FRM Level 1 Lecture Notes

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Content

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
- Corporate governance and 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 practice

- Clarification as to which risks are insurable, hedgeable, noninsurable, or nonhedgeable
- Can be performed for various risks factors
  - Pricing risk (e.g. production companies)
  - Foreign exchange
  - Interest rate
- Static vs dynamic hedging strategies
- Risk management instruments: Exchange traded, OTC

Sample question

1. Which of the following statements regarding exchange-traded and over-the-counter (OTC) financial instruments is correct?
   A There is greater liquidity with exchange-traded financial instruments.
   B There is greater customization with exchange-traded financial instruments.
   C There is greater price transparency with OTC financial instruments.
   D There is credit risk by either of the counterparties inherent in exchange-traded instruments.

Corporate governance and risk management I

Best practice in corporate governance

- Members with knowledge of the firm's business and industry
- Board watches out for the interests of all stakeholders
- Aware of any agency risks and takes steps to reduce them
- Board maintains its independence from management
- Board should consider the introduction of a chief risk officer

Best practice in risk management

- Focus on the economic performance over accounting performance
- Robust risk management process within the firm
- Ethics committee; Risk-adjusted performance
- Board should have a risk committee in place

Role of the board of directors in governance

- The firm's risk management policies
- The firm's periodic risk management reports
- The firm's appetite and its impact on business strategy
- The firm's internal controls
- The firm's financial statements and disclosures
- The firm's related parties and related party transactions
- Any audit reports from internal or external audits
- Corporate governance best practices for the industry
- Risk management practices of competitors and the industry

Corporate governance and risk management III

Concepts

- Risk appetite: tolerance (especially willingness) to accept risk
- Role of Audit committee, risk advisory director, risk management committee and compensation committee
- Functional units within a firm
  1. senior management
  2. risk management
  3. trading room management
  4. operations
  5. finance

Sample question I

1. Which of the following statements regarding the firm's risk appetite and/or its business strategy is most accurate?
   A The firm's risk appetite does not consider its willingness to accept risk.
   B The board needs to work with management to develop the firm's overall strategic plan.
   C Management will set the firm's risk appetite and the board will provide its approval of the strategic plan.
   D Management should obtain the risk management team's approval once the business planning process is finalized.

Sample question II

1. The various responsibilities surrounding the profit and loss (P&L) statement illustrate the importance of understanding the interdependence of managing risk within a firm. Within an investment bank, which functional unit is most likely to provide final approval of the P&L?
   - A Finance
   - B Operations
   - C Senior management
   - D Trading room management

Thank you!