

2013 Level II Mock Exam: Afternoon Session

The afternoon session of the 2013 Level II Chartered Financial Analyst (CFA®) Mock Examination has 60 questions. To best simulate the exam day experience, candidates are advised to allocate an average of 18 minutes per item set (vignette and 6 multiple choice questions) for a total of 180 minutes (3 hours) for this session of the exam.

Questions	Topic
1–6	Ethical and Professional Standards
7-12	Derivatives
13-18	Fixed-Income Investments
19-24	Portfolio Management
25-30	Economics
31-42	Financial Reporting & Analysis
43-48	Corporate Finance
49-60	Equity Investments
Total:	180

Questions 1 through 6 relate to ethical and professional standards.

McGuinn Case Scenario

Forster Investment Advisors (Forster) is a small asset management firm managing funds for both retail and institutional clients. Forster also undertakes investment banking activities, including market making, but only for a few shares that it follows closely.

Forster's finance director, who also serves as the firm's compliance officer, has given notice he will retire in one month's time. Forster's managing director asks Terry McGuinn, CFA, if he would be interested in being the compliance officer after the finance director retires. McGuinn, an independent compliance consultant whose clients mostly include pension funds, agrees to meet the managing director to discuss the position.

At the meeting, McGuinn is told, "Forster adopted the CFA Code and Standards 10 years ago. The outgoing finance director assured us at the time we adopted the Code, all of Forster's policies and procedures met the requirements of the Code and Standards and most of the recommendations as well. As a result, we mention compliance with the Code and Standards in all of our marketing material. We encourage you to implement new changes, but the implementation will need to be coordinated through the human resources department." After agreeing on written specific duties and responsibilities for the role, McGuinn accepts the offer to act as Forster's compliance officer on a part-time consultancy basis.

On his first day as the new compliance officer, McGuinn immediately reviews a draft response to a request for proposal (RFP) to be submitted the next day to a potential pension fund client. The proposal is identical to another RFP sent out three months ago and includes Forster's organizational chart, an in-depth description of its investment process and the occasional use of third-party research providers, a guarantee of a minimum 5% investment return and return of principal through a guaranteed structured savings product, underwritten by an investment-grade life insurance company. McGuinn approves the RFP document without making any changes.

That same day, Colleen Collins, a research analyst, approaches McGuinn, concerned that she may be in possession of insider information. Collins relates how she was at a party the night before and overheard a conversation between two CEOs of competing, publicly listed manufacturing companies. The CEOs discussed, but did not express their opinions on, the validity of a recent article published in an online industry newsletter, which was speculating on the benefits of a merger between their two companies. The newsletter is available by subscription only. One of these companies is on Forster's recommended buy list.

Following this conversation, McGuinn feels that it is necessary to enhance Forster's rules and procedures when dealing with possible insider information. He recommends the following changes to the company's policies and procedures:

- Recommendation 1: Stop market-making activities when in possession of material nonpublic information.
- Recommendation 2: Regularly review employee and proprietary trading.
- Recommendation 3: Require all employees to attend an annual refresher course on how to identify and handle material nonpublic information.

After reviewing how Forster chooses and retains its stockbrokers every year, McGuinn makes several changes in the policy. The following guidelines are implemented and communicated to clients. Stockbroker selection must be based on the brokers' ability to:

- Guideline 1: provide accounting software.
- Guideline 2: execute client transactions efficiently.
- Guideline 3: obtain invitations to investment conferences for loyal clients.

McGuinn undertakes an investigation based on reports citing that several Forster fund managers were witnessed being wined and dined over the past few weeks by large brokerage firms trying to get Forster's business. The same employees have not notified him about these dinners, violating Forster's internal policies. McGuinn notifies the employees in writing that they have been violating the company policy. In the letter of notification, he requires the employees to abide by the policy in the future.

1. Is McGuinn's proposed compliance officer structure consistent with the CFA Institute Code and Standards?
 - A. Yes
 - B. No, with regard to policies and procedures
 - C. No, with regard to authority and responsibility

Answer = B

"Guidance for Standards I-VII," CFA Institute

2013 Modular Level II, Vol. 1, Reading 2, Standard IV (C) Responsibility of Supervisors

Study Session 1-2-a

Demonstrate a thorough knowledge of the Code of Ethics and Standards of Professional Conduct by applying the Code and Standards to specific situations.

B is correct because Forster's adoption of the CFA Code and Standards took place more than 10 years ago, and it is not evident that reviews have taken place to adjust for any changes since then. It is also not clear that the company has additional policies and procedures to ensure compliance with local legal and regulatory requirements. According to Standard IV (C) Responsibilities of Supervisors, if a compliance system is non-existent or if an existing compliance system is inadequate, a member

should not accept supervisory responsibility until the firm adopts reasonable procedures to allow adequate exercise of supervisory responsibilities. McGuinn should thus undertake a review prior to accepting the position, ascertaining that proper policies and procedures are in place. McGuinn's authority and responsibility appear to have been clearly defined through his written terms of reference, and he was given authority to implement needed changes. McGuinn would be required, however, to supervise and coordinate the implementation through the human resources department.

2. Which item in the request for proposal (RFP) is inconsistent with Standard I (C) Misrepresentation?
- A. Guaranteed investment return
 - B. The firm's organizational structure
 - C. Use of third-party research providers

Answer = B

"Guidance for Standards I-VII," CFA Institute

2013 Modular Level II, Vol. 1, Reading 2, Standard I (C) Misrepresentation

Study Session 1–2–a

Demonstrate a thorough knowledge of the Code of Ethics and Standards of Professional Conduct by applying the Code and Standards to specific situations.

B is correct because the RFP was done on the basis of the old organizational structure, which would have included the retired finance director. Standard I (C) requires members not to misrepresent the qualifications of a firm. With a senior professional leaving the firm, the organizational structure should be updated prior to submitting a RFP for a potential client's consideration.

3. Did Collins *most likely* receive insider information as defined by the CFA Standards?
- A. Yes
 - B. No, because the information is considered public
 - C. No, because the information is considered non-material

Answer = C

"Guidance for Standards I-VII," CFA Institute

2013 Modular Level II, Vol. 1, Reading 2, Standard II (A) Material Nonpublic Information

Study Session 1–2–a

Demonstrate a thorough knowledge of the Code of Ethics and Standards of Professional Conduct by applying the Code and Standards to specific situations.

C is correct because when determining whether information is considered "insider," the source of the information must be assessed as required by Standard II (A) Material Nonpublic Information.

Having an industry or trade newsletter speculate on the benefits of a merger between two companies does not necessarily mean that the two companies are actually merging. The two CEOs are overheard discussing the newsletter but never provide their perspectives or opinions on the article, so the information is only related to the newsletter. Thus, the information is not considered material.

4. Which of McGuinn's recommendations is *least* appropriate to implement as per recommended procedures for compliance of Standard II (A) Material Nonpublic Information?
- A. Recommendation 1
 - B. Recommendation 2
 - C. Recommendation 3

Answer = A

"Guidance for Standards I-VII," CFA Institute
2013 Modular Level II, Vol. 1, Reading 2, Standard II (A) Material Nonpublic Information,
Recommended Procedures for Compliance
Study Session 1–2–b
Recommend practices and procedures designed to prevent violations of the Code of Ethics and Standards of Professional Conduct.

A is correct because when a firm acts as a market maker, a prohibition on proprietary trading may be counterproductive to the goals of maintaining the confidentiality of information and market liquidity, as outlined in Standard II (A) Material Nonpublic Information. In some cases, a withdrawal by the firm from market-making activities would be a clear tip to outsiders. Firms that continue market-making activity while in the possession of material nonpublic information should, however, instruct their market makers to remain passive to the market (i.e., take only the opposing side of unsolicited customer trades).

5. Which guideline with regard to choosing stockbroking services is consistent with Standard III (A) Duty to Clients?
- A. Guideline 1
 - B. Guideline 2
 - C. Guideline 3

Answer = B

"Guidance for Standards I-VII," CFA Institute
2013 Modular Level II, Vol. 1, Reading 2, Standard III (A) Loyalty, Prudence, and Care
Study Session 1–2–a

Demonstrate a thorough knowledge of the Code of Ethics and Standards of Professional Conduct by applying the Code and Standards to specific situations.

B is correct because members and candidates have a responsibility under Standard III (A) Loyalty, Prudence, and Care to obtain best execution (i.e., a trading process that seeks to maximize the value of the client's portfolio within the client's stated investment objectives and constraints). Standard III (A) Loyalty, Prudence, and Care requires an investment manager to use client brokerage to the benefit of the client and not to the firm unless the methods or policies followed to address the potential conflict of interests is disclosed to the client prior to the firm receiving the benefit. Forster did not do this with regard to the accounting software. In addition, members and candidates have a responsibility under Standard III (A) Loyalty, Prudence, and Care to use client brokerage to the benefit of all clients, not a group of select clients, unless it is under a directed brokerage arrangement. That is not the case in this scenario.

6. With regard to the fund managers under investigation, the *most* appropriate additional action McGuinn should take is to:
- A. monitor their future actions.
 - B. report the misconduct up the chain of command.
 - C. require a statement stating the behavior will cease.

Answer = A

"Guidance for Standards I-VII," CFA Institute

2013 Modular Level II, Vol. 1, Reading 2, Standard IV (C) Responsibility of Supervisors

Study Session 1–2–b

Recommend practices and procedures designed to prevent violations of the Code of Ethics and Standards of Professional Conduct.

A is correct because as a supervisor, under Standard IV (C) Responsibilities of Supervisors, McGuinn has a responsibility after he notices and investigates the violation to monitor the employees to ensure that the errant behavior has changed and conforms to the Code and Standards. Reporting the violation up the chain of command along with requiring a statement from the employees stating the behavior will not be repeated is not enough.

Questions 7 through 12 relate to derivative investments.

Rudi Kesselaar Case Scenario

Rudi Kesselaar, the treasurer for Internationaal Industrie Groep (IIG), a large, Dutch electronics multinational, directs the liquidity and hedging strategies of IIG's global subsidiaries. The treasurer's office maintains banking relationships and lines of credit in most countries where IIG has a presence and facilitates currency and interest rate hedges between each subsidiary and its respective local country

bank. Kesselaar is meeting with IIG's head trader, Arndt Wolters, to review IIG's economic forecasts and planned hedging strategies for IIG's two largest projects for next year.

Kesselaar tells Wolters, "Our Polish subsidiary, IIG-Polska (IIG-P), will require financing for 12 months to execute a 50 million Polish zloty (PLN) upgrade of a manufacturing facility near the German border. Earlier this year, we set up a PLN60 million line of credit for them. IIG-P will be able to pay in either EUR or PLN to complete the factory upgrade. What hedging solutions would you recommend?"

Wolters replies, "Our economists (whose forecast is shown in Exhibit 1) project the PLN/EUR rate to decline to PLN3.75 over the next year. Although eurozone interest rates aren't expected to rise, Polish interest rates could start to rise by the fourth quarter of this year. Because the PLN swaps market is large enough to allow us to hedge a floating rate loan and IIG-P can pay in either EUR or PLN, I have developed two alternatives:

Alternative 1—Pay in EUR:

- IIG-P executes a 12-month EUR/PLN fixed-to-fixed currency swap with IIG, swapping PLN50,000,000 for EUR11,904,762.
- IIG-P pays the EUR rate of 1.50% and receives the PLN rate of 5.75%.
- Both PLN and EUR yield curves are flat for the next 12 months, and the respective risk-free rates are 5.50% in PLN and 0.40% in EUR.

Alternative 2—Pay in PLN:

- IIG-P draws on the PLN line of credit that is charged an interest rate based on the Warsaw Interbank Offered Rate (WIBOR).
- IIG-P purchases a six-month receiver swaption with an exercise rate of 4.75%. If exercised, IIG-P can enter into an interest rate swap in six months with a fixed rate equal to the exercise rate."

Exhibit 1
Currency and Interest Rate Projections

Date	1-Month WIBOR	1-Month Euribor	PLN/EUR Exchange Rate
1-Apr-13(spot)	4.75%	0.15%	4.2000
1-Jul-13	4.75%	0.20%	4.0000
1-Oct-13	4.85%	0.25%	3.8000
1-Jan-14	5.25%	0.30%	3.7500
1-Apr-14	5.25%	0.35%	3.7500

Kesselaar then informs Wolters, "Our second project in Latvia is to finance construction of an oil terminal on the Gulf of Riga for LAT Transport (LAT), a Latvian government-sponsored enterprise. The project has a value of EUR60 million today. LAT's stock is a large component of the Riga Equity Index and has an almost perfect correlation with the index. Financing for the project is as follows:

- The Latvian government issues a four-year bond denominated in Latvian lats (LVL) to finance 50% of the construction costs.
- IIG provides LAT a EUR30 million loan for two years to finance the remaining 50% of the construction costs. In two years, the Latvian government intends to issue another LVL bond to allow LAT to repay the IIG loan.

- For the next two years, IIG will have an option to purchase 50% of the oil terminal for LVL45.92 million (equivalent to EUR32 million) at any time. The LVL/EUR exchange rate is pegged at LVL1.4350 per EUR because the Latvian government engages in market transactions to maintain this rate.”

Wolters responds to Kesselaar, “LAT’s market capitalization essentially reflects the value of the sum of its oil terminals. I think the price of the purchase option is cheap. I estimated the value of this option assuming the Riga Index can move up 15% or down 20% each year and the LVL annual risk-free rate is 2%. Using the Black–Scholes–Merton model, I calculate that the normal probabilities for the Riga Index are 59% for a gain each year and 41% for a loss.”

Kesselaar then tells Wolters, “I don’t believe your analysis is consistent with the Black–Scholes—Merton model assumptions. Please keep in mind that Standard & Poor’s has assigned Latvia a credit rating of BBB–, which is only one level above junk status. However, if Latvia still appears economically and politically stable in two years, I think we should definitely exercise our option.”

7. Using the spot rates shown in Exhibit 1, on 1 April 2013, the market value of the currency swap described in Alternative 1 from IIG-Polska’s perspective is *closest* to:
 - A. positive PLN390,000.
 - B. negative PLN390,000.
 - C. positive PLN550,000.

Answer = B

“Swap Markets and Contracts,” by Don M. Chance, CFA
2013 Modular Level II, Vol. 6, Reading 51, Section 4.2.2
Study Session 17–51–d

Calculate and interpret the fixed rate, if applicable, and the foreign notional principal for a given domestic notional principal on a currency swap, and estimate the market values of each of the different types of currency swaps during their lives.

B is correct. At the start of the currency swap:

IIG-Polska pays IIG PLN50,000,000.

IIG pays IIG-Polska EUR11,904,762 (the EUR equivalent of PLN50,000,000 at an exchange rate of PLN4.20).

On 1 October 2013:

IIG-P pays IIG $[EUR11,904,762 \times 0.015 \times (180/360)] = EUR89,285$;

IIG pays IIG-P $[PLN50,000,000 \times 0.0575 \times (180/360)] = PLN1,437,500$;

and on 1 April 2014, both parties exchange interest payments plus principal amounts:

IIG-P pays IIG $EUR11,904,762 + EUR89,285 = EUR11,994,047$;

IIG pays IIG-P $PLN50,000,000 + PLN1,437,500 = PLN51,437,500$.

The present value factors at the EUR risk-free rate of 0.40% are:

$B_0(180) = 0.9980$ (Present value of EUR89,285 = EUR89,106);

$B_0(360) = 0.9960$ (Present value of EUR11,994,047 = EUR11,946,071).

The present value factors at the PLN risk-free rate of 5.50% are:

$B_0(180) = 0.9732$ (Present value of PLN1,437,500 = PLN1,398,975;

$B_0(360) = 0.9479$ (Present value of PLN51,437,500 = PLN48,757,606.

Present value of total EUR payments made by IIG-Polska = EUR12,035,177 (or PLN50,547,743).

Present value of total PLN payments made by IIG = PLN50,156,581.

Market value to IIG-P = PV of payments received – PV of payments made =

PLN50,156,581 – PLN50,547,743 = –PLN 391,162.

8. Assume IIG-P and IIG enter into the swap described in Alternative 1, and the rates shown in Exhibit 1 materialize as projected. On 1 April 2014, the market value to IIG-Polska of the final exchange of payments would be *closest* to:
- A. positive PLN1,062,000.
 - B. positive PLN6,450,000.
 - C. negative PLN6,450,000.

Answer = B

“Swap Markets and Contracts,” by Don M. Chance, CFA

2013 Modular Level II, Vol. 6, Reading 51, Section 3.1

Study Session 17–51–d

Calculate and interpret the fixed rate, if applicable, and the foreign notional principal for a given domestic notional principal on a currency swap, and estimate the market values of each of the different types of currency swaps during their lives.

B is correct. At the onset of the currency swap, IIG-P paid IIG PLN50,000,000 and IIG paid IIG-P EUR11,904,762 (50,000,000/4.20). On 1 April 2014, the notional amounts plus the last interest payment will be made. IIG pays IIG-P PLN50,000,000 + PLN1,437,500 = PLN51,437,500. IIG-P pays IIG EUR11,904,762 + EUR89,285,714 = EUR11,994,048 (which now has a value of PLN44,977,679 at an exchange rate of PLN3.75 per EUR).
PLN51,437,500 – PLN44,977,679 = PLN6,459,821.

9. If IIG-P uses Alternative 2 and assuming the interest rate forecasts in Exhibit 1 hold, does Wolters’ recommendation of purchasing and exercising the swaption work?
- A. Yes
 - B. No, because the swap would not begin for six months
 - C. No, because the swap would not hedge the interest rate risk

Answer = C

“Swap Markets and Contracts,” by Don M. Chance, CFA

2013 Modular Level II, Vol. 6, Sections 6.1 and 6.2

Study Session 17–51–f

Explain and interpret the characteristics and uses of swaptions, including the difference between payer and receiver swaptions.

C is correct. IIG-P would have a floating rate loan and want to hedge against rising interest rates. A receiver swaption can be exercised into a receive fixed swap, which hedges against falling interest rates.

10. The price of IIG's option on LAT Transport valued according to a two-period binomial model is *closest* to:

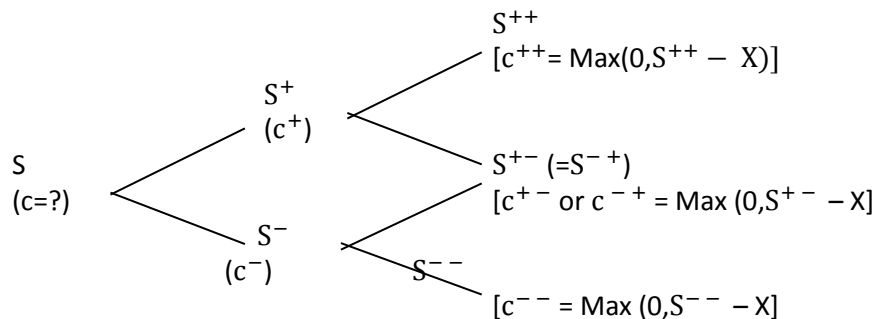
- A. EUR2.0 million.
- B. EUR3.2 million.
- C. EUR5.6 million.

Answer = B

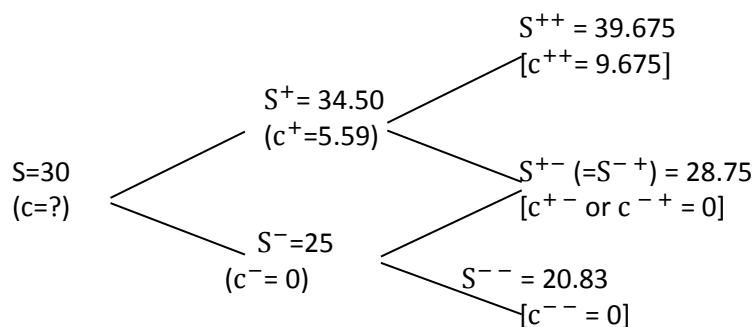
"Option Markets and Contracts," by Don M. Chance, CFA
2013 Modular Level II, Vol. 6, Section 6.2, Reading 50
Study Session 17–50–b

Calculate and interpret prices of interest rate options and options on assets using one- and two-period binomial models.

B is correct. According to the two-period binomial model:



where S = value of the underlying equity or EUR30 million (50% of EUR60 million), thus stated in EUR millions:



The value of a call is:

$$c^+ = \frac{\pi c^{++} + (1 - \pi) c^{+-}}{1 + r} = \frac{0.5895 \times 9.675 + [(1 - 0.5895) \times 0]}{1 + 0.02} = 5.59$$

$$c = \frac{\pi c^+ + (1 - \pi) c^-}{1 + r} = \frac{(0.5895 \times 5.59) + [(1 - 0.5895) \times 0]}{1 + 0.02} = 3.23$$

$$\text{where } \pi = \frac{1 + r - d}{u - d} = \frac{1 + 0.02 - 0.8333}{1.15 - 0.8333} = 0.5895.$$

Solving backward over two periods, $c = \text{EUR}3,230,000$. IIG has an option to purchase a EUR30 million share for the present value of EUR2 million (32 million future purchase price – 30 million repayment of loan). The option is priced cheaper than the EUR3.23 million fair value indicated in the two-step binomial model.

11. The option-pricing model used by Wolters is *least likely* appropriate because the:

- A. option is European.
- B. standard deviation of the log return does not change.
- C. underlying price follows a lognormal probability distribution.

Answer = A

“Option Markets and Contracts,” by Don M. Chance, CFA
2013 Modular Level II, Vol. 6, Section 7.1, Reading 50
Study Session 17–50–d

Explain and evaluate the assumptions underlying the Black–Scholes–Merton model.

A is correct. The option can be exercised at any time for the next two years. Therefore, it is not an European option but an American option. With only a few very advanced variations, the Black–Scholes–Merton model does not price American options.

12. In order to hedge the risks posed by the LAT project to IIG, Wolters would *most likely* decide to use a(n):

- A. total return swap.
- B. interest rate swap.
- C. credit default swap.

Answer = C

“Credit Derivatives: An Overview,” by David Mingle
2013 Modular Level II, Vol. 6, Reading 53
Study Session 17–53–c–d

Compare CDS, total return swaps, asset swaps, and credit spread options.

Identify uses of CDS (such as hedging exposure to credit risk, enabling action on a negative credit view, engaging in arbitrage between markets).

C is correct. The Latvian government is dependent on the future successful issue of debt in order to pay back IIG's loan. With an S&P rating of BBB-, one downgrade would give the country's debt "junk" status. IIG's primary risk is the credit risk associated with a default on its loan to LAT Transport. A credit default swap on the four-year Latvian government bond would likely help mitigate the credit risk because the loan repayment is dependent on the successful issue of future Latvian government debt.

Questions 13 through 18 relate to fixed-income investments

Gloucester Case Scenario

Beverly Magnolia, CFA, is a fixed-income analyst at Gloucester Advisors, LLC. Lynn Peabody, Gloucester's director of research, asks Magnolia to prepare several analyses for the next investment committee meeting. Magnolia's first assignment is to review a new bond issue for Rockport Corporation. Information about Rockport's outstanding and proposed senior debt issues is provided in Exhibit 1.

Exhibit 1 — Bond Data for Rockport

	Outstanding Bond	New Bond
Issue Date	2010	2012
Par Amount (\$millions)	500	300
Issue Ratings	BBB/Baa2	Not yet rated
Issuer	Holding Company	Operating Company
Issuer EBITDA (\$millions)	0	400
Seniority Ranking	Senior Unsecured	Senior Unsecured

Magnolia reviews the new bond issue prospectus and makes the following comment to Peabody: "I believe the issue rating for the new bond could be higher than for the outstanding bond. Because both bonds have the same seniority ranking, they have the same claim on the cash flows and assets of the issuer. The new bond is structurally subordinated to the outstanding bond. Neither of the ratings, of course, would reflect idiosyncratic risk, such as potential debt-financed acquisitions."

In her analysis, Magnolia uses the financial data from the new issue prospectus presented in Exhibit 2 to calculate credit ratios.

Exhibit 2
Financial Data for Rockport

	2011	2012

Revenues	20,500	18,700
Operating Expenses	18,700	17,100
Depreciation	750	670
Interest	304	257
Taxes	149	135
Net Income	597	539
Total Debt	4,500	4,425

Magnolia also compares Gloucester's credit metrics with the industry averages using the information presented in Exhibit 3.

Exhibit 3 — Selected Financial Data for Rockport and Industry

	Rockport			Industry		
	2010	2011	2012	2010	2011	2012
Operating Margin (%)	12.7	(6.9)	8.7	8.0	4.0	6.0
FCF/Debt (%)	9.2	5.6	6.2	12.0	8.0	10.0
Debt/Capital (%)	36.7	38.2	39.6	35.6	33.7	33.0
Return on Capital (%)	8.6	2.6	7.7	7.7	6.6	7.1

Peabody tells Magnolia that Gloucester forecasts that interest rates are likely to increase as economic activity accelerates but not in a parallel fashion across the yield curve. She asks Magnolia to review three Treasury STRIPS portfolios that Gloucester's manages and assess their performance if the forecast is realized. Magnolia uses the data in Exhibit 4, which shows how the portfolios are allocated across key rate durations to prepare her analysis.

Exhibit 4

Key Rate Duration Profile for Treasury STRIPS Portfolios

	Key Rate Durations		
	5 Years	15 Years	30 Years
Portfolio A	25%	50%	25%
Portfolio B	30%	30%	40%

Portfolio C	50%	25%	25%
Rate Change	+3 bps	+6 bps	+5 bps

Peabody asks Magnolia to evaluate a convertible bond issued by the Rockport Holding Company in 2008. The bond has a conversion ratio of 80 and a straight value of \$965.00. Rockport's stock is trading at \$12.25. Gloucester is considering paying the conversion value for the bond, but Peabody is concerned that the stock price may decline. Magnolia evaluates the potential loss the bond would incur, assuming a 10% decline in the stock price.

Finally, Magnolia reviews pricing for Rockport's \$500 million outstanding bond, which is callable. A dealer quotes bid-side prices at a zero-volatility spread of 185 bps and an option adjusted spread of 130 bps. Magnolia notes that a bond identical in every regard, except that it is option-free, is quoted in the market at a zero-volatility spread of 150 bps.

13. Magnolia's comments on the rating the agencies could assign Gloucester's new bond issue is *least likely* correct regarding:

- A. idiosyncratic risk.
- B. seniority ranking.
- C. structural subordination.

Answer = C

"Fundamentals of Credit Analysis," by Christopher L. Goodkind, CFA

2013 Modular Level II, Vol. 5, Reading 42, Section 4

Study Session 14–42–c–d

Distinguish between corporate issuer credit ratings and issue credit ratings and describe the rating agency practice of "notching";

Explain risks in relying on ratings from credit rating agencies.

C is correct because Magnolia's comment on structural subordination is incorrect. Although both bonds are senior unsecured, this ranking is only within the entity that issued them. The operating company generates all the cash flow, and the holding company is dependent on the up streaming of dividends to service the debt. In the case of distress, the obligations at the operating company, Rockport, would be paid before making funds available to other entities. The holding company debt is thus structurally subordinated to the operating company debt.

14. Based on the data in Exhibit 2, the leverage and coverage ratios, respectively, for Gloucester from 2011 to 2012 have *most likely*:

- | | <u>Leverage</u> | <u>Coverage</u> |
|----|-----------------|-----------------|
| A. | improved | improved. |
| B. | improved | deteriorated. |
| C. | deteriorated | improved. |

Answer = C

“Fundamentals of Credit Analysis,” by Christopher L. Goodkind, CFA

2013 Modular Level II, Vol. 5, Reading 42, Section 5.2.1

Study Session 14–42–f

Calculate and interpret the key financial ratios used by credit analysts.

C is correct based on a deteriorating debt/EBITDA ratio as a measure of leverage and an improving EBITDA/interest ratio as a measure of coverage. EBITDA is calculated as revenues minus operating expenses. An alternative measure of coverage is EBIT/interest, which also improved. The ratio values are provided below:

	2011	2012
EBITDA	1,800	1,600
EBIT	1,050	930
Debt/EBITDA	2.50	2.77
EBITDA/Interest	5.93	6.23
EBIT/Interest	3.45	3.62

15. Based on the information provided in Exhibit 3, which of the following statements *best* describes Gloucester’s creditworthiness relative to the industry? Gloucester is a:

- A. weaker credit relative to the industry with more volatile earnings and higher leverage.
- B. stronger credit relative to the industry, given stable leverage and higher margins at times.
- C. weaker credit relative to the industry with a lower ability to reduce debt despite lower leverage.

Answer = A

“Fundamentals of Credit Analysis,” by Christopher L. Goodkind, CFA

2013 Modular Level II, Vol. 5, Reading 42, Section 5.2.1

Study Session 14–42–g

Evaluate the credit quality of a corporate bond issuer and a bond of that issuer, given key financial ratios of the issuer and the industry.

A is correct because credit ratios show that Gloucester has more volatile earnings, even posting negative operating margins in 2011, and generates lower free cash flow relative to debt, which is an important credit consideration, because FCF provides the best means to retire debt. The debt-to-capital ratio is higher for Gloucester relative to the industry, which indicates that Gloucester has higher leverage. Collectively, the ratios show that Gloucester is a weaker credit than the industry.

16. Which of the portfolios in Exhibit 4 is *likely* to underperform the most, based on Gloucester's interest rate forecast?

- A. Portfolio A
- B. Portfolio B
- C. Portfolio C

Answer = B

"Term Structure and Volatility of Interest Rates," by Frank J. Fabozzi, CFA
2013 Modular Level II, Vol. 5, Reading 43, Sections 2 and 7
Study Session 14–43–f

Calculate and interpret the yield curve risk of a security or a portfolio by using key rate duration.

B is correct because in a scenario in which interest rates rise in a nonparallel fashion, key rate durations (KRD) are used to calculate the impact on a portfolio of each rate change. Because the portfolios are comprised of STRIPS or zero-coupon bonds, the maturities are equal to their duration. The weighted total return of Portfolio A is calculated as:

$(5 \times 0.03 \times 0.30) + (15 \times 0.06 \times 0.30) + (30 \times 0.05 \times 0.40) = 0.05 + 0.27 + 0.60 = 0.92$, indicating the portfolio will lose 0.92% of its value as rates change in a nonparallel manner as indicated. The calculations are shown below for all portfolios, with Portfolio B posting the largest loss.

	5	15	30	Sum
KRD × Rate Change	0.15	0.90	1.50	
Portfolio A	0.04	0.45	0.38	0.86
Portfolio B	0.05	0.27	0.60	0.92
Portfolio C	0.08	0.23	0.38	0.68

17. If Gloucester buys Rockport's bond issued in 2008 and Magnolia's expectations materialize, the new value of the bond can best be described as the bond's:

- A. straight value.
- B. straight value plus the value of a call option.
- C. conversion value minus the value of a call option.

Answer = B

"Valuing Bonds with Embedded Options," by Frank J. Fabozzi, CFA,
2013 Modular Level II, Vol. 5, Reading 44, Section 10
Study Session 14–44–j

Describe and evaluate a convertible bond and its various component values.

B is correct. The conversion value = $80 \times \$12.25 = \980.00 . If the stock declines 10%, it drops to 11.025; the conversion value is then $\$11.025 \times 80 = \882 . Although the conversion value drops

to \$882, the straight value sets an absolute floor of \$965. However, this floor has to be adjusted upward for the value of a call option.

18. The spread measures quoted by the dealer *most likely* indicate that relative to the option-free bond, Rockport's bond is:
- A. overvalued.
 - B. undervalued.
 - C. not comparable.

Answer = A

"Valuing Bonds with Embedded Options," by Frank J. Fabozzi, CFA
2013 Modular Level II, Vol. 5, Reading 44, Section 3
Study Session 14–44–g

Interpret an option-adjusted spread with respect to a nominal spread and to benchmark interest rates.

A is correct because the appropriate approach to compare whether a bond is rich or cheap relative to another is to remove the value of the option. The quote provided for the comparable bond is based on the z-spread. Because this bond has no option, the z-spread and the OAS are the same. After removing the value of the embedded option, which is what the OAS measure does, the OAS tells us that the \$500m issue bond is trading at a 20 basis point spread rich or overvalued, compared with the OAS of the option-free bond.

Questions 19 through 24 relate to portfolio management

Jim Huntley Case Scenario

Bob Parker, CFA, a portfolio manager at Marcellus Investment Advisory, is meeting with Jim Huntley, CFA, a finance professor and portfolio management consultant for Marcellus, in preparation for a client meeting with a high-net-worth family. Parker tells Huntley that Marcellus is applying mean–variance analysis to the client's portfolio, which consists of government bonds and actively managed large-cap stocks. The relationship between expected return and risk for combinations of these asset classes is provided in Exhibit 1.

Exhibit 1
Expected Return and Risk for Various Asset Allocations

Bond %	Stock %	Expected Return (%)	Standard Deviation (%)
0	100	15.00	15.00
25	75	12.00	12.50
50	50	9.00	11.00
75	25	7.00	11.50
100	0	5.00	12.00

Parker plans to modify the client's current portfolio by adding emerging markets stocks as a new asset class. A comparison of the current portfolio and the proposed portfolio, both of which are assumed to be mean–variance efficient, is provided in Exhibit 2. The risk free rate is 5%, and the market return is 10%.

Exhibit 2
Comparison of Current Portfolio to Proposed Portfolio

	Current Portfolio	Proposed Portfolio
Portfolio Expected Return	15.0	20.0
Portfolio Standard Deviation	4.0	5.0

Huntley shares his view that markets are not always in a state of equilibrium. Huntley and Parker discuss other strategies that can be employed for the client. Parker mentions that his client's investment policy statement provides flexibility to execute long–short strategies. Huntley then presents four model portfolios for Parker to consider. Each portfolio is well diversified but affected by rising interest rates, as captured by factor sensitivity. The expected return and factor sensitivity of each portfolio is provided in Exhibit 3.

Exhibit 3
Portfolio Information

Portfolio	Expected Return (%)	Factor Sensitivity
A	5.0%	0.50
B	8.0%	0.75
C	10.0%	2.00
D	12.0%	1.25

Parker formulates three long–short strategies, as outlined in Exhibit 4. Each strategy uses combinations of the portfolios in Exhibit 3, with an initial investment amount of \$1,000,000 and a time horizon of one year.

Exhibit 4
Long–Short Strategies

	Long	Long	Short	Short
Strategy 1	60% B	40% D	70% A	30% C
Strategy 2	70% B	30% C	60% D	40% A
Strategy 3	80% C	20% A	50% B	50% D

Parker confides that he occasionally questions investment practitioners' justification for active portfolio management. Huntley responds by making the following comments regarding active and passive portfolios:

Comment 1: Abnormal returns in active portfolios can be earned whenever prices reflect fair value.

Comment 2: Asset allocation across passive portfolios requires little analysis or forecasting.

Comment 3: Efficient passive portfolios are the result of active investors' identification of mispriced securities.

Huntley believes that the Treynor–Black approach enables security analysts' forecasts to be utilized in security selection. He provides data on selected securities that could be added to the active large-cap portfolio in order to optimize its performance. The data are presented in Exhibit 5.

Exhibit 5
Data for Selected Securities

Security	Information Ratio	Expected Alpha	Estimated Beta
X	2.0	0.20	1.1
Y	4.0	0.15	0.9
Z	3.0	0.10	1.2

The client's investment policy statement contains the following objective: "The portfolio's total pre-tax real return should achieve an average in excess of 7% over time in order for the family to have sufficient income to meet both its current and expected future spending needs."

19. Based on Exhibit 1, does a portfolio consisting of 75% government bonds and 25% stocks *most likely* lie on the efficient frontier?
- A. Yes
 - B. No, because it is dominated by other portfolios
 - C. No, because it has lower return than other portfolios

Answer = B

"Portfolio Concepts," by Richard A. DeFusco, CFA, Dennis W. McLeavey, CFA, Jerald E. Pinto, CFA, and David E. Runkle, CFA

2013 Modular Level II, Vol. 6, Reading 54, Section 2.1

Study Session 18–54–b

Describe the minimum-variance and efficient frontiers, and explain the steps to solve for the minimum-variance frontier.

B is correct. The minimum-variance frontier is the set of portfolios that have minimum variance for their level of expected return. The efficient frontier is a subset of the minimum variance portfolio, representing that portion of the minimum variance frontier beginning with the minimum variance portfolio and continuing above it. The 50% government bond/50% stock portfolio is the global minimum-variance portfolio because it is the portfolio with the highest return at the lowest level of risk. The 75% stock/25% bond and 100% stock/0% bond portfolios

lie on the efficient frontier. Any portfolios lying below the global minimum-variance portfolio are not efficient because there are other portfolios that have a greater level of return per unit of risk or a lower level of risk per a given return. The 75% bond/25% stock portfolio lies below the minimum-variance portfolio on the minimum-variance frontier.

20. Which of the following would *most likely* justify Parker's plan with respect to emerging markets stocks? The change in the:
- A. Sharpe ratio.
 - B. beta coefficient.
 - C. market risk premium.

Answer = A

"Portfolio Concepts," by Richard A. DeFusco, CFA, Dennis W. McLeavey, CFA, Jerald E. Pinto, CFA, and David E. Runkle, CFA

2013 Modular Level II, Vol. 6, Reading 54, Section 2.7, Reading 55, Section 2

Study Session 18–54–f

Explain the security market line (SML), the beta coefficient, the market risk premium, and the Sharpe ratio, and calculate the value of one of these variables given the values of the remaining variables.

A is correct. The Sharpe ratio is also known as the reward-to-variability ratio and is best explained as a tool with which to make portfolio decisions, such as adding a new asset class to an existing portfolio. The Sharpe ratio measures a portfolio's return in excess of the risk-free return relative to the standard deviation of that return. For any portfolio, adding an investment with a Sharpe ratio that is greater than that of the existing portfolio will always effect a mean–variance improvement at the margin.

The Sharpe ratio is calculated as follows:

$S = (\text{Portfolio expected return} - \text{risk-free return}) / \text{Standard deviation}.$

For the existing portfolio: $S = 2.5 = (15 - 5) / 4.$

For the Prospective Portfolio: $S = 3.0 = (20 - 5) / 5.$

We can infer the portfolios' betas from the relative change in portfolio expected return relative to the market risk premium and risk-free rate.

21. Given Huntley's view on market equilibrium, which of Parker's long–short strategies *most likely* presents an arbitrage opportunity?
- A. Strategy 1

- B. Strategy 2
- C. Strategy 3

Answer = A

“Portfolio Concepts,” by Richard A. DeFusco, CFA, Dennis W. McLeavey, CFA, Jerald E. Pinto, CFA, and David E. Runkle, CFA

2013 Modular Level II, Vol. 6, Reading 54, Section 4.3

Study Session 18–54–I

Describe the arbitrage pricing theory (APT), including its underlying assumptions and its relation to the multifactor models, calculate the expected return on an asset given an asset’s factor sensitivities and the factor risk premiums, and determine whether an arbitrage opportunity exists, including how to exploit the opportunity.

A is correct. Strategy 1 provides an arbitrage opportunity; the net return is \$31,000 with zero factor sensitivity.

Net return = \$31,000 = $\{ \$1,000,000 \times [(0.40 \times 12.0\%) \times (0.60 \times 8.0\%)] \} + \{ -\$1,000,000 \times [(0.30 \times 10.0\%) \times (0.70 \times 5.0\%)] \}$.

Net Factor Sensitivity = 0 = $\{ 1 \times [(0.40 \times 1.25) \times (0.60 \times 0.75)] \} + \{ -1 \times [(0.30 \times 2.00) \times (0.70 \times 0.50)] \}$.

22. Which of Huntley’s comments about active and passive portfolios is *most likely* accurate?

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

Answer = C

“The Theory of Active Portfolio Management,” by Zvi Bodie, Alex Kane, and Alan J. Marcus

2013 Modular Level II, Vol. 6, Reading 55, Section 1

Study Session 18–55–a

Justify active portfolio management when security markets are nearly efficient.

C is correct. Despite nearly efficient security markets, active investors will attempt to outperform the passive portfolio (and each other) until markets become perfectly efficient, at which time it is no longer possible for active investors to outperform a passive portfolio. Active investors’ competition to earn abnormal returns (returns in excess of the market return) is what drives the prices of securities to be near their “fair value.” Without the presence of active managers, there is no market mechanism to cause prices to move toward and ultimately reflect fair value, which ultimately makes passive investing possible.

23. Based on the Treynor–Black approach, Parker would *most likely* allocate the largest amount to which of the following?

- A. Security X
- B. Security Y
- C. Security Z

Answer = B

“Portfolio Concepts,” by Richard A. DeFusco, CFA, Dennis W. McLeavey, CFA, Jerald E. Pinto, CFA, and David E. Runkle, CFA

2013 Modular Level II, Vol. 6, Reading 54, Section 4.6.2

Study Session 18–54–m

Explain sources of active risk, interpret tracking error, tracking risk, and the information ratio, and explain factor portfolio and tracking portfolio

“The Theory of Active Portfolio Management,” by Zvi Bodie, Alex Kane, and Alan J. Marcus

2013 Modular Level II, Vol. 6, Reading 55, Section 4, p. 464–473

Study Session 18–55–c

Explain how an analyst’s accuracy in forecasting alphas can be measured and how estimates of forecasting can be incorporated into the Treynor–Black approach.

B is correct. Security Y has the highest information ratio. The information ratio is a measure of the contribution of any new security to the performance of the active portfolio. The information ratio is a tool to assess analyst forecast quality because the value of active management is a function of the quality of analysts’ forecasts. The information ratio considers both a security’s alpha and a security’s impact on the volatility of the active portfolio. The Treynor–Black approach is to combine a passive portfolio with an active portfolio. The active portfolio requires superior security selection. This is measured by the reward-to-variability ratio, the information ratio.

24. Based on the client’s investment policy statement objective, which of the following is likely *least* important for Huntley?

- A. Tax rates
- B. Inflation levels
- C. Benchmark returns

Answer = C

“The Portfolio Management Process and the Investment Policy Statement,” by John L. Maginn, CFA, Donald L. Tuttle, CFA, Dennis W. McLeavey, CFA, and Jerald E. Pinto, CFA

2013 Modular Level II, Vol. 6, Section 6

Study Session 18–56–e

Define investment objectives and constraints, and explain and distinguish among the types of investment objectives and constraints.

C is correct. Benchmark return is likely least important because Huntley has stated his target real, after-tax return in terms of a 7% absolute amount.

Questions 25 through 30 relate to economics

Golden Island Case Scenario

Golden Island is a country flourishing through tourism. The island is governed by a governor general, a parliamentary body of elected legislators, and a couple of agencies to regulate the island's economic and social environment. Recently, prospectors in the mountain range bordering the southern coast of the island discovered a large deposit of gold, silver, and platinum. The government is concerned that development of this deposit will harm the tourist trade. Elena Trippi has been asked to participate in a series of fact-finding sessions conducted jointly by the Ministry of Finance for the island and the Ministry of Tourism. This blue-ribbon fact-finding committee has been meeting weekly for the past two months.

Trippi began a recent meeting of the committee by presenting a summary of current financial and economic conditions for Golden Island. Comparing Golden Island with other developing nations, she presents these conditions in Exhibit 1.

Exhibit 1
Current Financial and Economic Conditions
Relative to other developing nations, Golden Island:
1. Has a relatively low level of capital per worker.
2. Does not have competitive financial markets. The single commercial bank on the island also acts as the central bank of Golden Island.
3. Has a relatively low rate of savings and investment.
4. Has a low level of literacy (about half the population is illiterate).
5. Has well-established property rights.
6. Tightly regulates capital flows into and out of the Golden Island economy.

She states that these conditions do not necessarily cause great harm to the tourist industry. However, the mining and processing of gold, silver, and platinum will require reexamination of these economic policies and circumstances. In particular, Trippi is concerned with the issue of tariffs. Golden Island has relatively high tariffs on capital goods.

Trippi states: “Golden Island will benefit from continuing to protect domestic capital goods by maintaining its relatively high tariff on foreign capital goods. High tariffs have little impact on foreign direct investment (FDI), and they generate revenue for the government.”

Rishi Chatterjee is the interim deputy minister for tourism. He states that he is not very knowledgeable about the gold business, but he believes that developing the island’s gold deposits will affect the relative value of the island’s currency, the sona (Sn). The current exchange rate of the sona against the U.S. dollar is Sn8.50/USD. Chatterjee says that increased FDI will cause the sona to strengthen against world currencies. Tourism will be harmed as goods and services priced in sonas will appear to be more expensive to the foreign visitors who make up the bulk of the tourist trade.

Trippi shows the committee Exhibit 2, which contains data from the currency exchange markets relative to the sona. Based on this data, Trippi states that markets currently anticipate that the sona will weaken against both the dollar and the British pound.

Exhibit 2			
Exchange Rates, Interest Rates, and Inflation Rates			
	Current Spot Rates	1-Year Interest Rate (%)	1-Year Inflation Rate (%)
Golden Island	Sn8.50 /USD	6.50	3.00
United Kingdom	GBP0.62/USD	4.05	1.60
United States		3.50	1.30

The minister of finance and president of the central bank is Rajiv Sengupta. He is confident that Golden Island can allow this mining district to proceed with little or no damage to tourism.

Sengupta states: “We can use free market mechanisms to control potential pollution from the mines. As there will be at least 4 and possibly more than 10 mining companies operating in the mining district, we can design an exchange in which the companies can trade ‘pollution rights.’ The government will set the total maximum amount of various pollutants that might occur from mining operations, revising that total from time to time. The companies will bid on ‘rights’ that will allow them a certain level of that total pollution. If the company exceeds the level they have a ‘right’ to, they will be fined. By allowing the trading of these rights on an exchange, the resulting ‘price of pollution’ will reflect the most efficient allocation of resources related to the mining district.”

Sengupta addresses the issues of potential inflation as the island transitions to greater growth. He assures the committee that Golden Island’s central bank stands ready to use monetary tools to prevent such inflation.

25. How many of the current financial and economic conditions listed in Exhibit 1 *at least* partially explain why Golden Island faces limited economic growth?

- A. All six are limitations on growth.
- B. Exactly five of the six are limitations on growth.
- C. Exactly three of the six are limitations on growth.

Answer = B

“Economic Growth and the Investment Decision,” by Paul Kutasovic, CFA
2013 Modular Level II, Vol. 1, Reading 15, Sections 2.1 and 2.7
Study Session 4–15–a

Describe and compare factors favoring and limiting economic growth in developed and developing economies.

B is correct. As noted in Sections 2.1 and 2.7 of the reading, five of the six conditions are limitations on growth. The exception is number five: “Has well-established property rights.”

26. Trippi’s statement regarding tariffs is *best* described as:

- A. correct.
- B. incorrect because high tariffs support increases in foreign direct investment (FDI).
- C. incorrect because eliminating high tariffs on manufactured goods will increase Golden Island’s physical capital and contribute to higher productivity.

Answer = C

“Economic Growth and the Investment Decision,” by Paul Kutasovic, CFA
2013 Modular Level II, Vol. 1, Reading 15, Section 2.6
Study Session 4–15–I

Describe the expected impact of removing trade barriers on capital investment and profits, employment and wages, and growth in the economies involved.

C is correct. As Section 2.6 states, “Developing countries would benefit from policies that encourage investment from abroad, such as eliminating high tariffs on foreign imports (especially capital goods).” Such free trade policies serve to increase a nation’s capital stock and increase productivity.

27. Chatterjee’s statement about tourism and the currency exchange rate of the sona is *best* described as:

- A. correct.
- B. incorrect because increased FDI is likely to lead to a weakening of the sona.
- C. incorrect because a stronger sona will make Golden Island appear to be a less expensive tourist destination for foreigners.

Answer = A

“Currency Exchange Rates: Determination and Forecasting,” by Michael R. Rosenberg and William A. Barker, CFA

2013 Modular Level II, Vol. 1, Reading 14, Section 5.2

Study Session 4–14–e, j, l

Explain international parity relations—covered and uncovered interest rate parity, purchasing power parity, and the international Fisher effect.

Explain how flows in the balance of payments accounts affect currency exchange rates.

Forecast the direction of the expected change in an exchange rate based on balance of payment, Mundell–Fleming, monetary, and asset market approaches to exchange rate determination.

A is correct. Holding all other factors constant, increased FDI will strengthen a currency. The stronger currency will affect tourism by making goods and services priced in that currency appear to be more expensive, at least in the short run.

28. Based on Exhibit 2, the one-year forward exchange rate of the Sn/GBP is *closest* to:

- A. Sn8.75/GBP.
- B. Sn13.45/GBP.
- C. Sn14.03/GBP.

Answer = C

“Currency Exchange Rates: Determination and Forecasting,” by Michael R. Rosenberg and William A. Barker, CFA

2013 Modular Level II, Vol. 1, Reading 14, Sections 2.1 and 2.2, Equation (1)

Study Session 4–14–c

Distinguish between spot and forward rates and calculate the forward premium/discount for a given currency.

C is correct. First, find the current Sn/GBP exchange rate. Then, find the one-year forward Sn/GBP rate.

1) $\text{Sn/GBP} = \text{Sn/USD} \times \text{USD/GBP} = 8.50 \times 1.6129 = 13.70968 \text{ Sn/GBP}$.

Note the 1.6129 number is the inverse of 0.62, which is the GBP/USD exchange rate given in Exhibit 1.

2) As shown in Equation 1 in Reading 14, the forward rate equals the spot rate times the ratio of 1 plus the sona one-year rate over 1 plus the pound one-year rate. In this case, the forward rate equals $1.065/1.0405 \times 13.70968 = 14.03249$.

29. Sengupta’s views regarding potential pollution from the mining district are *most* consistent with which of the following?

- A. Regulatory capture
- B. The Coase theorem
- C. Regulatory arbitrage

Answer = B

“Economics of Regulation,” by Chester S. Spatt
2013 Modular Level II, Vol. 1, Reading 16, Section 2.3
Study Session 4–16–c, h

Describe the economic rationale for regulatory intervention.
Describe the benefits and costs of regulation.

B is correct. Sengupta’s endorsement of an exchange that trades “pollution rights” is consistent with the Coase theorem. The Coase theorem states that if an externality can be traded and there are no transaction costs, then the allocation of property rights will be efficient and the resource allocation will not depend on the initial assignment of property rights.

30. Which of the following is *most likely* to be used by Sengupta to address the monetary issues relating to greater growth of the island’s economy? The central bank will:

- A. sell domestic securities to the private sector.
- B. buy domestic securities from the private sector.
- C. reduce the interest rate on loans to the private sector.

Answer = A

“Currency Exchange Rates: Determination and Forecasting,” by Michael R. Rosenberg and William A. Barker, CFA
2013 Modular Level II, Vol. 1, Reading 14, Section 7
Study Session 4–14–n

Describe the objectives and effectiveness of central bank intervention and capital controls.

A is correct. The threat is inflation. To counter such a threat, the central bank will want to reduce the money supply. The central bank will sell domestic securities to the private sector.

Questions 31 through 42 relate to financial reporting and analysis

Eagle Aerospace Case Scenario

Phil Henderson, an independent equity analyst, is reviewing his file on Eagle Aerospace Inc. following the release of some preliminary year-end results for the company (Exhibit 1).

Eagle Aerospace Inc. (Eagle) is a designer and manufacturer of executive and regional jets. Based in Kitty Hawk, North Carolina, United States, the company caters to the corporate market for executive jets and operators of private charters, as well as to airlines that require smaller planes (20–100 seats) for regional routes. The company sells planes either through outright sales, in which the buyer arranges the financing, or through offering long-term leases (more than 10 years) normally classified by Eagle as finance leases. Eagle also will buy and leaseback used aircraft, classifying those leases as operating

leases with the lease payments due in advance at the beginning of each period. Eagle prepares its financial statements according to U.S. GAAP.

Exhibit 1		
Eagle Aerospace Inc.		
Income Statements		
For the years ending December 31		
All amounts in USD\$ millions		
	2012	2011
Revenue	\$ 7,030	\$ 6,600
Cost of sales	<u>6,010</u>	<u>5,675</u>
Gross profit	1,020	925
Operating expenses	582	575
Other (income)	<u>(12)</u>	<u>(1)</u>
Earnings before interest and taxes	450	351
Interest expense	240	230
Financing income	<u>(198)</u>	<u>(210)</u>
Earnings before taxes	412	331
Income tax provision	<u>103</u>	<u>83</u>
Net income	<u>\$ 309</u>	<u>\$ 248</u>

Henderson is surprised by the increase in Eagle's operating margin. By reviewing the notes to the financial statements, he identifies the following events and decides to start his analysis by considering the impact of each.

1. Eagle changed the interest rate used in determining the present value of the lease payments on leased aircraft from 8% in 2011 to 7% in 2012. At the start of 2012, the company delivered 20 regional jets to an airline under long-term leases. The lease terms are for 15 years with annual payments of \$5 million per plane; the first payment is due on delivery. Henderson knows Eagle usually sells the jets for \$45 million each, and the production cost averages \$40 million per jet.
2. Because production can take many months and requires financing, Eagle allocates interest costs to the cost of manufacturing the aircraft by applying the cost of borrowing rate to the qualifying

assets. These amounts are expensed when the aircraft are sold. Interest capitalized in 2012 and 2011 is \$47.5 million and \$25 million, respectively. The amount of previously capitalized interest included in cost of goods sold in 2012 is \$30 million. Henderson prefers to adjust for the effects of the capitalized interest when calculating the interest coverage ratio and analyzing cash flows.

3. On 1 January 2012, Eagle acquired 20% of the voting shares of Aurora Aerospace Inc. (Aurora). Aurora manufactures the landing gear used in Eagle's planes. Details about the investment and Aurora are in Exhibit 2.

Exhibit 2 Information on Eagle's Investment in Aurora All amounts in USD\$		
1 January 2012	Purchases 4 million voting shares (20%)	Market price per share: \$35.00
	Book value of Aurora's net assets	\$500 million
	Value of Aurora's unrecorded, identifiable intangible assets with an estimated useful life of 10 years	\$60 million
Net earnings for 2012		\$93.0 million
	<ul style="list-style-type: none"> During the latter half of 2012, Aurora delivered landing gear to Eagle worth \$30 million \$15 million worth of the landing gear is still in Eagle's ending inventory as of 31 December 2012 Aurora earned a net profit of \$12 million on the original sale 	
Dividends paid in 2012		\$1.20 per share
31 December 2012		Market price per share: \$37.60

31. Considering how Eagle accounts for the purchase and leaseback of the used aircraft, the *most likely* effect on its financial statements is an increase in:

- A. capital assets.
- B. lease receivables.
- C. EBIT by an amount equal to the lease payments.

Answer = A

"Long-Lived Assets: Implications for Financial Statements and Ratios," by Elaine Henry, CFA, and Elizabeth A. Gordon

2013 Modular Level II, Vol.2, Section 6.2.2, Example 13

Study Session: 5–18–f

Explain and evaluate the effects on financial statements and ratios of finance leases and operating leases from the perspective of both the lessor and the lessee.

A is correct. The used aircraft that Eagle buys and leases back are classified as operating leases. For Eagle, the lessor, assets under operating leases would be classified in property plant and equipment in capital assets and thus an increase in capital assets.

32. The impact on 2012 gross profit (\$ millions) from the change in the interest rate used for the 20 aircraft leased to the airline is *closest* to:

- A. 50.1.
- B. 54.9.
- C. 74.5.

Answer = A

“Long-Lived Assets: Implications for Financial Statements and Ratios,” by Elaine Henry, CFA, and Elizabeth A. Gordon

2013 Modular Level II, Vol.2, Section 6.2.2, Example 14

Study Session: 5–18–f

Explain and evaluate the effects on financial statements and ratios of finance leases and operating leases from the perspective of both the lessor and the lessee.

A is correct. Eagle classifies the long-term leases as financing leases. The present value of the lease payments, using either rate, is more than Eagle’s production cost (carrying value) of the asset (\$40 million); thus, the leases would be classified as sales-type leases under U.S. GAAP.

In sales-type leases, the gross margin is recognized in the year the lease is signed and is the difference between the present value of the lease payments minus the cost to produce the aircraft. Therefore, the impact on gross profit is equal to the difference between the present values of the lease payments at the two interest rates because production costs are not affected.

On a per plane basis (in USD millions):

The first lease payment is due on delivery; thus, the leases are annuities due.

The present values of the lease payments on a per plane basis (in \$ millions) are:

2011 rate: PV of an annuity due, 15 annual payments of \$5 million at 8% = \$46.221

2012 rate: PV of an annuity due, 15 annual payments of \$5 million at 7% = \$48.727

Increase in revenue (and gross profit) per plane \$ 2.506

Increase in revenue (and gross profit) for 20 planes: $20 \times 2.506 =$ \$ 50.120 million.

33. Using Henderson’s preferred method of calculating the interest coverage ratio for 2012, the ratio is *closest* to:

- A. 1.46.
- B. 1.57.
- C. 1.67.

Answer = C

“Long-Lived Assets: Implications for Financial Statements and Ratios,” by Elaine Henry, CFA, and Elizabeth A. Gordon

2013 Modular Level II, Vol.2, Section 2.1, Example 3

Study Session: 5–18–a

Explain and evaluate the effects on financial statements and ratios of capitalizing versus expensing costs in the period in which they are incurred.

C is correct. Per his second comment, Henderson prefers to adjust for the effects of the capitalized interest; therefore, he must add the amount capitalized in 2012 to interest expense and increase EBIT by the amount of previously capitalized interest that is expensed in cost of sales in 2012.

EBIT as reported on income statement	\$450	
Previously capitalized interest expensed in CGS in 2012 (note 2)	<u>30</u>	
Adjusted EBIT		\$480
Interest expense reported in income statement	240	
Capitalized interest in 2012 (note 2)	<u>47.5</u>	
Adjusted interest cost		287.5
Interest coverage ratio (480/287.5)		1.67

34. Considering Eagle’s accounting policy, which of the following *best* describes the effect on the cash flow statement of the capitalization of the \$47.5 million in interest costs in 2012? Ignoring taxes, the cash flow from:

- A. operations would not be affected.
- B. investing activities would decrease.
- C. financing activities would decrease.

Answer = A

“Long-Lived Assets: Implications for Financial Statements and Ratios,” by Elaine Henry, CFA, and Elizabeth A. Gordon

2013 Modular Level II, Vol.2, Section 2.1, Example 3

Study Session: 5–18–a

Explain and evaluate the effects on financial statements and ratios of capitalizing versus expensing costs in the period in which they are incurred.

A is correct. Under U.S. GAAP, interest expense is part of cash from operations on the cash flow statement. Normally, when interest is capitalized as part of capital assets, it increases cash from operations (because it is not included as an outflow in CFO). However, Eagle is capitalizing the interest to the cost of manufacturing (inventory), which is also an operating activity; thus, there is no effect on the cash flow from operating activities.

35. If Eagle uses the equity method, the income (\$ millions) from its investment in Aurora for 2012 will be *closest* to:

- A. 16.2.
- B. 17.4.
- C. 21.0.

Answer = A

“Intercompany Investments,” by Susan Perry Williams
 2013 Modular Level II, Vol.2, Sections 4.1, 4.2, 4.3, 4.6, Example 5
 Study Session: 6–19–a, c

Describe the classification, measurement, and disclosure under International Financial Reporting Standards (IFRS) for 1) investments in financial assets, 2) investments in associates, 3) joint ventures, 4) business combinations, and 5) special purpose and variable interest entities.

Analyze effects on financial statements and ratios of different methods used to account for intercompany investments.

A is correct.

From the initial acquisition, Eagle’s share of the unrecorded identifiable intangible assets is \$60 million \times 20% = \$12 million. This amount will have to be amortized against investment income over its useful life of 10 years ($12/10 = 1.2$ per year).

Calculation of investment income	
Eagle’s share of Aurora’s net income for the year: 20% \times \$93 million =	18.6
Minus amortization of the identifiable intangible: \$12 million/10 years	(1.2)
Minus unrealized profit after tax on the unsold landing gear in Eagle’s ending inventory. One half of the inventory is unsold, therefore $\frac{1}{2}$ of the \$12 million profit should not be recognized: $\frac{1}{2} \times \$12 \text{ million} \times 20\% \text{ share}$	<u>(1.2)</u>
Investment income	16.2

36. If Eagle uses the fair value method, the income (\$ millions) from its investment in Aurora for 2012 will be *closest* to:
- A. 4.8.
 - B. 10.4.
 - C. 15.2.

Answer = C

“Intercompany Investments,” by Susan Perry Williams
2013 Modular Level II, Vol. 2, Section 4.4

Study Session: 6–19–a

Describe the classification, measurement, and disclosure under International Financial Reporting Standards (IFRS) for 1) investments in financial assets, 2) investments in associates, 3) joint ventures, 4) business combinations, and 5) special purpose and variable interest entities.

C is correct.

Unrealized gain from the change in fair value: $(37.60 - 35.00) \times 4$ million shares =	10.4
Dividend income: 1.20×4 million shares =	<u>4.8</u>
Total investment income =	<u>\$15.2</u>

London Star Refuse Company Case Scenario

Cheryl Minor is a junior analyst at Woodland Third Bank in the United Kingdom. She has been asked to perform a detailed financial analysis on London Star Refuse Company, Ltd. (LSRC), a leading provider in the waste management and environmental services industry. LSRC has approached Woodland for a loan and plans to use the additional capital for expansion purposes.

Selected financial statement information for LSRC is presented in Exhibit 1. LSRC uses IFRS and classifies interest expense as a financing activity in its cash flow statement. Minor starts her analysis by calculating some cash flow and accruals ratios to compare with those of LSRC’s competitors. Exhibit 2 contains the accrual ratios for three competitor companies.

Exhibit 1		
London Star Refuse Company, Ltd.		
Selected Financial Data		
as at December 31		
(in £ millions)		
	2012	2011
Cash and short-term investments	260	540

Total current assets	2,380	2,480
Total assets	22,570	21,480
Current liabilities	3,070	2,485
Total short-term and long-term debt	9,125	8,675
Total liabilities	16,500	15,215
Earnings before interest and taxes	1,520	1,630
Net income	980	950
Net cash flow provided by operating activities ⁽¹⁾	2,450	2,470
Cash paid for taxes	(480)	(470)
Cash paid for interest	(510)	(630)
Net cash flow provided by (used in) investing activities	(2,185)	(1,606)
⁽¹⁾ Includes cash paid for taxes		

Exhibit 2
Ratios for LSRC's Competitor Companies

Metric	Company 1 (%)	Company 2 (%)	Company 3 (%)
Balance-sheet-based accruals ratio	14.3	12.8	11.4
Cash-flow-statement-based accruals ratio	10.7	9.2	6.3

Minor then reviews LSRC's financial statements for the year ended 31 December 2012 and discovers that the company uses derivatives to hedge against exposure to the following risks:

Risk 1: LSRC leases out assets to waste management firms. At the end of the leases, the lessee firms return those assets to LSRC, and the company faces the risk of realizing their estimated residual values. LSRC hedges against the uncertainty in recovering the estimated residual values of those assets.

Risk 2: LSRC faces potentially higher energy costs and its negative impact on future cash flows. The company uses derivatives to hedge against this risk.

Risk 3: LSRC uses derivatives to hedge against foreign currency exposure related to the company's investment in its Chinese subsidiary, Shanghai Refuse.

Continuing her assessment of the quality of LSRC's earnings, Minor takes note of the following changes in some of the company's accounts and metrics.

1. Recently, the company's days sales outstanding (DSO) has shown a dramatic improvement as a result of securitizing a large portion of its receivables.
2. During the most recent three quarters, there have been large decreases in unearned revenues.
3. Compared with the past, the company has increased the provisions for doubtful accounts.

37. LSRC's ratio of operating cash flow before interest and taxes to operating income during 2012 is *closest to*:

- A. 1.3.
- B. 1.9.
- C. 2.3.

Answer = B

"Integration of Financial Statement Analysis Techniques," by Jack T. Cieselski, Jr., CFA
2013 Modular Level II, Vol. 2, Section 1, Case Study 1, Exhibit 25

Study Sessions: 7–24–a, e

Demonstrate the use of a framework for the analysis of financial statements, given a particular problem, question, or purpose (e.g., valuing equity based on comparables, critiquing a credit rating, obtaining a comprehensive picture of financial leverage, evaluating the perspectives given in management's discussion of financial results).

Analyze and interpret the effects of balance sheet modifications, earnings normalization, and cash-flow–statement-related modifications on a company's financial statements, financial ratios, and overall financial condition.

B is correct. LSRC classifies interest expense as a financing cash flow under IFRS. As such, the only adjustment necessary to operating cash flow is to add back taxes.

Adjusted operating cash flow = Net cash flow provided by operating activities + Cash paid for taxes = 2,450 + 480 = 2,930.

Operating income = EBIT = 1,520.

CFO before interest and taxes to operating income = $2,930/1,520 = 1.9$.

38. LSRC's balance-sheet-based accruals ratio in 2012 is *closest to*:

- A. 1.7%.
- B. 2.4%.
- C. 3.6%.

Answer = C

“Evaluating Financial Reporting Quality,” by Scott Richardson and Irem Tuna

2013 Modular Level II, Vol. 2, Sections 3.2, 3.3, Example 2,

Study Session: 7–23–a, d

Contrast cash-basis and accrual-basis accounting, and explain why accounting discretion exists in an accrual accounting system.

Describe earnings quality and measures of earnings quality, and compare the earnings quality of peer companies.

C is correct.

<i>Balance-sheet-based accruals ratio</i> = $\frac{(\text{NOA}_t - \text{NOA}_{t\text{OA}})}{(\text{NOA}_t + \text{NOA}_{t\text{OA}})/2}$ (Equation 4)		
Net operating assets 2012: (Total assets – Cash and short-term investments) – (Liabilities – Total debt) = (22,570 – 260) – (16,500 – 9,125) =		14,935
Net operating assets 2011	= (21,480 – 540) – (15,215 – 8,675)	14,400
Numerator (NOA _t – NOA _{tOA})	= 14,935 – 14,400	535
Denominator (Average NOA)	= (14,935 + 14,400)/2	14,667.50
<i>Balance-sheet-based accruals ratio</i>	= $\frac{535}{14,667.50}$	3.6%

39. LSRC’s cash-flow-statement-based accruals ratio in 2012 is *closest to*:

A. 1.8%

B. 3.2%

C. 4.9%

Answer = C

“Evaluating Financial Reporting Quality,” by Scott Richardson and Irem Tuna

2013 Modular Level II, Vol. 2, Section 3.2, 3.3, Example 2

Study Session: 7–23–a, d

Contrast cash-basis and accrual-basis accounting, and explain why accounting discretion exists in an accrual accounting system.

Describe earnings quality and measures of earnings quality, and compare the earnings quality of peer companies.

C is correct.

<i>Cash-flow-statement-based accruals ratio</i> = $\frac{[\text{NI}_t - (\text{CFO}_t + \text{CFI}_t)]}{(\text{NOA}_t + \text{NOA}_{t\text{OA}})/2}$ (Equation 6)

Numerator for 2012: Net income – (CFO + CFI) = 980 – (2,450 + –2,185)		715
Net operating assets 2012: (Total assets – Cash and short-term investments) – (Liabilities – Total debt) = (22,570 – 260) – (16,500 – 9,125) =		14,935
Net operating assets 2011:	= (21,480 – 540) – (15,215 – 8,675)	14,400
Denominator (Average NOA):	(14,935 + 14,400)/2	14,667.50
Cash-flow-statement-based accruals ratio	$\frac{715}{14,667.50}$	4.9%

40. Based on Exhibit 2, the competitor that has the *best* earnings quality is Company:

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

Answer = C

“Evaluating Financial Reporting Quality,” by Scott Richardson and Irem Tuna

2013 Modular Level II, Vol. 2, Sections 3.2, 3.3, Example 2

Study Session: 7–23–a, d

Contrast cash-basis and accrual-basis accounting, and explain why accounting discretion exists in an accrual accounting system.

Describe earnings quality and measures of earnings quality, and compare the earnings quality of peer companies.

C is correct. Both the balance-sheet-based accrual ratio and the cash-flow-statement-based accrual ratio are lower for Company 3 compared with Company 1 and Company 2. Lower ratios are indicative of higher earnings quality; thus, Company 3 has the best earnings quality.

41. In accounting for the use of derivatives against the three risks that Minor has discovered, the entire gains or losses from the derivatives will *most likely* bypass LSRC’s income statement for Risk:

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

Answer = C

“The Lessons We Learn,” by Pamela P. Peterson, CFA, and Frank J. Fabozzi, CFA
2013 Modular Level II, Vol. 2, Section 2, Lesson 5

Study Session: 7–22–c

Describe the accounting treatment for derivatives being used to hedge exposure to changes in the value of assets and liabilities, exposure to variable cash flows, and foreign currency exposure of investments in foreign corporations.

C is correct. When derivatives are used to hedge foreign currency exposure related to a foreign investment, the gains/losses go through other comprehensive income, which is part of shareholders’ equity, and thus they bypass the income statement.

42. Which of the three changes in the company’s accounts and metrics noted by Minor is *least likely* a warning sign concerning LSRC’s quality of earnings? The change relating to:

- A. DSO.
- B. unearned revenues.
- C. provisions for doubtful accounts.

Answer = C

“Evaluating Financial Reporting Quality,” by Scott Richardson and Irem Tuna
2013 Modular Level II, Vol. 2, Sections 3.1, 4.5

Study Session: 7–23–f

Explain potential problems that affect the quality of financial reporting, including revenue recognition, expense recognition, balance sheet issues, and cash flow statement issues, and interpret warning signs of these potential problems.

C is correct. Companies tend to reduce provisions for doubtful accounts in an effort to overstate net income in a given period, which can be a warning sign of lower quality of earnings. However, LSRC is increasing provisions for doubtful accounts, which reflects a more conservative accounting practice.

Questions 43 through 48 relate to corporate finance

Aubrey Yacht Manufacturers Case Scenario

Jack Aubrey and his brother Charles are cofounders of Aubrey Yacht Manufacturers of Miami, Florida. The company specializes in the production of yachts in the \$200,000 to \$800,000 price range. The Aubrey brothers took the company public in 1998, and its shares are now traded on NASDAQ under the symbol AYM. Jack is the president, and Charles is the CEO and chairman of the board.

Demand for yachts in AYM’s price range was strong during 2007, but a six-month strike, which started in June of that year, allowed the company to reduce its finished goods inventory substantially by year end. During the 2008 recession, with demand falling, the company responded by reducing inventory and

began to modify its capital structure from its long-run average of 25% long-term debt-to-equity until all of its outstanding long-term debt was finally repaid in 2009.

Earnings and dividends had been growing strongly until the strike occurred. The company paid its first dividend in 2003 but discontinued it soon after the strike began. Exhibit 1 shows the history of the company's earnings per share (EPS) and dividends per share (DPS) since 2003.

Exhibit 1 Aubrey Yacht Manufacturers Earnings and Dividend History for years ending 31 December 2003–2012										
	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
EPS (\$)	4.18	4.52	4.77	5.05	5.18	2.60	2.40	3.50	4.80	5.50
DPS (\$)	2.17	2.31	2.48	2.58	2.64					

During 2012, sales of yachts in the company's price range had recovered, and Jack Aubrey feels confident that the company will be able to reinstate its dividend in 2013. He also wants to ensure that future dividends are not cut, as they were in 2008, and he plans on determining dividends with a target payout adjustment model using a five-year period to adjust toward the target.

His estimates and proposed payout plan are provided in Exhibit 2.

Exhibit 2 Jack Aubrey's Estimates of Future Earnings and Dividends and Proposed Long-Run Dividend Policy		
	Earnings	Dividends
For 2013	\$6.60/share	\$3.42/share
For 2014	\$8.05/share	
Proposed Long-Run Dividend Policy, Beginning in 2014		
Long-run target payout	35%	

Adjustment factor toward five-year target	0.20 per year
---	---------------

Steve Maturin is the CEO of Standard Marine Containers, a manufacturer of plastic pallets and crates used in marine shipping. He is one of the four independent directors on the board of AYM; the board consists of eight directors, with only the Aubreys ever having had an employment relationship with the company. Maturin has been a close friend of Charles Aubrey since childhood, and Jack Aubrey is a director at Standard Marine Containers.

Charles, Maturin, and their families had just returned from a two-week cruise to Bermuda on the company's best yacht. Maturin informed Jack that the weather on this year's trip was much better than last year and that he was well rested and ready to tackle some thorny issues in AYM's first board meeting of the year.

Maturin said: "In particular, alternatives to paying dividends, moving to a staggered board of directors, and the company's financing mix are items of great interest to me."

Maturin said that on reviewing the company's share price behavior during the 2003 to 2007 period, he found that when the shares went ex-dividend, they normally fell by about \$0.68 per \$1.00 of dividend paid.

Jack Aubrey reminded everyone about the results of a survey that had been conducted last year on a large sample of the company's investors. It had indicated that, on average, the investors' tax rate on capital gains was 23%, but their tax rates on dividends varied widely across the sample.

Jack asked Maturin: "If these tax results had also applied to the time period for which you reviewed the ex-dividend share price behavior, what would have been the marginal tax rate on dividend income for those trading the company's shares around the ex-dividend date?"

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."

Maturin concluded his remarks by saying: "Although the company has not used any long-term debt since 2009, I would like to see the company use long-term debt again. It should issue long-term debt and repurchase shares to return to its historical level of 25% debt-to-equity. We should be able to issue long-term debt at a before-tax cost of 5%, and this should not materially increase the costs of financial distress, agency costs, or asymmetric information. With our current cost of equity at 12% and a 30% tax rate, our weighted average cost of capital should drop, enhancing shareholder value."

43. The dividend policy that was used by Aubrey Yacht Manufacturers (AYM) until the strike occurred is *best* described as a:

- A. stable dividend policy.
- B. residual dividend policy.
- C. constant dividend payout ratio policy.

Answer = C

“Dividends and Share Repurchases: Analysis,” by Gregory Noronha, CFA, and George H. Troughton, CFA

2013 Modular Level II, Reading 27, Section 4.1

Study Session 8–27–f

Compare stable dividend, constant dividend payout ratio, and residual dividend payout policies, and calculate the dividend under each policy.

C is correct. Each year, from 2003 to 2007, the company paid out approximately 51–52% of earnings—indicating a constant dividend payout ratio policy.

Year	EPS (\$)	DPS (\$)	DPS/EPS × 100
2003	4.18	2.17	51.9%
2004	4.52	2.31	51.1%
2005	4.77	2.48	51.9%
2006	5.05	2.58	51.0%
2007	5.18	2.64	50.9%

44. Using Aubrey’s estimates in Exhibit 2, and assuming that the company adopts his suggested dividend policy, the company’s 2014 dividends per share will be *closest* to:

- A. \$3.49.
- B. \$3.52.
- C. \$4.17.

Answer = B

“Dividends and Share Repurchases: Analysis,” by Gregory Noronha, CFA, and George H. Troughton, CFA

2013 Modular Level II, Reading 27, Section 4.1.1, Example 9

Study Session 8–27–f

Compare stable dividend, constant dividend payout, and residual dividend payout policies, and calculate the dividend under each policy.

B is correct. Aubrey is proposing a stable dividend policy—one that reflects long-run expected earnings.

$$\begin{aligned} \text{The adjustment factor} &= \frac{1}{\text{number of years over which adjustment is to occur}} \\ &= \frac{1}{5} = 0.20 \end{aligned}$$

Expected dividend:

= Last dividend + Increase in earnings × Target payout ratio × Adjustment factor.

For 2014: Expected dividend = $3.42 + (8.05 - 6.60) \times 0.35 \times 0.20 = \3.52 .

45. Which of the following factors *best* supports Maturin's classification as an independent director of AYM?

- A. Maturin's employment history with the company
- B. Personal relationship between Maturin and Charles
- C. Jack's membership on the board of Standard Marine Containers

Answer = A

"Corporate Governance," by Rebecca Todd McEnally, CFA, and Kenneth Kim
2013 Modular Level II, Reading 28, Section 5.1.1
Study Session 9–28–d, e

Describe responsibilities of the board of directors, and explain qualifications and core competencies that an investment analyst should look for in the board of directors.
Explain effective corporate governance practice as it relates to the board of directors, and evaluate strengths and weaknesses of a company's corporate governance practice.

A is correct. Personal relationships, having a past employment history with the firm, and interlocking directorships—all indicate a lack of board independence. Among the current board members, only the Aubreys are/were employees of the firm. Maturin was a childhood friend of Charles and recently returned from a long trip (for the second year in a row); Maturin and Jack have interlocking directorships on their respective boards.

46. The *best* response that Maturin could give to Jack Aubrey's question about the marginal tax rate on dividend income is that it was:

- A. 15.6%.
- B. 32.0%.
- C. 47.6%.

Answer = C

"Dividends and Share Repurchases: Analysis," by Gregory Noronha, CFA, and George H. Troughton, CFA
2013 Modular Level II, Reading 27, Section 2.4.1
Study Session 8–27–c

Explain how clientele effects and agency issues may affect a company's payout policy.

C is correct.

Use the equation for the price decrease when the share goes ex-dividend to solve for the marginal tax rate on dividends income.	
Equation 1: Section 2.4.1	$P_W - P_X = D \times \frac{1 - T_D}{1 - T_{CG}}$
P_W is the share price with the dividend attached	
P_X is the share price ex-dividend	
D is the dividend	Assumed: \$1.00

And T_D and T_{CG} are the marginal tax rates on dividends and capital gains.	T_{CG} given: 23%
If the dividend is assumed to be \$1, and the price change is \$0.68 of the dividend (as stated by Maturin) ($P_W - P_X = 68\%$)	$0.68 = 1 \times \frac{1 - T_D}{1 - 0.23}$
Marginal tax rate on dividends	$T_D = 47.6\%$

47. 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

Answer = B

"Corporate Governance," by Rebecca Todd McEnally, CFA, and Kenneth Kim
2013 Modular Level II, Reading 28, Section 5.1.4
Study Session 9–28–e

Explain effective corporate governance practice as it relates to the board of directors, and evaluate strengths and weaknesses of a company's corporate governance practice.

B is correct. Staggered boards do allow for continuity of the knowledge and experience in the company, which is essential for good corporate governance.

48. Using Maturin's assumptions, the company's weighted average cost of capital under his proposed financing plan would be *closest* to:

- A. 9.8%.
- B. 10.3%.
- C. 11.3%.

Answer = C

"Capital Structure," by Raj Aggarwal, CFA, Pamela Peterson Drake, CFA, Adam Kobor, CFA, and Gregory Noronha, CFA
2013 Modular Level II, Reading 26, Section 2.2, 2.3
Study Session 8–26–a

Explain the Modigliani–Miller propositions concerning capital structure, including the impact of leverage, taxes, financial distress, agency costs, and asymmetric information on a company's cost of equity, cost of capital and optimal capital structure.

C is correct.

1. Determine the cost of equity at the proposed debt level.
According to MM Proposition II, in the presence of taxes
$r_e = r_0 + (r_0 - r_d)(1 - t) D/E$ (Equation 9)

The company is currently unlevered, so its $r_0 = 12\%$ (given)
$r_e = 0.12 + (0.12 - 0.05) \times (1 - 0.30) \times 0.25 = \mathbf{13.2\%}$
2. Determine the WACC using the levered cost of equity.
A D/E of 0.25 corresponds to $D/V = 0.25/1.25 = 20\%$.
$r_{WACC} = D/V \times r_d (1 - t) + E/V \times r_e$ (Equation 8)
$r_{WACC} = [0.20 \times 0.05 \times (1 - 0.30)] + [0.80 \times 0.132] = \mathbf{11.3\%}$
r_e = Marginal cost of equity capital for levered firm
r_0 = Cost of equity capital for unlevered firm
r_d = Marginal Cost of debt, before tax
t = Corporate tax rate
D, E, V = market value of debt, equity, and value of firm respectively
r_{WACC} = weighted average cost of capital for firm

Questions 49 through 60 relate to equity investments

Fargo Durum Farmers Case Scenario

Minneapolis Viking Arbitrageurs, LLC (MVA), is a fledgling U.S.-based hedge fund with slightly more than \$50 million under its management. MVA specializes in owning and managing small-sized properties in agriculture, forestry, and mining.

Jim Hester, MVA's M&A analyst, is evaluating Fargo Durum Farms, Inc. (FDF) for a potential acquisition. FDF owns 1,500 acres of fertile land, farm buildings, machinery, residential quarters, livestock, cattle feed, seeds, grain, significant amounts of intangible assets, and so forth. Selected data from FDF's income statement for the year ended December 2012 and additional estimates compiled by Hester are presented in Exhibits 1 and 2.

Exhibit 1	
FDF's Select Financial Data for the Year Ended December 2012	
Gross revenues from crops, livestock, feed, etc.	\$2,500,000
Cost of goods sold	1,000,000
Selling, general, and administrative expenses (SG&A)	900,000
Depreciation and amortization	200,000
Tax rate	30%
<u>Notes:</u>	

i) FDF carries debt in the amount of \$750,000 at an interest rate of 8%, and it comprises 30% of total assets on a book value basis. Debt will be a part of the acquisition transaction.

ii) FDF holds \$200,000 in cash and short-term investments, but it will not be a part of the assets under acquisition transaction.

Exhibit 2

Additional data and Hester's estimates for normalization

1.	The cost of goods sold ratio should be higher at 45%
2.	SG&A includes \$400,000 in owners' compensation. According to Hester's research, owners' compensation expense for similar-sized farms is \$200,000.
3.	A ranch and living quarters are not required for the farm's core operations. The reported SG&A expenses include \$125,000 (\$25,000 toward depreciation and \$100,000 for operating expenses) relating to those properties. The ranch and living quarters will be kept by the current owners and are not a part of FDF's farming operations being considered for purchase by the hedge fund.
4.	For pro forma estimations, Hester will consider depreciation and amortization at 10% of gross revenues. He thinks the current tax rate of 30% to be reasonable.

First, Hester assesses FDF's normalized operating income after tax. Next, Hester values FDF's equity starting with the free cash flow to the firm (FCFF) with the data and assumptions in Exhibit 3.

Exhibit 3

FDF's data and estimates for valuing its equity

1.	Free cash flow to the firm (FCFF) for next year (2013)	\$336,250
2.	FCFF's annual growth rate for the foreseeable future	5%
3.	FDF's debt holding at an interest rate of 8.0% per year	\$750,000
4.	FDF's weighted average cost of capital (WACC)	11.5%
5.	FDF's cost of equity	14.0%

Hester presents his initial assessment and valuation of FDF to MVA's investment committee. The comments and suggestions from some members on the committee are as follows.

Xavier Moreno, commodities analyst, suggests the use of excess earnings method (EEM) for valuing FDF and makes the following three statements in support of his preference:

1. EEM involves estimating the earnings remaining before deducting amounts that reflect the required returns to the tangible assets.
2. EEM is a widely used method for pricing entire private businesses, such as FDF.
3. EEM is especially useful for valuing FDF because it allows for valuing working capital, fixed assets, and intangibles using different discount rates.

Jamal Bahrami, the external consultant on the committee, differs from Hester and prefers the use of free cash flow to equity (FCFE) model. Further, he develops his own estimates for valuing FDF's equity:

- Owing to the continued strength in the global demand for wheat, FDF will experience a higher annual growth rate of 10% for 2013 and 2014; thereafter, it will grow at a constant rate of 6% per year.
- Next year (2013), FDF will realize \$1,000,000 in cash flow from operations.
- To support its high-growth needs, FDF will require \$400,000 in new capital investment next year.
- In 2013, the company would need additional borrowing in the amount of \$250,000 at an interest cost of 8%.
- Because of illiquidity and small-firm risk premiums, the appropriate WACC and required return on equity will be higher at 12.9% and 16%, respectively.

Hester made a cash offer of \$9 million for acquiring FDF. But the Mahoney brothers decided to make a counter offer, and they approached Joselyn Olsen, a reputable agriculture industry analyst at the Red River Valley Consultants, LLP, for her assessment of FDF's value.

Olsen prefers the guideline transactions method (GTM) using next year's expected EBITDA to value FDF, and she estimates the following from the company data, market information, and her own assessments.

- ✓ FDF's expected EBITDA for 2013 = \$924,000.
- ✓ Three recent purchase transactions of similar farms in North Dakota indicate an average MVIC (market value of invested capital) to EBITDA multiple of 9.0.
- ✓ FDF commands a 30% control premium.
- ✓ FDF need not incur any additional capital expenditures or borrowing (*Note: Currently, FDF carries debt in the amount of \$750,000 at an interest rate of 8%.*)

Olsen justifies her choice of the GTM approach in the following three statements:

1. The GTM approach works well for valuing FDF because it uses a multiple that specifically relates to sales of entire companies. SFAS No. 157 presents a fair value hierarchy that gives the highest priority to market-based evidence.
2. Most appraisers readily accept the valuation from GTM approach because of the reliability of transactions data.
3. The market approach to determine the value of equity is appropriate even for companies with highly leveraged financial conditions or significant volatility expected in future financial performance.

Satisfied with Olsen's valuation and her methodological choice, the Mahoney brothers move ahead with their counteroffer to Hester.

49. Using the company's data, Hester's assessments, and estimates in Exhibits 1 and 2, FDF's normalized operating income after taxes for the year 2012 is *closest* to:

- A. \$325,500.
- B. \$367,500.
- C. \$402,500.

Answer = B

"Private Company Valuation," by Raymond D. Rath, ASA, CFA
 2013 Modular Level II, Vol. 4, Reading 37, Section 4.1, Example 1
 Study Session 12–37–e

Explain cash flow estimation issues related to private companies and adjustments required to estimate normalized earnings.

B is correct.

FDF's financial performance for the year ended December 2012	As reported	Normalized
	\$	\$
Gross revenues from crops, livestock, feed, etc.	2,500,000	2,500,000
Cost of goods sold: normalized to 45% of revenues	<u>(1,000,000)</u>	<u>(1,125,000)</u>
Gross profit	1,500,000	1,375,000
Selling, general, and administrative expenses (SG&A): reflects \$200,000 reduction in owner's compensation and \$100,000 reduction in operating expenses related to the ranch.	<u>(900,000)</u>	<u>(600,000)</u>
EBITDA	600,000	775,000
Depreciation and amortization: normalized to 10% of revenues	<u>(200,000)</u>	<u>(250,000)</u>
Earnings before interest and taxes	400,000	525,000
Pro forma taxes (at 30 percent)	<u>(120,000)</u>	<u>(157,500)</u>
Operating income after taxes	<u>280,000</u>	<u>367,500</u>

50. Using the data and assumptions in Exhibit 3 compiled by Hester, FDF's value of equity as at the end of 2012 is *closest* to:

- A. \$2,986,111.
- B. \$4,423,077.

C. \$4,681,731.

Answer = B

“Free Cash Flow Valuation,” by Jerald Pinto, CFA, Elaine Henry, CFA, Thomas Robinson, CFA, and John Stowe, CFA

2013 Modular Level II, Vol. 4, Reading 34, Section 2.3, Example 1

“Private Company Valuation,” by Raymond D. Rath, ASA, CFA

2013 Modular Level II, Vol. 4, Reading 37, Section 4.1.2, Example 2

Study Session 12–34–j; 12–37–f

Estimate a company’s value using the appropriate free cash flow model(s).

Calculate the value of a private company using the free cash flow, capitalized cash flow, and/or excess earnings methods.

B is correct.

$V_{2012} = \text{FCFF}_{2013} / (\text{WACC} - g)$	$336,250 / (0.115 - 0.05) =$	5,173,077
Minus debt		<u>(750,000)</u>
Value of equity (December 2012)		4,423,077

51. With regard to Moreno’s three statements, he is *most* accurate with respect to the statement concerning:

- A. required returns to tangible assets.
- B. valuing the entire private businesses.
- C. the use of different discount rates for valuation.

Answer = C

“Private Company Valuation,” by Raymond D. Rath, ASA, CFA

2013 Modular Level II, Vol. 4, Reading 37, Section 4.2.4

Study Session 12–37–e, f

Explain cash flow estimation issues related to private companies and adjustments required to estimate normalized earnings.

Calculate the value of a private company using the free cash flow, capitalized cash flow, and/or excess earnings methods.

C is correct. Statement 3 is correct. The excess earnings method (EEM) allows for valuing working capital, fixed assets, and intangible assets using different discount rates.

52. According to the approach preferred by Bahrami and using the estimates developed by him, the value of FDF’s equity as of 31 December 2012 is *closest* to:

- A. \$8,554,891.
- B. \$8,793,104.

C. \$12,755,292.

Answer = B

“Return Concepts,” by John Stowe, CFA, Thomas Robinson, CFA, Jerald Pinto, CFA, and Dennis McLeavey, CFA

2013 Modular Level II, Vol. 4, Reading 31, Section 4.3.1

“Free Cash Flow Valuation,” by Jerald Pinto, CFA, Elaine Henry, CFA, Thomas Robinson, CFA, and John Stowe, CFA

2013 Modular Level II, Vol. 4, Reading 34, Section 3.4, Example 6

“Private Company Valuation,” by Raymond D. Rath, ASA, CFA

2013 Modular Level II, Vol. 4, Reading 37, Sections 4.1, 4.2, Example 2

Study Session 11–31–c; 12–34–c, j; 12–37–g

Estimate the required return on an equity investment using the capital asset pricing model, the Fama–French model, the Pastor–Stambaugh model, macroeconomic multifactor models, and the build-up method (e.g., bond yield plus risk premium).

Explain the appropriate adjustments to net income, earnings before interest and taxes (EBIT), earnings before interest, taxes, depreciation, and amortization (EBITDA), and cash flow from operations (CFO) to calculate FCFF and FCFE.

Estimate a company’s value using the appropriate free cash flow model(s).

Explain factors that require adjustment when estimating the discount rate for private companies.

B is correct.

Calculation of next year’s (2013) FCFE and value of equity at the end of 2012	
Cash flow from operations (CFO) for the year 2013	\$ 1,000,000
Minus: Investment in fixed capital	(400,000)
Plus: Net borrowing	<u>250,000</u>
Free cash flow to equity (FCFE ₂₀₁₃)	<u>850,000</u>
$FCFE_{2014} = FCFE_{2013} \times 1.10 = 850,000 \times 1.10$	935,000
$FCFE_{2015} = FCFE_{2014} \times 1.06 = 935,000 \times 1.06$	991,100
Using a two-stage model: $TV_{2014} = 991,100 / (0.16 - 0.06) = 9,911,000$	
$V_{2012} = 850,000 / 1.16 + 935,000 / 1.16^2 + 9,911,000 / 1.16^2$ $= 732,759 + 694,857 + 7,365,488 =$	8,793,104

53. The value of FDF's equity as at the end of 2012, according to the approach and estimates by Olsen, is *closest* to:

- A. \$7,566,000.
- B. \$10,060,800.
- C. \$10,810,800.

Answer = B

"Market-Based Valuation: Price and Enterprise Multiples," by Jerald Pinto, CFA, Elaine Henry, CFA, Thomas Robinson, CFA, and John Stowe, CFA

2013 Modular Level II, Vol. 4, Reading 35, Section 4

"Private Company Valuation," by Raymond D. Rath, ASA, CFA

2013 Modular Level II, Vol. 4, Reading 37, Sections 4.1 and 4.3, Examples 1 and 5

Study Session 12–35–n; 12–37–i, k

Calculate and interpret EV multiples, and evaluate the use of EV/EBITDA.

Determine the value of a private company based on market approach methods, and describe advantages and disadvantages of each method.

Explain and evaluate the effects on private company valuations of discounts and premiums based on control and marketability.

B is correct.

EBITDA		924,000
EBITDA multiple for FDF (including control premium)	9.0×1.30	11.70
MVIC = EBITDA \times multiple	$924,000 \times 11.70$	10,810,800
Minus debt		<u>(750,000)</u>
Value of equity at the end of 2012		10,060,800

54. Which of Olsen's three statements justifying her choice of GTM approach is *most* accurate?

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

Answer = A

"Private Company Valuation," by Raymond D. Rath, ASA, CFA

2013 Modular Level II, Vol. 4, Reading 37, Section 4.3

Study Session 12–37–i

Determine the value of a private company based on market approach methods, and describe advantages and disadvantages of each method.

A is correct. The GTM approach uses a multiple that specifically relates to sales of entire companies, and SFAS No. 157 also presents a fair value hierarchy that gives the highest priority to market-based evidence. Additionally, in the United States, tax courts assessing private company valuations have generally stated a preference for valuation based on market transactions, although they often accept valuations based on the income approach.

Rivera Case Scenario

Louisiana High Growth Investors (LHGI), a large hedge fund in New Orleans, Louisiana, United States, is considering the purchase of Black Tiger Prawns Inc. (BTP), a publicly traded company headquartered in the same city, for \$500 million. BTP's revenues and earnings are cyclical, from both seasonal and business cycle effects. BTP is a small-cap firm, and its stock trades thinly on the OTC market.

As a part of the analysis, Jose Rivera, equity analyst at LHGI, compiles the data presented in Exhibit 1 (Panel A) and estimates the forward-looking equity risk premium using the Gordon growth model. To the risk premium he has computed, Rivera adds 1.50% to account for the additional small-firm risk premium associated with BTP.

Rivera shows his computations to Kamini Royappa, chief investment officer. Royappa suggests that the macroeconomic model with supply-side analysis, using the Ibbotson–Chen format, provides a better estimate for BTP's risk-premium. She also suggests that BTP commands a 0.75% risk premium for its thin trading in addition to the small-firm risk premium that Rivera has already considered. Following the suggestions by Royappa, Rivera collects additional data presented in Exhibit 1 (Panel B).

Exhibit 1	
Data for forward-looking risk premium estimates	
Panel A: Data for the Gordon growth model (GGM)	
Current price level of the market index	1,480.00
Current year's dividend on the market index	\$31.25
Year-ahead forecasted dividend on the market index	\$33.60
Long-term earnings growth rate for the market index	6.00%
Current long-term government bond yield	4.00%
Current short-term government bond yield	2.75%

Panel B: Data for the macroeconomic model using Ibbotson–Chen format	
Expected growth rate in real earnings per share	3.00%
Expected growth rate in P/E	1.50%
Expected income component	2.50%
Expected TIPS yield	2.15%
Expected inflation	1.81%
TIPS = Treasury Inflation Protected Securities	

Further, Royappa says, “In addition to the forward-looking estimates of the equity risk premium for BTP, you should also compute historical estimates of risk premium for the stock. Note, however, the following three caveats as you undertake computations, especially when using the CAPM approach:

1. Compared with the geometric mean return, the arithmetic mean return is consistent with the assumptions of single period models, such as CAPM.
2. In almost all cases, the equity risk premiums based on long-term government bonds tend to be smaller than those based on short-term government bonds.
3. Make sure to adjust the risk premium upward if the market index has experienced the survivorship bias as a result of removing poorly performing companies.”

Next, Rivera presents his assessment of risk premium for BTP to the investment committee and asks for the committee’s advice regarding approaches to valuing BTP. Katrina Smirnoff, portfolio manager, prefers the use of two multiples-based approaches—the justified P/B and EV/EBITDA—for BTP. Furthermore, she makes the following three statements regarding different relative valuation approaches:

1. In assessing BTP’s trailing P/E, be sure to adjust for its countercyclical property, called the Molodovsky effect.
2. The PEG (P/E-to-growth) is a better measure than P/E because it correctly accounts for differences in risk and the duration of growth between BTP and its peers.
3. Note that BTP’s return on equity (ROE) is much higher than its peers. Therefore, on the basis of justified P/B, BTP will appear overvalued relative to its peers with the same P/B.

Additionally, Smirnoff suggests that Rivera should adjust BTP’s multiples reflecting a 25% discount for additional risks because of its small size and thin trading. Rivera agrees with Smirnoff and collects the data needed (see Exhibit 2).

Exhibit 2			
BTP’s Selected Financial Data			
(\$ millions)			
Net income	20	Book value of equity	100

Interest	5	Market value of equity	250
Taxes	10	Long-term debt	150
Depreciation	80	Cash	50
Amortization	15	Required return on stock	11.0%
Earnings growth rate	5.5%	Weighted average cost of capital	9.0%

55. Using the appropriate data in Exhibit 1 and Rivera's adjustment, the risk premium for BTP stock according to the Gordon growth model is *closest* to:

- A. 5.61%.
- B. 5.77%.
- C. 7.02%

Answer = B

"Return Concepts," by John Stowe, CFA, Thomas Robinson, CFA, Jerald Pinto, CFA, and Dennis McLeavey, CFA

2013 Modular Level II, Vol. 4, Reading 31, Section 3.2.1

Study Session 10–31–b

Calculate and interpret an equity risk premium using historical and forward-looking estimation approaches.

B is correct. First compute the GGM equity risk premium, and then add Rivera's adjustment for small firm risk premium. Computations are as follows:

GGM equity risk premium estimate = Dividend yield on the index based on year-ahead aggregate forecasted dividends and aggregate market value + Consensus long-term earnings growth rate – Current long-term government bond yield.

Dividend yield: $33.60/1,480 =$	2.27%
Plus: Consensus long-term earnings growth rate	6.00%
Minus: Current long-term government bond yield	–4.00%
Equals: Equity risk premium per GGM	4.27%
Plus: Rivera's adjustment for small-firm risk premium	1.50%
= GGM equity risk premium including Rivera's adjustment	5.77%

56. Using the appropriate data in Exhibit 1 for the macroeconomic model and the adjustments considered by Rivera and Royappa, the risk premium for BTP stock is *closest* to:

- A. 5.62%.
- B. 7.19%.
- C. 7.54%.

Answer = B

“Return Concepts,” by John Stowe, CFA, Thomas Robinson, CFA, Jerald Pinto, CFA, and Dennis McLeavey, CFA

2013 Modular Level II, Vol. 4, Reading 31, Section 3.2.2, Equation 7

Study Session 10–31–b

Calculate and interpret an equity risk premium using historical and forward-looking estimation approaches.

B is correct. First compute the equity risk premium according to the macroeconomic model with four components, as explained by Ibbotson and Chen. Next, add the small firm and thin trading risk premia.

Equity risk premium according to the macroeconomic model:

$= \{[(1 + \text{EINFL})(1 + \text{EGREPS})(1 + \text{EGPE}) - 1] + \text{EINC}\} - \text{Expected risk free rate};$

Equity risk premium: $\{[(1.0181)(1.03)(1.015) - 1] + 0.025\} - 0.04$	4.94%
Plus: Risk premia for small firm and thin trading: 1.50% + 0.75%	2.25%
= Risk premium for BTP including premia for small firm and thin trading	7.19%

57. Which of the three caveats regarding the historical estimates of risk premium that Royappa has stated is *least* accurate? Her:

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

Answer = C

“Return Concepts,” by John Stowe, CFA, Thomas Robinson, CFA, Jerald Pinto, CFA, and Dennis McLeavey, CFA

2013 Modular Level II, Vol. 4, Reading 31, Sections 3.1.1, 3.1.2, 3.1.3

Study Session 10–31–b, e

Calculate and interpret an equity risk premium using historical and forward-looking estimation approaches.

Describe strengths and weaknesses of methods used to estimate the required return on an equity investment.

C is correct. Her caveat concerning survivorship bias is the least accurate one. Survivorship bias in equity market data series arises when poorly performing or defunct companies are removed

from membership in an index so that only relative winners remain. Survivorship bias tends to inflate historical estimates of the equity risk premium. When using a series that has such bias, however, the historical risk premium estimate should be adjusted downward.

58. Which of the three statements regarding relative valuation approaches that Smirnoff has stated is *most* accurate? His statement concerning the:

- A. P/E.
- B. PEG.
- C. justified P/B.

Answer = A

“Market-Based Valuation: Price and Enterprise Value Multiples,” by Jerald Pinto, CFA, Elaine Henry, CFA, Thomas Robinson, CFA, and John Stowe, CFA

2013 Modular Level II, Vol. 4, Reading 35, Sections 3.1.2.2, 3.1.5.1, 3.2.2, Equation 4

Study Session 12–35—d, h, k

Calculate and interpret alternative price multiples and dividend yield.

Calculate and interpret the justified price-to-earnings ratio (P/E), price-to-book ratio (P/B), and price-to-sales ratio (P/S) for a stock, based on forecasted fundamentals.

Calculate and interpret the P/E-to-growth ratio (PEG), and explain its use in relative valuation.

A is correct. BTP is a cyclical company. Empirically, P/Es for cyclical companies are often highly volatile over a cycle even without any change in business prospects: High P/Es on depressed EPS at the bottom of the cycle and low P/Es on unusually high EPS at the top of the cycle reflect the countercyclical property of P/Es known as the Molodovsky effect.

59. Using the data in Exhibit 2 and the adjustment suggested by Smirnoff, BTP’s justified P/B is *closest* to:

- A. 1.98.
- B. 3.11.
- C. 3.30.

Answer = A

“Market-Based Valuation: Price and Enterprise Value Multiples,” by Jerald Pinto, CFA, Elaine Henry, CFA, Thomas Robinson, CFA, and John Stowe, CFA

2013 Modular Level II, Vol. 4, Reading 35, Sections 3.2.2, Equation 4

Study Session 12–35—h

Calculate and interpret the justified price-to-earnings ratio (P/E), price-to-book ratio (P/B), and price-to-sales ratio (P/S) for a stock, based on forecasted fundamentals.

A is correct.

Justified P/B = $(ROE - g)/(r - g)$

Return on equity	20/100 =	20.0%
------------------	----------	-------

ROE = NI/Book value of equity		
Justified P/B = $(\text{ROE} - g)/(r - g)$	$(0.20 - 0.055)/(0.11 - 0.055) =$	2.64
Adjustment per Smirnoff's suggestion	$2.64 \times (1 - 0.25) =$	1.98

60. Using the data in Exhibit 2 and the adjustment suggested by Smirnoff, BTP's EV/EBITDA multiple is *closest* to:

- A. 2.02.
- B. 2.31.
- C. 3.36.

Answer = A

"Market-Based Valuation: Price and Enterprise Value Multiples," by Jerald Pinto, CFA, Elaine Henry, CFA, Thomas Robinson, CFA, and John Stowe, CFA
 2013 Modular Level II, Vol. 4, Reading 35, Sections 4.1.1, 4.1.2, Example 34
 Study Session 12–35–n
 Calculate and interpret EV multiples, and evaluate the use of EV/EBITDA.

A is correct.

EV = MV Equity + Debt – Cash	$250 + 150 - 50 =$	350
EBITDA= NI + Int + Taxes + Depr + Amort	$20 + 5 + 10 + 80 + 15 =$	130
EV/EBITDA		2.69
Adjustment per Smirnoff's suggestion	$2.69 \times (1 - 0.25) =$	2.02