

2020

FRM[®]

Study Guide Changes



FRM EXAM PART I

Foundations of Risk Management

PART I EXAM WEIGHT | 20%

ADDITIONS

For 2020, the entirety of the Foundations of Risk Management curated readings has been replaced with GARP's proprietary *Foundations of Risk Management* book. The contents of this book are as follows:

- Chapter 1. The Building Blocks of Risk Management
- Chapter 2. How Do Firms Manage Financial Risk?
- Chapter 3. The Governance of Risk Management
- Chapter 4. Credit Risk Transfer Mechanisms
- Chapter 5. Modern Portfolio Theory (MPT) and the Capital Asset Pricing Model (CAPM)
- Chapter 6. The Arbitrage Pricing Theory and Multifactor Models of Risk and Return
- Chapter 7. Principles for Effective Data Aggregation and Risk Reporting
- Chapter 8. Enterprise Risk Management and Future Trends
- Chapter 9. Learning from Financial Disasters
- Chapter 10. Anatomy of the Great Financial Crisis
- Chapter 11. GARP Code of Conduct*

*This reading is freely available on the GARP website.



Quantitative Analysis

PART I EXAM WEIGHT | 20%

ADDITIONS

For 2020, the entirety of the Quantitative Analysis curated readings has been replaced with GARP's proprietary *Quantitative Analysis* book. The contents of this book are as follows:

- Chapter 1. Fundamentals of Probability
- Chapter 2. Random Variables
- Chapter 3. Common Univariate Random Variables
- Chapter 4. Multivariate Random Variables
- Chapter 5. Sample Moments
- Chapter 6. Hypothesis Testing
- Chapter 7. Linear Regression
- Chapter 8. Regression with Multiple Explanatory Variables
- Chapter 9. Regression Diagnostics
- Chapter 10. Stationary Time Series
- Chapter 11. Nonstationary Time Series
- Chapter 12. Measuring Returns, Volatility and Correlation
- Chapter 13. Simulation and Bootstrapping



Financial Markets and Products

PART I EXAM WEIGHT | 30%

ADDITIONS

For 2020, the entirety of the Financial Markets and Products curated readings has been replaced with GARP's proprietary *Financial Markets and Products* book. The contents of this book are as follows:

- Chapter 1. Banks
- Chapter 2. Insurance Companies and Pension Plans
- Chapter 3. Fund Management
- Chapter 4. Introduction to Derivatives
- Chapter 5. Exchanges and OTC Markets
- Chapter 6. Central Clearing
- Chapter 7. Futures Markets
- Chapter 8. Using Futures for Hedging
- Chapter 9. Foreign Exchange Markets
- Chapter 10. Pricing Financial Forwards and Futures
- Chapter 11. Commodity Forwards and Futures
- Chapter 12. Options Markets
- Chapter 13. Properties of Options
- Chapter 14. Trading Strategies
- Chapter 15. Exotic Options
- Chapter 16. Properties of Interest Rates
- Chapter 17. Corporate Bonds
- Chapter 18. Mortgages and Mortgage-Backed Securities
- Chapter 19. Interest Rate Futures
- Chapter 20. Swaps

Valuation and Risk Models

PART I EXAM WEIGHT | 30%

ADDITIONS

For 2020, the entirety of the Valuation and Risk Models curated readings has been replaced with GARP's proprietary *Valuation and Risk Models* book. The contents of this book are as follows:

- Chapter 1. Measures of Financial Risk
- Chapter 2. Calculating and Applying VaR
- Chapter 3. Measuring and Monitoring Volatility
- Chapter 4. External and Internal Credit Ratings
- Chapter 5. Country Risk: Determinants, Measures, and Implications
- Chapter 6. Measuring Credit Risk
- Chapter 7. Operational Risk
- Chapter 8. Stress Testing
- Chapter 9. Pricing Conventions, Discounting and Arbitrage
- Chapter 10. Interest Rates
- Chapter 11. Bond Yields and Return Calculations
- Chapter 12. Applying Duration, Convexity and DV01
- Chapter 13. Modeling Non-Parallel Term Structure Shifts and Hedging
- Chapter 14. Binomial Trees
- Chapter 15. The Black-Scholes-Merton Model
- Chapter 16. Option Sensitivity Measures: The "Greeks"

FRM EXAM PART II

Market Risk Measurement and Management

PART II EXAM WEIGHT | 20%

ADDITIONS

- None

DELETIONS

1. **Gunter Meissner, *Correlation Risk Modeling and Management* (New York, NY: John Wiley & Sons, 2014).**
 - Chapter 3. Statistical Correlation Models—Can We Apply Them to Finance?

UPDATES

1. **Previous version:** Gunter Meissner, *Correlation Risk Modeling and Management* (New York, NY: John Wiley & Sons, 2014).
 - Chapter 1. Some Correlation Basics: Properties, Motivation and Terminology
 - Chapter 2. Empirical Properties of Correlation: How Do Correlations Behave in the Real World?
 - Chapter 4. Financial Correlation Modeling—Bottom-Up Approaches (Section 4.3.0 [intro], 4.3.1, and 4.3.2 only)

New version: Gunter Meissner, *Correlation Risk Modeling and Management, 2nd Edition* (Risk Books, 2019).

- Chapter 1. Correlation Basics: Definitions, Applications and Terminology
- Chapter 2. Empirical Properties of Correlation: How Do Correlations Behave in the Real World?
- Chapter 5. Financial Correlation Modeling—Bottom-Up Approaches (pages 126-134 only)

MOVED TO OTHER SECTION

- None

MOVED FROM OTHER SECTION

1. **Moved from Operational Risk and Resiliency:** Kevin Dowd, *Measuring Market Risk, 2nd Edition* (West Sussex, UK: John Wiley & Sons, 2005).
 - Chapter 7. Parametric Approaches (III): Extreme Value
2. **Moved from Operational Risk and Resiliency:** John C. Hull, *Risk Management and Financial Institutions, 5th Edition* (Hoboken, NJ: John Wiley & Sons, 2018).
 - Chapter 18. Fundamental Review of the Trading Book

Credit Risk Measurement and Management

PART II EXAM WEIGHT | 20%

ADDITIONS

- None

DELETIONS

1. **Giacomo De Laurentis, Renato Maino and Luca Molteni, *Developing, Validating and Using Internal Ratings* (West Sussex, UK: John Wiley & Sons, 2010).**
 - Chapter 2. Classifications and Key Concepts of Credit Risk
2. **Jon Gregory, *The xVA Challenge: Counterparty Credit Risk, Funding, Collateral, and Capital, 3rd Edition* (West Sussex, UK: John Wiley & Sons, 2015).**
 - Chapter 12. Default Probabilities, Credit Spreads, Funding Costs

UPDATES

- None

MOVED TO OTHER SECTION

- None

MOVED FROM OTHER SECTION

1. **Moved from Valuation and Risk Models: Gerhard Schroeck, *Risk Management and Value Creation in Financial Institutions* (New York, NY: John Wiley & Sons, 2002).**
 - Chapter 5. Capital Structure in Banks (pages 170-186 only)

Operational Risk and Resiliency

PART II EXAM WEIGHT | 20%

ADDITIONS

1. “Supervisory Guidance on Model Risk Management,” Federal Deposit Insurance Corporation, (June 7, 2017).
2. Mark Carey, “Capital Regulation Before the Global Financial Crisis,” GARP Risk Institute, April 2019.
3. Mark Carey, “Solvency, Liquidity and Other Regulation After the Global Financial Crisis,” GARP Risk Institute, April 2019.
4. Mark Carey, “Management of Risks Associated with Money Laundering and Financing of Terrorism,” GARP Risk Institute, February 2019.
5. “Banking Conduct and Culture: A Permanent Mindset Change,” G30 Working Group, 2018. (Introduction through Lessons Learned only)
6. Alessandro Carretta and Paola Schwizer, *Risk Culture in Banking* (Palgrave Macmillan, 2017).
 - Chapter 2. Risk Culture
7. “Implementing Robust Risk Appetite Frameworks to Strengthen Financial Institutions,” Institute of International Finance, June 2011. (Introduction through Section 4 and Annex 1 only)
8. Andrew Coburn, Eireann Leverett and Gordon Woo, *Solving Cyber Risk: Protecting Your Company and Society* (Hoboken, NJ: Wiley, 2019).
 - Chapter 8. The Cyber-Resilient Organization
9. “Cyber-resilience: Range of practices,” (Basel Committee on Banking Supervision Publication, December 2018). (Introduction through Section 6 only)
10. “Building the UK financial sector’s operational resilience,” (Bank of England, July 2018). (Exclude Section 3, Include only Annex 1)
11. “Striving for Operational Resilience,” Oliver Wyman, 2019.

DELETIONS

1. “Observations on Developments in Risk Appetite Frameworks and IT Infrastructure,” Senior Supervisors Group, December 2010.
2. Philippa X. Girling, *Operational Risk Management: A Complete Guide to a Successful Operational Risk Framework* (Hoboken, NJ: John Wiley & Sons, 2013).
 - Chapter 8. External Loss Data
 - Chapter 12. Capital Modeling

3. John C. Hull, *Risk Management and Financial Institutions, 5th Edition* (Hoboken, NJ: John Wiley & Sons, 2018).
 - Chapter 15. Basel I, Basel II and Solvency II
 - Chapter 16. Basel II.5, Basel III and Other Post-Crisis Changes
4. “Sound management of risks related to money laundering and financing of terrorism,” (Basel Committee on Banking Supervision, June 2017). (pages 1-32 only)
5. Kevin Dowd, *Measuring Market Risk, 2nd Edition* (West Sussex, UK: John Wiley & Sons, 2005).
 - Chapter 14. Estimating Liquidity Risks
6. Michel Crouhy, Dan Galai and Robert Mark, *The Essentials of Risk Management, 2nd Edition* (New York, NY: McGraw-Hill, 2014).
 - Chapter 15. Model Risk

UPDATES

- None

MOVED TO OTHER SECTION

1. **Moved to Market Risk Measurement and Management:** Kevin Dowd, *Measuring Market Risk, 2nd Edition* (West Sussex, UK: John Wiley & Sons, 2005).
 - Chapter 7. Parametric Approaches (III): Extreme Value
2. **Moved to Liquidity and Treasury Risk Measurement and Management:** Bruce Tuckman and Angel Serrat, *Fixed Income Securities: Tools for Today's Markets, 3rd Edition* (Hoboken, NJ: John Wiley & Sons, 2011).
 - Chapter 12. Repurchase Agreements and Financing
3. **Moved to Liquidity and Treasury Risk Measurement and Management:** Allan Malz, *Financial Risk Management: Models, History, and Institutions* (Hoboken, NJ: John Wiley & Sons, 2011).
 - Chapter 12. Liquidity and Leverage
4. **Moved to Liquidity and Treasury Risk Measurement and Management:** Darrell Duffie, “The Failure Mechanics of Dealer Banks,” *Journal of Economic Perspectives* (2010): 24(1), 51-72.
5. **Moved to Market Risk Measurement and Management:** John C. Hull, *Risk Management and Financial Institutions, 5th Edition* (Hoboken, NJ: John Wiley & Sons, 2018).
 - Chapter 18. Fundamental Review of the Trading Book

MOVED FROM OTHER SECTION

1. **Moved from Foundations of Risk Management:** James Lam, *Enterprise Risk Management: From Incentives to Controls, 2nd Edition* (Hoboken, NJ: John Wiley & Sons, 2014).
 - Chapter 4. What is ERM?

Liquidity and Treasury Risk Measurement and Management

PART II EXAM WEIGHT | 15%

ADDITIONS

For 2020, the new Part II section, Liquidity and Treasury Risk Measurement and Management, contains an amalgam of new readings and readings previously associated with other Part II sections. The contents of this section are as follows:

1. **Allan Malz, *Financial Risk Management: Models, History, and Institutions* (Hoboken, NJ: John Wiley & Sons, 2011).**
 - Chapter 12. Liquidity and Leverage
2. **John C. Hull, *Risk Management and Financial Institutions, 5th Edition* (Hoboken, NJ: John Wiley & Sons, 2018).**
 - Chapter 24. Liquidity Risk
3. **Shyam Venkat, Stephen Baird, *Liquidity Risk Management* (Hoboken, NJ: John Wiley & Sons, 2016).**
 - Chapter 3. Liquidity Stress Testing
 - Chapter 4. Intraday Liquidity Risk Management
 - Chapter 6. Early Warning Indicators
 - Chapter 7. Contingency Funding Planning
4. **Antonio Castagna, Francesco Fede, *Measuring and Managing Liquidity Risk* (United Kingdom, John Wiley & Sons, 2013).**
 - Chapter 6. Monitoring Liquidity
5. **Moorad Choudhry, *The Principles of Banking Institutions* (Singapore: John Wiley & Sons, 2012).**
 - Chapter 14. Liquidity Risk Reporting and Stress Testing
6. **Darrell Duffie, 2010. "The Failure Mechanics of Dealer Banks," *Journal of Economic Perspectives* 24:1, 51-72.**
7. **Peter Rose, Sylvia Hudgins, *Bank Management & Financial Services, 9th Edition* (New York, NY: McGraw-Hill, 2013).**
 - Chapter 7. Risk Management for Changing Interest Rates: Asset-Liability Management and Duration Techniques
 - Chapter 10. The Investment Function in Financial Services Management
 - Chapter 11. Liquidity and Reserves Management: Strategies and Policies
 - Chapter 12. Managing and Pricing Deposit Services
 - Chapter 13. Managing Nondeposit Liabilities

8. Bruce Tuckman and Angel Serrat, *Fixed Income Securities: Tools for Today's Markets, 3rd Edition* (Hoboken, NJ: John Wiley & Sons, 2011).
 - Chapter 12. Repurchase Agreements and Financing
9. Joel Grant, 2011. "Liquidity Transfer Pricing: A Guide to Better Practice," Occasional Paper, Financial Stability Board, Bank for International Settlements.
10. Patrick McGuire, Gotz von Peter, 2009. "The US Dollar Shortage in Global Banking and the International Policy Response," BIS Working Papers, Bank for International Settlements.
11. Claudio Borio, Robert McCauley, Patrick McGuire, Vladyslav Sushko, 2016. "Covered Interest Rate Parity Lost: Understanding the Cross-Currency Basis," BIS Quarterly Review.
12. Andrew Ang, *Asset Management: A Systematic Approach to Factor Investing* (New York, NY: Oxford University Press, 2014).
 - Chapter 13. Illiquid Assets

DELETIONS

- None

UPDATES

- None

MOVED TO OTHER SECTION

- None

MOVED FROM OTHER SECTION

1. **Moved from Operational Risk and Resiliency:** Bruce Tuckman and Angel Serrat, *Fixed Income Securities: Tools for Today's Markets, 3rd Edition* (Hoboken, NJ: John Wiley & Sons, 2011).
 - Chapter 12. Repurchase Agreements and Financing
2. **Moved from Operational Risk and Resiliency:** Allan Malz, *Financial Risk Management: Models, History, and Institutions* (Hoboken, NJ: John Wiley & Sons, 2011).
 - Chapter 12. Liquidity and Leverage
3. **Moved from Operational Risk and Resiliency:** Darrell Duffie, "The Failure Mechanics of Dealer Banks," *Journal of Economic Perspectives* (2010): 24(1), 51-72.
4. **Moved from Risk Management and Investment Management:** Andrew Ang, *Asset Management: A Systematic Approach to Factor Investing* (New York, NY: Oxford University Press, 2014).
 - Chapter 13. Illiquid Assets



Risk Management and Investment Management

PART II EXAM WEIGHT | 15%

ADDITIONS

- None

DELETIONS

- None

UPDATES

- None

MOVED TO OTHER SECTION

1. **Moved to Liquidity and Treasury Risk Measurement and Management:** Andrew Ang, *Asset Management: A Systematic Approach to Factor Investing* (New York, NY: Oxford University Press, 2014).
 - Chapter 13. Illiquid Assets

MOVED FROM OTHER SECTION

- None

Current Issues in Financial Markets

PART II EXAM WEIGHT | 10%

ADDITIONS

1. “The Impact of Blockchain Technology on Finance: A Catalyst for Change,” International Center for Monetary and Banking Studies, 2018. (Section 1-Section 3 only)
2. “FinTech and market structure in financial services: Market developments and potential financial stability implications,” Financial Stability Board, February 14, 2019.
3. Stijn Claessens, Jon Frost, Grant Turner, and Feng Zhu, “Fintech credit markets around the world: size, drivers and policy issues,” BIS Quarterly Review, September 23, 2018.
4. “Sound Practices: Implications of fintech developments for banks and bank supervisors,” Bank for International Settlements (BIS), February 2018.
5. Tobias Adrian and Tommaso Mancini-Griffoli, “The Rise of Digital Money,” International Monetary Fund (IMF), July 2019.
6. Hugues Chenet, “Climate Change and Financial Risk,” Social Science Research Network, June 25, 2019.
7. Andreas Schrimpf and Vladyslav Sushko, “Beyond LIBOR: a primer on the new benchmark rates,” BIS Quarterly Review, March 5, 2019.

DELETIONS

1. Emanuel Kopp, Lincoln Kaffenberger and Christopher Wilson, “Cyber Risk, Market Failures, and Financial Stability,” (August 2017). IMF Working Paper No. 17/185.
2. Peter Gomber, Robert J. Kauffman, Chris Parker and Bruce Weber, “On the Fintech Revolution: Interpreting the Forces of Innovation, Disruption and Transformation in Financial Services,” Journal of Management Information Systems (2018): 35(1), 220-265.
3. Rama Cont, “Central clearing and risk transformation,” Norges Bank Research, March 2017.
4. “What is SOFR?” CME Group, March 2018.

UPDATES

- None

MOVED TO OTHER SECTION

- None

MOVED FROM OTHER SECTION

- None



Creating a culture of risk awareness®

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ABOUT GARP | The Global Association of Risk Professionals is a non-partisan, not-for-profit membership organization. GARP offers risk certification — the Financial Risk Manager and Energy Risk Professional — and educational programs for professionals at financial institutions, government agencies, central banks, academia and corporations. Through the GARP Benchmarking Initiative and GARP Risk Institute, GARP sponsors research in risk management and promotes collaboration among practitioners, academics and regulators to promote a culture of risk awareness.

Founded in 1996, governed by a Board of Trustees, GARP is headquartered in Jersey City, NJ, with offices in London, Washington, D.C., Beijing and Hong Kong.

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