

2012 Level II Mock Exam: Afternoon Session

The afternoon session of the 2012 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.

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Marcus Pinto Case Scenario

A struggling asset management company recently hired Marcus Pinto, CFA, as chief operating officer (COO). Pinto's first responsibility is to recommend to the Board of Directors how they can lower costs while still retaining the firm's client base and how to increase assets under management.

Pinto analyzes the firm, its clients' needs, and general market conditions before presenting his findings to the Board of Directors. At the presentation, he makes the following statements:

- Statement 1: "If the company adopts the CFA Institute Standards of Professional Conduct, the CFA Institute Research Objectivity Standards, and the CFA Institute Soft Dollar Standards and publicly discloses the company's compliance, we must be 100% compliant firm-wide. By complying with these standards, our business will grow since clients value the integrity these standards bring to firms that abide by them."
- Statement 2: "The CFA Institute Soft Dollar Standards are easy to adopt because they reflect the fiduciary duty we have to our clients, placing their interests first and foremost. It also allows us to purchase research with cash credits for the investment and administration departments, which will reduce our overhead costs."

Pinto also recommends they outsource the research function of the firm to stockbrokers who will supply all research. He states this will result in a substantial cost savings by reducing the firm's workforce and office space needs.

In Exhibit 1 below, Pinto presents to the board the database he has developed with regard to stockbroker selection:

Exhibit 1
Stockbroker Services

Name of Broker	Gross Commission Fee Charged	Average Trade Execution Period	Services Provided	Additional Information
Stockbroker A	0.30%	2 days	Brokerage/trading services only	Investment management software available (See Note 1 below)
Stockbroker B	0.27%	1 day	Investment bank with mutual fund subsidiary	Negotiable commission recapture/rebates
Stockbroker C	0.27%	1 day	Brokerage/trading services only	Invitation to annual client conference

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Note 1: The software comprises the following applications and estimated usage within the firm:

Daily Portfolio Valuation:	55%
General Financial Accounting:	15%
Economic Statistical Database:	30%

Continuing with his presentation, Pinto states:

- “If we adopt the Soft Dollar Standards, we must provide a statement to existing and potential clients disclosing we use broker-provided research for all clients irrespective of whether client trades were directed to the broker providing the research and whether they involve principal basis trades;
- The statement needs to include the types of research received through proprietary or third-party research arrangements, the extent of use, and whether any affiliated broker is involved; and
- We must also provide a statement to our clients that any Soft Dollar Arrangements with respect to that particular client account conforms to the CFA Institute Soft Dollar Standards.

I suggest we send the disclosure statement every six months.”

After the board presentation, Pinto’s firm decides to implement the Soft Dollar Standards and selects Stockbroker B as its primary broker. Subsequently, Mrs. Choi, a pension fund trustee who is a client of the asset management company, gives instructions that some brokerage transactions be directed to a new brokerage company. Pinto recommends that the firm regularly evaluate the client-directed brokerage arrangements, including:

- a list of stockbrokers;
- the potential for achieving best execution; and
- the targeted percentage of transactions to selected brokers.

-
1. Pinto’s first statement is *least likely* correct with regard to which of the following CFA Institute standards?
 - A. Soft Dollar
 - B. Research Objectivity
 - C. Professional Conduct

Answer = A

“CFA Institute Soft Dollar Standards,” CFA Institute
2012 Modular Level II, Vol. 1, pp. 191–192, 194–195
Study Session 1-3-a

Define soft-dollar arrangements and state the general principles of the Soft Dollar Standards.

“CFA Institute Research Objectivity Standards,” CFA Institute
2012 Modular Level II, Vol. 1, pp. 212–213
Study Session 1-4-a

Explain the objectives of the Research Objectivity Standards.

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“Code of Ethics and Standards of Professional Conduct,” CFA Institute
2012 Modular Level II, Vol. 1, p. 15

Study Session 1-1-b

Explain the ethical responsibilities required by the Code and Standards, including the multiple sub-sections of each standard.

A is correct because Soft Dollar Standards are not required to be adopted on a firm-wide basis. Compliance can be specific to certain clients only. Soft Dollar Standards are not applicable to clients who make client-directed brokerage arrangements. Standard V. — Client-Directed Brokerage dictates that since brokerage is a client asset, rather than an investment manager asset, the practice of client-directed brokerage does not violate any investment mandate *per se*.

2. Does Pinto’s second statement *most likely* reflect the principles of the CFA Institute Soft Dollar Standards?
- A. Yes
 - B. No, with regard to fiduciary duty
 - C. No, with regard to purchase of research

Answer = C

“CFA Institute Soft Dollar Standards,” CFA Institute
2012 Modular Level II, Vol. 1, p. 187

Study Session 1-3-a

Define soft-dollar arrangements and state the general principles of the Soft Dollar Standards.

C is correct because the fundamental principles of the CFA Institute Soft Dollar Standards are based not only on fiduciary duty but also on the principle that client brokerage cannot be spent on research not used in the investment decision-making process (i.e., not for the general management or administration of the investment firm). Pinto’s description of fiduciary duty is consistent with the standards, but his comment on the purchase of research for use by administration is not consistent with the standards.

3. Based on Note 1 in Exhibit 1, in order to comply with CFA Institute Soft Dollar Standards, the maximum percentage of Stockbroker A’s “research” allowed to be purchased with client brokerage is *closest* to:
- A. 55%.
 - B. 85%.
 - C. 100%.

Answer = B

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“CFA Institute Soft Dollar Standards,” CFA Institute
2012 Modular Level II, Vol. 1, pp. 197–199

Study Session 1-3-c

Determine whether a product or service qualifies as “permissible research” that can be purchased with client brokerage.

B is correct because daily portfolio valuation (55%) and economic statistical database (30%) platforms are considered to be used in the investment decision-making process (total = 85%), whereas general accounting is a function to help in the running of the investment firm and hence not allowed to be paid for by client brokerage.

A is incorrect because it only includes the daily valuation function, whereas the statistical database would also qualify (30%).

4. Based on Exhibit 1, and assuming equal market impact costs, which stockbroker should the firm *most likely* select as their primary broker?
- A. Stockbroker A
 - B. Stockbroker B
 - C. Stockbroker C

Answer = B

“CFA Institute Soft Dollar Standards,” CFA Institute
2012 Modular Level II, Vol. 1, pp. 191–193

Study Session 1-3-a, b

Define soft-dollar arrangements and state the general principles of the Soft Dollar Standards.

Evaluate company soft-dollar practices and policies.

B is correct because Standard III — Selection of Brokers of the CFA Institute Soft Dollar Standards requires an investment manager to obtain best execution. Stockbroker B executes in one day at the same rate as Stockbroker C, but Stockbroker B offers a commission rebate that would lower the overall execution cost when compared with Stockbroker C, thus lowering the cost for the client. Therefore, Stockbroker B offers the best execution.

5. Does Pinto’s description of the required disclosure statement regarding Soft Dollar Arrangements *most likely* meet the CFA Institute Soft Dollar Standards?
- A. Yes
 - B. No, with regard to frequency of disclosure statement
 - C. No, with regard to availability of additional information

Answer = C

“CFA Institute Soft Dollar Standards,” CFA Institute

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2012 Modular Level II, Vol. 1, pp. 194–195

Study Session 1-3-b

Evaluate company soft-dollar practices and policies.

C is correct because Standard VI — Disclosure of the CFA Institute Soft Dollar Standards requires investment managers to prominently disclose in writing to their clients that additional information in accordance with the CFA Institute Soft Dollar Standards concerning the investment manager's soft-dollar arrangements is available on request. The standard also requires that investment managers disclose their policies with respect to all soft-dollar arrangements. The standard also requires the manager to provide a statement indicating compliance with soft-dollar standards at minimum on an annual basis.

6. Do Pinto's proposed evaluation procedures for client-directed brokerage *most likely* comply with recommended practices of the Soft Dollar Standards?
- A. Yes
 - B. No, with regard to stockbroker list
 - C. No, with regard to target percentage

Answer = B

"CFA Institute Soft Dollar Standards," CFA Institute

2012 Modular Level II, Vol. 1, pp. 196–197

Study Session 1-3-b

Evaluate company soft-dollar practices and policies.

B is correct because while Pinto's recommended evaluation process includes the list of stockbrokers, it fails to identify their trading skills as recommended by the Soft Dollar Standards with regard to client-directed brokerage.

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Theodore Case Scenario

In a seminar at Bessel University, two economists, Roger Theodore and Chester Yuri, are discussing the sources of economic growth for emerging countries.

Theodore outlines his position on preconditions for economic growth.

"I think the basic preconditions for economic growth are:

1. Democratic political systems in order to stimulate economic growth.
2. Social arrangements that govern the ownership, use, and disposal of factors of production.
3. A monetary system that facilitates the orderly transfer of private property."

Yuri states:

"A country can achieve faster economic growth by encouraging spending, improving education, and restricting international trade. Indeed, the proper mix of these economic policies can lead to an economy with no limits to its growth into the future. Furthermore, a country should encourage foreign direct investment as it is the best way to increase both the financial account and the current account."

Continuing on the topic of international trade, Theodore says:

"In exchange for foreign direct investment in the emerging country, trading partners should limit exports, which will protect jobs in the emerging country. Further, the exporter captures the difference between the domestic price and the exported price of the good."

The seminar concludes with a discussion on regulation and its consequences.

Yuri starts the discussion by noting the benefits of regulation:

"Regulations create a cooperative relationship between industry and regulators and promote the social goals of sound economic policies."

Theodore responds:

"You and I disagree on some of the benefits of regulation, but I suspect we can agree on one point. Often enough in the past, regulators come to represent the special interests of the industry rather than protection of the public interests."

7. Which of the preconditions for economic growth stated by Theodore is *least* accurate?

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

Answer = A

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“Economic Growth,” Michael Parkin
2012 Modular Level II, Vol. 1, pp. 527–528
Study Session 4-14-a
Describe sources of and preconditions for economic growth.

A is correct. The preconditions for economic growth are markets, property rights, and monetary exchange, making Theodore’s statement about democratic political systems the least accurate.

8. Yuri’s statement about faster economic growth is *most* accurate with respect to:
- A. spending.
 - B. education.
 - C. international trade.

Answer = B

“Economic Growth,” Michael Parkin
2012 Modular Level II, Vol. 1, pp. 530–531
Study Session 4-14-c

Explain how faster economic growth can be achieved by increasing the growth of physical capital, technological advances, and investment in human capital.

B is correct. By funding basic education and by ensuring high standards in basic skills (such as language, mathematics, and science), governments can contribute to a nation’s growth potential.

9. Yuri’s view of future economic growth is *most* consistent with:
- A. new growth theory.
 - B. classical growth theory.
 - C. neo-classical growth theory.

Answer = A

“Economic Growth,” Michael Parkin
2012 Modular Level II, Vol. 1, pp. 536–540
Study Session 4-15-d

Compare classical growth theory, neo-classical growth theory, and new growth theory.

A is correct. The idea that growth and profit can persist indefinitely is consistent with new growth theory.

10. Yuri's statement about foreign direct investment is *most* accurate with respect to:

- A. the current account only.
- B. the financial account only.
- C. both the financial and current accounts.

Answer = B

"Foreign Exchange Parity Relations," Bruno Solnik and Dennis McLeavey

2012 Modular Level II, Vol. 1, pp. 629–630

Study Session 4-18-b

Explain the role of each component of the balance of payments accounts.

B is correct. Foreign direct investment coming into the country increases the financial (capital) account.

11. Theodore's suggested policy on international trade and foreign direct investment is *best* described as a:

- A. tariff.
- B. quota.
- C. voluntary export restraint.

Answer = C

"Trading With the World," Michael Parkin

2012 Modular Level II, Vol. 1, pp. 581–584

Study Session 4-16-b

Compare tariffs, nontariff barriers, quotas, and voluntary export restraints.

C is correct. Theodore's suggested policy is a voluntary export restraint (VER). A VER is an agreement between two countries in which the government of the exporting country agrees to restrain the volume of its own exports. A VER is similar to a quota, but the difference is in sharing the gap between the domestic price and the export price. In the case of VERs, the gap is captured by the exporting country, not the importer.

12. Theodore's statement in regard to regulation is *most* consistent with the:

- A. capture hypothesis.
- B. corruption hypothesis.
- C. share-the-gains, share-the-pains theory.

Answer = A

"Regulation and Antitrust Policy in a Globalized Economy," Roger LeRoy Miller

2012 Modular Level II, Vol. 1, p. 559

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Study Session 4-15-c

Distinguish between the capture hypothesis and the share-the-gains, share-the-pains theory of regulator behavior.

A is correct. The capture hypothesis is that a regulatory authority will eventually be controlled by the special interests of those being regulated. The special interest groups of the industry have more to offer political entrepreneurs within a regulatory agency, such as future employment with one of the regulated firms. Therefore, regulators have strong incentive to support the position of a well-organized group within the regulated industry.

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Dagmar Case Scenario

Dagmar AG is a European-based manufacturing firm that prepares its financial statements according to IFRS. Two members of Dagmar's treasury group, Henrik Ferdinand and Adele Christoph, are reviewing Dagmar's portfolio of investments. They are particularly interested in the investment income reported during the year and if any of the investments should be considered impaired. Exhibits 1 and 2 contain information about the first two investments they are reviewing.

Exhibit 1 Selected Information on Investments For the year ended 31 December 2011 All € figures in '000 except per share data		
Company name	Alme AG	Elbe AG (Additional information in Exhibit 2)
Security description	Bonds maturing 31 December 2020, 5% coupon payable annually, 6% effective market rate when issued 1 January 2010	Common shares
Classification at purchase	Held-to-maturity	Associate company
Date of purchase	1 January 2010	28 February 2000
Amount owned by Dagmar	Face value €4,000	1.8 million shares
Total # of shares outstanding	n.a.*	6.0 million shares
Market value 1 January 2011	€3,600.60	€31.92 per share
Market value 31 December 2011	€3,634.76	€30.20 per share
Net earnings of investee company in 2011	n.a.	€12,375
Dividends paid by investee company in 2011	n.a.	€0.50 per share
*n.a. = not applicable		

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Exhibit 2 Additional Information Investment in Elbe AG (All € figures in '000s except per share data)	
At the date of acquisition (28 February 2000)	
• Price paid	€17 per share
• Total net book value of Elbe	€90,000
• Excess of fair market value of plant and equipment above book value	€5,250
• Expected useful life remaining on plant and equipment	15 years
• Elbe uses straight-line depreciation for all of its tangible assets	
At 31 December 2011	
• Book value of investment on Dagmar's statement of financial position	€59,022

Ferdinand opens the meeting with the statement:

"Before we consider impairment, let's calculate what each investment will contribute to Dagmar's net earnings this year."

Turning to the issue of impairment Christoph says:

"I believe the decline in the share price of Elbe is related to uncertainty surrounding the current status of Elbe's defined benefit pension plan."

At a recent board meeting, Elbe's management disclosed the information in Exhibit 3 concerning the company's pension plan, based on a recent actuarial revaluation. Elbe also announced it was going to change its policy of deferring actuarial gains and losses and instead recognize them as they arise. Elbe's management believes this will increase transparency going forward and that the improved disclosure will help the stock price.

Exhibit 3 Selected Data from Elbe's Pension Plan As at 31 December 2011 (All figures in € '000s)		
	Pension Plan Data before Revaluation	Pension Plan Data after Revaluation
Present value of defined benefit obligation	40,060	45,200
Fair value of plan assets	29,522	29,522
Unrecognized actuarial losses	1,500	4,250
Unrecognized past service costs	433	433

Further Christoph states:

"I think we should consider the investment in Elbe impaired because with the decline in the share price the market value has recently fallen below our book value."

Ferdinand responds:

"I don't think we have to consider it impaired because:

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1. despite the pension plan problems, Elbe has been able to maintain its dividends at its historical rate; and
2. the remaining goodwill from the acquisition has not been fully written off.”

Christoph concludes the meeting by reviewing the events surrounding another fixed income investment Dagmar held. The company owns bonds of Bergenfeld AG having a face value of €5 million and a coupon rate of 6%, payable semi-annually. The bonds have been held for five years and are classified as held to maturity.

“I am concerned about whether the investment in Bergenfeld is impaired for the following reasons:

- In August 2011, Standards and Poor’s lowered the credit rating for Bergenfeld from A to BB.
- In October 2011, the bonds of Bergenfeld were no longer publicly traded due to low volumes.
- In November 2011, Bergenfeld asked holders of the bonds if they would forgo the coupon payment due on 31 December 2011 in exchange for an increase in the coupon rate on future payment dates to 7.5%. The bondholders agreed to the change.”

13. The contribution from the investment in Alme to Dagmar’s net earnings (in ‘000s) for 2011 is *closest* to:

- A. €200.
- B. €224.
- C. €234.

Answer = B

"Intercompany Investments," Susan Perry Williams
2012 Modular Level II, Vol. 2, pp. 120–121, 127–129
Study Session 6-22-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.

B is correct. The investment in Alme was classified as held to maturity; therefore, Dagmar would be using amortized cost as the method to account for the investment, and the effect on net earnings would be the interest revenue earned for the year at the effective market rate at the time of purchase by Dagmar (6%).

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The interest revenue for 2011 can be calculated in two ways:			
1.	Market rate at issue × Book value at the beginning of the year (see below for the book value):	6.0% × 3,727.9 = 223.7	
2.	Interest coupon payment received + Amortization of the bond discount (see below)	200 + 23.7 = 223.7	
Supporting Calculations:			
The book value of the bond at any point in time is the present value of the remaining cash flows discounted at the historical market rate (i.e., the rate at the date of purchase)			
	Inputs	Calculations	Value
Book value of the bond at 1 January 2011	Face value 4,000 Coupon = 5% × 4,000 = 200 Market interest rate = 6% # of years (N) = 9	Using a financial calculator: FV = 4,000 PMT = 200 Interest rate = 6%, N = 9 Compute PV	3,727.9
Book value of the bond at 31 December 2011 (1 January 2012)	Face value 4,000 Coupon = 5% × 4,000 = 200 Market interest rate = 6% # of years (N) = 8	FV = 4,000 PMT = 200 Interest rate = 6%, N = 8 Compute PV	3,751.6
Bond amortization for 2011		Difference in book value 3,751.6 – 3,727.9 =	23.7

14. The contribution to Dagmar's 2011 net earnings (in '000s) from its investment in Elbe is *closest* to:

- A. €3,607.5.
- B. €3,712.5.
- C. €4,507.5.

Answer = A

"Intercompany Investments," Susan Perry Williams

2012 Modular Level II, Vol. 2, pp. 130–137

Study Session 6-22-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.

A is correct. Dagmar would be using the equity method to account for its investment in Elbe because of its classification as an associated company. Therefore, Dagmar will include its proportionate share of Elbe's net earnings, less the amortization of the

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excess purchase price from the initial acquisition. Dagmar owns 30% ($1.8 \div 6.0$ million shares) of Elbe.

	Calculations	in € '000s
% of Elbe's net income	$30\% \times 12,375$	3,712.5
Less amortization of the excess value of tangible assets at acquisition (from Exhibit 2)	$5,250 \times 30\% = 1,575$ $1,575 \div 15 \text{ years}$	(105.0)
Investment income from Elbe in 2011		3,607.50

15. Which of the following *best* describes the accounting for goodwill in the Elbe investment?

- A. €2,025,000 included in the investment in Elbe account.
- B. €3,600,000 included in the investment in Elbe account.
- C. There is no goodwill arising in an investment in an associated company.

Answer = A

"Intercompany Investments," Susan Perry Williams
2012 Modular Level II, Vol. 2, pp. 135–136
Study Session 6-22-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.

A is correct. Under the equity method, goodwill is calculated at the date of acquisition and included in the carrying amount of the investment. It is not amortized. Using data in Exhibit 2:

Acquisition calculation

Price per share	€17.00
# of shares	$\times 1,800,000$
Total price paid for 30%	€ 30,600,000
30% of Net book value of Elbe ($0.30 \times €90,000,000$)	27,000,000
Excess purchase price paid	€ 3,600,000
Allocated to plant and equipment ($0.30 \times €5,250,000$)	1,575,000
Goodwill	€ 2,025,000

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16. After the actuarial revaluation of the pension plan and the change in accounting policy related to actuarial gains and losses, the net pension liability (in '000s) Elbe would report on its statement of financial position will be *closest* to:
- A. €11,428.
 - B. €15,245.
 - C. €15,678.

Answer = B

"Employee Compensation: Post Employment and Share-Based," Elaine Henry and Elizabeth Gordon

2012 Modular Level II, Vol. 2, pp. 195–197

Study Session 6-23-b

Explain and calculate measures of a defined benefit pension obligation (i.e., present value of the defined benefit obligation and projected benefit obligation) and net pension liability (or asset).

B is correct. IFRS does not recognize the deferred portion of past service costs in the balance sheet liability. The net pension liability reported when actuarial gains and losses are recognized immediately is calculated as follows:

Present value of defined benefit obligation	€ 45,200
Less fair value of plan assets	(29,522)
Less unrecognized past service costs	(433)
Net pension liability	€ 15,245

17. Which of the statements concerning whether the investment in Elbe should be considered impaired as at the end of 2011 is *most* appropriate?
- A. Christoph's statement about market value
 - B. Ferdinand's statement about the dividends
 - C. Ferdinand's statement about the remaining goodwill

Answer = B

"Intercompany Investments," Susan Perry Williams

2012 Modular Level II, Vol. 2, p. 138

Study Session 6-22-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.

B is correct. Under IFRS, there must be objective evidence of impairment as a result of one or more loss events after the initial recognition of the investment, and that these

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events have an impact on the investment's future cash flows, which can be reliably estimated. Ferdinand is correct in her statement that Elbe has been able to maintain dividend payments. Current dividends are €0.50 on EPS of $\text{€}12,373 \div 6,000 = \text{€}2.06$, thus a payout ratio of 24%, implying that cash flows do not appear to be impaired. Therefore, the investment should not be considered impaired for that reason.

If the fair market value of the investment is below its carrying (book) value and the decline is deemed other than temporary, an impairment loss must be recognized. However, according to Christoph the market value "has just now fallen" below the book value, and there is no indication that the situation of fair value below carrying value is other than temporary. Under the equity method, the investment is not carried at market value. Goodwill is not tested separately for impairment for investments using the equity method.

18. During which month in 2011 would it have been *most* appropriate for Dagmar to consider the value of its investment in Bergenfeld to be impaired?
- A. August
 - B. October
 - C. November

Answer = C

"Intercompany Investments," Susan Perry Williams
2012 Modular Level II, Vol. 2, pp. 125–126
Study Session 6-22-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. The earliest point at which it would have been appropriate for Dagmar to consider the investment in Bergenfeld to be impaired is November. The downgrading of debt (in August) or the disappearance of an active market for a security (October) alone is not evidence of an impairment. But the request for and acceptance of concessions on the coupon payment in conjunction with the earlier events would indicate that the debt is impaired.

Ready Power, Inc., Case Scenario

Ready Power, Inc., is a manufacturer of high quality industrial electric generators. While many companies have been negatively impacted by the continued global economic weakness, Ready Power has experienced strong demand for its products largely as a result of several recent natural disasters and many occurrences of rolling brownouts and blackouts arising from excessive strains on power grids. Although this strong demand has resulted in higher inventory costs in recent years, the company has been able to pass them on to customers through higher prices. The company's generators have expected useful lives of about 25 years, and it normally depreciates its assets on a straight-line basis.

Margo Lenz, CFA, an equity analyst at Livermore Investment Council, is reviewing Ready Power's recent financial statements, which are prepared according to U.S. GAAP.

Exhibits 1 and 2 contain selected portions of the company's statement of operations and statement of financial position, while Exhibit 3 contains selected notes from the company's 2011 financial statements.

Exhibit 1 Ready Power, Inc. Consolidated Results of Operations (\$U.S. millions)	
For the Year Ended December 31	2011
Sales	24,910
Cost of goods sold	<u>17,729</u>
Gross profit	7,181
Net profit	2,122

Exhibit 2 Ready Power, Inc. Consolidated Financial Position (\$U.S. millions)		
December 31	2011	2010
Cash	318	665
Receivables	8,983	8,381
Inventories	3,811	3,134
Other current assets	<u>744</u>	<u>1,441</u>
Current assets	13,856	13,621
Net property, plant, and equipment	5,311	4,794
Other assets	<u>11,360</u>	<u>9,826</u>
Total assets	<u>30,527</u>	<u>28,241</u>
Accounts payable	2,451	2,047
Other current liabilities	<u>9,100</u>	<u>9,262</u>
Total current liabilities	11,551	11,309
Long-term liabilities	<u>14,861</u>	<u>11,873</u>
Total liabilities	26,412	23,182
Total shareholders' equity	<u>4,115</u>	<u>5,059</u>
Total liabilities and shareholders' equity	<u>30,527</u>	<u>28,241</u>

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Exhibit 3
Ready Power, Inc.
Selected Notes to Consolidated Financial Statements

Note 1. Operations and Summary of Significant Accounting Policies

D. Inventories

Inventories are stated at the lower of cost or market, with cost determined using the last-in, first-out (LIFO) method.

\$U.S. millions	2011	2010
LIFO reserve	\$1,442	\$1,407
No LIFO liquidation occurred during the years 2009 to 2011.		

F. Depreciation and amortization

Depreciation of plant and equipment is computed using the straight-line depreciation method.

\$U.S. millions	2011	2010
Consolidated depreciation expense	\$332	\$235

J. Income taxes

The company's effective tax rate has been 29% for each of the past 3 years

Note 10. Property, Plant, and Equipment

	December 31	
\$U.S. millions	2011	2010
Land	110	92
Plant and equipment	<u>10,257</u>	<u>9,426</u>
Total plant and equipment	10,367	9,518
Less accumulated depreciation	<u>5,056</u>	<u>4,724</u>
Net property, plant, and equipment	5,311	4,794

Harold Mays, one of Lenz's assistants, made the following comments about Ready Power's inventory policy:

1. "One of the advantages of using LIFO is that it simplifies the accounting process for inventories as it gives the same results for inventory and cost of goods sold whether the company uses a periodic or perpetual inventory system."
2. "Another advantage of using LIFO is that it appears to improve the company's cash conversion cycle."

Lenz mentioned to Mays that earlier that day, she had seen Bill Jacobs, the CEO of Ready Power, in an exclusive interview on a cable news network specializing in financial news. Lenz was particularly interested in the portion of the interview dealing with the company's new program to lease out electrical generators. Selected excerpts from a transcript of the interview are found in Exhibit 4.

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Exhibit 4
Selected Excerpts from a Cable TV Interview of Harold Jacobs
4 March 2012

Jacobs: "The firm is meeting the growing demand for our electrical generators and will be introducing a leasing program to further consolidate our lead in this area. We anticipate that about 80% of the leases we grant will have a term of 20 years or more, with the remainder having shorter terms of around 5 years."

After reading the excerpts from the cable TV interview, Mays wondered what impact the company's new position as a lessor and its classification of leases would have on the company's future financial statements. Finally, he commented:

1. "For a given leased asset, in the initial year of the lease, Ready Power's profits should be higher if the company classifies the lease as an operating lease."
2. "Regardless of how the company classifies a lease, its total cash flow and operating cash flow over the lease term will be the same."

19. If Ready Power had used the FIFO method to account for its inventory, its cost of goods sold (in millions) in 2011 would have been *closest* to:

- A. \$16,287.
- B. \$17,694.
- C. \$17,764.

Answer = B

"Inventories: Implications for Financial Statements and Ratios," Michael A. Broihahn
 2012 Modular Level II, Vol. 2, pp. 13–18

Study Session 5-20-c

Convert a company's reported financial statements from LIFO to FIFO for purpose of comparison.

B is correct.

COGS (FIFO) =	COGS (LIFO) – Increase in LIFO reserve*
	17,729 – 35 = 17,694
*Increase in LIFO reserve = 1,442 – 1,407 = 35	

20. If Ready Power had been using FIFO accounting since incorporation, its retained earnings at the end of 2011 would *most likely* be higher (in millions) by:

- A. \$1,024.
- B. \$1,442.
- C. \$2,927.

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Answer = A

“Inventories: Implications for Financial Statements and Ratios,” Michael A. Broihahn
2012 Modular Level II, Vol. 2, pp. 13–18

Study Session 5-20-c

Convert a company’s reported financial statements from LIFO to FIFO for purpose of comparison.

A is correct. The LIFO reserve at the end of 2011 was \$1,442, indicating that cumulative gross profits would have been \$1,442 higher under FIFO. With a tax rate of 29%, the cumulative additional income tax expense would be $\$1,442 \times 0.29 = \418 , resulting in an increase in retained earnings of $\$1,442 - \$418 = \$1,024$.

21. The statement in Note 1.D (Exhibit 3) concerning LIFO liquidations *most likely* means that for the stated period:

- A. costs and prices must have been rising throughout.
- B. there were no inventory write-downs in any of the three years.
- C. units manufactured (or purchased) equaled or exceeded unit sales for each year.

Answer = C

“Inventories: Implications for Financial Statements and Ratios,” Michael A. Broihahn
2012 Modular Level II, Vol. 2, pp. 20–21

Study Session 5-20-b, d

Explain LIFO reserve and LIFO liquidation and their effects on financial statements and ratios.

Describe implications of valuing inventory at net realizable value for financial statements and ratios.

C is correct. LIFO liquidation arises when the number of units sold exceeds the number of units purchased or manufactured, and therefore, a portion of the older inventory is sold off or liquidated.

22. With regard to Mays’ comments about the LIFO method, which of his statements is *most* accurate?

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

Answer = B

“Inventories: Implications for Financial Statements and Ratios,” Michael A. Broihahn
2012 Modular Level II, Vol. 2, pp. 9, 12

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Study Session 5-20-c, e

Convert a company's reported financial statements from LIFO to FIFO for purpose of comparison.

Analyze and compare financial statements and ratios of companies, including those that use different inventory valuation methods.

B is correct. Only Statement 2 is correct:

In periods of rising inventory prices, as recently experienced by the company, LIFO COGS is higher and average inventory is lower, resulting in faster inventory turnover and, therefore, fewer days of inventory on hand (DOH). Receivables and payables are not affected by the choice of inventory method. The lower DOH will appear to shorten the operating and cash conversion cycles.

Statement 1 is incorrect:

The LIFO inventory (and cost of goods sold) will usually differ depending on whether the company uses a periodic or perpetual counting system; in addition, it must keep track of the value of FIFO-based inventory so as to report the LIFO reserve.

23. In 2011, the estimated remaining life (in years) of the company's asset base is *closest* to:

- A. 15.2.
- B. 15.7.
- C. 16.0.

Answer = B

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

2012 Modular Level II, Vol. 2, pp. 81–86

Study Session 5-21-d

Analyze and interpret the financial statement disclosures regarding long-lived assets.

B is correct.

Estimated remaining life	=	$\frac{\text{Net (depreciable) PP\&E}}{\text{annual depreciation expense}}$
		$= 5,201 \div 332 = 15.7$
Net (depreciable) PP&E excludes land, from Note 10: \$5,311 – \$110 = \$5,201		
Depreciation expense from Note 1.F: \$332		

24. Which of May's statements about the new leasing program is *most likely* correct?

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

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Answer = C

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

2012 Modular Level II, Vol. 2, pp. 100–103

Study Session 5-21-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.

C is correct.

Neither statement is correct.	
Statement 1 is incorrect:	Lessors generally prefer sales type leases to operating leases because a sales type lease accelerates revenue recognition. Assuming that the lease payments will be the same under both types of leases (as the case scenario indicates), in the initial year of the lease, for a sales type lease, the company will report the difference between the present value of the lease payments and the asset's carrying value as profit, as well as the interest revenue on the lease receivable; for the an operating lease, the company's income will be the lease payment less the depreciation expense, which will be lower than the gross profit on the sale plus interest revenue from the sales type lease.
Statement 2 is incorrect:	While total cash flow over a lease term under the two different methods of accounting for a lease will be the same, the operating cash flows will not be. Under an operating lease, the net difference between the lease receipts and depreciation expense will be treated as operating cash flows. After the first year of the lease, only the interest revenue will be treated as an operating cash flow under a financing lease (direct or sales type), with the amount affecting the principal amount of the lease receivable being treated as an investing cash flow.

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Hi Chu Case Scenario

Hi Chu is a manager of a manufacturing subdivision of Restar Corporation. Restar is a conglomerate with divisions in the container industry. Chu's task is to forecast the profitability of a four-year project for the manufacturing of specialty labeled aluminum cans. Restar has never manufactured such an item before and will require new equipment for the project. Exhibit 1 displays Chu's abridged forecasted financial projections for the project.

Exhibit 1 Specialty Labeled Aluminum Cans Project Financial Projections (Values are year-end totals in '000s)					
	Year 0	Year 1	Year 2	Year 3	Year 4
Fixed Capital	100,000				
Working Capital	0				
Total Investment	100,000				
Sales		60,000	72,000	86,400	103,680
Operating Costs		24,000	28,800	34,560	41,472
Depreciation		25,000	25,000	25,000	25,000
EBIT		11,000	18,200	26,840	37,208
Interest		4,000	3,112	2,154	1,118
EBT		7,000	15,088	24,686	36,090
Tax (40%)		2,800	6,035	9,874	14,436
Net Income		4,200	9,053	14,812	21,654
Dividends		1,680	3,621	5,925	8,662
Addition to Retained Earnings		2,520	5,432	8,887	12,992
Capital Employed	100,000	75,000	50,000	25,000	0
Restar's Cost of Capital and Capital Structure					
Cost of Debt		8.00%			
Cost of Equity		15.00%			
Debt Ratio (Total Debt ÷ Total Assets)		50.00%			

In a meeting with Restar's CFO, Trey Papier, Chu discusses the merits of the project. Chu makes the following points:

- All assumptions in the projections are based on the overall debt and equity mix of Restar and on Restar's corporate policy in regard to dividend payout.
- However, instead of using the weighted average cost of capital (WACC), I think the project should be evaluated with a project-specific market-determined discount rate of 16% because the project is not similar to any of the firm's current manufacturing processes.

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Papier asks Chu if other evaluation methods were considered. Chu replies that he has computed the economic profit instead, and using WACC as the discount rate, he found the market value added (MVA) to be much higher (\$21.9 million) than the previous NPV calculation of \$6.4 million.

Chu states that he is uncertain as to the appropriate cost of equity to use because two weeks earlier, Restar's management announced that the financing mix was going to change by increasing the target debt ratio to 60%. As a result, he says, the choices seem to be the:

- cost of equity for an unlevered firm,
- firm's current cost of equity, or
- cost of equity based on the Modigliani and Miller tax model and the new target debt ratio, assuming that the cost of debt rises to 8.75%.

Papier interjects that the current cost of equity would be better because the implementation of the new financing mix is likely to be delayed. Papier states that the delay is because the structure of the board of directors is about to change in the following ways:

- The CEO will no longer be the chairman of the board.
- The retired original founder of Restar will now become the chairman of the board.
- The board will now have a majority of members who have had past experience at Restar.

Despite these changes, Papier believes it is still important to explore the potential value of this new project.

Three weeks later, Chu and Papier meet again and review Chu's work. After some discussion, they think an alternative project will perform the same task as the original project. The alternative project will cover a six-year period. Chu has calculated its NPV based on after-tax operating cash flows with the same discount rate of 16% used for the original project. Chu and Papier agree that since the two projects are mutually exclusive, they can decide between them using the equivalent annual annuity approach. The NPVs of the two projects are summarized in Exhibit 2.

Exhibit 2 Comparison of Project NPVs		
Project	Project Life	NPV
Original	4 years	\$6,406,450
Alternative	6 years	\$8,141,220

25. Based on Exhibit 1, the after-tax operating cash flow (in \$1,000) for Year 1 is *closest* to:

- A. 31,600.
- B. 33,200.
- C. 46,600.

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Answer = A

“Capital Budgeting,” John D. Stowe and Jacques R. Gagne

2012 Modular Level II, Vol. 3, p. 31

Study Session 8-28-a

Calculate the yearly cash flows of an expansion capital project and a capital replacement project, and evaluate how the choice of depreciation method affects those cash flows.

A is correct. Based on equation (7) on page 31:

$$CF = (sales - operating\ expenses - depreciation) \times (1 - tax\ rate) + depreciation$$

$$CF = (\$60,000 - \$24,000 - \$25,000) \times 1 - 0.40 + \$25,000 = \$31,600$$

26. Based on Exhibit 1, the economic profit (in \$1,000) for Year 1 is *closest* to:

- A. -8,400.
- B. -3,300.
- C. 1,100.

Answer = B

“Capital Budgeting,” John D. Stowe and Jacques R. Gagne

2012 Modular Level II, Vol. 3, p. 64

Study Session 8-28-a, i

Calculate the yearly cash flows of an expansion capital project and a capital replacement project, and evaluate how the choice of depreciation method affects those cash flows. Distinguish among, and evaluate a capital project using, the economic profit, residual income, and claims valuation models.

B is correct. Based on equation (12) on page 64 (Note that capital employed is based on beginning of year values as per the reading and the debt ratio is 50% from Exhibit 1):

Economics profit = EP = NOPAT – \$WACC

$$EP = EBIT \times (1 - tax\ rate) - WACC \times capital$$

$$WACC = w_d r_d (1 - t) + w_e r_e = 0.50 \times 0.08 \times (1 - 0.40) + (1 - 0.50) \times 0.15 = 0.099$$

$$EP = \$11,000 \times (1 - 0.40) + \$100,000 \times 0.099 = -\$3,300$$

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27. The dividend payment policy assumed by Chu in Exhibit 1 is *most* accurately described as a:

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

Answer = C

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

2012 Modular Level II, Vol. 3, pp. 155–161

Study Session 8-30-f

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

C is correct. When viewing Exhibit 1, the dividend payout ratio for each year is 40% of net income. This result is consistent with a constant dividend payout policy.

28. The cost of equity (%) under the newly announced financing mix using Chu’s assumption on the change in the cost of debt and his suggested approach is *closest* to:

- A. 15.1.
- B. 15.6.
- C. 16.3.

Answer = B

“Capital Structure,” Raj Aggarwal, Pamela Peterson Drake, Adam Kobor, and Gregory Noronha

2012 Modular Level II, Vol. 3, p. 106

Study Session 8-29-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.

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B is correct. Based on equations (9) on page 104:

$r_e = r_o + (r_o - r_d)(1 - t) \frac{D}{E}$	r_o = cost of equity of an all-equity company = ? r_e = cost of equity for the firm = 0.15 (Exhibit 1) r_d = cost of debt for the firm = 0.08 (Exhibit 1)
First solve for r_o based on current debt and equity mix given the following original inputs:	
Current D/E = debt-to-equity ratio = $0.50 \div (1 - 0.50) = 1.0$ (implied from Exhibit 1) t = tax rate = 0.40 (Exhibit 1)	
$r_o = \frac{r_e + r_d(1-t) \frac{D}{E}}{1 + (1-t) \frac{D}{E}} = \frac{0.15 + 0.08(1-0.4)1.0}{1 + (1-0.4)1.0} = \frac{0.198}{1.6} = 0.12375$	
Then solve for r_e based on the new debt and equity mix (0.60) and the new cost of debt (0.0875):	
Revised D/E = debt-to-equity ratio = $0.60 \div (1 - 0.60) = 1.5$ (based on debt ratio of 0.60)	
$r_e = 0.12375 + (0.12375 - 0.0875)(1 - 0.4)1.5 = 0.156375 = 15.6\%$	

29. Which changes to the board of directors is *most* consistent with best practices in the composition of a board?

- A. Change regarding the CEO
- B. Specific choice of the new chairman of the board
- C. Change in the composition of the board membership

Answer = A

“Corporate Governance,” Rebecca Todd McEnally and Kenneth Kim
2012 Modular Level II, Vol. 3, pp. 195–199
Study Session 9-31-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.

A is correct. Based on page 198, section 5.1.2, the chairman of a board should not be a senior executive from the firm.

30. Based on the equivalent annual annuity method for the original and alternative projects, the *most appropriate* conclusion is to:

- A. accept the original project.
- B. accept the alternative project.
- C. be indifferent between the two projects.

Answer = A

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“Capital Budgeting,” John D. Stowe and Jacques R. Gagne
2012 Modular Level II, Vol. 3, pp. 41–42

Study Session 8-28-c

Evaluate and select the optimal capital project in situations of 1) mutually exclusive projects with unequal lives, using either the least common multiple of lives approach or the equivalent annual annuity approach, and 2) capital rationing.

A is correct.

Find the annuitized value of the NPV based on 16% for each project:		
Project Life	Calculation	Equivalent annual cash flow
4 years original project	$\$6,406,450 \times 0.16 \div \left[1 - \frac{1}{(1 + 0.16)^4} \right]$ PV = 6,406,450; N = 4; I = 16; CPT PMT? = \$2,289,506	\$2,289,506
6 years alternative project	$\$8,141,220 \times 0.16 \div \left[1 - \frac{1}{(1 + 0.16)^6} \right]$ PV = 8,141,220; N = 6; I = 16; CPT PMT? = \$2,209,445	\$2,209,445
Conclusion:	Choose the original 4 year project as it produces the highest equivalent annual cash flow	

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Metev Case Scenario

Rila Rakia & Beer Ltd. (RRBL), a small privately owned company, produces high quality rakia (a high potency hard liquor), vino (wine), and bira (beer) in Bulgaria. After Bulgaria's accession to the European Union in 2007, international demand for the country's liquor, wine, and beer increased substantially. Most firms in the industry, including RRBL, have been reporting double-digit sales growth on year-over-year basis.

Metiu Metev, a portfolio strategist at a major German investment consulting firm, inherited RRBL from his grandparents. Frankfurter Destillerie & LiqueurFabrik (FDLF), a famous German distillery, which is interested in entering the Bulgarian market, has made a cash offer of BGN 900 million for the company's equity (BGN = Bulgarian Lev; 1€ = 1.95586 BGN, pegged rate). FDLF will assume RRBL's entire outstanding debt, including both current liabilities and long-term debt. If Metev prefers to sell only a non-controlling interest, FDLF is willing to purchase a no less than 40% of equity stake, but at an appropriate discount for lack of control.

Metev evaluates the company himself by using the capitalized cash flow method (CCM). He uses the build-up method to estimate the required rate of return on equity and then computes the firm's weighted average cost of capital (WACC). In computations, Metev uses the book values of debt and considers the current weight of total debt in the capital structure to be optimal. Exhibits 1A, 1B, 2, and 3 contain RRBL's financial data and other inputs that Metev used for determining RRBL's value.

Before responding to FDLF's offer, however, Metev meets with Vasil Nenkov, his colleague and a senior equity analyst covering the wine and beer industry in the Balkan region. After reviewing the data and Metev's valuation analysis, Nenkov suggests that 11% would be a more reasonable estimate of RRBL's WACC. He also makes the following two comments:

- (1) CCM is most often used for the valuation of large public companies, and it is less valid for valuing private companies, such as RRBL.
- (2) The excess earnings method is preferable as it provides an estimate of the value of intangible assets by capitalizing future earnings in excess of the estimated return requirements associated with working capital and fixed assets.

Nenkov also suggests that the enterprise value (EV) multiple approach should work well for valuing RRBL. Upon searching his database, Nenkov finds that Rhodopi Wineries PLC, a publicly traded company and a close competitor to RRBL, is currently valued at an EV/EBITDA multiple of 7.2. Nenkov further suggests that RRBL should command an upward adjustment of 25% in the EV/EBITDA multiple, reflecting its lower risk and higher growth relative to Rhodopi Wineries. He also recommends using the forward-looking EBITDA for determining RRBL's value.

On a cautionary note, Nenkov makes two statements regarding the use of the EV/EBITDA approach to valuation.

- (1) It is more appropriate than P/E for comparing companies with different financial leverage.

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(2) EBITDA underestimates cash flow from operations if working capital is growing.

Finally, Metev recalls FDLF's willingness to purchase a non-controlling ownership interest but at a discount for lack of control. Nenkov responds saying that a control premium of 30% is typically applied for purchase transactions of small, privately owned firms similar to RRBL, and proper adjustment for lack of control should be made if the transaction involves a non-controlling interest. Metev thanks Nenkov for his help and goes back to his desk to revise his valuations.

Exhibit 1A Rila Rakia & Beer Ltd. (RRBL) EBITDA and Other Data [All values in millions of Bulgaria Leva (BGN)]		
	FY2011 (Actual)	FY2012 (Pro Forma)
Revenues	248.5	300.6
Cost of goods sold	<u>(132.3)</u>	<u>(172.5)</u>
Gross profit	116.2	128.1
Selling, general & administrative expenses	<u>(19.2)</u>	<u>(23.0)</u>
EBITDA	97.0	105.1
Other Data		
Capital expenditures	2.5	4.0
Interest expense	2.7	3.6
Depreciation and amortization	5.0	6.4
Change in working capital	0.8	1.0
Exhibit 1B		
Additional Information		
Pre-tax cost of debt	10.0%	
Weight of total debt in capital structure	30%	
Tax rate	25%	

Exhibit 2 Rila Rakia & Beer Ltd. (RRBL) Balance Sheet for FY2011 [All values in millions of Bulgaria Leva (BGN)]			
Assets		Liabilities and equity	
Cash & short-term investments	50	Accounts payable	10
Receivables & inventory	40	Notes payable	8
Net fixed assets	50	Long-term debt	30
Patents and trademarks	<u>20</u>	Common equity	<u>112</u>
Total assets	160	Total liabilities and equity	160

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Exhibit 3 Other Data and Inputs	
Bulgarian government's 10-year bond yield	3.9%
Beta of publicly traded firms in the industry	0.75
Equity risk premium	6.0%
Small stock risk-premium	2.5%
Industry risk premium	-1.0%
RRBL's company-specific risk premium	1.5%
Long-term growth rate beyond FY2012	5.0%

31. According to the method used by Metev for computing the cost of equity and the pertinent data in Exhibits 2 and 3, RRBL's WACC is *closest* to:

- A. 8.6%.
- B. 10.3%.
- C. 11.3%.

Answer = C

"Private Company Valuation," Raymond D. Rath
2012 Modular Level II, Vol. 4, pp. 540–543
Study Session 12-43-g, h

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

Compare the models used to estimate the required rate of return to private company equity (for example, the CAPM, the expanded CAPM, and the build-up approach).

C is correct. Cost of equity (build-up method) = Risk-free rate + Equity risk premium + Small stock premium + Industry risk premium + Company-specific risk adjustment
= $3.9 + 6.0 + 2.5 - 1.0 + 1.5 = 12.9\%$.

WACC = Pre-tax cost of debt $(1 - T)$ (Debt weight) + Cost of equity (Equity weight)
= $[10.0 (1 - 0.25) (0.3)] + 12.9 (0.7) = 2.25 + 9.03 = 11.28\%$.

32. According to the method used by Metev and the WACC suggested by Nenkov, RRBL's value of equity (in BGN million) is *closest* to:

- A. 1,130.
- B. 1,209.
- C. 1,257.

Answer = B

"Free Cash Flow Valuation," Jerald Pinto, Elaine Henry, Thomas Robinson, and John Stowe
2012 Modular Level II, Vol. 4, pp. 280–283

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“Private Company Valuation,” Raymond D. Rath

2012 Modular Level II, Vol. 4, pp. 540, 546–548

Study Session 12-40-d, 12-43-f

Calculate FCFF and FCFE.

Demonstrate the free cash flow, capitalized cash flow, and excess earnings methods of private company valuation.

B is correct. $FCFF_{2012} = [(EBITDA - \text{Dep'n \& Amort}) \times (1 - T)] + \text{Dep'n \& Amort} - \text{Cap Ex} - \text{Increase in WC}$

$= [(105.1 - 6.4) \times (0.75)] + 6.4 - 4.0 - 1.0 = 75.425$.

Capitalization rate = $11.0 - 5.0 = 6\%$

Value of invested capital = $75.425 \div 0.06 = 1,257.08$

Value of debt = Accts. Payable + Notes payable + LT debt = $10 + 8 + 30 = 48$

Value of equity = $1,257.08 - 48.0 = 1,209.08$

33. Regarding the two comments that Nenkov made after reviewing Metev's valuation analysis, he is *most likely* correct with respect to:

- A. comment 1 only.
- B. comment 2 only.
- C. both comments 1 and 2.

Answer = B

“Private Company Valuation,” Raymond D. Rath

2012 Modular Level II, Vol. 4, pp. 546–550

Study Session 12-43-a, b

Compare public and private company valuation.

Describe the uses of private business valuation, and explain the applications of greatest concern to financial analysts.

B is correct. Nenkov is incorrect with respect to his first statement because the capitalized cash flow method is rarely used for the valuation of public companies, and it is more appropriate for valuing a private company, such as RRBL.

Nenkov's second statement is correct because the excess earnings method involves estimating the earnings remaining after deducting the amounts that reflect the required returns to working capital and tangible assets. The residual amount of earnings (i.e., the “excess earnings”) is capitalized to obtain an estimate of the value of intangible assets. Therefore, only Nenkov's second statement is correct.

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34. Using Nenkov's findings from his search of the database, his suggestions regarding appropriate adjustments, and the EV/EBITDA multiples approach, RRBL's value of equity (in BGN million) is *closest* to:

- A. 916.
- B. 946.
- C. 966.

Answer = C

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

2012 Modular Level II, Vol. 4, pp. 426–430

"Private Company Valuation," Raymond D. Rath

2012 Modular Level II, Vol. 4, p. 550–555

Study Session 12-41-n; 12-43-d

Calculate and interpret enterprise value multiples, and evaluate the use of EV/EBITDA. Explain the income, market, and asset-based approaches to private company valuation and the factors relevant to the selection of each approach.

C is correct. Adjusted EV/EBITDA multiple = $7.2 \times (1.25) = 9.0$.

Enterprise Value (EV) = $EBITDA_{2012} \times \text{Adjusted EV/EBITDA} = 105.1 \times 9.0 = 945.9$.

Value of equity = EV + Cash & S.T. investments – L.T. Debt = $945.9 + 50.0 - 30.0 = 965.9$.

35. Regarding Nenkov's two cautionary statements concerning the use of the enterprise value method of valuation, he is *most likely* correct with respect to:

- A. statement 1 only.
- B. statement 2 only.
- C. both statements 1 and 2.

Answer = A

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

2012 Modular Level II, Vol. 4, pp. 426–430

"Private Company Valuation," Raymond D. Rath

2012 Modular Level II, Vol. 4, p. 550–555

Study Session 12-41-n; 12-43-d

Calculate and interpret enterprise value multiples, and evaluate the use of EV/EBITDA. Explain the income, market, and asset-based approaches to private company valuation and the factors relevant to the selection of each approach.

A is correct. Statement 1 is correct because EBITDA is a pre-interest earnings figure, in contrast to EPS, which is a post-interest figure. Thus, the differences in financial leverage do not impact EBITDA.

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Statement 2 is incorrect because EBITDA overestimates cash flow from operations if working capital is growing.
Therefore, only statement 1 is correct.

36. The discount for lack of control, given the typical control premium indicated by Metev, is *closest* to:
- A. 12%.
 - B. 23%.
 - C. 30%.

Answer = B

“Private Company Valuation,” Raymond D. Rath
2012 Modular Level II, Vol. 4, pp. 561–562
Study Session 12-43-k

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

B is correct. $DLOC = 1 - [1/(1 + \text{Control premium})] = 1 - [1/(1.30)] = 23.1\%$ (see page 562, 2012).

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GreenSnacks, Inc., Case Scenario

Peter Tanner recently accepted a position as a domestic equity analyst of a large U.S. pension fund. The fund uses a bottom-up team approach to stock selection. The fund's equity manager, Cindy Bradley, chief investment officer, is responsible for the results of the domestic equity portfolio.

Tanner's first assignment is to evaluate a packaged foods company, GreenSnacks (GNSK), which trades on the NASDAQ. His analysis is to include a long-term outlook for the company in the context of the well-established packaged foods industry, which is dominated by about a dozen companies in the United States.

The major players compete vigorously for market share. The industry has been growing at a rate very similar to that of GDP for many years. GNSK competes in the health food category, which has been gaining about 1 to 2 percent of relative share per annum within the broader packaged foods industry due to external factors, such as changes in social preference and an aging population.

Originally a spin-off from a major food company, GNSK has shown promising growth for the past few years due to a newfound process that eases the preserving, packaging, and distribution of fruity snacks. Several patents have been obtained for this process that results in healthy, moist, and flavorful snacks. GNSK's innovative advancement allows it to create products that maintain a fresh taste without preservatives and that have a shelf-life much longer than the established products of the leading brands.

Although the healthy snack category has been gaining market share due to social changes, GNSK was not able to break through the established shelf-space barrier controlled by the large competitors until the newfound process was perfected. As national chains have picked up the product line, GNSK has been gaining substantial market share as sales accelerate. The outlook for the company's future sales growth exceeds 17%, and profit margins are increasing well beyond the levels of competitors.

Tanner expects extraordinary earnings growth of 20% in 2012 for GNSK, with the rate of growth linearly diminishing over the next five years to match industry conditions thereafter. He assumes that starting in Year 6, GNSK's long-term dividend growth rate will be equal to the current level of sustainable growth rate for the industry. Given these assumptions and the data in Exhibit 1, Tanner prefers to use the H-model for valuing GNSK's stock.

Exhibit 1		
Selected Financial Information		
For the Fiscal Year Ended 31 December 2011		
	GNSK	Industry Average
Return on equity (%)	23.1	12.8
Earnings per share (EPS) 2010 (\$)	2.45	n.a.
Dividend payout ratio 2010 (%)	25.0	65.0
Required return (%)	n.a.	11.0
Trailing dividend yield (%)	2.8	3.7

n/a = not available

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Tanner meets with Bradley for her advice. Bradley states that since the packaged foods industry is mature and stable, she would prefer that Tanner calculate the implied long-term dividend growth rate for GNSK using the Gordon model. Further, Bradley believes that the required return and dividend yield for the industry are the most stable indicators and they should be used in the computations.

Bradley makes another suggestion:

“While you are looking at the industry, I believe Star Cakes (STCK) is undervalued, and it would be a more attractive alternative to GNSK. The company paid a dividend of \$2.48 last year. Its earnings are dropping about 2% every year permanently. I assign a required return of 7.4% for this company due to its low beta. It closed at \$15 yesterday.”

After his meeting with Bradley, Tanner discusses the merits of different valuation methods with three of his colleagues: Marcia Stephens, Dale Mathews, and Kevin Baldridge. They make the following statements:

Stephens: “Free cash flow valuation is especially appropriate for investors who want to take a control perspective in takeovers. Also, free cash flow to equity is the cash flow available to be distributed to shareholders without impairing the company’s value.”

Mathews: “Remember that the Gordon growth model is based on indefinitely extending future dividends, and the intrinsic value derived by the model is very sensitive to small changes in the assumed growth rate and required rate of return.”

Baldridge: “You can use the residual income approach as well, a simpler model that does not require clean surplus relation to hold, and the valuation is not impacted by book values either.”

Tanner prepares a list of issues he needs to consider as he begins his analysis for writing his report.

37. Which of the following life cycle phases *best* describes GNSK?

- A. Mature
- B. Growth
- C. Pioneer

Answer = B

“Industry Analysis,” Jeffrey C. Hooke
2012 Modular Level II, Vol. 4, pp. 134–136
Study Session 11-37-b
Describe the life cycle of a typical industry.

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B is correct. Growth companies achieve above-average growth—gaining market share by offering an improved quality or service, consumers liking its products better than those of the competition, or increasing market share. GNSK is a growth company as it has shown promising growth for the past few years due to a newfound process that eases the preserving, packaging, and distribution of fruity snacks. GNSK has been gaining substantial market share as sales accelerate. Further, the outlook for the company's future sales growth exceeds 17%, and profit margins are increasing well beyond the levels of competitors.

38. Which of the following factors have been *most* significant for the sales growth of GNSK products?

- A. Technology
- B. Demographics
- C. Social changes

Answer = A

"Industry Analysis," Jeffrey C. Hooke
2012 Modular Level II, Vol. 4, pp. 139–144
Study Session 11-37-d

Analyze the impact of external factors (e.g., technology, government, foreign influences, demography, and social changes) on industries.

A is correct. For GNSK, innovation from new patents for preserving fruity snacks represents the technology change contributing to the company's gain in market share and accelerating sales growth. Further, as stated in the vignette, "GNSK was not able to break through the established shelf-space barrier controlled by the large competitors until the advanced process was perfected." External factors such as changing demographics and social forces apply to all players in the industry in about the same manner and are not unique to GNSK.

39. Using Tanner's preferred valuation approach, the expected rate of return for GNSK is *closest* to:

- A. 8.5%.
- B. 9.6%.
- C. 12.2%.

Answer = A

"Discounted Dividend Valuation," Jerald Pinto, Elaine Henry, Thomas Robinson, and John Stowe
2012 Modular Level II, Vol. 4, pp. 231–233, 240–241
Study Session 11-39-i, j, m, n

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Explain the assumptions and justify the selection of the two-stage DDM, the H-model, the three-stage DDM, or spreadsheet modeling to value a company's common shares. Explain the growth phase, transitional phase, and maturity phase of a business. Estimate a required return based on any DDM, including the Gordon growth model and the H-model. Calculate and interpret the sustainable growth rate of a company, and demonstrate the use of DuPont analysis to estimate a company's sustainable growth rate.

A is correct. The H-model, Tanner's preferred approach, is a variant of the two-stage DDM. It assumes growth begins at a high rate and declines linearly throughout the supernormal growth period until it reaches a normal rate at the end. In the case of GNSK, the H-model is appropriate for estimating the required return because Tanner expects extraordinary earnings growth of 20% next year, with the rate of growth diminishing over time to match industry conditions in Year 6.

$$R = (D_0/P_0) \times [(1 + G_L) + H \times (G_S - G_L)] + G_L$$

where G_L = long-term growth rate, calculated below
 G_S = short-term growth rate (20%)
 H = half-life in years of the supernormal growth rate; $5 \times 0.5 = 2.5$
 $G_L = ROE \times (1 - \text{payout})$: $0.128 \times (1 - 0.65) = 0.0448$ or 4.48%
 $r = 0.028 \times [(1 + 0.0448) + 2.5 \times (0.20 - 0.0448)] + 0.0448 = 0.08492$ or 8.5%

40. Using the approach suggested by Bradley and her preferred assumptions, GNSK's implied long-term dividend growth rate is *closest* to:
- A. 7.0%.
 - B. 7.3%.
 - C. 8.0%.

Answer = A

"Discounted Dividend Valuation," Jerald Pinto, Elaine Henry, Thomas Robinson, and John Stowe

2012 Modular Level II, Vol. 4, pp. 219–220

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

2012 Modular Level II, Vol. 4, pp. 422–424

Study Session 11-39-d, 12-41-d, g

Calculate the implied growth rate of dividends using the Gordon growth model and current stock price.

Calculate and interpret alternative price multiples and dividend yield.

Describe the fundamental factors that influence alternative price multiples and dividend yield.

A is correct:

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$$P_0 = \frac{D_0(1+g)}{r-g}$$

$$\text{Rearranging: } D_0/P_0 = \frac{r-g}{1+g}$$

$$\text{Let } D_0/P_0 = d \text{ and rewrite the equation; } g = \frac{r-d}{1+d}$$

Using the industry data in Exhibit 1:

$$g = \frac{0.11-0.037}{1+0.037} = 0.0704 \text{ or } 7.0\%$$

Alternatively:

$$0.037 = (0.11 - g) \div (1 + g)$$

$$0.037(1 + g) + g = 0.11$$

$$0.037 + 0.037g + g = 0.11$$

$$1.037g = 0.11 - 0.037$$

$$g = 0.073/1.037 = 0.0704 = \sim 7\%$$

41. Given Bradley's estimates and assumptions, STCK's intrinsic value is *closest* to:

- A. \$25.85.
- B. \$26.38.
- C. \$46.84.

Answer = A

"Discounted Dividend Valuation," Jerald Pinto, Elaine Henry, Thomas Robinson, and John Stowe

2012 Modular Level II, Vol. 4, pp. 209–212, 217

Study Session 11-39-c

Calculate the value of a common stock using the Gordon growth model, and explain the model's underlying assumptions.

A is correct:

$$V_0 = D_1 / (r - g) \text{ where } D_1 = D_0 (1 + g).$$

$$V_0 = \frac{2.48(1-.02)}{[0.074-(-0.02)]}$$

$$= 2.43 \div 0.094 = \$25.85$$

42. The statement by which of Tanner's colleagues regarding valuation methods is *least* accurate?

- A. Stephens
- B. Mathews
- C. Baldrige

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Answer = C

“Discounted Dividend Valuation,” Jerald Pinto, Elaine Henry, Thomas Robinson, and John Stowe

2012 Modular Level II, Vol. 4, pp. 197–205, 226

“Residual Income Valuation,” Jerald Pinto, Elaine Henry, Thomas Robinson, and John Stowe

2012 Modular Level II, Vol. 4, pp. 476, 484, 494

Study Session 11-39-a, h; 12-42-b, d

Compare dividends, free cash flow, and residual income as measures in discounted cash flow models, and identify investment situations for which each measure is suitable.

Describe the strengths and limitations of the Gordon growth model, and justify its selection to value a company’s common shares.

Describe the uses of residual income models.

Explain fundamental determinants of residual income.

C is correct. Baldrige’s statement is least accurate. The residual income approach uses the book value of equity, and it requires that the clean surplus relation holds.

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Tyra Merinar Case Scenario

Tyra Merinar is a portfolio manager at Ridge Row Capital Advisors (RRCA), a hedge fund based in Charlottesville, Virginia. Merinar is meeting with two assistant portfolio managers, Vinay Jani and Zhong Geng, to review the performance of investments made by RRCA and to evaluate potential new investments. At this meeting they will discuss two recent investments, an equity swap and a swaption, as well as two potential new investments.

RRCA entered into a one-year equity swap 30 days ago. Under the terms of the swap, the fund would receive the return on the S&P/ASX 300 Metals & Mining Index and pay a fixed annual interest rate of 4.8% on notional principal of \$75,000,000. The swap calls for quarterly payments. At the time the swap was initiated, 30 days ago, the S&P/ASX 300 index was 3,250. The value of the S&P/ASX 300 index today is 3,738. Merinar wishes to determine the market value of the equity swap today using the current term structure of interest rates presented in Exhibit 1.

Exhibit 1
Term Structure of Interest Rates (%)

Days	LIBOR
60	1.42
150	1.84
240	2.12
330	3.42

Three months ago, RRCA purchased a European receiver swaption that is exercisable into a two-year swap with semiannual payments. The swaption has a semiannual exercise rate of 2.75% and a notional principal of \$25,000,000. The swaption has just expired, and Merinar asks Jani to determine its cash settlement using the term structure presented below in Exhibit 2.

Exhibit 2
Term Structure of Interest Rates (%)

Days	LIBOR
180	1.95
360	3.68
540	4.11
720	4.65

The meeting's focus turns to potential new investments. Geng has been studying an investment strategy that involves potential changes in credit ratings of individual securities. Geng states, "I have been evaluating bonds of Onex Corporation, which are currently rated BBB. Onex has just announced an acquisition that we believe will likely weaken its credit metrics over the next two years. However, longer term, say 4 to 5 years, Onex should generate enough cash flow to improve credit quality to pre-acquisition levels. We could use forward contracts on a credit default swap (CDS) index, such as the CDX, to take advantage of this. The best way to do this is to buy CDX investment grade expiring in 5 years and sell CDX high yield expiring in 2 years."

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Merinar asks Jani to assess potential mispricing in equity futures markets with a view to implementing an investment strategy to take advantage of any mispricing. Specifically, she asks him to evaluate a futures contract on the S&P 400 Mid Cap stock index expiring in 145 days. The annual risk-free rate is 3.5%, and the index is at 840 today. The accumulated value of dividends reinvested over the life of the futures contract is expected to be \$3.15 per contract.

Merinar explains the investment strategy to be implemented if the stock index futures contract is mispriced. She states, "If futures sell for less than our fair value calculation, the appropriate strategy would be to purchase futures on the index and short the index."

Merinar closes the meeting by asking if Geng and Jani can explain the relation between futures prices and expected spot prices. Geng responds, "Futures prices are an accurate estimate of expected future spot prices." Jani argues, "I disagree. Expected spot prices are equal to futures prices plus a risk premium." Merinar concludes the discussion saying, "You are both incorrect. Expected spot prices are equal to futures prices minus a risk premium."

43. Using the information provided in Exhibit 1, the market value of the equity swap is *closest to*:

- A. \$7,717,500.
- B. \$7,665,000.
- C. \$9,997,500.

Answer = C

"Swap Markets and Contracts," Dom M. Chance
2012 Modular Level II, Vol. 6, pp. 275–280
Study Session 17-57-e

Calculate and interpret the fixed rate, if applicable, on an equity swap and the market values of the different types of equity swaps during their lives.

C is correct. Per \$1 of notional principal, the market value of the equity swap is calculated as follows:

$$\left(\frac{3.738}{3.250} \right) - 0.9696 - (0.012)(0.9976 + 0.9924 + 0.9861 + 0.9696) = 0.1333$$

The market value of the swap = $0.1333 \times \$75,000,000 = \$9,997,500$

The appropriate present value factors are provided below:

$B_{30}(90)$	0.9976
$B_{30}(180)$	0.9924
$B_{30}(270)$	0.9861
$B_{30}(360)$	0.9696

For example, $B_{30}(90)$ is calculated as:

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$$\frac{1}{1 + [0.0142 \times (\frac{60}{360})]} = 0.9976$$

44. Using the information in Exhibit 2, the market value of the receiver swaption is *closest* to:
- A. \$106,250.
 - B. \$495,508.
 - C. \$687,500.

Answer = B

“Swap Markets and Contracts,” Don M. Chance
2012 Modular Level II, Vol. 6, pp. 268–269, 286–287
Study Session 17-57-h

Calculate and interpret the value of an interest rate swaption at expiration.

B is correct. The market value of the receiver swaption is calculated as:
 $\text{Max} [0, (0.0275 - 0.0223)] \times (0.9903 + 0.9645 + 0.9419 + 0.0149) \times \$25,000,000$
 $= \$495,508.$

The appropriate present value factors are provided below:

Bo(180)	0.9903
Bo(360)	0.9645
Bo(540)	0.9419
Bo(720)	0.9149

For example, $B_0(180)$ is calculated as:

$$\frac{1}{1 + 0.0195 \times (\frac{180}{360})} = 0.9903$$

Other present value factors are calculated in a similar manner.

The fixed rate is calculated as follows:

$$\frac{1.0 - B_0(h_n)}{\sum_{j=1}^n B_0(h_j)} = \frac{1.0 - 0.9149}{0.9903 + 0.9645 + 0.9419 + 0.9149} = 0.0223$$

The annualized rate = $0.0223 \times 2 = 0.0446$

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45. Is Geng's strategy to take advantage of his credit expectations *most likely* appropriate?

- A. Yes.
- B. No, the appropriate strategy would be to sell 2-year CDS and buy 5-year CDS for Onex Corporation.
- C. No, the appropriate strategy would be to buy 2-year CDS and sell 5-year CDS for Onex Corporation.

Answer = C

"Using Credit Derivatives to Enhance Return and Manage Risk," George Spentzos

2012 Modular Level II, Vol. 6, pp. 361–362

Study Session 17-59-d

Describe credit derivatives' trading strategies, and explain how they are used by hedge funds and other managers.

C is correct. Since Geng expects credit ratings for Onex Corporation bonds to weaken over the near term up to two years, and then strengthen over the longer term (five years), the appropriate strategy is to buy 2-year CDS and sell 5-year CDS. The 2-year CDS would provide a hedge against short-term volatility, and the sale of the 5-year CDS would partially fund the purchase of 2-year CDS. This is a flattener curve trade.

46. Assuming a 365-day year, the S&P 400 Mid Cap stock index futures price is *closest* to:

- A. 836.85.
- B. 848.11.
- C. 854.71.

Answer = B

"Futures Markets and Contracts," Don M. Chance

2012 Modular Level II, Vol. 6, pp. 114–120

Study Session 16-55-h

Calculate and interpret the prices of Treasury bond futures, stock index futures, and currency futures.

B is correct. The S&P 400 Mid Cap futures price is:

$$840 \times (1.035)^{(145/365)} - 3.15 = 848.41$$

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47. Is Merinar's investment strategy using stock index futures contracts *most likely* correct?

- A. Yes.
- B. No, the correct strategy would be to only purchase stock index futures.
- C. No, the correct strategy would be to purchase the stock index and sell stock index futures.

Answer = A

"Futures Markets and Contracts," Don M. Chance

2012 Modular Level II, Vol. 6, p. 116

Study Session 16-55-h

Calculate and interpret the prices of Treasury bond futures, stock index futures, and currency futures.

A is correct. Merinar is correct. If stock index futures are underpriced, the correct arbitrage strategy would be to short the stock index and purchase stock index futures. This strategy will effectively ensure that Merinar has borrowed money at the risk-free rate and repaid at a rate less than the risk-free rate.

48. Who correctly states the relationship between futures prices and expected spot prices?

- A. Jani
- B. Geng
- C. Merinar

Answer = A

"Futures Markets and Contracts," Don M. Chance

2012 Modular Level II, Vol. 6, pp. 99–100

Study Session 16-55-f

Explain the relation between futures prices and expected spot prices.

A is correct. Jani is correct. The futures price is equal to the expected spot price minus a risk premium. Alternatively, the expected spot price equals the futures price plus a risk premium.

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Lima Case Scenario

Jose Ortega, CFA, is director of Research at Lima Bond Advisors. He asks Manuel Asuncion, a credit analyst at Lima, to assess the credit worthiness of several companies whose bonds are current or potential investments in the firm's fixed income portfolios.

Ortega states that he is concerned about the credit risks posed by three companies currently held in portfolios. Each company will report earnings next week. Given the recent volatile business environment, he expects actual results will vary from Wall Street analysts' consensus estimate of earnings. Asuncion compares Lima's internal earnings estimates with consensus and provides the variance or "surprise," in Exhibit 1 along with other relevant data.

Exhibit 1
Credit Data for Lima's Portfolio Companies

	Andes	Barranca	Cuzco
Credit Rating	Baa3	B1	Caa1
Rating Outlook	Positive	Negative	Stable
Earnings Surprise	-15%	+5%	-2%
Credit Spread to Treasury	200	290	600
Average Spread for Eating	225	300	590

Ortega asks Asuncion to prepare credit analyses on three companies Lima is considering for investment. In the analyses, Asuncion reviews key credit metrics, such as solvency, capitalization, and coverage ratios. Financial data for the three companies are provided in Exhibit 2.

Exhibit 2
Selected Financial Data for 2011

(in \$)	Aymara	Bajamar	Chimbote
Current Assets	13,585,000	39,182,000	16,705,000
Current Liabilities	6,175,000	17,810,000	9,263,000
EBITDA	3,412,500	6,864,000	3,073,000
Operating Income	2,730,000	5,558,000	2,145,000
Interest Expense	420,000	1,287,000	676,000
Long-Term Debt	5,980,000	17,160,000	8,450,000
Shareholders' Equity	14,950,000	29,250,000	10,725,000

Asuncion asks Ortega what factors are important in credit analysis in addition to financial ratios. Ortega responds, "Cash flow is an important component of credit analysis. Please review the data in Exhibit 3 to see if it confirms the findings of your ratio analyses regarding the creditworthiness of these companies."

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Exhibit 3
Cash Flow Data for 2011

(in \$)	Aymara	Bajamar	Chimbote
Funds from Operations	2,218,125	4,461,600	1,997,450
Operating Cash Flow	3,218,125	461,600	2,997,450
Free Operating Cash Flow	1,718,125	-1,538,400	97,450
Discretionary Cash Flow	1,418,125	-1,538,400	-2,550

Ortega adds, "The character of a corporation, which is closely related to the quality of its management, is also an important part of a company's credit strength. There is an inherent agency problem in corporate governance, which occurs when management, the agent, acts in its own self-interests rather than the interests of shareholders. Agency problems can be mitigated using a number of practices:"

- Practice 1: Agency problems can be mitigated by reducing the size of the board of directors.
- Practice 2: Agency problems can also be mitigated by choosing board members with no ties to the company or its management.
- Practice 3: Agency problems can be mitigated by compensating management primarily through fixed salaries and cash bonuses based on operating results.

Ortega is evaluating convertible bonds issued by each of the companies Asuncion analyzed. He uses the data in Exhibit 4 to assess the value offered by each bond.

Exhibit 4
Convertible Bond Characteristics

	Aymara	Bajamar	Chimbote
Current Market Price	\$ 980.00	\$ 1,250.00	\$ 1,025.00
Conversion Ratio	65.00	33.00	24.00
Bond Straight Value	\$ 950.00	\$ 1,020.00	\$ 940.00
Current Market Stock Price	\$ 10.15	\$ 32.05	\$ 25.50

Finally, Asuncion asks Ortega about the various measures to evaluate bonds. Ortega tells Asuncion, "Option-adjusted spread, or OAS, is particularly useful when analyzing bonds with embedded options. The value of OAS is that it is independent of assumptions such as volatility. It adjusts the bond's cash flows for the embedded option when computing the spread to the benchmark interest rates."

49. Based on the information in Exhibit 1, the bonds issued by Andes, Barranca, and Cuzco, respectively, *most likely* pose which of the following credit risks?

- A. Downgrade risk, credit spread risk, and default risk
- B. Credit spread risk, default risk, and downgrade risk
- C. Credit spread risk, downgrade risk, and default risk

Answer = C

“General Principles of Credit Analysis,” Frank J. Fabozzi

2012 Modular Level II, Vol. 5, pp. 138–140

Study Session 14-48-a

Distinguish among default risk, credit spread risk, and downgrade risk.

C is correct because Andes is expected to report earnings well below expectations while its bonds trade at a tighter spread than comparable-rated bonds in the market. The higher credit risk posed by lower earnings likely will cause the spread to widen. Note that credit spread risk reflects the likelihood that the market will require a wider spread due to the perceived increase in risk. Barranca is the only credit of the three that carries a negative outlook, signaling that the rating agency may downgrade it in the intermediate term. Cuzco is the lowest rated credit in the group at Caa1, which empirically has a high probability of default.

50. Based on the credit metrics that Asuncion uses in his analyses, which company in Exhibit 2 *most likely* has the strongest credit quality?

- A. Aymara
- B. Bajamar
- C. Chimbote

Answer = A

“General Principles of Credit Analysis,” Frank J. Fabozzi

2012 Modular Level II, Vol. 5, pp. 143–146

Study Session 14-51-c, d

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

Evaluate the credit quality of an issuer of a corporate bond, given such data as key financial ratios for the issuer and the industry.

A is correct based on the current ratio as a measure of solvency, as well as the long-term debt to capitalization and EBITDA interest coverage ratios, which are all strongest for Aymara. Results for the ratios are provided in the table below.

Ratio	Aymara	Bajamar	Chimbote
Current Ratio	2.20	2.20	1.80
Debt to Capitalization	28.6%	37.0%	44.1%
Coverage Ratio	8.2	5.3	4.5

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Calculations for Aymara =

Current Ratio = $13,585,000 / 6,175,000 = 2.20$

Debt/Capitalization = $5,980,000 / (5,980,000 + 14,950,000) = 28.6\%$

Coverage Ratio = $3,413,000 / 420,000 = 8.1X$

Note: Even if current liabilities are used in a total debt/capitalization ratio, Aymara still ranks first.

51. Based on the data in Exhibit 3, Asuncion's cash flow analysis *most likely* reveals which of the following?

- A. Bajamar paid the highest amount in dividends, and Chimbote generated cash from working capital.
- B. Aymara used cash in its working capital, and Chimbote funds its capital expenditures from operations.
- C. Aymara paid the highest amount in dividends, and Bajamar cannot fund its capital expenditures from operations.

Answer = C

"General Principles of Credit Analysis," Frank J. Fabozzi

2012 Modular Level II, Vol. 5, pp. 147–148

Study Session 14-48-e

Analyze why and how cash flow from operations is used to assess the ability of an issuer to service its debt obligations and to assess the financial flexibility of a company.

C is correct because recall that Funds from operations – Change in working capital = Operating cash flow – Capital expenditures = Free operating cash flow – Cash dividends = Discretionary cash flow. As the table below shows, working capital was a source of funds for Aymara, and Bajamar cannot fund its capital expenditures from operations.

	Aymara	Bajamar	Chimbote
Change in working capital	Source	Use	Source
Funded capital expenditures from operations	Yes	No	Yes
Cash dividends paid (in \$)	300,000	0	100,000

52. Which of Ortega's practices regarding management is *most likely* correct?

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

Answer = B

"General Principles of Credit Analysis," Frank J. Fabozzi

2012 Modular Level II, Vol. 5, pp. 151–155

Study Session 14-48-b

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Explain and analyze capacity, collateral, covenants, and character as components of credit analysis.

B is correct because independent board members provide better oversight of management and help to ensure that management acts in the interests of shareholders.

53. Based on the data in Exhibit 4, which company's convertible bond *most likely* requires Ortega to pay the highest market conversion premium percentage?

- A. Aymara
- B. Bajamar
- C. Chimbote

Answer = C

"Valuing Bonds with Embedded Options," Frank J. Fabozzi
2012 Modular Level II, Vol. 5, pp. 292–295
Study Session 14-50-j

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

C is correct because Chimbote has the highest market conversion premium ratio, as the following three-step calculation shows:

1. Market conversion price = $\frac{\$980}{65} = \15.08 ; $\frac{\$1250}{33} = \37.88 ; $\frac{\$1,025}{24} = \42.71
2. Market conversion premium per share =
 $\$15.08 - \$10.15 = \$4.93$; $37.88 - 32.05 = 5.83$; $\$42.71 - \$25.50 = \$17.21$
3. Market conversion premium ratio =
 $\frac{\$4.93}{\$10.15} = 48.6\%$; $\frac{\$5.83}{\$32.05} = 18.2\%$; $\frac{\$17.21}{\$25.50} = 67.5\%$

54. Is Ortega *most likely* correct in his statements regarding option-adjusted spread?

- A. Yes.
- B. No, he is incorrect regarding volatility.
- C. No, he is incorrect regarding cash flows.

Answer = B

"Valuing Bonds with Embedded Options," Frank J. Fabozzi
2012 Modular Level II, Vol. 5, pp. 278–279
Study Session 14-50-g

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

B is correct because the OAS will depend on the volatility assumption. For a given callable bond, the higher the interest rate volatility assumed, the lower the OAS.

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Jongmoo Choi Case Scenario

Jongmoo Choi is a portfolio manager at Silver Oak Capital Management based in Omaha, Nebraska. Silver Oak provides customized portfolio management and investment consulting services to institutional clients. Choi is meeting with a new assistant, Raul Fernandez, to review the firm's portfolio management models and techniques. Choi begins the meeting with the following statement:

Statement 1: "We use multifactor models to estimate the expected return and risk of securities we are evaluating. Depending on the situation, we use one of three types of multifactor models: a macroeconomic factor model, a fundamental factor model, or a statistical factor model. For macroeconomic factor models, the factors are the value or level of selected macroeconomic variables. For fundamental factor models, the factors are company share attributes, such as price-earnings ratio and market capitalization. Finally, when using statistical factor models, we apply statistical techniques, such as factor analysis or principal component analysis, to historical returns to identify factors that best explain historical variances and covariances."

Fernandez asks Choi: "How is arbitrage pricing theory (APT) related to these multifactor models?"

Choi responds, "APT helps us determine the appropriate number of factors to use in a multifactor model, the identity of those factors, and the expected return of the investment being evaluated."

Choi continues with the discussion of multifactor models by stating:

Statement 2: "Multifactor models are particularly useful in analyzing the active risk of a portfolio. Specifically, we carry out our analysis using active risk squared, which can be decomposed into two components: active factor risk and active specific risk. Active factor risk is the risk that is due to variation between factor exposures in the portfolio and the benchmark. Active specific risk identifies the residual risk exposure of the portfolio."

The discussion turns to international investing. Choi says one must take into account exchange rates, inflation, and interest rates in order to properly evaluate international investments. He presents the information in Exhibit 1 to illustrate his point.

Exhibit 1
Selected Economic and Financial Data
Current Values and Expected Values in One Year

	Current Value	Expected Value
Current exchange rate (USD/EUR)	1.33	1.38
Risk-free U.S. bond one-year yield	1.20%	—
Risk-free German bond one-year yield	1.64%	—
German Consumer Price Index	144.7	146.3
U.S. Consumer Price Index	211.7	218.3
One-year return U.S. stock index ¹	—	9.40%
One-year return German stock index ¹	—	6.75%

¹Stock index returns are measured in local currency terms.

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Choi makes the following statement:

Statement 3: “In order to evaluate an investment in the German stock market index, we use an international asset pricing model (ICAPM) to estimate the return on the German stock index in dollar terms as a function of:

- the German risk-free rate, plus
 - the world market risk premium times the German market’s beta with the world market index, plus
 - the foreign currency risk premium times the German index’s currency exposures.”
-

55. In Statement 1, Choi is *least likely* correct with respect to:

- A. statistical factor models.
- B. fundamental factor models.
- C. macroeconomic factors models.

Answer = C

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

2012 Modular Level II, Vol. 6, pp. 422–423

Study Session 18-60-j

Describe and compare macroeconomic factor models, fundamental factor models, and statistical factor models.

C is correct. In macroeconomic models, the factors are “surprises” in macroeconomic variables, not the level or value of macroeconomic variables.

56. Choi’s response to Fernandez is *most likely* correct with regard to the:

- A. expected return.
- B. number of factors.
- C. identity of the factors.

Answer = A

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

2012 Modular Level II, Vol. 6, pp.426–428

Study Session 18-60-l

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

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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. The APT model tells us what the intercept term (expected return) in a multifactor model should be.

57. In Statement 2, does Choi correctly explain active factor risk and active specific risk?

	Active Factor Risk	Active Specific Risk
A.	Yes	Yes
B.	Yes	No
C.	No	Yes

Answer = A

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

2012 Modular Level II, Vol. 6, pp.446–448

Study Session 18-60-m

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

A is correct. Choi correctly explains active factor risk and active specific risk. Active factor risk measures the factor exposures of the portfolio relative to its benchmark. Active specific risk is the contribution to active risk squared due to each asset's active weight (actual weight in the portfolio minus weight in the benchmark) times its residual risk (the variance of the asset's returns left unexplained by the factors)—that is, it measures the residual risk taken on by the portfolio.

58. Based on the data in Exhibit 1, assuming actual price levels, exchange rate, and stock index values at the end of the year are as expected, the one-year dollar return on the German stock index is *closest* to:

- A. 3.13%.
- B. 10.76%.
- C. 12.76%.

Answer = B

"International Asset Pricing," Bruno Solnik and Dennis McLeavey

2012 Modular Level II, Vol. 6, pp. 488–491

Study Session 18-62-g

Calculate the end-of-period real exchange rate and the domestic-currency *ex-post* return on a foreign bond (security).

B is correct. $R_{US} = R_{GER} + s + (s \times R_{GER}) = 0.0675 + 0.0376 + (0.0376 \times 0.0675) = 0.1076$,

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where, $s = (1.38 - 1.33) \div 1.33 = 0.0376$.

59. Based on the data in Exhibit 1, the foreign currency risk premium is *closest* to:

- A. 3.32%.
- B. 3.76%.
- C. 4.20%.

Answer = C

“International Asset Pricing,” Bruno Solnik and Dennis McLeavey
2012 Modular Level II, Vol. 6, p. 493–494
Study Session 18-62-h

Calculate a foreign currency risk premium, and explain a foreign currency risk premium in terms of interest rate differentials and forward rates.

C is correct. The foreign currency risk premium (SRP) can be calculated as the expected movement in the exchange rate minus the difference between the domestic and foreign risk-free rate.

$$SRP = E[(S_1 - S_0)/S_0] - (r_{US} - r_{GER}) = (1.38 - 1.33) \div 1.33 - (0.012 - 0.0164) = 0.042 \text{ or } 4.2\%.$$

60. In Statement 3, does Choi accurately describe the model used to estimate returns on the German stock index?

- A. Yes.
- B. No, the U.S. risk-free rate must be used.
- C. No, German stock index returns must be measured in local currency terms.

Answer = B

“International Asset Pricing,” Bruno Solnik and Dennis McLeavey
2012 Modular Level II, Vol. 6, pp.494–495
Study Session 18-62-i

State the risk pricing relation and the formula for the international capital asset pricing model (ICAPM), and calculate the expected return on a stock using the model.

B is correct. Since the home country is the United States, the U.S. risk-free rate must be used in the ICAPM.