent price (P_0)	\$45.00	\$115.48
Most recent dividend (D_0)	\$2.75	8.45
Payout ratio	40%	55%

Exhibit 2 provides Hilliard's estimates of market information relating to her analysis. Western's analysts typically use three models to estimate the required return on equity for the companies they evaluate: the Gordon growth dividend discount model (DDM), the capital asset pricing model (CAPM), and the Fama–French model (FFM). Nonetheless, in her work, Hilliard prefers to use the DDM-based estimate of the required return on equity when she calculates the weighted-average cost of capital (WACC) for companies such as Hattie's Apparel.

Exhibit 2 Additional Market Information	
U.S. T-bill rate	1%
Equity risk premium	8%
Market capitalization factor	2%
Book-to-market factor	4%

69. Using the information reported in Exhibit 1 and Exhibit 2, the Fama–French estimate of the required return on equity for Hattie's Apparel is closest to:
- A. 8.0%.
 - B. 8.7%.
 - C. 9.7%.

The following information relates to 70

Arnaud Aims is assisting with the analysis of several firms in the retail department store industry. Because one of the industry members, Flavia Stores, has negative earnings for the current year, Aims wishes to normalize earnings to establish more meaningful P/E ratios. For the current year (2016) and six previous years, selected financial data are given below. All data are in euros.

Exhibit 1: Selected Financial Data for Flavia Stores, 2010-2016

	2016	2015	2014	2013	2012	2011	2010
Earnings per share	(1.05)	1.90	1.65	0.99	1.35	0.77	1.04
Book value per share	9.11	10.66	9.26	8.11	7.62	6.77	6.50
Return on equity	(0.115)	0.178	0.178	0.122	0.177	0.114	0.160

70. Using the information in Exhibit 1, estimate the P/E ratio for Flavia Stores using EPS

estimated with the method of average return on equity. The P/E ratio is closest to:

- A. 16.0.
- B. 18.8.
- C. 25.0.

The following information relates to 71

Miranda Mendosa, equity analyst at San Antonio Investment Research Group (SIRG), begins valuing Premier Riverboats, Inc. (PRBI), a thinly and infrequently traded stock on a regional stock exchange.

Mendosa and Raman have a discussion about other approaches that might be appropriate for valuing PRBI's stock. They make the following statements:

Statement 1—Raman: Because PRBI's management is actively seeking opportunities to be acquired, the guideline public company method (GPCM) would be most appropriate. It establishes a value estimate based on pricing multiples derived from the acquisition of control of entire public or private companies. Specifically, it uses a multiple that relates to the sale of entire companies.

Statement 2—Mendosa: We could also value PRBI using the free cash flow to equity (FCFE) model. But in order to support its rapid growth, the company is expected to significantly increase its net borrowing every year for the next three to five years, and during those years, it could have a significant dampening effect on the company's FCFE and thus a lower value for its equity.

Statement 3—Raman: I agree. The residual income (RI) model, also called the "excess earnings method," does not have the same weakness as the FCFE approach because residual income is an estimate of the profit of the company after deducting the cost of all capital: debt and equity. Furthermore, it makes no assumptions about future earnings and the justified P/B is directly related to expect future residual income.

71. In regard to the discussion on other approaches between Mendosa and Raman, which of the following statements that they make is most accurate? Statement:

- A. 1
- B. 3
- C. 2

The following information relates to 72

The Senior Vice President of Acquisitions for Northland Industries, Angela Lanton, and her head analyst, Michael Powell, are evaluating several potential investments.

Although Northland is interested in acquiring all of the stock of FAMCO, the acquisition of a 15 percent equity interest in FAMCO is also an option. Lanton asks Powell about the valuation of small equity interests in private entities and notes that control and marketability are important factors that lead to adjustments in value estimates for small equity interests. Powell mentions that the control premium paid for the most similar guideline firm used in the analysis suggests a discount for lack of control of 20 percent. The discount for lack of marketability was estimated at 15 percent.

72. The total discount for both control and marketability is closest to:

- A. 15 percent.
- B. 32 percent.
- C. 35 percent.

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Fixed income

The following information relates to 73-74

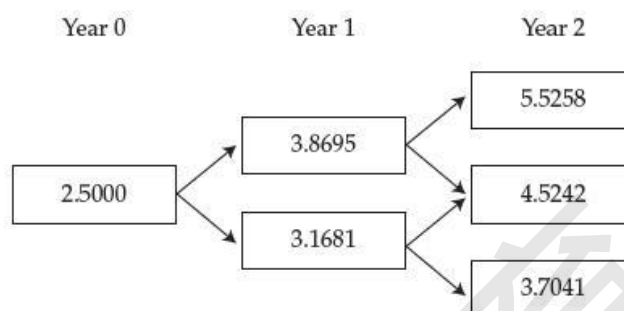
Muniz moves on to a discussion of the valuation of risky bonds with embedded options and asks if there is a metric that can be used to determine relative value and how such a measure is calculated. In response Scahill states: “The option-adjusted spread, or OAS, can be used to determine the value of a risky bond with embedded options. When assessing relative value for two bonds that are otherwise similar in all respects, the bond with the lower OAS is most likely underpriced or cheap.” Morgan adds: “The OAS is a variable spread that is based on the likelihood of cash flows occurring.” Gomaa disagrees with Scahill and Morgan, stating: “I believe OAS is the constant spread that when added to all one-period forward rates on the interest rate tree, equates the present value of the bond’s cash flows to the market price. Furthermore, for two bonds that have similar characteristics and credit quality, the bond with the higher OAS is underpriced.”

Scahill then asks, “While we are on the topic of OAS, a question that comes to mind is how the interest rate volatility assumption impacts the OAS of callable and puttable bonds.” Morgan responds, “It is my understanding that as interest rate volatility declines, the OAS for callable bonds decreases while the OAS for puttable bonds increases.”

73. In response to Muniz’s question about the valuation of bonds with embedded options and relative value analysis, who is most likely correct?
- A. Morgan
 - B. Gomaa
 - C. Scahill
74. Is his response to Scahill’s question regarding the impact of changes in interest rate volatility on the OAS of callable and puttable bonds, Morgan is most likely:
- A. incorrect about callable and puttable bonds.
 - B. correct about callable bonds and incorrect about puttable bonds.
 - C. correct about puttable bonds and incorrect about callable bonds.

The following information relates to 75

To prepare for rising rates, Harding asks Hamilton to evaluate floating-rate bond issues. She reviews a two-year floater issued by NexTec and creates a two-year binomial interest rate tree for valuation purposes, as shown in Exhibit 2. The bond pays annual coupons based in the one-year Libor. The Libor swap curve is the same as the par yield curve: 2.5% at one year and 3.0% at two years.



75. If the NexTec floater had a 3% cap, the value of this embedded cap for the issuer would be closest to:

- A. 1.57.
- B. 1.09.
- C. 0.49.

The following information relates to 76-77

Marlin instructs Betta to also consider structural models of credit risk and makes the following points: (1) A structural model is based on the balance sheet of a company and views the equity as a European call option on the company's assets with a specific maturity and strike price, and (2) the probability of default for the debt is equal to the probability that the company's asset value falls below the face value of the debt and the loss given default is given by this shortfall.

Betta tells Marlin that he believes that, compared with structural models, reduced form models better match actual market conditions in assessing credit.

76. Are Marlin's points regarding structural models of credit risk most likely correct?

- A. Yes.
- B. No, he is incorrect with regard to Point 1.
- C. No, he is incorrect with regard to Point 2.

77. The reason why Betta's development of a reduced form model is most likely is?

- A. Reflect the changing business cycle
- B. Provide an option analogy
- C. Using balance sheet and traded assets

The following information relates to 78-81

Bill Akron is Director of Research at Cuyahoga Fixed Income Advisors. He has a large staff of research analysts and each year adds six new hires to the group. In addition to their regular work assignments, the analysts undergo formal training conducted by Akron. He plans to have five modules over the coming weeks each covering key fixed income concepts. In each module, Akron starts out by outlining a lesson.

Module 1:

“A good place to start a fixed income program is with a discussion of the yield curve and the information it conveys. This lesson will be theoretical in nature as we discuss interpretations of the term structure of interest rates. I want to present three theories that explain the shape of the yield curve. First, is the pure expectations theory which states that the forward rate is an unbiased predictor of the future spot rate. This theory assumes investors are affected by uncertainty and require a risk premium. Second, is the liquidity preference theory which postulates investors are willing to take on more risk by investing in longer maturity bonds if they are paid a liquidity premium. Its explanation for an upward sloping yield curve, even if spot rates are expected to be unchanged, is the liquidity premium. A third explanation of the shape of the yield curve is the segmented markets theory which says that yields are a function of supply and demand for funds in a specific maturity segment. This last theory is very similar to the preferred habitat theory and is premised on investors and borrowers having strong preferences for particular maturities.”

Module 3:

“Today I want to go over techniques we use at Cuyahoga to add alpha to our active fixed income strategies. Many of our portfolio managers like to use a portfolio management strategy called riding the yield curve. This strategy can enhance total return in two ways. First, it increases the yield of the portfolio by buying bonds with maturities longer than their investment horizon whenever the yield curve is upward sloping, is expected to maintain the same level and shape and spot rates rise as predicted by forward rates. Second, even if interest rates increase unexpectedly, since the bonds roll down the yield curve, the bonds will appreciate in price.”

Module 4:

“Today I want to go over several spread measures used in fixed income markets. The Z-spread provides a useful measure of risk for credit instruments such as corporate bonds. It uses the implied spot yield curve and adds the spread necessary to discount the bond’s cash flows and derive its current market price. The TED spread is used for the valuation of government bonds and is calculated as the difference between Libor and the yield on a T-bill of equal maturity. The Libor-OIS spread incorporates unsecured lending between banks. It serves as a good measure of the risk and liquidity of money market securities.”

Module 5:

“Swap rates are very useful in the valuation of bonds. I would like you to use the information in Exhibit 2 to value a bond, issued by AAA rated European Supranational Bank (ESB), maturing in 3.86 years, with a coupon rate of 2.86% paid annually. Dealers are quoting the bond flat to swaps. Simple interpolation can be used to perform the calculations.”

Exhibit 2 Yield Measures at Various Maturities					
Maturity (Years)	1	2	3	4	5
Off the run Bond yield (%)	0.25	0.32	0.46	0.57	0.66
On the run Bond yield (%)	0.21	0.27	0.41	0.50	0.59
Swap rate (%)	0.81	0.89	1.05	1.16	1.27

78. Akron is least likely correct with regard to which theory of the term structure of interest rates?

- A. Liquidity preference theory
- B. Pure expectations theory
- C. Segmented markets theory

79. Is Akron most likely correct with regard to how portfolio managers can profit from riding the yield curve?

71-104

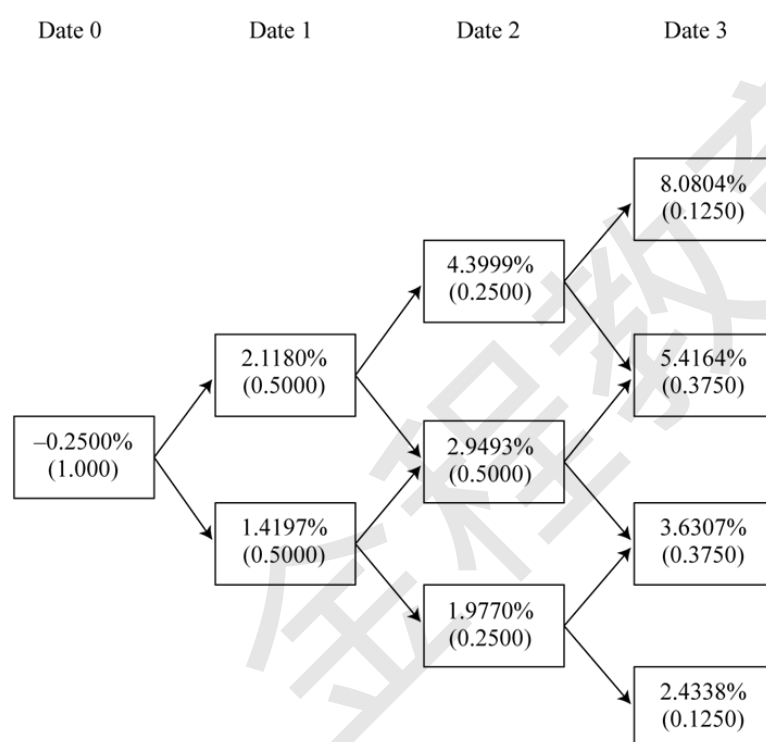
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- A. No, he is incorrect regarding the impact of interest rate changes.
 - B. No, he is incorrect with respect to bond maturities.
 - C. Yes.
80. Akron is least likely correct with regard to which spread measure in Module 4?
- A. Z-spread
 - B. TED spread
 - C. Libor–OIS spread
81. Based on the data in Exhibit 2, the spread the market is expecting for the credit and liquidity component of the yield to maturity for the ESB bond is closest to:
- A. 0.59
 - B. 0.66
 - C. 1.14

The following information relates to 82

Simon is a junior analyst in the fixed-income department of a large asset management firm. Simon is presently analyzing one of a bond which is a four-year corporate bond with a par value of €1,000. The wealth management firm's research team has estimated that the risk-neutral probability of default (the hazard rate) for each date for the bond is 1.50%, and the recovery rate is 20%. The coupon rate is the one-year benchmark rate plus 5%, paid annually. The following exhibit 1 shows the binomial interest rate tree.

Exhibit 1. One-Year Binomial Interest Rate Tree for 20% Volatility



82. The fair value of the bond is most likely equal to?

- A. 1142.81.
- B. 1,177.26.
- C. 1,173.55.

The following information relates to 83-84

Forster Investment Advisors (Forster) is a small asset management firm managing funds for both retail and institutional clients. Forster also undertakes investment banking activities.

Recently, Forster is analyzing purchasing an 8-year CDS on Terry LLC debt to hedge its current portfolio position. Collin, Forster's junior analyst to calculate if an upfront payment would be required and, if so, the amount of the premium. Collin collects the information for the CDS in Exhibit 1.

Exhibit 1 Data for 8-year CDS on Terry LLC	
Credit spread	500 basis points
Duration	6years
Coupon rate	3%

Finally, Forster purchases the 8-year CDS on Terry LLC debt. Three months later the credit spread for Terry LLC has increased by 150bps. Forster asks Collin to close out the CDS position on Terry LLC by entering into new offsetting contracts.

83. Based on Exhibit 1, the upfront premium as a percent of the notional for the CDS protection on Terry LLC would be closest to:

- A. 12.0%.
- B. 14.0%.
- C. 16.0%.

84. If Forster Investment Advisors enters into a new offsetting contract three months after purchasing the CDS protection on Terry LLC, this action will most likely result in:

- A. a gain on the CDS position.
- B. a loss on the CDS position.
- C. neither a loss or a gain on the CDS position.

Derivatives

The following information relates to 85-86

Donald Troubadour is a derivatives trader for Southern Shores Investments. The firm seeks arbitrage opportunities in the forward and futures markets using the carry arbitrage model.

Troubadour identifies an arbitrage opportunity relating to a fixed-income futures contract and its underlying bond. Current data on the futures contract and underlying bond are presented in Exhibit 1. The current annual compounded risk-free rate is 0.30%.

Exhibit 1 Current Data for Futures and Underlying Bond			
Futures Contract		Underlying Bond	
Quoted futures price	125.00	Quoted bond price	112.00
Conversion factor	0.90	Accrued interest since last coupon payment	0.08
Time remaining to contract expiration	Three months	Accrued interest at futures contract expiration	0.20
Accrued interest over life of futures contract	0.00		

Troubadour next gathers information on one existing position.

Position 1 (Euro/Yen Forward Contract):

One month ago, Troubadour purchased euro/yen forward contracts with three months to expiration at a quoted price of 100.20 (quoted as a percentage of par). The contract notional amount is ¥100,000,000. The current forward price is 100.05, and the current annualized risk-free rate is 0.30%.

85. Based on Exhibit 1 and assuming annual compounding, the arbitrage profit on the bond futures contract is closest to:

- A. 0.4158.
- B. 0.5356.

C. 0.6195.

86. The value of Position 1 is closest to:

A. -¥149,925.

B. -¥150,000.

C. -¥150,075.

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The following information relates to 87-89

Sonal Johnson is a risk manager for a bank. She manages the bank's risks using a combination of swaps and forward rate agreements (FRAs).

Johnson prices a three-year Libor-based interest rate swap with annual resets using the present value factors presented in Exhibit 1.

Exhibit 1 Present Value Factors	
Maturity (years)	Present Value Factors
1	0.990099
2	0.977876
3	0.965136

Johnson also uses the present value factors in Exhibit 1 to value an interest rate swap that the bank entered into one year ago as the receive-floating party. Selected data for the swap are presented in Exhibit 2. Johnson notes that the current equilibrium two-year fixed swap rate is 1.12%.

Exhibit 2 Selected Data on Fixed for Floating Interest Rate Swap	
Swap notional amount	\$50,000,000
Original swap term	Three years, with annual resets
Fixed swap rate (since initiation)	3.00%

Johnson reviews a 6×9 FRA that the bank entered into 90 days ago as the pay-fixed/receive-floating party. Selected data for the FRA are presented in Exhibit 3, and current Libor data are presented in Exhibit 4. Based on her interest rate forecast, Johnson also considers whether the bank should enter into new positions in 1×4 and 2×5 FRAs.

Exhibit 3 6×9 FRA Data	
FRA term	6×9
FRA rate	0.70%
FRA notional amount	US\$20,000,000

FRA settlement terms	Advanced set, advanced settle
----------------------	-------------------------------

Exhibit 4 Current Libor	
30-day Libor	0.75%
60-day Libor	0.82%
90-day Libor	0.90%
120-day Libor	0.92%
150-day Libor	0.94%
180-day Libor	0.95%
210-day Libor	0.97%
270-day Libor	1.00%

87. Based on Exhibit 1, Johnson should price the three-year Libor-based interest rate swap at a fixed rate closest to:
- A. 0.34%.
- B. 1.16%.
- C. 1.19%.
88. From the bank's perspective, using data from Exhibit 1, the current value of the swap described in Exhibit 2 is closest to:
- A. -\$2,951,963.
- B. -\$1,849,897.
- C. -\$1,943,000.
89. From the bank's perspective, based on Exhibits 3 and 4, the value of the 6×9 FRA 90 days after inception is closest to:
- A. \$14,817.

B. \$19,647.

C. \$29,635.

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The following information relates to 90-92

Bruno Sousa has been hired recently to work with senior analyst Camila Rocha. Rocha gives him three option valuation tasks.

Beta Company

Sousa uses the two-period binomial model to estimate the value of a European-style call option on Beta Company's common shares. The inputs are as follows.

- The current stock price is 38, and the call option exercise price is 40.
- The up factor (u) is 1.300, and the down factor (d) is 0.800.
- The risk-free rate of return is 3% per period.

Sousa makes two statements with regard to the valuation of a European-style option under the expectations approach.

Statement 1 The calculation involves discounting at the risk-free rate.

Statement 2 The calculation uses risk-neutral probabilities instead of true probabilities.

90. The value of the European-style call option on Beta Company shares is closest to:

- A. 4.83.
- B. 5.12.
- C. 7.61.

91. The value of the American-style put option on Beta Company shares is closest to:

- A. 4.53.
- B. 5.15.
- C. 9.32.

92. Which of Sousa's statements about binomial models is correct?

- A. Statement 1 only
- B. Statement 2 only
- C. Both Statement 1 and Statement

The following information relates to 93-94

Trident Advisory Group manages assets for high-net-worth individuals and family trusts.

Alice Lee, chief investment officer, is meeting with a client, Noah Solomon, to discuss risk management strategies for his portfolio. Solomon is concerned about recent volatility and has asked Lee to explain options valuation and the use of options in risk management.

Options on Stock

Lee uses the BSM model to price TCB, which is one of Solomon's holdings. Exhibit 1 provides the current stock price (S), exercise price (X), risk-free interest rate (r), volatility (σ), and time to expiration (T) in years as well as selected outputs from the BSM model. TCB does not pay a dividend.

Exhibit 1 BSM Model for European Options on TCB				
BSM Inputs				
S	X	r	Σ	T
\$57.03	55	0.22%	32%	0.25
BSM Outputs				
d_1	$N(d_1)$	d_2	$N(d_2)$	BSM Call Price
0.3100	0.6217	0.1500	0.5596	\$4.695

Solomon asks Lee which option Greek letter best describes the changes in an option's value as time to expiration declines.

93. To determine the long put option value on TCB stock in Exhibit 1, the correct BSM valuation approach is to compute:
- A. 0.4404 times the present value of the exercise price minus 0.6217 times the price of TCB stock.
 - B. 0.4404 times the present value of the exercise price minus 0.3783 times the price of TCB stock.
 - C. 0.5596 times the present value of the exercise price minus 0.6217 times the price of TCB stock.

stock.

94. Which of the following is the correct answer to Solomon's question regarding the option Greek letter?

- A. Vega
- B. Theta
- C. Gamma

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The following information relates to 95-96

Vladimir Kozorez is chief investment officer of MegaArb Associates (MAA), a multi-asset-class arbitrage hedge fund he recently launched. He has hired Ludvig Nils, an analyst with a deep and broad background in security analysis but no experience in arbitrage investing. At their first research meeting, Kozorez, who is mentoring Nils, makes the following comments regarding arbitrage using derivative contracts.

Comment 1 A forward commitment is a derivative instrument in the form of a contract that provides the ability to lock in a price or rate at which one can buy or sell the underlying instrument at some future date or exchange an agreed-on amount of money on a series of dates.

Comment 2 There is a difference between the pricing and the valuation of forward commitments. Pricing involves determining the appropriate forward commitment price or rate, typically after it has been initiated. Valuation involves determining the appropriate rate of the forward commitment when initiating the contract.

Comment 3 The two fundamental rules of arbitrage are that one does not use any of one's own money in a transaction, and one does not take any price risk.

Nils also analyzes a US Treasury futures contract that he plans to use to hedge a corporate bond's interest rate risk. He researches the characteristics of Treasury futures and observes the following characteristics.

Characteristic 1 The underlying deliverable bond in a US Treasury futures contract consists of a basket of bonds from which the short position can deliver the cheapest bond.

Characteristic 2 Eligible deliverable bonds can have various maturities and coupon rates, and the seller will receive the futures price adjusted by a conversion factor to account for any accrued interest.

Characteristic 3 Long and short positions are marked to market each day. Therefore, the contract's market value at the end of each day is zero.

95. Which of the comments made by Kozorez regarding arbitrage is least likely correct?

- A. Comment 2
- B. Comment 3
- C. Comment 1

96. Which characteristic observed by Nils regarding Treasury futures is least likely correct?

- A. Characteristic 1
- B. Characteristic 2
- C. Characteristic 3

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Alternative Investments

The following information relates to 97-98

Karen Westin, Kei Shinoya, and Carlos Perez, partners at PacRim Investment Consultants are advising a client, the West Lundia Government Employees Pension Plan (WLGE), a large public pension fund. In a previous meeting with the pension board of WLGE, the PacRim team made a recommendation to increase the fund's exposure to domestic real estate. Because of the WLGE plan's large size and in-house expertise, the pension fund has the capacity to invest in and manage a wide variety of real estate investments. The currency in West Lundia is the West Lundian Dollar (WL\$).

West Lundian Commercial Real Estate Market Expectations

Commercial real estate prices have experienced a moderate increase over the past year after a decade of unusually slow growth. Demand is expected to exceed supply over the next 10 years. The current average commercial mortgage rate of 3.75% is low by historical standards and is expected to stay relatively low for at least seven more years. The West Lundian economy is expected to enjoy an above average growth rate.

Exhibit 1: West Lundia's Economic Outlook

	Expected Annual Growth Rate	Relative to Other Developed Countries
Job Creation	3.0%	High
Population	1.8%	High
Retail Sales	1.5%	Low
Inflation	0.5%	Low

Because of the favorable real estate conditions, the consensus was to consider equity investments in real estate. Three options under consideration are:

Option 1: Direct investment, in an existing office building.

Option 2: Investment in a public equity REIT.

Oakstar Timber Balance Sheet (Year Ended 31 December 2008)

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Option 1: Direct Investment	
Expected NOI Years 1-7	WL\$ 7.0 MM
Expected NOI Year 8	WL\$ 8.5 MM
Required return on equity investment	10%
NOI growth rate after 8 years	3.25%
Option 2: REIT	
Recent NOI	WL\$ 140.0 MM
Non-cash rents	WL\$ 5.0 MM
Full year adjustment for acquisition	WL\$ 5.0 MM
Other assets	WL\$ 50.0 MM
Total liabilities	WL\$ 300.0 MM
Current market price per share	WL\$ 125.00
Shares outstanding	15 MM
Going-in cap rate	7.00%
NOI growth rate	2.50%
Option 3: REOC	
Expected AFFO in Year 8	WL\$ 13.5 MM
Holding Period	7 years
Present value of all dividends for 7 years	WL\$ 39.7 MM
Shares outstanding	1.0 MM
Cap rate	7.0%
Growth rate (from Year 8)	2.50%

Additional Information:

- The office building under consideration has existing tenants with long-term leases that will expire in seven years.
- The REOC terminal value at the end of seven years is to be based on a leading price-to-AFFO multiple of 12x.

97. The estimated value of the office building (Option 1) using the discounted cash flow approach is closest to:
- A. WL\$ 89 million.
 - B. WL\$ 93 million.
 - C. WL\$ 99 million.
98. Based on its estimated value using the asset value approach, the REIT identified in Option 2 is:
- A. fairly priced.
 - B. selling at a discount.
 - C. selling at a premium.

The following information relates to 99-100

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Shoshone Capital is a private equity firm that structures funds as limited partnerships for which it serves as the general partner. The funds focus on buyouts of publicly traded companies. Shoshone has produced a new marketing brochure that it will use to solicit capital investments. The first section of the brochure describes the common characteristics of buyout investments, including the following:

Characteristic 1: The target firms generally have experienced management teams.

Characteristic 2: The target firms often have the potential for substantial cost reductions.

Characteristic 3: The deals are generally arranged through relationships with the existing shareholders.

Section 2 of the brochure discusses how Shoshone aligns its interests with those of the managers of its portfolio companies.

Shoshone's brochure provides an example of a typical acquisition, in which it purchased LUW, Inc., for \$160 million. After the acquisition, LUW's new capital structure consisted of \$80 million in debt, \$65 million in preference shares, and \$15 million in common equity. After six years, Shoshone sold LUW, Inc., to another private equity firm for \$285 million. The brochure also provides an example of a private equity fund called Tensleep Fund, which has committed capital of \$150 million, a management fee of 2%, carried interest of 20%, and a hurdle rate of 9%. Carried interest is paid on a deal-by-deal basis. In the example, the fund calls \$100 million in commitments at the beginning of the first year and invests \$40 million in Firm A and \$60 million in Firm B. At the beginning of the second year, it calls the remaining \$50 million and invests it in Firm C. At the end of the second year, the investment in Firm B is sold for \$70 million. At the end of the third year, the fund's investment in Firm A is worth \$54 million, its investment in Firm C is worth \$40 million, and it has \$46 million in cash.

The brochure concludes with the history of a second private equity fund called Pocatello Fund. The first five years of this fund's cash flows and distributions are presented in Exhibit 1

Exhibit 1: Pocatello Fund Cash Flows and Distributions (\$ millions)

Year	Paid-In Capital	Mgmt Fees	Operating Results	NAV before Distributions	Carried Interest	Distributions	NAV after Distributions
2005	40	0.8	-3	36.2			36.2
2006	55	1.1	4	54.1			54.1
2007	80	1.6	11	88.5			88.5
2008	100	2	27	133.5	4.2	19	110.3
2009	125	2	34	167.3	6.6	38	122.7

Note: NAV is net asset value.

99. Which of the characteristics listed in the brochure regarding buyout investments is least likely correct?

- A. Characteristic 3
- B. Characteristic 1
- C. Characteristic 2

100. In 2009, the total value to paid in of the Pocatello Fund is closest to:

- A. 0.98×
- B. 1.44×
- C. 0.46×

The following information relates to 101

Pai-han Chen is a generalist analyst at Yushan. Chen's responsibilities include completing research projects assigned by the portfolio teams and responding to questions from institutional consultants. Anant Madan works as an alternative investment analyst for a consulting firm that is advising a large pension plan that seeks to expand its private equity exposure.

The portfolio manager asks Chen to determine the pre-money valuation for the potential investment in Robologistix, using the following assumptions:

- Time to exit event = 6 years.
- Terminal value = £32 million.
- Amount of investment = £3.0 million.
- Discount return used by investors = 40%.
- Number of shares issued and outstanding to current shareholders = 500,000.

101. Based on the assumptions Chen has for Robologistix, the estimated value per share is closest to:

- A. £3.54.
- B. £4.29.
- C. £2.50.

The following information relates to 102

Horizon Yield, Inc. is a commodities trading firm. Horizon's most important clients are pension plans seeking diversification by gaining exposure to commodities. Albert Billingsley specializes in agricultural markets and recently joined Horizon as head trader.

On 1 September 2012, Billingsley, anticipating an increase in the spot prices of corn and wheat, considers purchasing corn and wheat futures contracts for delivery on 15 December 2012. Price data for corn and wheat are presented in Exhibit 1

Exhibit 1. Corn and Wheat Spot and Futures Prices

Price per Bushel	
as of 1 September 2012	
Spot corn	\$2.65
Spot wheat	\$4.20
December 2012 corn	\$2.85
December 2012 wheat	\$3.70

102. Billingsley's activities in the wheat market would most likely classified him as a(n):

- A. Hedger.
- B. Speculator.
- C. Arbitrageur.

Portfolio Management

The following information relates to 103-108

Gordon Stenton, CFA, works for a small investment management firm in the United States. Part of his role involves managing portfolios for high net worth individuals. Currently, Stenton is corresponding with Rachael Matten. Matten has withdrawn her assets from Altune, an asset management firm, and is considering allocating \$2.5 million of those funds to Stenton's firm. Matten indicated that she was unhappy with the level of disclosure about trading methods and risk management that were employed at Altune.

Matten has sent Stenton a list of questions to assess the policies at Stenton's firm.

The first issue Matten wants clarification on pertains to the use of VaR. Among the documents that Altune sent Matten were two statements (shown in Exhibit 1). Matten was unsure of how to interpret either of these statements.

Exhibit 1: VaR

Statement 1: Your portfolio has a 5% monthly VaR of \$225,000.

VaR is calculated using a parametric methodology and an assumption of normality for all risk

Statement 2: The average loss once the VaR cutoff is exceeded is estimated to be \$320,000.

Matten indicates that in Statement 1, she understands that the \$225,000 represents the minimum monthly loss that will occur 5% of the time. She would also like to confirm her suspicion that the 1% VaR (loss) would be lower.

To provide Matten the risk management process employed at his firm, Stenton intends to send Matten the description shown in Exhibit 2.

Exhibit 2: Risk Management Measures

Primary Risk Management Measure — Steps

Step 1: Identify the top 10 exposures for the portfolio.

Step 2: Design a hypothetical global event that would simultaneously adversely affect each of the exposures.

Step 3: Assess the impact on the portfolio.

Matten has also raised an issue about investing in ETFs and the trading methods used by Stenton. She has read several negative comments in the financial press regarding the use of algorithms to trade and about the growing trend of high frequency trading. She has asked Stenton to comment on the concerns she has noted in Exhibit 3.

Exhibit 3: Concerns

Concern 1: The tracking error of ETFs chosen by Stenton tends to be fairly high.

Concern 2: The increase in market fragmentation resulting from an increase in electronic markets.

103. Which of the following statements regarding Statement 1 in Exhibit 1 is least accurate?

- A. The monthly VaR of \$225,000 indicates an annual VaR of \$2.7 million.
- B. The fund will lose more than \$225,000 in a month, 5% of the time.
- C. The methodology described is not applicable to portfolios containing option positions.

104. Statement 2 in Exhibit 1 is most accurately described as:

- A. incremental VaR.
- B. conditional VaR.
- C. marginal VaR.

105. In her interpretation of VaR, Matten is most likely:

- A. correct regarding the \$225,000 but incorrect regarding the 1% VaR.
- B. incorrect regarding the \$225,000 but correct regarding the 1% VaR.
- C. incorrect regarding the \$225,000 and the 1% VaR.

106. The primary risk management measure discussed in Exhibit 2 is most accurately described as:

- A. sensitivity risk analysis.
- B. reverse stress testing.

C. Monte Carlo simulation.

107. Stenton would least accurately respond to Concern 1 in Exhibit 3 by saying that tracking errors are caused by

- A. service charges paid by the authorized parties for primary market transactions.
- B. the increased use of execution algorithms to profit from arbitrage opportunities, which has decreased market stability.
- C. sampling and optimization methods used by funds.

108. Stenton should most accurately respond to Concern 2 in Exhibit 3 by saying that:

- A. U.S. markets are not fragmented.
- B. one specific type of trading algorithm, smart order routing, is chiefly responsible for market fragmentation.
- C. smart order routing was developed as a response to market fragmentation.

The following information relates to 109-111

Thoms Investment Advisory (TIA) is an investment management firm focused on health care equities in various global markets. TIA bases its investment process on the belief that common factors affect mean equity returns, and these common factors vary in degrees of importance by region or country.

Senior portfolio manager Thilo Singh is discussing characteristics of the firm's portfolios with junior analyst Douglas Park. Singh states, "We use factor models when analyzing regional health care index expected returns. In order for our analysts to understand our security selection process, they must first have a working knowledge of factor models."

Park adds, "Factor models are based on the arbitrage pricing theory (APT), which, similar to the CAPM, is an expression for the expected return of an asset or portfolio. The APT makes three key assumptions:

Assumption 1: A factor model describes asset returns.

Assumption 2: A well-diversified portfolio can eliminate factor risk.

Assumption 3: A state of financial market equilibrium exists among well-diversified portfolios."

Park continues: "I have examined three of the regional portfolios using our available information, and I have determined that they show sensitivity to a return-on-equity (ROE) factor as shown in Exhibit 1. That implies that an arbitrage opportunity could exist and be exploited by buying the Pacific Rim portfolio while selling short a portfolio composed of 60% of the Eurozone portfolio and 40% of the North America portfolio."

Exhibit 1

Portfolio sensitivities to ROE factor

Portfolio	Expected Return	Factor Sensitivity
Eurozone	11.9%	0.3
North America	10.7%	0.8
Pacific Rim	13.7%	0.5

Exhibit 2**Panel A: Factor model and portfolio characteristics**

Sector Region	Mean Local Index Return	β_{ROE}	β_{MKT}	β_{INV}	Information Ratio	Tracking Error
Eurozone	8.5%	0.3	0.20	1.5	0.971	3.500%
North America	6.0%	0.9	0.90	0.4	1.192	4.000%
Pacific Rim	9.0%	0.6	0.93	0.9	0.509	9.375%
Japan	5.0%	0.9	0.88	0.6	1.620	3.000%

PANEL B: FACTOR VALUES

Region	ROE	MKT	INV
Eurozone	0.020	0.04	0.070
North America	0.075	0.03	0.033
Pacific Rim	0.020	0.02	0.070
Japan	0.031	0.05	0.066

109. According to the data in Exhibit 2, the expected return for the Japan sector portfolio is closest to:

- A. 11.7%
- B. 14.7%
- C. 11.2%

110. TIA's three-factor model is most likely a:

- A. Macroeconomic model
- B. Fundamental model

C. Statistical model

111. According to the data in Exhibit 2, which portfolio most likely exhibits the risk characteristics of an aggressive active equity manager?

- A. Pacific Rim portfolio
- B. Eurozone portfolio
- C. Japan portfolio

金程教育

The following information relates to 112-114

Andrew Rutherford is a fixed-income analyst with Quantum Credit Advisers, an institutional investment management company. Quantum offers a variety of fixed-income oriented investment strategies, including a core-plus-bond strategy as well as a popular long – short credit hedge fund. Rutherford participates in Quantum’s weekly fixed-income committee meetings.

A macro topic for this week’s fixed-income committee is the possibility that the US Federal Reserve Board (Fed) will raise the federal funds rate (FFR) 25 bps at their next meeting. Quantum’s committee believes that the Fed is likely to hold off raising the FFR for at least six months because of weak economic data, and that weakness will be seen in the upcoming payroll numbers. Quantum expects the monthly non-farm payroll report to show that the US labor market added only 90,000 jobs this month, roughly in line with consensus expectations. The committee is debating what will happen to the short end of the US yield curve (and what will happen subsequently to short-dated bond prices) if the payroll report comes in at the level they expect.

Quantum’s committee forecasts weaker-than-expected GDP growth in the future and expects that GDP growth will be more volatile as the economy ultimately adjusts to a changing interest rate policy. Rutherford believes these factors will exert downward pressure on short-term Treasury Inflation-Protected Securities (TIPS) rates.

As part of Rutherford’s analysis, he forecasts the real one-year risk-free rate to be 0.25% and average inflation over the next year to be 1.5%. A zero-coupon nominal Treasury bond with one year to maturity and a par value of \$100 is currently trading at \$98.05. Rutherford notes the discrepancy in market pricing relative to his forecasts.

Quantum is looking to enhance its equity offerings. It has recently hired David Wu to help construct a quantitative equity rotation strategy that will use economic input from the fixed-income committee. Wu has a background in quantitative modeling of equity markets and is tasked with developing an aggregate earnings forecasts. He is also working on incorporating a target equity risk premium into an equity rotation model. Wu makes the following observations based on his prior experiences:

Observation 1 The equity premium should be larger than, and positively correlated with, the corporate bond premium.

Observation 2 Corporate profitability is a leading economic indicator.

Observation 3 Equities provide superior consumption-hedging properties to high-quality bonds.

The equity rotation model can allocate between small- and large-cap stocks and growth and value stocks and can take targeted sector positions to enhance returns relative to the broader equity market. As the model is nearing completion, Wu evaluates how it would have performed during previous economic cycles. He runs extensive backtesting and observes the following tendencies of the model in the aftermath of recessions:

- Rotates from consumer discretionary to consumer staple stocks
- Rotates from large-cap growth stocks into large-cap value stocks
- Rotates from small-cap value stocks to mid-cap value stocks

112. Is Rutherford most likely correct with regard to the impact on short-term TIPS rates?

- A. Yes.
- B. No, with regard to the impact of volatility.
- C. No, with regard to the impact of growth.

113. Which implied market expectation most likely accounts for the discrepancy in bond pricing that Rutherford notes?

- A. Inflation uncertainty
- B. Interest rate risk
- C. Credit risk

114. Which of Wu's three observations is least likely correct?

- A. Observation 3
- B. Observation 1

C. Observation 2

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The following information relates to 115-118

Tamara Ogle, CFA, and Isaac Segovia, CAIA, are portfolio managers for Lucas Investment Management (Lucas). Ogle and Segovia both manage large institutional investment portfolios and are working together to research portfolio optimization strategies. Ogle mentions the Premier fund. Exhibit 1 shows the Premier fund's exposures and expected return, as well as benchmark specifications.

Exhibit 1: Premier Fund Characteristics

Security(i)	Portfolio Weight(w_{Pi})	Benchmark Weight(w_{Bi})	Return $E(R_i)$
X	35%	40%	11.20%
Y	20%	25%	4.25%
Z	45%	35%	14%
Total	100%	100%	

Ogle states that the information ratio for a manager is a good indicator of relative performance. Ogle also makes the following statements:

Statement 1: "Unlike the Sharpe ratio, the information ratio can be affected by the addition of cash or leverage."

Statement 2: "The information ratio of an unconstrained portfolio is unaffected by aggressiveness of the active weights."

Statement 3: "Among active portfolios with similar strategy, the portfolio with the highest information ratio need not have the highest Sharpe ratio."

Statement 4: "The optimal active risk for an unconstrained portfolio is less than the optimal active risk for a constrained portfolio."

Meanwhile, Segovia considers the Indigo funds. Exhibit 3 shows selected data for the funds.

	S&P 500	Indigo Fund
Expected annual return	9.0%	10.5%
Return standard deviation	18.0%	25.0%
Sharpe ratio	0.333	0.30
Active return		1.2%
Active risk		8.0%
Information ratio		0.15

Ogle and Segovia are also worried about one of the fund's small-cap managers whose portfolio has been underperforming its benchmark for the past few years, and the output from Ogle's fundamental law analysis was troubling. Ogle has recommended the fund consider replacing the manager and has provided the committee with a list of several alternative managers. Committee reviews the handout containing the expected information ratio and active risk measures and asks whether one statistic is more relevant than the other. Ogle responds, "They are both equally important."

115. Based on the information in Exhibit 1, the ex-ante active return for the Premier fund is closest to:

- A. 0.63%.
- B. 1.05%.
- C. 2.92%

116. Regarding Ogle's Statements 1 and 2:

- A. both statements are incorrect.
- B. one statement is correct and one is incorrect.
- C. both statements are correct.

117. Which of the following pairs of weights would be used to achieve the highest Sharpe ratio and optimal amount of active risk through combining the Indigo Fund and benchmark portfolio, respectively?

- A. 1.014 on Indigo and -0.014 on the benchmark
- B. 1.450 on Indigo and -0.450 on the benchmark
- C. 1.500 on Indigo and -0.500 on the benchmark

118. Is Ogle's response to committee regarding small-cap managers most likely correct?

- A. No, the committee should focus on active risk.

- B. Yes
- C. No, the committee should focus on the expected information ratio.

金程教育

The following information relates to 119-120

Brendan Mollie is a summer intern at Faver Asset Management. He is currently learning about the trading systems used at Faver. As part of his orientation, Sean McDermott, the head trader at Faver, provides a printout to Mollie as shown in **Limit order book for SIVP**.

Limit order book for SIVP

Bids				Asks			
Dealer	Time Entered	Price	Size	Dealer	Time Entered	Price	Size
A	11:29 am	12.22	2,500	C	9:31 am	12.26	1,500
B	11:39 am	12.21	2,000	A	9:31 am	12.28	2,500
C	11:43 am	12.20	3,000	B	9:41 am	12.31	3,000

119. For a purchase transaction at a price of \$12.27, and using dealer B quotes, the effective spread per share on the trade is closest to:

- A. \$0.01.
- B. \$0.02.
- C. \$0.04.

120. Mollie executes a market sell order for 3000 shares of SVIP. Based on Exhibit 1, the total amount that Mollie will receive, on a per share basis, for executing the market sell order is closest to:

- A. \$12.22
- B. \$12.21
- C. \$12.20