Foundations of CFE Exam

Fall 2017/Spring 2018

Important Exam Information:

Exam Registration	Candidates may register online or with an application.
Order Study Notes	Study notes are part of the required syllabus and are not available electronically but may be purchased through the online store.
Introductory Study Note	The Introductory Study Note has a complete listing of all study notes as well as errata and other important information.
Overview study note	Study Note F-20-17 is designed to provide an overview of the CFE Track and this exam. Candidates should read it prior to beginning preparation for the exam. While it can be a valuable aid in preparation, the material in this note will not be tested.
Case Study	A copy of the case study will be provided with the examinations. Candidates will not be allowed to bring their copy of the case study into the examination room.
Past Exams	Past Exams from 2000-present are available on SOA website.
Updates	Candidates should be sure to check the Updates page on the exam home page periodically for additional corrections or notices.

1. **Topic: Corporate Finance**

Learning Objective

The candidate will understand how a business funds its activities with considerations for its business model, and the cost and constraints on the sources of capital, including other market frictions.

Learning Outcomes

The Candidate will be able to:

a. Identify and critique the available funding sources at different stages of a business's development

b. Evaluate capital budgeting approaches and capital structure policy for insurance and non-insurance organizations

Resources

- *Corporate Finance,* Berk, Jonathan and Demarzo, Peter, 3rd Edition
  - Ch. 8 (Fundamentals of Capital Budgeting), 18 (Capital Budgeting and Valuation with Leverage), 22(Real Options)
- *Raising Capital*, Andrew J. Sherman, 3rd Edition
  - Chapters 1-2, 4, 6-7, 9, 11, 13

- F-113-14: Securitization, Insurance and Reinsurance
- F-119-15: Capital Management, Banking's New Imperative, McKinsey
- F-120-15: Creating Value Through Best-In-Class Capital Allocation, JP Morgan, October 2009
- F-121-15: Is the Company Using Its Capital Wisely? KPMG
- F-122-15: The Cross-Section of Hurdle Rates for Capital Budgeting: An Empirical Analysis of Survey Data, National Bureau of Economic Research
- F-123-15: How Do CFOs Make Capital Budgeting and Capital Structure Decisions?, Journal of Applied Corporate Finance , Vol 15, #1

2. **Topic: Capital Management - Decision-Making**

Learning Objective

The candidate will understand how an enterprise's structure and policies allow its management to prioritize and select among projects or business activities that are competing for scarce capital resources especially when opposing factors are key decision criteria.

Learning Outcomes

The Candidate will be able to:

a. Evaluate how the legal form of an organization, corporate governance, compensation dynamics, and other market frictions impact business decisions
b. Recommend an optimal capital structure and how to implement the structure for a business strategy
c. Design a risk management plan to optimize the risk reward tradeoff of employed capital
d. Assess the impact of behavioral factors in capital budgeting methods and capital structure policies

Resources

- *Corporate Finance,* Berk, Jonathan and Demarzo, Peter, 3rd Edition
  - Ch. 17 (Payout Policy), 25 (Leasing), 26 (Working Capital), 27 (Short Term Financing), and 29 (Corporate Governance)
- *Handbook of the Economics of Finance*, Vol 2 Part A, 2013, Chapter 5, pp.357-424
- F-113-14: Securitization, Insurance and Reinsurance
- F-120-15: Creating Value Through Best-In-Class Capital Allocation, JP Morgan, October 2009
- F-123-15: How Do CFOs Make Capital Budgeting and Capital Structure Decisions?, Journal of Applied Corporate Finance , Vol 15, #1
- F-126-15: An International Comparison of Capital Structure and Debt Maturity Choices, National Bureau of Economic Research
- F-129-15: The Modigliani-Miller Theorem, The New Palgrave Dictionary of Economics
- F-132-17: Capital structure, executive compensation, and investment efficiency, Journal of Banking & Finance

3. **Topic: Stochastic Modelling**

Learning Objective

The candidate will understand how and when to apply various stochastic techniques to situations which have uncertain financial outcomes.

Learning Outcomes

The Candidate will be able to:

a. Describe the appropriateness of a given quantification of market and non-market risk exposures

b. Recommend the use of techniques that balance the reduction of computational demand versus model accuracy when applying stochastic methodology

c. Assess the results of a given application of stochastic modelling and calibration processes

d. Explain the differences and implications of the use of real-world and market-consistent constructs for risk assessment

e. Explain what risk exposures are or are not identified with a given risk metric, assess the implications, and recommend further action

Resources

- *How to Measure Anything,* Hubbard, Third Edition, Ch. 4-6
- *Stochastic Modeling – Theory and Reality from an Actuarial Perspective*
  - Ch. I General Methodology
  - Ch. II General Applications
  - Ch. III Evaluating and Discussing Results
- *Monte Carlo Methods and Models in Finance and Insurance,* Korn, Korn and Kroisandt
  - Ch. 5, sections 5.1-5.6 (background), 5.7-5.9, 5.11, 5.14-5.19
- F-131-16: Heavy Models, Light Models and Proxy Models
- Interest Rate Swap – Exposed
- Layering Your Own Views into a Stochastic Simulation–Without a Recalibration by T. Dardis, L. Grandchamp and D. Antonio *Risk & Rewards,* August 2013

4. **Topic: Model Risk Vetting in Risk Management**

Learning Objective

The candidate will understand how to identify and recommend appropriate model risk assessment and vetting techniques for risk management models.

Learning Outcomes

The Candidate will be able to:

a. Assess methods and processes for quantifying and managing model risk within any business enterprise

b. Design and evaluate stress-testing and back-testing processes

c. Interpret stress-testing and back-testing results

Resources

- *Monte Carlo Methods and Models in Finance and Insurance,* Korn, Korn and Kroisandt
  - Ch. 5, sections 5.1-5.6 (background), 5.7-5.9, 5.11, 5.14-5.19
- *How to Measure Anything,* Hubbard, Ch. 7
- *Measuring Market Risk,* Dowd, Kevin , 2nd Edition
  - Ch. 13 Stress Testing Risk
  - Ch. 15 Back Testing Risk
  - Ch. 16 Model Risk
- Model Validation for Insurance Enterprise Risk and Capital Models, pages 1 – 26 (excluding AIG case study)

5. **Topic: Advanced Risk Assessment Techniques for Unhedgeable Risks**

Learning Objective

The candidate will understand how and when to apply various advanced techniques to evaluate non-hedgeable risk or uncertainty in any business enterprise, especially non-insurance organizations.

Learning Outcomes

The Candidate will be able to:

a. Critique methods for determining long term discount rates beyond what is observable in the capital markets

b. Apply cost of capital frameworks for risk evaluation in business decisions

c. Assess the appropriateness of Applied Information Economics (AIE) concepts for risk management

Resources

- *How to Measure Anything*, Hubbard, Ch. 1-3 background only, Ch. 7-14
- F-107-13: A Market Cost of Capital Approach to Market Value Margins
- F-130-15: Yield Curve Extrapolation: Work in Progress, Moody's Analytics
- Down but not Out: A cost of Capital Approach to Fair Value Risk Margins
- A Risk Management Tool for Long Liabilities: The Static Control Model, 2009 Enterprise Risk Management Monograph
- Proposed Actuarial Standards of Practice (ASOP) on Modeling, pages 1 - 10