



## FSA LEVEL II SAMPLE QUESTIONS

The following sample questions have been developed to mimic the style and rigor of the questions on the FSA Level II exam. As with the Level II exam, the correct answers are derived from the information contained in the Level II Study Guide.

### Case Study 1 - Hotels & Lodging industry

Key revenue drivers in the Hotels & Lodging industry include consumer and business discretionary spending, domestic and international travel, and consumers' sense of financial security. Major costs include wages and purchases (room supplies, food, and beverages), which together account for over 60% of revenue. Since the industry is very capital-intensive for hotel owners, some companies have transitioned their business models away from direct property ownership to hotel management via franchising and third party property ownership.

Hotel and lodging companies have relatively large consumption of, and dependence on, energy and water resources though they are not the industry's greatest source of operating costs. Variability in energy prices or water availability impacts financial results or even the ability to operate. In the U.S., the average retail price of electricity for the commercial end-use sector was 7.25 cents per kilowatt-hour (kWh) in 2001 and is projected to increase to 18.5 cents per kWh by 2040, representing a 2.4% increase annually.

The industry also relies heavily on human capital for guest services and daily operations. These jobs typically require long working hours and are filled by a large percentage of women and immigrants. Furthermore, as approximately 80% of all tourism takes place in coastal areas, the industry faces challenges from shifting weather patterns and rising sea levels.

Below is information from two companies in the Hotels & Lodging industry, which may or may not be material. Note that determining the average number of occupied rooms requires multiplying the average occupancy rate by the number of hotel rooms.

	Company A	Company B
Revenue (in millions)	\$1,840	\$6,420
Number of Hotel Rooms	92,896	128,234
Average occupancy rate	71%	82%
% Locations owned (as opposed to leased)	65%	30%
% of revenue from leisure/tourism customers	35%	72%
Percent of revenue from:		
• Mountain regions	• 30%	• 15%
• Landlocked, non-mountain regions	• 60%	• 45%
• Coastal regions	• 10%	• 40%

Total energy consumed (in thousands of gigajoules)	5,132	3,725
Reclaim rate of hotel room keys	79%	31%
Total water withdrawn (in thousands of cubic meters)	12,120	8,478
Water withdrawn in regions with high/extremely high water stress (in thousands of cubic meters)	2,545	2,296
Voluntary employee turnover rate for hotel employees	60%	95%
Total employee workplace injury rate (incidents per thousand hours worked)	1.2	0.4

**Sample Questions for Case Study 1 – Hotels & Lodging industry**

- 1) If an analyst determines that Company A is less likely than Company B to face material impacts from environmental and climate risks, what piece of information would likely lead to that conclusion?
  - A. The percent of revenue from coastal regions
  - B. The percent of revenue from business customers
  - C. The reclaim rate of plastic hotel room keys
  - D. The amount of energy need to generate \$1 of revenue
  
- 2) An analyst comparing the two companies' management of water use found that, on a normalized basis, Company A was actually outperforming Company B. Which normalization did the analyst use?
  - A. Revenue generated per cubic meter of water withdrawn
  - B. Cubic meters of water withdrawn per total number of rooms
  - C. Cubic meters of water withdrawn per average number of occupied rooms
  - D. Percent of water withdrawn from regions with high/extremely high water stress
  
- 3) As compared to Company A, how would Company B's performance on energy management predominantly impact the valuation model?
  - A. Decrease cost of capital
  - B. Increase growth projections
  - C. Decrease expense projections
  - D. Increase book value of assets

- 4) How will performance on SASB metrics impact Company A's valuation as compared to Company B?
- A. Company B's higher percentage of revenue from leisure customers will likely decrease valuation.
  - B. Company B's lower reclamation rate of hotel room keys will likely increase valuation.
  - C. Company A's lower percentage of revenue from coastal regions will likely decrease valuation.
  - D. Company A's lower voluntary employee turnover rate will likely increase valuation.

**1.A    2.D    Answers  
3.C    4.D**

## Case Study 2 - Telecommunications industry

The Telecommunications industry is the foundation of modern communications and information sharing, fueled by the growth of the Internet economy. The U.S. is the largest telecom market in the world, expected to grow by 3.7% per year in the next 5 years. Meanwhile, emerging markets are averaging growth rates closer to 12% per year.

Telecom companies work in partnership with phone manufacturers to bundle services and devices, such as mobile phones. This carries a shared responsibility for device end-of-life management. Mobile phones are a target for developing legislation related to electronic waste (e-waste) since these devices are typically replaced every two to five years. Improper disposal can lead to hazardous substances leaching into the environment, threatening human health. Telecom companies' customer relationships provide an opportunity for cost savings for materials via product recycling and re-use.

Similarly, telecom companies can pursue various strategies to achieve cost savings through energy efficiency efforts, including purchasing more efficient equipment, optimizing the locations for network equipment and data centers, and implementing server virtualization. In addition, long-term power purchase agreements with renewable energy providers or on-site generation can provide a hedge against volatile energy prices.

Companies A and B are two telecom companies. Company A is a market leader in North America, which is its largest geographic source of revenue. In a networked industry with high, fixed infrastructure costs, market leaders benefit from network effects and economies of scale. This, in turn, allows for infrastructure upgrades to deliver better services. On the other hand, telecom companies face risks from anti-trust regulation aimed at fostering competition.

Company B recently acquired a software company, which had revenues last year equivalent to 18% of Company's B's revenues. In the Software industry, the number of job openings continues to grow but companies are finding it difficult to recruit qualified employees, especially as other firms compete for highly-skilled employees. The industry is characterized by relatively low representation from women and minority groups so efforts to recruit from and develop diverse talent pools can mitigate the talent shortage. Moreover, a workforce that reflects a company's customer base can help companies better understand their customers' needs.

Below is information about companies A and B from the most recent fiscal year.

	<b>Company A</b>	<b>Company B</b>
Revenue (in millions)	\$66,840	\$65,428
Wireless subscribers (in millions)	69,632	68,327
Wireless network bandwidth capacity (in megabits per second)	12.78	12.23
Distribution of network infrastructure <ul style="list-style-type: none"> <li>• % in North and South America</li> <li>• % in Europe and Russia</li> <li>• % in Africa</li> <li>• % in Asia and Oceania</li> </ul>	<ul style="list-style-type: none"> <li>• 50%</li> <li>• 25%</li> <li>• 10%</li> <li>• 15%</li> </ul>	<ul style="list-style-type: none"> <li>• 35%</li> <li>• 15%</li> <li>• 30%</li> <li>• 20%</li> </ul>

Total energy consumed (in thousands of megawatt-hours)	8,150	7,980
<ul style="list-style-type: none"> <li>• percentage grid electricity</li> <li>• percentage renewable energy</li> </ul>	<ul style="list-style-type: none"> <li>• 85%</li> <li>• 15%</li> </ul>	<ul style="list-style-type: none"> <li>• 88%</li> <li>• 12%</li> </ul>
% of customers' personally identifiable information compromised in data security breaches last year	0.5%	6%
Materials recovered through take back programs, percentage of recovered materials that are: <ul style="list-style-type: none"> <li>• reused,</li> <li>• recycled, and</li> <li>• landfilled</li> </ul>	<ul style="list-style-type: none"> <li>• 22%</li> <li>• 8%</li> <li>• 70%</li> </ul>	<ul style="list-style-type: none"> <li>• 8%</li> <li>• 22%</li> <li>• 70%</li> </ul>
Amount of legal and regulatory fines and settlements associated with anti-competitive practices (in thousands)	N/A	N/A

**Sample Questions for Case Study 2 – Telecommunications industry**

- 5) Due to the differences in revenue streams, management of which sustainability topic(s) will likely have more material impacts for Company B than for Company A?
- A. Data privacy
  - B. Affordability and fair pricing
  - C. Systemic risks from technology disruptions
  - D. Recruitment and retention of a diverse workforce
- 6) When comparing Company A's performance to Company B's, what external factor(s) provides relevant insight into differences in near-term forecasts for the two companies?
- A. Rising costs and legislative focus on energy use
  - B. Growth in emerging markets
  - C. Growth in wireless data use
  - D. Legislation to increase product reclamation
- 7) If each company's performance data on energy consumption remained the same next year while all other data points increased, which two statements would likely offer the best explanation? (Choose two)
- A. Company A increased their percentage of energy from renewables
  - B. Company A invested in efficiency upgrades for their data centers
  - C. Company B hired a developer team to virtualize their servers
  - D. Company B negotiated stable pricing deals with their largest utility providers

**5.D    6.B    Answers  
7.B and C**

## Case Study 3 - Insurance industry

Companies in the Insurance industry offer a range of policy lines, including life, supplemental health, property, casualty, automobile, liability, and reinsurance. Insurance premiums, underwriting profits, and income from the investment of premiums drive industry growth, while insurance claim payments present the most significant cost and source of uncertainty. Technology is increasing the transparency of insurance markets, as customers and ratings agencies evaluate timeliness of claim payments, fairness of pricing, and customer complaints.

The extent to which insurance companies, as large asset owners, incorporate environmental, social, and governance (ESG) factors into investment decision-making can influence their investment returns. Fixed income assets, such as corporate debt, are heavily favored by insurance companies and can be particularly sensitive to ESG factors. Apart from investment decisions, exposure to environmental risks to insured properties can affect both tangible and intangible assets, as inadequate consideration of risks such as floods or extreme weather events can increase benefits payments and reduce profit and/or raise a company's risk profile.

Advances in technology and the development of new policy products have allowed insurance companies to limit claim payments while encouraging responsible behavior. These products include consumer insurance incentives for safe driving, smoking cessation, or building insurance incentives for construction designed to minimize use of natural resources, such as water or energy. These policies can reduce the incidence of triggering events for insurance payout, enhancing profitability.

Within the industry, companies that engage in non-traditional or non-insurance activities, including credit default swaps (CDS) protection, have been identified as more likely to amplify or contribute to systemic risk in the financial markets and are targeted for additional regulatory oversight. Inadequate risk assessment for credit risk, trade risk, and financial guarantee insurance products can generate systemic risk, and lead to withdrawals and liquidity risks.

### Sample Questions for Case Study 3 – Insurance industry

- 8) How could stakeholder concerns materially impact the insurance industry?
- A. Pending regulation scrutinizing companies' systemic impact on financial markets
  - B. Employees unsatisfied with their company's consideration of environmental risk exposure from customer plans
  - C. An NGO pressuring companies to integrate ESG factors into investment management
  - D. Risk of falling behind peer companies that offer policies that incentivize responsible behavior

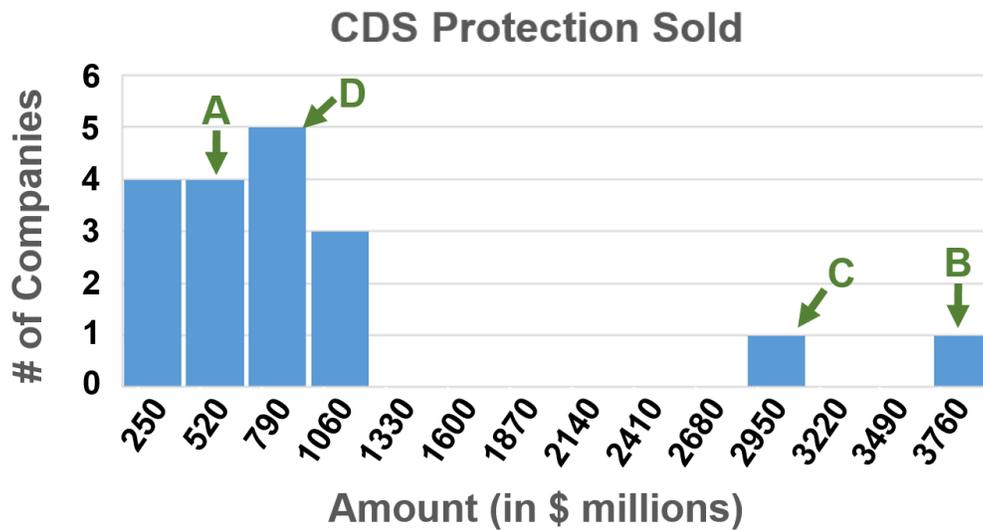
- 9) Suppose an analyst is reviewing performance data from a company for the following SASB metrics:

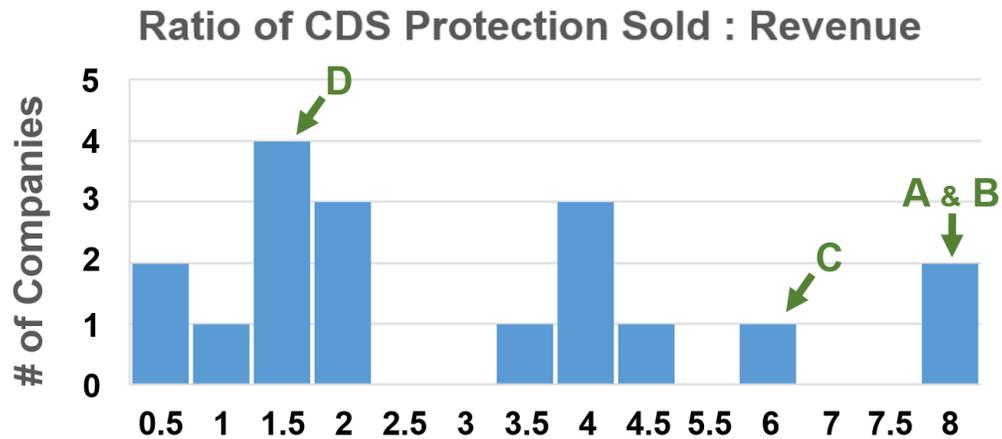
Metric 1	Complaints-to-claims ratio
Metric 2	Notional amount of CDS protection sold
Metric 3	Net premiums written related to energy efficiency and low carbon technology
Metric 4	Amount of life and annuity liabilities that can be surrendered upon request with penalties lower than 20%
Metric 5	Percentage of policies in which weather-related natural catastrophe risks have been mitigated through reinsurance and/or alternative risk transfer

Which two provide information about progressive impacts? (Choose two)

- A. Metric 1
- B. Metric 2
- C. Metric 3
- D. Metric 4
- E. Metric 5

- 10) Suppose the following histograms represent the distribution of CDS protection sold by 18 insurance companies. 4 companies – A, B, C, and D – are identified in each graph.





Which two companies will likely be at greater risk of being classified as systemically significant, nonbank financial institutions? (Choose two)

- A. A
- B. B
- C. C
- D. D

**8.C**      **9.A and C**      **Answers**  
**10.A and B**

## Case Study 4 - Metals and Mining industry

The Metals & Mining industry is involved in extracting all metals and minerals, producing and refining ores, quarrying stones, smelting and manufacturing metals, and providing mining support activities. The largest metal mining companies have truly global operations spanning six continents. These companies depend on concessions, licenses, and permits from governments to conduct their business and gain access to natural resources. In the U.S. and abroad, there are a variety of laws designed to prohibit any corrupt use of commerce to influence foreign officials to violate their lawful duty, or to secure improper advantages to assist in obtaining or retaining business. Some provisions hold companies accountable if they fail to prevent bribery.

Though the outputs of the Metals & Mining industry are long-lived, reusable, and can be recycled, one ton of metal ore produced generates two or three tons of waste rock, or mine tailings. They are typically stored on-site in impoundments or used as in-pit backfill. In the latter case, such storage can create the potential for groundwater contamination and could affect the stability of active mines in the area. As ore quality declines, even more waste rock needs to be extracted to generate the same yields.

Conversely, innovations in the industry are creating lighter, more durable products, enabling efficiency downstream. Metal recycling rates are increasing and new technologies are reducing the need for extracting virgin materials.

The Metals & Mining industry has relatively high fatality rates compared to other industries. Whereas miner safety regulations outside the US may have lax enforcement, many mining companies have created policies around zero harm or the goal of zero fatalities. These companies have found there is an inverse relationship between worker injuries and near misses, and safety management directly impacts labor productivity through avoidance of non-productive time, regulatory fines, payout of medical benefits, and employee morale.

Below is information from three consecutive years of performance on select financial and sustainability data points from one company in the Metals & Mining industry.

<b>Data for Company A</b>	<b>Year 1</b>	<b>Year 2</b>	<b>Year 3</b>
Revenue (in millions)	\$32,557	\$33,742	\$35,198
Net income (in millions)	\$2,930	\$3,082	\$3,292
% Revenue from Foreign Sources	76%	79%	81%
Country of Largest Revenue	South Africa	China	China
Total number of employees	74,654	77,370	80,531
Number of mining complexes	14	14	14
Total weight of tailings waste (in metric tons)	154,000	160,200	168,300

Number of non-technical delays	1	1	0
Duration of non-technical delays	7	3	0
Fatality Rate • full-time employees; • contract employees	• 0.034 • 0.07	• 0.06 • 0	• 1 • 0.03
Near Miss Frequency Rate • full-time employees; • contract employees	• 0.4 • 0.36	• 0.32 • 0.48	• 0.39 • 0.42

**Sample Questions for Case Study 4 – Metals & Mining industry**

- 11) Suppose the company’s Near Miss Frequency Rate (NMFR) is higher than the industry average, when normalized by workforce participants. How should management and investors view the company’s performance on NMFR?
- A. As a risk, because a higher NMFR indicates an unsafe work environment and increased safety-related costs
  - B. As a risk, because robust NMFR reporting indicates an increased likelihood of additional safety-related regulations
  - C. As an opportunity, because a higher NMFR indicates an efficient operating environment
  - D. As an opportunity, because robust NMFR reporting indicates potential for reduced safety risks
- 12) The efficiency of the company’s production of tailings waste is improving based on the 3-year trend when:
- A. revenue is normalized by the weight of tailings produced.
  - B. the weight of tailings produced is normalized by number of mining complexes.
  - C. net income is normalized by the weight of tailings produced.
  - D. the weight of tailings produced is normalized by number of employees.
- 13) Company A’s management of business ethics and payments transparency will likely translate to impacts on which financial metric?
- A. Pricing power
  - B. Research and Development
  - C. Assets
  - D. Cost of capital

**Answers**  
11.D    12.C    13.D