
SOCIETY OF ACTUARIES
Strategic Decision Making Exam

Exam CFESDM

MORNING SESSION

Date: Friday, May 2, 2014
Time: 8:30 a.m. – 11:45 a.m.

INSTRUCTIONS TO CANDIDATES

General Instructions

1. This examination has a total of 100 points. It consists of a morning session (worth 60 points) and an afternoon session (worth 40 points).
 - a) The morning session consists of 8 questions numbered 1 through 8.
 - b) The afternoon session consists of 5 questions numbered 9 through 13.

The points for each question are indicated at the beginning of the question. Questions 1-4, 7-9, 11 and 13 pertain to the Case Study, which is enclosed inside the front cover of this exam booklet.

2. Failure to stop writing after time is called will result in the disqualification of your answers or further disciplinary action.
3. While every attempt is made to avoid defective questions, sometimes they do occur. If you believe a question is defective, the supervisor or proctor cannot give you any guidance beyond the instructions on the exam booklet.

Written-Answer Instructions

1. Write your candidate number at the top of each sheet. Your name must not appear.
2. Write on only one side of a sheet. Start each question on a fresh sheet. On each sheet, write the number of the question that you are answering. Do not answer more than one question on a single sheet.
3. The answer should be confined to the question as set.
4. When you are asked to calculate, show all your work including any applicable formulas.
5. When you finish, insert all your written-answer sheets into the Essay Answer Envelope. Be sure to hand in all your answer sheets because they cannot be accepted later. Seal the envelope and write your candidate number in the space provided on the outside of the envelope. Check the appropriate box to indicate morning or afternoon session for Exam CFESDM.
6. Be sure your written-answer envelope is signed because if it is not, your examination will not be graded.

Tournez le cahier d'examen pour la version française.

CASE STUDY INSTRUCTIONS

The case study will be used as a basis for some examination questions. Be sure to answer the question asked by referring to the case study. For example, when asked for advantages of a particular plan design to a company referenced in the case study, your response should be limited to that company. Other advantages should not be listed, as they are extraneous to the question and will result in no additional credit. Further, if they conflict with the applicable advantages, no credit will be given.

****BEGINNING OF EXAMINATION****

***Question 1 pertains to the Case Study.
Each question should be answered independently.***

- 1.** (9 points) Information on Frenz Corporation is found in Section 4 of the Case Study. Additional information on Frenz's Board of Directors is found in Exhibit 1 of Section 4A of the Case Study.

Board members can be classified into the following three groups:

- Insiders
- Related Outsiders
- Outsiders

- (a) (2 points)
- (i) Describe the characteristics of the three groups.
 - (ii) Classify each member of the current Frenz's Board of Directors into one of the three groups.
- (b) (1 point) Describe four ways an organization can enhance the effectiveness of its board of directors.
- (c) (2 points) Explain three weaknesses in the composition of the current Frenz's Board of Directors.

1. Continued

Fred Coppens has decided to relinquish his position as a member of the Board. The following short-list has been maintained by the Nominating Committee and is to be used in the event of such a departure:

- André Geisinger, CEO and founder of André Chocolates, the leading manufacturer of chocolate in Switzerland. He holds a Master of Business Administration from Universität St. Gallen.
- Rupert Edwards, CFO of Frenz US, a subsidiary of Frenz. Rupert has been a Certified Public Accountant since 1995. Prior to joining the accounting department of Frenz US in 2000, Rupert worked in the finance department of a mid-sized American health insurance company.
- Don Benito (retired) Senior Vice President, CRO, & Chief Legal Officer and General Counsel of Dos Primos Puro Sol, a leading cigar company based in Honduras. Don is still licensed to practice law in Honduras.
- Olivia Kurtz, Chief Executive Officer and President, Enterprise Hotels & Resorts Worldwide, Inc., which is based in Dallas, Texas. Prior to her 5 year tenure at Enterprise Hotels & Resort, Olivia served as the CEO and President of a large American brewing company for 5 years and 10 years as a designer, developer and marketer for a large American athletic shoe and clothing manufacturer.

(d) (4 points)

- (i) Critique each candidate on the Nominating Committee's short list.
- (ii) Recommend Fred Coppen's replacement. Justify your recommendation.

*Question 2 pertains to the Case Study.
Each question should be answered independently.*

2. (9 points) Information on Frenz Corporation is provided in Section 4 of the Case Study.

Think about the following six considerations of implementing a vertical integration strategy:

- (1) Vertical market failure
 - (2) Competition from adjacent stages
 - (3) Raising barriers to entry or price discrimination across customer segments
 - (4) Growth or declining market
 - (5) Spurious reasons
 - (6) Quasi-integration strategies
- (a) (2 points) Describe each of the six considerations.
- (b) (5 points) Evaluate whether or not each of the six considerations supports Frenz's vertical integration plan to set up a production facility in Vietombia. Justify your evaluation.
- (c) (2 points) Recommend whether Frenz should pursue a full integration, quasi-integration or no integration strategy. Justify your recommendation based on your evaluation in part (b).

Question 3 pertains to the Case Study.
Each question should be answered independently.

3. (9 points)

Information about Darwin Life Insurance Company is found in Section 7 of the Case Study. Sensitivity test results are shown in Exhibit 6 of Section 7.

Based on Darwin's risk appetite statement,

(a) (3 points)

- (i) Determine whether Darwin is able to support a 30% increase in variable annuity sales from the baseline. Justify your answer.
- (ii) Assess whether the current business plan for the variable annuity line of business is suitable for Darwin. Justify your answer.

Darwin's variable annuity product offers a waiver rider that waives the 5% charge upon surrender. Darwin's management is concerned about the loss of surrender charge revenue due to excess withdrawals. Vin Atium, a new member of the Liquidity and Capital Committee, proposes a securitization structure to insure the withdrawal risk. The proposed structure is similar to Nephila's catastrophe bond where there will be a Special Purpose Vehicle (SPV) involved to facilitate the risk transfer.

The expected withdrawal rate is 3% with an attachment point of 6%. The current account value is \$1 billion. Investors are willing to provide protection for the withdrawal exposure by charging 100 basis points per year on the exposure.

- (b) (2 points) Sketch a diagram that shows a possible structure and expected cash flows between Darwin, investors and the SPV at issuance.

Using the same structure as in part (b),

- (c) (4 points) Sketch diagrams that show the expected cash flows between Darwin, investors and the SPV at the end of the first year for the following scenarios:
- (i) Withdrawals are 5% during the first year
 - (ii) Withdrawals are 10% during the first year

***Question 4 pertains to the Case Study.
Each question should be answered independently.***

- 4.** (6 points) Julia Reich, CRO of RPPC Dynasty, has proposed adding a hedge fund. A reason she provides in her proposal is risk diversification, as the hedge fund performance will be almost uncorrelated with the rest of the conglomerate. The proposal outlines the use of risk measures and capital allocation.
- (a) (2 points) Describe advantages and disadvantages of each of the following approaches to risk measures.
- (i) Notional-Amount approach
 - (ii) Risk measures based on loss distributions
 - (iii) Risk measures based on scenarios
- (b) (1 point) Explain three reasons why a coherent risk measure is desirable.
- (c) (3 points) Currently RPPC assesses capital based on VaR. The proposal uses a simple capital allocation rule, where diversification is allocated to each business unit using a ratio of its capital over the sum of all the individual business units' capital.

Houben Huang, CFO of RPPC Dynasty, questions the basis of the risk measures and the robustness of the capital allocation rule suggested by the proposal, saying that it will not be appropriate for allocating capital to the hedge fund. He suggests that a hedge fund will benefit more from a covariance principle allocation.

- (i) (2 points) Explain and support Houben's position.
- (ii) (1 point) Recommend another allocation principle. Support your recommendation.

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5. (6 points)

(a) (3 points)

- (i) (1 point) Describe short-comings of the cross-sectional approach to measuring the value of a company.
- (ii) (2 points) Identify an alternative to the cross-sectional approach and describe the features of this alternative approach.

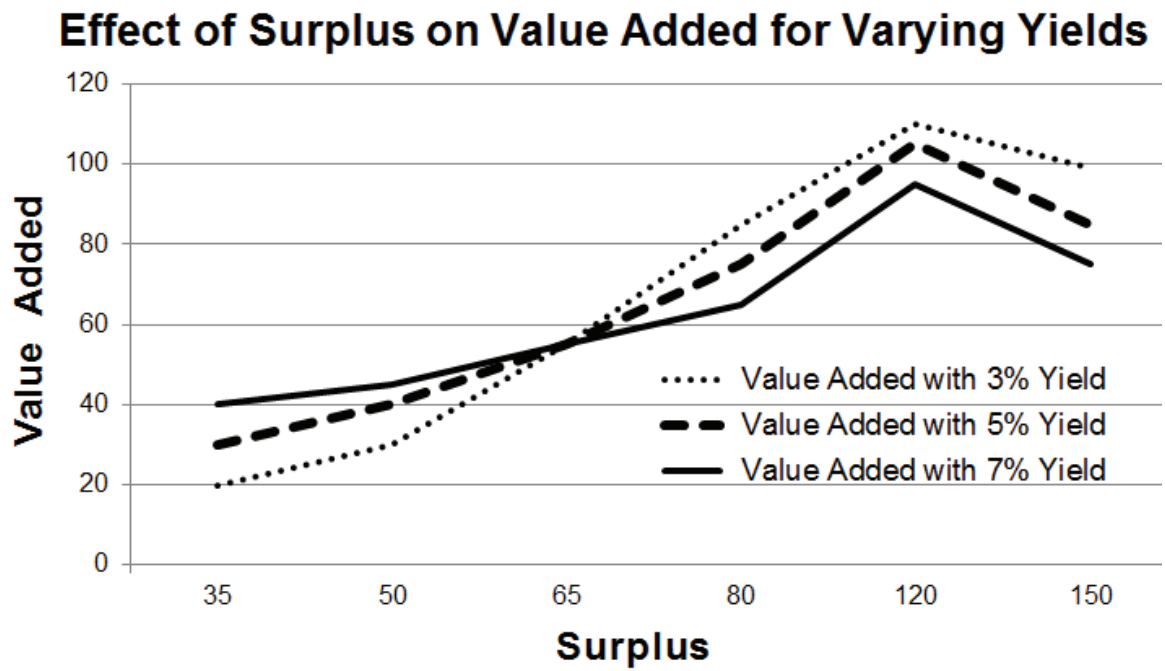
The CFO of the XYZ Insurance Company defines a Value Added metric which is equal to the present value of default-risk-adjusted future profits less the company surplus.

XYZ has been using a valuation model to calculate the Value Added of the firm. The model has been used to generate the following results for scenarios with different investment yields.

Units in Millions

Surplus	Value Added with 3% yield	Value Added with 5% yield	Value Added with 7% yield
35	20	30	40
50	30	40	45
65	55	55	55
80	85	75	65
120	110	105	95
150	99	85	75

5. Continued



(b) (3 points) Interpret the relationship between surplus and Value Added.

- 6.** (7 points) Effective communication is vital to organizational performance and is a basis for effective leadership.
- (a) (2 points) Define each of the following seven organizational barriers to effective communication:
- (i) Information overload
 - (ii) Noise
 - (iii) Time pressures
 - (iv) Network breakdowns
 - (v) Specialty area jargon
 - (vi) Information distortion
 - (vii) Cross-cultural barriers
- (b) (1 point) Describe the three primary stakeholder groups, listed below, with which every company both establishes and maintains relationships:
- (i) Capital market stakeholders
 - (ii) Product market stakeholders
 - (iii) Organizational stakeholders
- (c) (4 points) Propose an action item for each of the barriers to effective communication in part (a) to formulate a successful communication strategy to the organizational stakeholders in part (b)(iii). Justify your proposals.

***Question 7 pertains to the Case Study.
Each question should be answered independently.***

7. (8 points) An industry's profit potential is a function of five forces of competition:

- I. Threat of new entrants
- II. Bargaining power of suppliers
- III. Bargaining power of buyers
- IV. Threat of substitute products
- V. Intensity of rivalry among competitors

(a) (2 points) Describe the impact of each of the five forces of competition on an industry's profit potential.

Information on Darwin Life Insurance Company is provided in Section 7 of the Case Study.

(b) (3 points) Assess the impact of forces (I), (IV) and (V) on the life insurance industry.

(c) (3 points) Provide examples of Darwin's ability to earn above-average profits for each of the assessments in part (b).

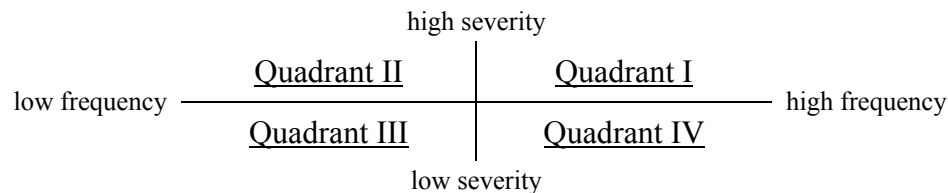
Question 8 pertains to the Case Study.
Each question should be answered independently.

- 8.** (6 points) The description of a potential Blue Jay Air acquisition is provided in Section 2.4 of the Case Study.

Three risks that Blue Jay Air has identified with Xolar/ Skylite are:

- I. Aircraft break-down causing aviation accident
- II. Material cost rise
- III. Maintenance operation overloads causing delays in maintenance

A Frequency Severity Analysis Matrix is shown below:



Four potential strategies to manage the risks identified by Blue Jay Air are:

- Undertake or Ignore
 - Avoid and Control
 - Prevent and Reduce
 - Transfer
- (a) (1 point) Categorize each of the three risks into the appropriate quadrant of the Frequency Severity Analysis Matrix.
- (b) (5 points)
- (i) (2 points) Recommend one of the potential strategies that Blue Jay Air should use for each of the three identified risks based on the Frequency Severity Analysis Matrix. Justify your recommendation.
 - (ii) (3 points) Propose an action Blue Jay Air can take for each of the three identified risks, to execute the strategy recommended in part (i). Justify your proposed action.

****END OF EXAMINATION****
Morning Session

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