

Sample Level II Item-Set Questions

Questions 1 through 6 relate to Ethical and Professional Standards.

SMC Case Scenario

Ian Sherman, CFA, is a portfolio manager at SMC, an investment advisory firm which offers investment products and services to individual and institutional clients. SMC has adopted the CFA Institute Research Objectivity Standards and implemented policies in compliance with the Standards.

All of SMC's investment professionals have earned CFA charters. Sherman tells prospective clients, "The CFA charter is the highest credential in the global investment management industry. As charterholders we are committed to the highest ethical standards. Completion of the program has dramatically improved the team's portfolio management knowledge and their ability to achieve better performance results."

Sherman has earned a reputation for consistently outperforming the market. Over the long run, his mutual funds have outperformed their respective market benchmarks by a wide margin. For the past 12 months the funds have slightly underperformed the benchmarks. Some clients have noticed that Sherman's fund performance information has not been updated on the advisor's website in the past six months. When clients inquire about fund performance, Sherman provides them with accurate updated information.

Annette Martineau, CFA, works as an analyst for Sherman and presents her recently completed research report and sell recommendation on Muryan Corporation, which is held in one of Sherman's funds to SMC's Investment Committee. After much debate about the company and its prospects, the committee reaches a consensus recommendation that is contrary to Martineau's. Martineau informs Sherman, "I accept that the committee's recommendation has a reasonable basis, but I strongly believe that my recommendation is more appropriate. I have been diligent in my research and have a deeper understanding of the industry and its competitive factors."

The following week, Martineau prepares for an investment conference, open to the general public but typically attended only by investment professionals, by reviewing SMC's policies regarding public appearances. The policies state:

- 1) Employees should remind audience members to judge the suitability of the investment in light of their own unique circumstances.
- 2) Employees should make full disclosure of all conflicts of interest, both their own and those of the firm.
- 3) Employees may not provide research reports to audience members. Research reports are reserved exclusively for SMC clients.

During the conference, private equity firm Caruso Limited announces a takeover bid for Muryan. Immediately, Muryan shares increase 30 percent in value. Martineau is skeptical of the transaction as she doubts that the Caruso partners fully understand the changing industry dynamics of the target firm. She hypothesizes that they would cancel the deal if they did. Concerned that Caruso will eventually cancel the deal, Martineau drafts an updated report and reiterates her sell recommendation on Muryan. Since SMC's Investment Committee had overturned her previous sell recommendation on Muryan she goes into great detail as to why she believes Caruso will not complete the deal. She emails the recommendation to Sherman the next afternoon.

That evening, Martineau considers what action to take regarding the 5,000 shares of Muryan held in her husband's personal account. The firm's policy on personal investments and trading requires that Martineau receive approval from the compliance department in advance of all trades in securities in subject companies in her assigned industry. She is concerned that if Sherman accepts her recommendation to liquidate all fund holdings of Muryan, the stock price will drop before she receives approval from the compliance department. Martineau decides to use derivatives to hedge her husband's position because these types of trades do not require advance approval from the compliance department.

The next morning, on Martineau's recommendation, Sherman's trader sells all of SMC's mutual fund's entire positions of Muryan for a sizable gain. Martineau hedges her husband's position.

Several weeks later, as Martineau had hypothesized, Caruso cancels the deal and Muryan's stock price declines 20 percent. Martineau's derivatives position effectively hedges her husband's position in the stock.

Sherman learns that a wealthy investor in the fund might liquidate his holdings due to doubts about suitability and economic forecasts. Sherman carefully reviews the client's investment objectives, and informs the client, "You should not sell. Our fund is still suitable for you. You have been invested with us throughout the past 12 years and I urge you to continue to stay fully invested. I was just looking at the investment record of a former client who happens to be a relative of mine, Karoll Reeves, who has traded in and out of our funds during that same period. Her returns have badly lagged yours." The client elects to maintain his holdings in Sherman's fund.

A month later, Martineau leaves SMC and starts the Galaxy hedge fund with Anjali Shah as her partner. The first client to commit to the hedge fund instructs the Galaxy partners to direct its trades through RLB Securities. RLB charges higher-than-average fees, but provides some unique informational services to investors. In return for receiving Galaxy's trading business, RLB promises to refer potential clients to Galaxy. Shah tells Martineau "A larger client base will create economies of scale and will eventually allow Galaxy to lower its expenses for all clients." Martineau agrees. She and Shah explain the directed brokerage arrangement carefully to prospective clients. They require each client to sign a statement that reads, "It is not necessary for Galaxy to seek best price and execution, and I am aware of the consequence for my account. I consent to Galaxy's trades being executed by RLB Securities."

1. In which of the following actions does Sherman *most likely* comply with the requirements and recommendations of the CFA Institute Standards of Professional Conduct? When he:
 - A. references the CFA program and designation.
 - B. provides performance information on the advisor's website.
 - C. references the enhanced portfolio management skills of his team.

2. According to CFA Institute Standards, Martineau's *best* immediate course of action regarding her initial research report and recommendation on Muryan is to:
 - A. leave her name on the report and take no further action.
 - B. leave her name on the report and document her difference of opinion.
 - C. issue her own independent recommendation since she has a reasonable basis.

3. Which of SMC's policies regarding public appearances is *least likely* consistent with both the requirements and recommendations of the CFA Institute Research Objectivity Standards?
 - A. Statement 1.
 - B. Statement 2.
 - C. Statement 3.

4. Martineau's actions regarding her husband's account *most likely* violate the CFA Institute Research Objectivity Standards because she:
 - A. did not receive advance approval from the compliance department for trades in her assigned industry.
 - B. trades within the restricted trading period of at least 5 calendar days prior to and after issuing a research report.
 - C. should seek to ensure that trades for immediate family members are not done in advance of or disadvantage investing clients.

5. Concerning the client who wants to liquidate his holdings, which of the following CFA Institute Standards is *most likely* violated by Sherman?
 - A. Confidentiality.
 - B. Conflict of interest.
 - C. Communication with client.

6. Which of the following actions correctly states why Martineau's relationship with RLB Securities would *most likely* violate CFA Institute Standards?
 - A. Galaxy is prohibited from referring brokers to any client.
 - B. Galaxy fails to explain the consequences of average quality execution.
 - C. Galaxy should trade client accounts through RLB only if the accounts receive best price and execution.

Questions 7 through 12 relate to Financial Statement Analysis

Bobby Lee Case Scenario

Bobby Lee, CFA, is an equity analyst for the U.S. investment management firm Dumas Freres. Dumas Freres holds a substantial position in Skylark Industries, a U.S.-based company. In reviewing the position, Lee decides to look at how employee benefits and stock option compensation have affected the financial statements. In 2006, Skylark adopted SFAS No. 158 the 2006 standard on pension accounting.

First he collects information regarding Skylark's pension plan (Exhibit 1) and pension plan assumptions (Exhibit 2). Lee specifically wants to consider whether Skylark is using certain assumptions to minimize its:

1. Projected Benefit Obligation (PBO) at year-end 2008, or,
2. pension related compensation expense for 2008.

Exhibit 1
Selected Skylark Pension Plan Data
as of 31 December (U.S.\$ millions)

Funded Status of the Plan	<u>2008</u>	<u>2007</u>
Benefit obligation at end of the year (PBO)	<u>972</u>	<u>902</u>
Fair value of plan assets at beginning of the year	514	430
Actual return on plan assets	56	54
Employer/Employee contributions	78	72
Benefits paid	-44	-42
Other changes to plan assets	_____	_____
Fair value of plan assets at end of the year	<u>604</u>	<u>514</u>
Funded status	-368	-388
Unrecognized net loss	200	224
Unrecognized prior service cost	7	10
Components of net periodic benefit cost		
Service cost	60	45
Interest cost	54	47
Expected return on plan assets	-51	-43
Other amounts recognized	<u>27</u>	<u>13</u>
Net periodic benefit cost	<u>\$90</u>	<u>\$62</u>

Exhibit 2
Selected Skylark Pension Plan Assumptions

Pension plan assumptions and other information	2008	2007
Expected return on assets	10.0%	10.0%
Discount rate for obligations	6.0%	5.5%
Expected rate of compensation increases	3.0%	2.5%
Actual return on assets	10.9%	12.6%
Vesting Period	4 years	3 years

Next, Lee collects the following information about Skylark's executive stock option compensation plan:

1. On 1 January each year, Skylark grants senior executives 1,200,000 options with a vesting period of four years.
2. The exercise price of the options is set at 140 percent of the closing stock price on the grant date.

Lee is considering whether Skylark is using certain assumptions (Exhibits 3 and 4) to minimize its stock compensation expense in 2008.

Exhibit 3
Selected Skylark Stock Option Data

	2008
Fair value of options at grant date, 1 January 2008	\$3.25
Exercise price of options	140% of closing stock price on grant date
# of options granted	1,200,000
Vesting period	4 years
Time to expiry	10 years
Basis of option valuation	Black-Scholes model

Exhibit 4
Selected Share Price Information and Option Valuation Assumptions
as at 1 January,

	2008	2007
Share Price	\$11.15	\$10.00
Dividend yield	1.85%	1.25%
Volatility	34%	32%
Risk-free rate	5%	4%

7. With regard to his concern about the PBO assumptions at the end of 2008 (Exhibit 2), Lee should focus on the disclosures related to the:
- A. discount rate.
 - B. expected return on plan assets.
 - C. expected rate of compensation increases.
8. Under SFAS No.158, the pension liability recognized on the balance sheet (\$ millions) at 31 December 2008 is *closest* to:
- A. 161.
 - B. 368.
 - C. 972.
9. Which of the following would *best* support Lee's concern about the pension related compensation expense in 2008? The change in the:
- A. discount rate.
 - B. vesting period.
 - C. actual return on assets.
10. The 2008 economic pension expense (\$ millions) is *closest* to:
- A. 58.
 - B. 63.
 - C. 85.
11. The 2008 compensation expense (\$ millions) related to the stock options issued in 2008 is *closest* to:
- A. 0.390
 - B. 0.975.
 - C. 1.338.
12. Which of the following would *best* support Lee's concern about the stock related compensation expense in 2008?
- A. The risk-free rate.
 - B. The dividend yield.
 - C. The share price volatility

Questions 13 through 18 relate to Equity Investments

Skate-O-Rama Case Scenario

Charville Securities
Roxanne Bouvier, CFA

International/Canada
Recreation
6 March 2009

Skate-O-Rama, Inc. (SKATE)

Price: \$36.00 CAD

12-Month Price Objective: \$45.00 CAD

Skating on Thin Ice?

BUY

Company Description

Skate-O-Rama is Canada's largest owner and operator of recreational ice facilities and the only one that is publicly traded. In addition to ice rinks, their facilities all contain sports bars and restaurants that overlook the ice, and retail stores that sell equipment and clothing. The company generates revenue from three sources: in-house skating programs (71 percent of revenues), food and beverage operations (20 percent), and retail stores (9 percent). The company's in-house programs focus on skating lessons, youth and adult hockey leagues, multi-sport day camps, and sports tournaments.

Visit with Skate-O-Rama management reinforces our Buy rating

After participating in a publicly held conference call, we are reiterating our Buy recommendation and consider SKATE our top equity selection for 2009. The company's pursuit of both cost leadership and differentiation strategies has enabled it to charge premium prices for its in-house skating programs, while at the same time lowering operating costs through economies of scale.

Based on our analysis of industry structure, the competitive forces influencing the industry are: low barriers to entry, intense rivalry among competitors, weak bargaining power of buyers (customers), and strong bargaining power of suppliers. However, a key factor contributing to SKATE's profitability is management's continued ability to capture the value that they create for customers. Therefore, we have a high degree of confidence in both our revenue projections and our above-consensus EPS estimates for 2010 and 2011 (Exhibits 1 and 2).

Three important conclusions after the conference call:

- In 2009 enrollments in in-house hockey programs and figure and speed skating classes are increasing.
- Management's development and delivery of high quality programming has had a beneficial impact on food and beverage revenues and retail sales.
- Management plans to continue to expand geographically, by acquiring individually owned ice rinks and converting them into recreational ice sports arenas by redesigning the facilities (adding restaurants, bars, and retail stores) and developing skating programs.

We view SKATE as undervalued with strong future growth potential

We believe our estimate of a three year cumulative annual growth rate (CAGR) in EPS provided in Exhibit 1 is conservative due to our expectations of: a) 10 percent growth in program enrollment; b) 12 percent growth in food and beverage revenues; c) an 8-10 percent increase in retail sales per square foot; and d) 40-60 basis points of annual operating margin improvement that reflects economies of scale and improved product pricing.

We believe that SKATE will continue to generate a positive franchise value that will accrue to the existing stockholders. Using a franchise value approach and computing an intrinsic price-earnings ratio, we believe that SKATE's current stock price does not fully reflect the present value of the company's future investment opportunities and the return levels associated with these opportunities. Therefore, we expect SKATE's price-earnings multiple to expand further as the market revalues the company in the context of its greater size, earnings power, and ability to create shareholder value.

Price Objective & Risk

We are reiterating our Buy recommendation on SKATE with a 12-month price objective of \$45. This assumes that SKATE trades at 16.0X our 2010 estimated EPS of \$2.25 and 17.3X our 2011 estimated EPS of \$2.60. Risks to our price objective include: a slowdown in consumer spending and a decline in disposable income.

If the above two risk factors become severe, the company may experience no real growth in earnings. In that event, as SKATE can pass along only 60 percent of inflation effects to its customers, our P/E estimates and 12-month price objective for the stock might not be realized.

Exhibit 1
Estimates and Assumptions

	Skate-O-Rama	Recreation Industry Average
Estimated 2010 ROE	18.0%	20.0%
Estimated 2011 P/E	16.0X	14.0X
Expected EPS Growth Rate	15.0%	12.0%
Dividend Payout Ratio	20.0%	15.0%
Nominal Required Rate of Return	15.0%	---
Expected Inflation	5.0%	5.0%

Exhibit 2
Selected Financial Data For the Year Ending 31 December 2008
(In CAD\$ millions)

	Skate-O-Rama	Recreation Industry Average
Revenue	46.00	54.00
Earnings before interest and taxes	6.00	9.00
Earnings before taxes	4.75	5.75
Net Income	2.88	3.00
Total assets (average)	123.00	145.00
Total equity (average)	16.00	15.00

13. Based on Bouvier's analysis of the industry structure, SKATE's ability to capture value is *most likely* due to:
- A. barriers to entry.
 - B. bargaining power of buyers.
 - C. bargaining power of suppliers.
14. Based on Exhibit 2 and the DuPont Model, Skate-O-Rama's lower 2008 return on equity compared to the recreation industry is *best* explained by:
- A. net profit margin.
 - B. financial leverage.
 - C. operating leverage.
15. Based on Exhibit 2 and the DuPont Model, Skate-O-Rama's higher 2008 net profit margin compared to the recreation industry is *best* explained by:
- A. pretax margin.
 - B. interest burden.
 - C. operating margin.
16. Using Bouvier's assumptions in Exhibit 1, Skate-O-Rama's franchise P/E as of 31 December 2008 is *closest* to:
- A. 16.67.
 - B. 17.79.
 - C. 26.67.

17. Using Bouvier's assumptions in Exhibit 1 and the franchise value approach, Skate-O-Rama's intrinsic P/E as of 31 December 2008 is *closest* to:

- A. 20.0.
- B. 33.3.
- C. 42.7.

18. Considering the two risk factors and the inflation related effects, the *most* accurate estimate of SKATE's intrinsic P/E ratio using prospective earnings is:

- A. 7.69.
- B. 8.33.
- C. 12.50.

Answers are provided beginning on the next page.

Answers to Sample Level II Item-Set Questions

SMC Case Scenario

1. In which of the following actions does Sherman *most likely* comply with the requirements and recommendations of the CFA Institute Standards of Professional Conduct? When he:
 - A. references the CFA program and designation.
 - B. provides performance information on the advisor's website.
 - C. references the enhanced portfolio management skills of his team.

Answer: A

Guidance for Standards I-VII, CFA Institute
2009 Modular Level II, Volume 1, pp., 29-31, 64, 105-7
Demonstrate a thorough knowledge of the Code of Ethics and Standards of Professional Conduct by applying the Code and Standards to specific situations.

Sherman's comments about his staff and the CFA Program are all acceptable,

2. According to CFA Institute Standards, Martineau's *best* immediate course of action regarding her initial research report and recommendation on Muryan is to:
 - A. leave her name on the report and take no further action.
 - B. leave her name on the report and document her difference of opinion.
 - C. issue her own independent recommendation since she has a reasonable basis.

Answer: B

Guidance for Standards I-VII, CFA Institute
2009 Modular Level II, Volume 1, pp. 80-83, example 5.
Study Sessions 1-2-a
Demonstrate a thorough knowledge of the Code of Ethics and Standards of Professional Conduct by applying the Code and Standards to specific situations.

Martineau need not remove her name from the report, but she should document the difference of opinion.

3. Which of SMC's policies regarding public appearances is *least likely* consistent with both the requirements and recommendations of the CFA Institute Research Objectivity Standards?
- A. Statement 1.
 - B. Statement 2.
 - C. Statement 3.

Answer: C

CFA Institute Research Objectivity Standards, CFA Institute
2009 Modular Level II, Volume 1, p. 160
Study Sessions 1-4-b

Critique company policies and practices related to research objectivity and distinguish between changes required and changes recommended for compliance with the Research Objectivity Standards.

The CFA Institute Research Objectivity Standards recommend that firms provide full research reports on the subject companies discussed to members of the audience at a reasonable price. At a minimum, the covered employee should disclose whether a written research report is available to members of the audience who are not clients of the firm, the approximate cost, and how a listener might acquire the report. Firms should make copies of the full research report available for purchase or review; for example via the firm's website.

4. Martineau's actions regarding her husband's account *most likely* violate the CFA Institute Research Objectivity Standards because she:
- A. did not receive advance approval from the compliance department for trades in her assigned industry.
 - B. trades within the restricted trading period of at least 5 calendar days prior to and after issuing a research report.
 - C. should seek to ensure that trades for immediate family members are not done in advance of or disadvantage investing clients.

Answer: C

CFA Institute Research Objectivity Standards, CFA Institute
2009 Modular Level II, Volume 1, pp. 158-159.
Study Sessions 1-4-b

Critique company policies and practices related to research objectivity and distinguish between changes required and changes recommended for compliance with the Research Objectivity Standards.

The CFA Institute Research Objectivity Standards requires firms to ensure that covered employees and members of their immediate families do not have the ability to trade in advance of or otherwise disadvantage investing clients relative to themselves of the firm.

5. Concerning the client who wants to liquidate his holdings, which of the following CFA Institute Standards is *most likely* violated by Sherman?
- A. Confidentiality.
 - B. Conflict of interest.
 - C. Communication with client.

Answer: A

Guidance for Standards I-VII, CFA Institute
2009 Modular Level II, Volume 1, pp. 67, 84, 89
Study Sessions 1-2-a

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

The Standards prohibit Sherman from revealing confidential information about clients or former clients, including use of the client's name.

6. Which of the following actions correctly states why Martineau's relationship with RLB Securities would *most likely* violate CFA Institute Standards?
- A. Galaxy is prohibited from referring brokers to any client.
 - B. Galaxy fails to explain the consequences of average quality execution.
 - C. Galaxy should trade client accounts through RLB only if the accounts receive best price and execution.

Answer: C

Guidance for Standards I-VII, CFA Institute
2009 Modular Level II, Volume 1, p. 50
Study Sessions 1-2-a

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

According to Standard III (A) Loyalty, Prudence, and Care, members must act for the benefit of their clients and place their clients' interests before their own. Martineau puts her own interests ahead of that of her clients when directing brokerage in exchange for client referrals. Martineau may trade through RLB only if the accounts receive best price and execution and the practice (i.e. the referral arrangement) is disclosed to clients.

Bobby Lee Case Scenario

7. With regard to his concern about the PBO assumptions at the end of 2008 (Exhibit 2), Lee should focus on the disclosures related to the:
- A. discount rate.
 - B. expected return on plan assets.
 - C. expected rate of compensation increases.

Answer: A

“Employee Compensation: Post-Retirement and Share-Based,” Elaine Henry, CFA, and Elizabeth Gordon
2009 Modular Level II, Volume 2, pp. 93-98
Study Session 6-23-b,
Explain the measures of a defined-benefit pension plan’s liabilities, including the projected benefit obligation, accumulated benefit obligation, and vested benefit obligation.

Lee’s concern is that the firm may be using certain assumptions which minimize the PBO in 2008. The increase in the discount rate from 5.5% to 6.0% would reduce the present value of the pension liability (PBO) and the service cost. Expected return on assets affects the pension expense, but not the obligation, and has not changed. The increase in the expected rate of compensation would increase the PBO, not decrease it.

8. Under SFAS No.158, the pension liability recognized on the balance sheet (\$ millions) at 31 December 2008 is *closest* to:
- A. 161.
 - B. 368.
 - C. 972.

Answer: B

“Employee Compensation: Post-Retirement and Share-Based,” Elaine Henry, CFA, and Elizabeth Gordon
2009 Modular Level II, Volume 2, pp. 103-105
Study Session 6-23-d, f
Explain the impact on financial statements of international financial reporting standards (IFRS) and U.S. generally accepted accounting principles (U.S. GAAP) for pension and other post-retirement benefits that permit some items to be reported in the footnotes rather than being reflected in the financial statements themselves.

Evaluate the underlying economic liability (or asset) of a company based upon pension and other post-retirement benefit disclosures.

Under SFAS No. 158 the pension liability recognized is the ending pension obligation minus the ending pension assets without any adjustments for unrecognized amounts. $972-604 = 368$.

9. Which of the following would *best* support Lee's concern about the pension related compensation expense in 2008? The change in the:
- A. discount rate.
 - B. vesting period.
 - C. actual return on assets.

Answer: A

“Employee Compensation: Post-Retirement and Share-Based,” Elaine Henry, CFA and Elizabeth Gordon
2009 Modular Level II, Volume 2, pp. 93-98
Study Session 6-23-c

Describe the components of a company's defined-benefit pension expense and explain the impact of plan assumptions on that pension expense.

Lee's concern is that Skylark may be minimizing its pension expense through various assumptions. An increase in the discount rate will reduce the present value of the future pension benefits and hence decrease the current service cost. It will increase the interest expense component of pension expense, but typically the decrease in the present value is greater than the increase in the interest component; the exception is when the pension obligation is of a short duration. See Exhibit 7 on page 97. The expected ROA affects the pension expense, not the actual ROA.

10. The 2008 economic pension expense (\$ millions) is *closest* to:
- A. 58.
 - B. 63.
 - C. 85.

Answer: A

“Employee Compensation: Post-Retirement and Share-Based,” Elaine Henry, CFA and Elizabeth Gordon
2009 Modular Level II, Volume 2, pp. 103-108
Study Session 6-23-g

Calculate the underlying economic pension expense and other post-retirement expense (income) based upon disclosures.

The economic pension expense would include service cost plus interest cost less actual return on assets: $60 + 54 - 56 = 58$. Alternatively, it is the change in the pension obligation less the change in plan assets adjusted for cash contributions and benefit payments.

[Change in benefit obligation + benefits paid (*non-expense item*)] – [Change in plan assets – (contributions – benefits paid)]
 $(972-902 + 44) - (604-514 - (78 - 44)) = 58$

11. The 2008 compensation expense (\$ millions) related to the stock options issued in 2008 is *closest* to:

- A. 0.390
- B. 0.975.
- C. 1.338.

Answer: B

“Employee Compensation: Post-Retirement and Share-Based,” Elaine Henry, CFA and Elizabeth Gordon
2009 Modular Level II, Volume 2, pp. 116-119
Study Session 6-23-i

Explain the impact on financial statements of accounting for stock grants and stock options, and the importance of companies’ assumptions in valuing these grants and options.

Stock options are measured at their fair value on the date of issue and that amount is expensed over the vesting period (4 years). The fair value = $1,200,000 \times 3.25 = \$3,900,000$. The expense in 2008 = $3,900,000/4 = 975,000$

12. Which of the following would *best* support Lee’s concern about the stock related compensation expense in 2008?

- A. The risk-free rate.
- B. The dividend yield.
- C. The share price volatility

Answer: B

“Employee Compensation: Post-Retirement and Share-Based,” Elaine Henry, CFA, and Elizabeth Gordon

2009 Modular Level II, Volume 2, pp. 116-117
“Option Markets and Contracts,” Don Chance, CFA
2009 Modular Level II, Volume 6, pp. 149-165
Study Session 6-23-i, 17-62-c, d

Explain the impact on financial statements of accounting for stock grants and stock options, and the importance of companies’ assumptions in valuing these grants and options.

Explain the assumptions underlying the Black–Scholes–Merton model and their limitations.

Explain how an option price, as represented by the Black–Scholes–Merton model, is affected by each of the input values (the option Greeks).

The compensation expense is based on the valuation of the stock options at the grant date using the Black-Scholes model. Under Black-Scholes the value of an option is affected by the stock price and exercise price, the stock price volatility, the estimated life of the option, the risk-free rate and the dividend yield. The increase in dividend yield, from 1.25% to 1.85%, would decrease the valuation of the options and hence decrease the related compensation expense. The increase in the other factors would increase the value of the option and the related compensation expense.

Skate-O-Rama Case Scenario

13. Based on Bouvier’s analysis of the industry structure, SKATE’s ability to capture value is *most likely* due to:
- A. barriers to entry.
 - B. bargaining power of buyers.
 - C. bargaining power of suppliers.

Answer: B

“The Five Competitive Forces That Shape Strategy,” Michael E. Porter
2009 Modular Level II, Volume 4, pp. 202-210
Study Session 11-38-a

Distinguish among the five competitive forces that drive industry profitability in the medium and long run.

Weak bargaining power by buyers would enable Skate-O-Rama to capture the majority of value by maintaining high prices.

14. Based on Exhibit 2 and the DuPont Model, Skate-O-Rama’s lower 2008 return on equity compared to the recreation industry is *best* explained by:

- A. net profit margin.
- B. financial leverage.
- C. operating leverage.

Answer: B

“Equity: Concepts and Techniques,” Bruno Solnik and Dennis McLeavey, CFA
2009 Modular Level II, Volume 4, pp. 173-175

Study Session 11-37-e

Evaluate two common approaches of equity analysis (ratio analysis and discounted cash flow models including the franchise value model) and demonstrate how to find attractively priced stocks by using either of these methods.

The primary factor causing Skate-O-Rama to have a lower ROE than the recreational industry is that the company has lower leverage (Assets/Equity). Skate-O-Rama has a higher net profit margin, almost the same asset turnover, higher return on assets, and lower leverage than the Industry.

$$\text{ROE} = \text{Net Profit margin} \times \text{Asset Turnover} \times \text{Leverage}$$

	Skate-O-Rama	Industry
Net Profit Margin (Net Income/Revenue)	2.88/46 = .0626	3.00/54 = .0556
Asset turnover (Revenue/Assets)	46/123 = .3740	54/145 = .3724
Leverage (Assets/Equity)	123/16 = 7.68	145/15 = 9.67
Return on Equity	2.88/16 = 18.00%	3/15 = 20.00%
Equity Turnover (Revenue/Equity)	46/16 = 2.88	54/15 = 3.60

15. Based on Exhibit 2 and the DuPont Model, Skate-O-Rama’s higher 2008 net profit margin compared to the recreation industry is *best* explained by:

- A. pretax margin.
- B. interest burden.
- C. operating margin.

Answer: B

“Equity: Concepts and Techniques,” Bruno Solnik and Dennis McLeavey, CFA
2009 Modular Level II, Volume 4, pp. 173-175

Study Session 11-37-e

Evaluate two common approaches of equity analysis (ratio analysis and discounted cash flow models including the franchise value model) and demonstrate how to find attractively priced stocks by using either of these methods.

The primary factors causing Skate-O-Rama’s net profit margin to be higher than the industry are tax burden and interest burden. Interest burden is measured as EBT/EBIT and tax burden is measured as Net Income/EBT. Higher values imply lower interest burden or tax burden. Since Skate-O-Rama’s EBT/EBIT ratio is higher (.7917) than the industry (.6389), it has a lower interest burden. Furthermore, Skate-O-Rama has a lower pretax margin and a lower operating margin.

$$\text{Net Profit Margin} = \text{NI/EBT} \times \text{EBT/EBIT} \times \text{EBIT/Revenue}$$

	Skate-O-Rama	Industry
Net Profit Margin (Net Income/Revenue)	2.88/46 = .0626	3.00/54 = .0556
Net Income/EBT (tax burden)	2.88/4.75 = .6063	3.00/5.75 = .5217
EBT/EBIT (interest burden)	4.75/6.0 = .7917	5.75/9.0 = .6389
EBIT/Revenue	6.00/46 = .1304	9/54 = .1667
EBT/Revenue	4.75/46 = .1033	5.75/54 = .1065

16. Using Bouvier’s assumptions in Exhibit 1, Skate-O-Rama’s franchise P/E as of 31 December 2008 is *closest* to:

- A. 16.67.
- B. 17.79.
- C. 26.67.

Answer: C

“Equity: Concepts and Techniques,” Bruno Solnik and Dennis McLeavey, CFA
2009 Modular Level II, Volume 4, pp. 176-180

“Discounted Dividend Valuation,” John D. Stowe, CFA, Thomas R. Robinson, CFA,
Jerald E. Pinto, CFA, and Dennis W. McLeavey, CFA
2008 Modular Level II, Volume 4, pp. 327-328

Study Session 11-37-e; 11-41-o

Evaluate two common approaches of equity analysis (ratio analysis and discounted cash flow models including the franchise value model) and demonstrate how to find attractively priced stocks by using either of these methods.

Define, calculate, and interpret the sustainable growth rate of a company, explain the calculation’s underlying assumptions, and demonstrate the use of the DuPont analysis of return on equity in conjunction with the sustainable growth rate expression.

$$\text{Franchise Factor} = 1/r - 1/\text{ROE} = 1/0.15 - 1/0.18 = 1.111$$

$$\text{Sustainable Growth Rate} = \text{Retention Ratio} \times \text{ROE} = (1 - .20) \times .18 = .1440$$

$$\text{Growth Factor} = g/(r-g) = .1440/(.150 - .1440) = 24.00$$

$$\text{Franchise P/E} = \text{Franchise Factor} \times \text{Growth Factor} = 1.111 \times 24.0 = 26.67$$

17. Using Bouvier's assumptions in Exhibit 1 and the franchise value approach, Skate-O-Rama's intrinsic P/E as of 31 December 2008 is *closest* to:

- A. 20.0.
- B. 33.3.
- C. 42.7.

Answer: B

"Equity: Concepts and Techniques," Bruno Solnik and Dennis McLeavey, CFA
2009 Modular Level II, Volume 4, pp. 176-180

Study Session 11-37-e; 11-41-o

"Discounted Dividend Valuation," John D. Stowe, CFA, Thomas R. Robinson, CFA,
Jerald E. Pinto, CFA, and Dennis W. McLeavey, CFA
2009 Modular Level II, Volume 4, pp. 327-328

Evaluate two common approaches of equity analysis (ratio analysis and discounted cash flow models including the franchise value model) and demonstrate how to find attractively priced stocks by using either of these methods.

Define, calculate, and interpret the sustainable growth rate of a company, explain the calculation's underlying assumptions, and demonstrate the use of the DuPont analysis of return on equity in conjunction with the sustainable growth rate expression.

The intrinsic value P/E can be calculated in two ways:

1. Example 3 on p. 180

Intrinsic P/E = Franchise P/E + Tangible P/E = (26.66 + 6.67) = 33.33

Tangible P/E = 1/required rate of return = 1/.15 = 6.67

Franchise Factor = 1/r - 1/ROE = 1/0.15 - 1/0.18 = 1.111

Sustainable Growth Rate = Retention Ratio X ROE = (1 - .20) X .18 = .1440

Growth Factor = g/(r-g) = .1440/(.150 - .1440) = 24

Franchise P/E = Franchise Factor X Growth Factor = 1.111 X 24.0 = 26.66

2. Using the intrinsic P/E ratio formulas on p. 177 and p. 178

Intrinsic P/E = (1 - retention ratio) / (required rate of return - sustainable growth)

Sustainable growth = (retention ratio * ROE) / ((required return - (retention ratio * ROE))

= (1 - .20) / ((.15 - ((1-.20)*.18))) = 33.33

18. Considering the two risk factors and the inflation related effects, the *most* accurate estimate of SKATE's intrinsic P/E ratio using prospective earnings is:

- A. 7.69.
- B. 8.33.
- C. 12.50.

Answer: B

“Equity: Concepts and Techniques,” Bruno Solnik and Dennis McLeavey, CFA
2009 Modular Level II, Volume 4, pp. 180-183, Equation 37-8

Study Session 11-37-f

Analyze the effects of inflation on asset valuation.

Intrinsic P/E using prospective earnings: $P_0/E_1 = 1 / [\rho + (1 - \lambda)I]$; $\rho = r - I$

$\rho = 15\% - 5\% = 10\%$;

$P_0/E_1 = 1 / [0.10 + (0.40 \times 0.05)] = 8.33$.