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Study Guide and Learning Objectives


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Financial Risk and Regulation Series

The broad areas of knowledge covered in the books in the Financial Risk and Regulation Series include the following:

BOOK 1: CREDIT RISK MANAGEMENT

CREDIT RISK ASSESSMENT

This chapter introduces the core notions of credit risk and the standard quantitative methods for assessing it. The difference between expected credit loss and unexpected credit loss is outlined.

THE RISKS OF CREDIT PRODUCTS

Credit risks in multiple bank business lines are outlined in this chapter, including retail, SME, large corporate, and sovereign exposures. Credit risk models, including scorecard and distance-to-default, are covered and credit valuation adjustment (CVA) is introduced.

CREDIT RISK PORTFOLIO MANAGEMENT

Whereas the first two chapters cover single event credit risk, this chapter focuses on the portfolio view of credit risk. Correlation in credit risk is introduced, as are credit default swaps (CDS), both in single-name and index versions. The chapter ends with a discussion around problem assets and bad loans.

THE REGULATORY VIEW OF CREDIT RISK

The final chapter outlines the evolution of the Basel Accords I, II and III. The shortcomings of each accord are outlined and an explanation of the incremental steps to overcome them is provided. Basel III is updated to the final agreed version from December 2017, where changes are mandated to start in 2021 and to be fully implemented by 2027. The chapter ends with a discussion of stress testing capital, as well as an overview of US and international regulations and regulatory institutions.

BOOK 2: MARKET RISK MANAGEMENT

INTRODUCTION TO MARKET RISK MANAGEMENT

This chapter outlines the five main classes of market risk and introduces risk expressed in implied volatility and implied correlation.

FOREIGN EXCHANGE MARKETS, INSTRUMENTS, AND RISKS

This chapter reviews the standard instruments in the global foreign exchange (FX) markets and discusses how foreign exchange risk arises. Exotic options are introduced, and their more sophisticated risks are displayed.

INTEREST RATE MARKETS, INSTRUMENTS, AND RISKS

This chapter covers both short- and long-term interest rate risk, which is expressed through changes in the yield curve. Duration and PV01 are described as basic tools for quantifying interest rate risk. The chapter ends with an overview of the main derivative instruments used to manage interest rate risk.

EQUITY AND COMMODITY MARKETS, INSTRUMENTS, AND RISKS

This chapter covers market risk in both cash equity and equity derivatives, as well as cash commodities and commodity derivatives. An outline of the value drivers in the equity and commodity markets is followed by a discussion of exposure and risk characteristics in exchange-traded derivatives as compared to those for their over-the-counter counterparts.

THE RISK MEASUREMENT PROCESS

This chapter covers value-at-risk (VaR) as the key market risk measurement methodology over the past quarter century. The discussion outlines the differences between the three classic VaR analytical methods and points to the short comings of each. It is explained how using both VaR and expected shortfall (ES) is better for assessing market risk than using VaR alone.

RISKS IN BANK TRADING STRATEGIES

This chapter begins with an overview of the internal considerations relevant to a bank with a trading operation. It continues with a focus on standard trading strategies and outlines the risks inherent in each. External risks are covered thereafter, including market liquidity and behavior, and the chapter finishes with a section about how to manage market risk in a trading operation.

MARKET RISK ORGANIZATION AND REPORTING

The final chapter in this volume covers the internal organizational aspects of managing a trading operation. Topics include market risk governance, the tools used in market risk analysis, and market risk monitoring and control. The chapter ends with a discussion of the users and uses of market risk reports.

BOOK 3: OPERATIONAL RISK MANAGEMENT

OPERATIONAL RISK MANAGEMENT

This chapter gives an overview of operational risk in financial institutions and discusses its relationship with other types of risk. There is then emphasis on how an operational risk framework can help establish and maintain an appropriate management process. The governance section explains who in the organization should 'own' the ORM function, as well as the relationship between disclosure, compliance, internal audit and supervisors.

OPERATIONAL RISK: IDENTIFICATION AND ASSESSMENT

Following a classification of operational risk, this chapter discusses risk and control self-assessments (RCSAs) as a method for generating a reliable insight into an organization's operational risk exposures, including potential and actual risk events.

OPERATIONAL RISK: MEASUREMENT

The quality of operational risk loss data is important, and this chapter covers both internally and externally generated data. Internally generated loss data, which is better under almost any scenario than externally generated data, is covered in the first half of the chapter. Externally generated data, which has validity for smaller organizations and for those with a limited exposure to esoteric operational risk event types, is discussed in the second half of the chapter.

OPERATIONAL RISK: MITIGATION AND CONTROL

This chapter starts with a brief overview of the classic 'three lines of defence' approach to organizing risk management responsibilities and looks at the concept of operational risk insurance. The remaining part of the chapter discusses control points in a number of common scenarios.

OPERATIONAL RISK: MONITORING AND REPORTING

The first half of this chapter illustrates how key risk indicators (KRI) can be used when monitoring operational risk in a financial institution. The second half of this chapter covers common risk reporting requirements.

BOOK 4: ASSET AND LIABILITY MANAGEMENT

ALCO AND THE ROLE OF THE TREASURY FUNCTION

This chapter covers the central role of the treasury function in any financial institution or corporate entity and follows up with insight into what constitutes treasury risk. It also identifies the role of the asset and liability management committee (ALCO) and how it is guided by both asset and liability management (ALM) policies. A section outlining classic ALM reports follows and the chapter ends with a description of common limit structures designed to control ALM risk.

INTEREST RATE RISK IN THE BANKING BOOK

This chapter cover two important aspects of interest rate risk in the banking book (IRRBB), net interest income (NII), and economic value of equity (EVE). It first looks at the basic NII risk model and discusses criticisms raised against it. Secondly, it discusses EVE and the impact it can have on the economic value of a bank. The chapter ends with an overview of the 2016 Basel IRRBB framework.

LIQUIDITY RISK IN THE BANKING BOOK

This chapter covers liquidity risk in the banking book and discusses the two different ways to understand it. It illustrates methods for quantifying this risk and managing exposures to it. This is followed by a section that discusses funds transfer pricing (FTP) as a central liquidity management tool. The chapter ends with a review of the two Basel III liquidity measures banks are obliged to adopt and report.

BANK CAPITAL MANAGEMENT

This chapter begins with a distinction between economic and regulatory capital and extends into a deeper coverage of economic capital. Thereafter follows an in-depth coverage of Basel II and Basel III regulatory capital, including a section on 'bail-in' capital. The chapter ends with an overview of the differences between return on equity (ROE) and risk-adjusted return on capital (RAROC).

OTHER NON-TRADING MARKET RISK IN THE BANKING BOOK

The final chapter of this book reviews specific market risk exposures that are not generated from trading operations: credit spread market risk applicable to non-traded credit risky positions, foreign exchange risk in foreign subsidiary company stock values, investment risk in strategic and alternative long-term equity investments, pension risk applicable to defined benefit staff pension schemes, guaranteed product value risks in customer portfolios, and economic capital consumption in non-traded market risk positions.

FINANCIAL RISK AND REGULATION SERIES

CREDIT RISK MANAGEMENT

MARKET RISK MANAGEMENT

OPERATIONAL RISK MANAGEMENT

ASSET AND LIABILITY MANAGEMENT

Credit Risk Management

EXAM WEIGHT | 25% (CRM)

The readings that you should focus on for this section and the specific learning objectives that should be achieved with each reading are:

CHAPTER 1. CREDIT RISK ASSESSMENT

After completing this reading, you should be able to:

- Differentiate between credit and market risk
- Estimate expected credit losses
- Understand the mission and objectives of the credit portfolio
- Interpret lending guidelines
- Explain the relationship between credit risk and loan pricing
- Interpret inputs to credit models
- Explain the meaning of probability of default (PD)
- Differentiate exposure at default (EAD) for loans versus derivative contracts
- Compute the recovery rate and loss given default (LGD) for an obligor

CHAPTER 2. THE RISKS OF CREDIT PRODUCTS

After completing this reading, you should be able to:

- Explain features of credit products
- Understand consumer credit risk
- Understand the purpose of consumer credit scoring
- Describe sensible credit score factors
- Design credit scorecards for the SME sector
- Explain credit scoring benefits
- Analyze corporate credit risk models
- Explain how counterparty credit differs from corporate credit
- Calculate a simple credit valuation adjustment (CVA) measure
- Explain elements of sovereign credit risk
- Illustrate the relationship between sovereign ratings and corporate ratings
- Assess the regulatory treatment of sovereign exposures

CHAPTER 3. CREDIT RISK PORTFOLIO MANAGEMENT

After completing this reading, you should be able to:

- Describe evolution of credit risk management
- Understand the purpose of correlation in credit analysis
- Examine risk management of a credit portfolio
- Illustrate the elements of asset securitization
- Explain how credit derivatives work
- Describe the purpose and structure of CDS indices
- Explain elements of how collateral works
- Provide an overview of credit portfolio management models
- Describe potential problems with credit portfolio models
- Assess the purpose of asset management companies or bad banks
- Describe methods used to avoid bad loans
- Describe a broad range of credit risk reports and their purpose
- Estimate recovery rates on problem assets
- Define the benefits of external credit and loan review
- Investigate the elements of a stress test

CHAPTER 4. THE REGULATORY VIEW OF CREDIT RISK

After completing this reading, you should be able to:

- Understand the link between capital and credit risk
- Identify the shortcomings of and criticize Basel I
- Explain elements of the Basel II framework
- Explain the elements of the Basel III framework
- Describe the standardised approach (SA) for credit risk
- Describe the Internal Ratings Based approaches (IRB) for credit risk
- Explain why Basel III contains a revised standardised approach for credit risk
- Explain the need to revise the Basel III IRB approaches
- Identify key elements of the Basel III securitization framework
- Investigate the link between stress testing and regulatory capital
- Differentiate between EL and UL models
- Discuss methods for credit risk mitigation
- Describe the standardised approach (SA) for counterparty credit risk (CCR)
- Differentiate between SA and IMM for CCR
- Explain the features and risks in leveraged lending
- Describe different types of stress testing
- Evaluate differences in global regulatory stress testing requirements
- Explain differences of approach between global regulatory agencies

Market Risk Management

EXAM WEIGHT | 25% (MRM)

The readings that you should focus on for this section and the specific learning objectives that should be achieved with each reading are:

CHAPTER 1. INTRODUCTION TO MARKET RISK MANAGEMENT

After completing this reading, you should be able to:

- Provide a definition of market risk
- Illustrate implied volatility price risk
- Interpret implied correlation risk
- Describe what impact the Basel III finalization has had on market risk management

CHAPTER 2. FOREIGN EXCHANGE MARKETS, INSTRUMENTS, AND RISKS

After completing this reading, you should be able to:

- Explain the drivers of foreign exchange rates
- Calculate a cross-currency spot contract price
- Calculate a currency forward contract price
- Outline the market risks in foreign exchange forwards
- Describe the differences between currency forward and futures
- Explain the features and benefits of derivative contracts
- Describe the elements of a currency swap
- Explain option market pricing dynamics
- Evaluate the risks in option trading
- Identify exotic options variants
- Deduce the risks in trading exotic options

CHAPTER 3. INTEREST RATE MARKETS, INSTRUMENTS, AND RISKS

After completing this reading, you should be able to:

- Describe rate setting standards for loans and deposits in the interbank market
- Explain interest rate spreads for loans and bonds
- Distinguish between major bond classifications
- Compute prices for cash fixed income instruments
- Relate theories of the term structure of interest rates to pricing dynamics in the market
- Compare the impact of major drivers of interest rates
- Understand drivers of credit spreads
- Calculate the present value of a basis point (PVBP/PV01) for a bond
- Compute modified duration and Macaulay duration
- Describe the effects of convexity in a fixed income position
- Explain the difference between forward rate agreements and short-term interest rate futures
- Determine how interest rate swaps are valued and describe their risks
- Describe the structure and pricing of currency swaps
- Identify fixed income options and exotic instruments

CHAPTER 4. EQUITY AND COMMODITY MARKETS, INSTRUMENTS, AND RISKS

After completing this reading, you should be able to:

- Explain the features and value drivers in equity instruments
- Understand the pricing of equity forwards and futures contracts
- Explain the elements of equity index and total return swaps
- Compare equity index futures to balanced equity portfolios
- Identify the main features of equity options
- Assess the main physical commodity risk drivers
- Understand commodity derivative risks
- Analyze the main credit derivative instruments

CHAPTER 5. THE RISK MEASUREMENT PROCESS

After completing this reading, you should be able to:

- Provide an accurate definition of VaR
- Estimate parametric VaR using the normal distribution
- Describe how VaR can be estimated from historical data
- Understand how VaR can be calculated with Monte Carlo simulation
- Identify the Main VaR shortcomings
- Assess VaR for multiple factors
- Describe how option positions are converted for VaR estimation
- Describe the daily VaR process
- Explain how expected shortfall (ES) can be a solution to the VaR model coherence problem
- Define the purpose of stressed VaR
- Evaluate the significance of the Basel incremental risk charge (IRC)
- Describe the Basel comprehensive risk measure (CRM)
- Examine the robustness of credit valuation adjustment (CVA) as a risk quantification method
- Identify the minimum Basel capital requirements for market risk

CHAPTER 6. RISKS IN BANK TRADING STRATEGIES

After completing this reading, you should be able to:

- Describe position management and hedging
- Explain risks in leveraged trading
- Identify the risks in carry trades
- Explain risk dynamics in financial markets
- Assess the relative magnitude of risks in basis trading
- Evaluate the consequences of failure of trading controls
- Describe the problems with the mark-to-market process
- Define the risks associated with the portfolio diversification approach
- Deduce primary and secondary risks with the hedging approach
- Explain the potential risks connected with the synthetic portfolio approach

CHAPTER 7. MARKET RISK ORGANIZATION AND REPORTING

After completing this reading, you should be able to:

- Describe the governance of market risk
- Explain the purpose of VaR back-testing
- Assess the unintended impact of debit valuation adjustment (DVA)
- Deduce the meaning of loss advisories and drawdowns
- Investigate the weaknesses of economic value (EV) stress testing
- Evaluate Earnings-at-Risk stress testing
- Describe the main elements of model risk
- Describe risk identification for large exposures
- Identify uses and users of market risk reports

Operational Risk Management

EXAM WEIGHT | 25% (ORM)

The readings that you should focus on for this section and the specific learning objectives that should be achieved with each reading are:

CHAPTER 1. OPERATIONAL RISK MANAGEMENT

After completing this reading, you should be able to:

- Describe what operational risk means in the finance industry
- Explain the relationship between operational risk management and other risk types
- Define the core purpose of operational risk management
- Identify obstacles to successful operational risk measurement
- Give an operational risk framework overview
- Determine who should own the operational risk function
- Explain the role of supervisors in the operational risk function
- Illustrate how lack of risk culture and awareness is the greatest impediment to successful ORM

CHAPTER 2. OPERATIONAL RISK: IDENTIFICATION AND ASSESSMENT

After completing this reading, you should be able to:

- Differentiate between inherent, residual, and secondary risks
- Assess the complete risk identification process
- Explain the purpose of risk registers
- Evaluate the strengths and weaknesses of risk and control self-assessments (RCSA)
- Explain the RCSA questionnaire approach
- Examine the RCSA workshop approach
- Compare RCSA scoring methods

CHAPTER 3. OPERATIONAL RISK: MEASUREMENT

After completing this reading, you should be able to:

- Differentiate between expected and unexpected losses
- Quantity operational risk loss data
- Identify what should be collected in the loss data program
- Evaluate sources of external loss event data
- Design individual scenario analysis methods
- Describe the Basel basic indicator approach (BI)
- Calculate OR capital using the standardised approach (SA)
- Assess the usefulness of the alternative standardised approach (ASA)
- Explain the shortcomings of the advanced measurement approach (AMA)
- Understand how to model operational risk capital

CHAPTER 4. OPERATIONAL RISK: MITIGATION AND CONTROL

After completing this reading, you should be able to:

- Define core objectives of operational risk mitigation
- Explain the workings of the three lines of defence
- Explain elements relating to risk appetite
- Explain the elements and purpose of due diligence
- Describe the benefits and disadvantages of operational risk insurance
- Evaluate the additional controls needed for outsourcing, vendor and third-party risk
- Understand how governance, risk and compliance (GRC) integrates ORM activities

CHAPTER 5. OPERATIONAL RISK: MONITORING AND REPORTING

After completing this reading, you should be able to:

- Define key operational risk indicators
- Identify key performance indicators
- Illustrate key control indicators
- Describe variants of KRI
- Assess loss data reporting
- Analyze action tracking reporting
- Explain risk and control self-assessment reporting
- Examine key risk indicator reporting

Asset and Liability Management

EXAM WEIGHT | 25% (ALM)

The readings that you should focus on for this section and the specific learning objectives that should be achieved with each reading are:

CHAPTER 1. ALCO AND THE ROLE OF THE TREASURY FUNCTION

After completing this reading, you should be able to:

- Explain the role of the treasury in a bank and in a non-bank commercial organization
- Describe a commercial/retail-only bank model
- Illustrate the role of the treasury in a commercial/retail bank with an investment banking operation
- Evaluate interest rate and FX risk in Treasury
- Evaluate a range of asset and liability management committee (ALCO) activities
- Produce a set of mismatch and gap reports
- Analyze classic ALM reports
- Distinguish between value limits and time limits
- Consider the usefulness of volatility limits in risk management
- Compare and contrast gross position versus net overall limits

CHAPTER 2. INTEREST RATE RISK IN THE BANKING BOOK

After completing this reading, you should be able to:

- Understand the basic NII risk model
- Describe examples of NII risk management
- Examine the level of critique raised against the basic NII risk model
- Assess the impact of economic value of equity (EVE) in a bank
- Explain how to hedge interest rate risk in order to mitigate changes in EVE
- Describe the 2016 Basel IRRBB Framework

CHAPTER 3 LIQUIDITY RISK IN THE BANKING BOOK

After completing this reading, you should be able to:

- Define two types of liquidity
- Evaluate sources of liquidity problems in banks
- Define and compute a liquidity ladder as an example of a static liquidity model
- Explain the function of probabilistic liquidity models
- Evaluate securitization as a form of liquidity management
- Describe the role of funds transfer pricing (FTP) in creating an effective treasury
- Compare the cost of funds method with the net funding method
- Contrast the pooled funding Method with the matched maturity method
- Assess the purpose and effectiveness of the Basel III liquidity measures
- Calculate the liquidity coverage ratio (LCR) for several balance sheet scenarios
- Describe the objective behind the net stable funding ratio (NSFR)

CHAPTER 4. BANK CAPITAL MANAGEMENT

After completing this reading, you should be able to:

- Distinguish between economic and regulatory capital
- Understand the link between economic capital and value-at-risk (VaR)
- Describe the background to economic capital methodology
- Outline several problems with measuring economic capital
- Identify the main components of regulatory capital
- Interpret the ratios between different tiers of capital
- Recount the Basel III capital rules in the context of 'quality of capital'
- Describe the purpose of the Basel III leverage rule
- Illustrate how "bail-in" capital can be better than 'bail-out' capital
- Calculate risk-adjusted return on capital (RAROC) for a single transaction

CHAPTER 5. OTHER NON-TRADING MARKET RISK IN THE BANKING BOOK

After completing this reading, you should be able to:

- Understand how credit spread risk apply to non-traded credit risky positions
- Explain how foreign exchange risk arise in foreign subsidiary company stock values
- Analyze investment risk in strategic and alternative long-term equity investments
- Describe how defined benefit staff pension schemes give rise to pension risk
- Identify guaranteed product value risks in customer portfolios
- Determine economic capital consumption in non-traded market risk positions

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ABOUT GARP | The Global Association of Risk Professionals is a non-partisan, not-for-profit membership organization focused on elevating the practice of risk management. GARP offers role-based risk certification — the Financial Risk Manager® and Energy Risk Professional® — as well as the Sustainability and Climate Risk™ certificate and on-going educational opportunities through Continuing Professional Development. Through the GARP Benchmarking Initiative and GARP Risk Institute, GARP sponsors research in risk management and promotes collaboration among practitioners, academics and regulators.

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