

# QFI – Investment Risk Management Exam

Spring 2021/Fall 2021

## 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.

### Syllabus Readings

Readings listed in this syllabus may include study notes, online readings and textbooks. Candidates are responsible for all readings in their entirety, including sections such as Appendices, unless it is stated otherwise in the syllabus.

### [Introductory Study Note](#)

The Introductory Study Note has a complete listing of all study notes as well as errata and other important information.

### Case Study

A case study will not be provided with the examination.

### [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.

Quantitative Finance and Investment – Investment Risk Management Exam  
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QFI-IRM readings and exam questions assume familiarity with investment policy and asset allocation. Candidates who missed this material because of the exam transition are advised to read *Managing Investment Portfolios: A Dynamic Process*, by Maginn et. al., 3rd edition, chapters 1, 3, and 5.

**1. Topic: Governance**

**Learning Objectives**

The candidate will understand the value of governance and its key elements in general and in the context of an investment operation.

**Learning Outcomes**

The Candidate will be able to:

- a) Compare the interests of key stakeholders
- b) Identify sources of unethical conduct and explain the role of a fiduciary
- c) Describe governance mechanisms that attempt to address these conflicts
- d) Understand the importance of an organization’s culture in effectuating governance
- e) Explain how governance may be structured to gain competitive advantages and efficiencies
- f) Demonstrate understanding of how ethics relates to business decision-making, and relate ethics in business to personal ethics

**Resources**

- *Investment Ethics*, Peck, Sarah, 2011
  - Ch. 1-3, 7 & 9
- QFII-101-14: Chapter 11 of *Strategic Management: An Integrated Approach*, Hill & Jones, pp. 378-384 only, up to “Agency Theory” (including example 11.1 “Strategy in Action”)
- QFII-103-14: *Advances in Risk Management and Risk Governance*
- QFII-111-17: *Tracing the True Origins of Bad Behavior: New Ways to Predict Conduct Risk Exposure*, Dr. Roger Miles
- QFII-116-19: Chapter 45 of *Risk Management: Foundations for a Changing Financial World*, Haslett Jr., Walter V., 2010
- QFII-120-20: IAA Note on ERM for Capital and Solvency Purposes in the Insurance Industry, pp. 9-38

<b>2. Topic: Investment Risk Management</b>
<b>Learning Objectives</b>
The candidate will understand and be able to apply the components of an effective risk management system.
<b>Learning Outcomes</b>
The Candidate will be able to: <ul style="list-style-type: none"><li>a) Explain the importance of risk culture in an investment firm</li><li>b) Identify and describe the various kinds of risks, including strategic, market, credit, operational, etc.</li><li>c) Identify and describe various approaches for managing risks including risk budgeting, position limits, etc.</li><li>d) Explain the features of a best practices enterprise risk management system</li><li>e) Evaluate a company's risk management process</li><li>f) Examine examples of risk management failure</li></ul>
<b>Resources</b>
<ul style="list-style-type: none"><li>• <i>Value at Risk</i>, Jorion, Philippe, 3<sup>rd</sup> Edition, 2007<ul style="list-style-type: none"><li>○ Ch. 17: VAR and Risk Budgeting in Investment Management</li></ul></li><li>• <i>Financial Enterprise Risk Management</i>, Sweeting, Paul, 2<sup>nd</sup> Edition, 2017<ul style="list-style-type: none"><li>○ Ch. 8: Risk Identification</li><li>○ Ch. 20: Case Studies</li></ul></li><li>• <i>The Top Ten Operational Risks: A Survival Guide for Investment Management Firms and Hedge Funds</i>, Miller and Lawton, 2010</li><li>• QFII-110-15: The Devil is in the Tails: Actuarial Mathematics and the Subprime Mortgage Crisis</li><li>• QFII-117-19: Chapter 7 of Strategic Risk Management Practice: How to Deal Effectively with Major Corporate Exposures, Andersen &amp; Schroder</li><li>• QFII-120-20: IAA Note on ERM for Capital and Solvency Purposes in the Insurance Industry, pp. 9-38</li><li>• QFII-121-20: Chapter 2 of <i>Quantitative Enterprise Risk Management</i></li><li>• QFII-122-21: Chapter 9, Section 6 of <i>Managing Investment Portfolios</i>, Maginn, John L. &amp; Tuttle, Donald L., 3<sup>rd</sup> Edition, 2007</li></ul>

<b>3. Topic: Risk Measurement</b>
<b>Learning Objectives</b>
Understand and be able to apply different approaches to measuring risk exposures.
<b>Learning Outcomes</b>
The Candidate will be able to: <ul style="list-style-type: none"><li>a) Explain the advantages and limitations of different risk metrics</li><li>b) Explain how different approaches and tests form a set of complementary investment risk metrics</li><li>c) Analyze and evaluate risk aggregation techniques, including the use and misuse of correlation, integrated risk distributions and copulas</li><li>d) Evaluate different measures of rare event risks</li><li>e) Evaluate a company's or a portfolio's exposures to various risks</li></ul>
<b>Resources</b>
<ul style="list-style-type: none"><li>• <i>Value at Risk</i>, Jorion, Philippe, 3<sup>rd</sup> Edition, 2007<ul style="list-style-type: none"><li>○ Ch. 7: Portfolio Risk: Analytical Methods (excluding Appendix)</li><li>○ Ch. 17: VAR and Risk Budgeting in Investment Management</li></ul></li><li>• QFII-104-14: Correlation: Pitfalls and Alternatives</li><li>• QFII-110-15: The Devil is in the Tails: Actuarial Mathematics and the Subprime Mortgage Crisis</li><li>• QFII-119-19: Chapter 3 of <i>The Known, the Unknown, and the Unknowable in Financial Risk Management: Measurement and Theory Advancing Practice</i></li><li>• QFII-123-21: IAA Note on Stress Testing and Scenario Analysis (pp. 1-6, 14-17, 19-26 &amp; 32-39)</li><li>• QFII-124-21: Chapters 7 and 10 of <i>Quantitative Enterprise Risk Management</i></li></ul>