FRM Level 1 Lecture Notes

v. 1.0.0

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April 13, 2017

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Outline

Introduction
- The FRM exam
- Key to success

Introduction

The FRM exam

- International professional certification offered by **GARP** (The Global Association of Risk Professionals).
- A certificate focus on risk management, 2 levels:
  - **Part 1**: tools used to assess financial risk : Foundations of Risk Management, Quantitative Analysis, Financial Markets and Products, Valuation and Risk Models
  - **Part 2**: Measurement and Management of: Market Risk, Credit Risk, Operational and Integrated Risk; Current Issues in Financial Markets
- Scoring and results:
  - All multiple choice questions
  - No penalties for wrong answers
  - Passing scores determined by FRM committee ($\sim$ 50%)
  - Exam results emailed six weeks after the exam, quartile results

Table: Part 1 exam contents and weights

Book	Knowledge Domains	Weight	# Questions
1	Foundations of Risk Management	20%	20
2	Quantitative Analysis	20%	20
3	Financial Markets and Products	30%	30
4	Valuation and Risk Models	30%	30

[a] 4 hours exam time

Plan and practice

- Begin studying early
- Study plan and stick to the plan
- **Practice exams**

Recourses

- Official books
- Schweser
- bbs.pinggu.org

Outline

Foundations of risk management

- Overview
- Corporate risk management

Overview I

Concepts

- **Risk**: uncertainty regarding losses/gain.
- **Risk management**: Activities aimed to reduce eliminate potential to incur expected loses.
- **Risk trading**: taking risk $\rightarrow$ generating incremental gains

Risk management process

1. Identify
2. Quantify and estimate
3. Determine collective effects/cost-benefit analysis
4. Develop risk mitigation strategy
5. Assess performance and amend risk mitigation strategy as needed

Overview II

Tools and procedures

- Quantitative measures: *e.g.* VaR, Expected shortfall, Exposures[a]
- Quantitative assessment: scenario analysis, stress testing,
- Enterprise risk management (ERM): integrative approach within an entire entity

[a] Will re-visit

Compare

- Expected & unexpected loss
- Risk & reward

Overview III

Types of risks

- Market risk: *e.g.* IR, FX, equity, commodity price, *etc*
- Credit risk: *e.g.* default, bankruptcy, downgrade and settlement
- Liquidity risk: *e.g.* funding/trading liquidity risk
- Operation risk: non-financial problems; challenging to quantify
- Legal and regulatory risk
- Business risk: uncertainty in business environment (supply/demand, business strategy)
- Strategic risk: associated with large new business investments
- Reputation risk

Sample question I

1. Examining the impact of a dramatic increase in interest rates on the value of a bond investment portfolio could be performed using which of the following tools?

   I Stress testing

   II Enterprise risk management

   A I only

   B II only

   C both I and II

   D Neither I nor II

2. In considering the major classes of risks, which risk would best describe an entity with weak internal controls that could easily be circumvented with a lack of segregation of duties?

   A Business risk

   B Legal and regulatory risk

   C Operational risk

   D Strategic risk

Sample question II

1. Examining the impact of a dramatic increase in interest rates on the value of a bond investment portfolio could be performed using which of the following tools?
   - I Stress testing
   - II Enterprise risk management

   - A I only
   - B II only
   - C Both I and II
   - D Neither I nor II

2. In considering the major classes of risks, which risk would best describe an entity with weak internal controls that could easily be circumvented with a lack of segregation of duties?
   - A Business risk
   - B Legal and regulatory risk
   - C Operational risk
   - D Strategic risk

Hedging risk exposures – advantages and disadvantages

- Theoretical considerations
  - Assumptions of hedging: perfect competitive capital markets;
- Disadvantages:
  - Cost management's focus on core business
  - Compliance costs
  - May increase the variability of the firm's earnings
- Advantages:
  - Lowering cost of capital
  - Increase shareholders confidence (stable earnings/cash flows)
  - Controlled financial performance
  - Operational improvements within a firm
  - Taxation

Role of board of directors

- Set the firm's risk appetite
- Tools of risk management: e.g. risk tolerance, VaR, stress testing
- Risk and return goals

Hedging risk factors

Thank you!