
2011 FRM[®] Examination Study Guide

The designation recognized by risk
management professionals worldwide

Topic Outline, Readings, Test Weightings

The Study Guide sets forth primary topics and subtopics under the five risk-related disciplines covered in the FRM exam. The topics were selected by the FRM Committee as topics that risk managers who work in practice today have to master. The topics are reviewed yearly to ensure the FRM exam is kept timely and relevant.

FRM Examination Approach

The FRM exam is a practice-oriented examination. Its questions are derived from a combination of theory, as set forth in the readings, and “real-world” work experience. Candidates are expected to

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understand risk management concepts and approaches and how they would apply to a risk manager’s day-to-day activities.

The FRM examination is also a comprehensive examination, testing a risk professional on a number of risk management concepts and approaches.

It is very rare that a risk manager will be faced with an issue that can immediately be slotted into one category. In the real world, a risk manager must be able to identify any number of risk-related issues and be able to deal with them effectively.

Readings

Questions for the FRM examination are derived from the readings listed under each topic outline. These readings were selected by the FRM Committee to assist candidates in their review of the subjects covered by the exam. It is strongly suggested that candidates review these readings in depth prior to sitting for the exam.

The *Financial Risk Manager Handbook, 6th Edition*, by Philippe Jorion (New York: John Wiley & Sons, 2011), covers most of the FRM examination topics at the appropriate level. However, please note that the FRM Handbook was designed to help candidates review the material and is not a textbook. Alone, the FRM Handbook is not sufficient to prepare a candidate to pass the examination. The FRM Handbook includes an interactive eLearning platform with questions and answers from previous FRM exams to assist candidates with their exam preparation.

FRM Course Providers

Some candidates may want to more formally review the materials with FRM Course Providers. Course Providers are listed on the GARP website. GARP does not endorse any Course Provider but merely lists them as a service to FRM candidates.

FRM PART I—TOPICS AND READINGS

FOUNDATIONS OF RISK MANAGEMENT—Part I Exam Weight | 20%

- The role of risk management
- Basic risk types, measurement and management tools
- Creating value with risk management
- Modern Portfolio Theory (MPT)
- Standard and non-standard forms of the Capital Asset Pricing Model (CAPM)
- Single and multi-index models and the Arbitrage Pricing Theory (APT)
- Risk-adjusted performance measurement
- Enterprise Risk Management
- Financial disasters and risk management failures
- Case studies
- Ethics and the GARP Code of Conduct

Readings for Foundations of Risk Management

1. Philippe Jorion, *Value-at-Risk: The New Benchmark for Managing Financial Risk, 3rd Edition* (New York: McGraw-Hill, 2007).
 - Chapter 1The Need for Risk Management
2. René Stulz, *Risk Management & Derivatives* (Florence, KY: Thomson South-Western, 2002).
 - Chapter 2Investors and Risk Management
 - Chapter 3Creating Value with Risk Management
3. Edwin J. Elton, Martin J. Gruber, Stephen J. Brown and William N. Goetzmann, *Modern Portfolio Theory and Investment Analysis, 7th Edition* (Hoboken, NJ: John Wiley & Sons, 2007).
 - Chapter 5Delineating Efficient Portfolios
 - Chapter 13The Standard Capital Asset Pricing Model
 - Chapter 14Nonstandard Forms of Capital Asset Pricing Models
 - Chapter 16The Arbitrage Pricing Model APT—A New Approach to Explaining Asset Prices
4. Noel Amenc and Veronique Le Sourd, *Portfolio Theory and Performance Analysis* (West Sussex, England: John Wiley & Sons, 2003).
 - Chapter 4, Section 4.2 onlyApplying the CAPM to Performance Measurement: Single-Index Performance Measurement Indicators
5. Casualty Actuarial Society, Enterprise Risk Management Committee, “Overview of Enterprise Risk Management,” May 2003. Copy available at: www.GARPDigitalLibrary.org
6. Steve Allen, *Financial Risk Management: A Practitioner's Guide to Managing Market and Credit Risk* (New York: John Wiley & Sons, 2003).
 - Chapter 4Financial Disasters

7. René Stulz, “Risk Management Failures: What are They and When Do They Happen?” Fisher College of Business Working Paper Series (Oct. 2008). Copy available at: www.GARPDigitalLibrary.org
8. GARP Code of Conduct <http://www.garp.com/about/GARPCodeofConduct.aspx>

QUANTITATIVE ANALYSIS—Part I Exam Weight | 20%

- Discrete and continuous probability distributions
- Population and sample statistics
- Statistical inference and hypothesis testing
- Estimating the parameters of distributions
- Graphical representation of statistical relationships
- Linear regression with single and multiple regressors
 - The Ordinary Least Squares (OLS) method
 - Interpreting and using regression coefficients, the t-statistic, and other output
 - Hypothesis testing and confidence intervals
 - Heteroskedasticity and multicollinearity
- Monte Carlo Methods
- Estimating correlation and volatility using EWMA and GARCH models
- Volatility term structures
- Quantifying volatility in VaR models

Readings for Quantitative Analysis

9. James Stock and Mark Watson, *Introduction to Econometrics, Brief Edition* (Boston: Pearson Education, 2008).
- Chapter 2Review of Probability
 - Chapter 3Review of Statistics
 - Chapter 4Linear Regression with One Regressor
 - Chapter 5Regression with a Single Regressor: Hypothesis Tests and Confidence Intervals
 - Chapter 6Linear Regression with Multiple Regressors
 - Chapter 7Hypothesis Tests and Confidence Intervals in Multiple Regression
10. Svetlozar Rachev, Christian Menn, and Frank Fabozzi, *Fat-Tailed and Skewed Asset Return Distributions: Implications for Risk Management, Portfolio Selection and Option Pricing* (Hoboken, NJ: John Wiley & Sons, 2005).
- Chapter 2Discrete Probability Distributions
 - Chapter 3Continuous Probability Distributions
11. Jorion, *Value-at-Risk: The New Benchmark for Managing Financial Risk, 3rd Edition*.
- Chapter 12Monte Carlo Methods
12. John Hull, *Options, Futures, and Other Derivatives, 7th Edition* (New York: Pearson Prentice Hall, 2009).
- Chapter 21Estimating Volatilities and Correlations
13. Linda Allen, Jacob Boudoukh and Anthony Saunders, *Understanding Market, Credit and Operational Risk: The Value at Risk Approach* (Oxford: Blackwell Publishing, 2004).
- Chapter 2Quantifying Volatility in VaR Models

FINANCIAL MARKETS AND PRODUCTS—Part I Exam Weight | 30%

- Mechanics of OTC and exchange markets
- Forwards, futures, swaps and options
 - Mechanics
 - Pricing and factors that affect it
 - Uses in hedging and hedging strategies
 - Delivery options
- Interest rates and measures of interest rate sensitivity
- Derivatives on fixed-income securities, interest rates, foreign exchange, and equities
- Commodity derivatives
- Foreign exchange risk
- Corporate bonds

Readings for Financial Markets and Products

14. Hull, *Options, Futures, and Other Derivatives, 7th Edition*.
 - Chapter 1Introduction
 - Chapter 2Mechanics of Futures Markets
 - Chapter 3Hedging Strategies Using Futures
 - Chapter 4Interest Rates
 - Chapter 5Determination of Forward and Futures Prices
 - Chapter 6Interest Rate Futures
 - Chapter 7Swaps
 - Chapter 9Properties of Stock Options
 - Chapter 10Trading Strategies Involving Options
15. Robert McDonald, *Derivatives Markets, 2nd Edition* (Boston: Addison-Wesley, 2006).
 - Chapter 6Commodity Forwards and Futures
16. Helyette Geman, *Commodities and Commodity Derivatives: Modeling and Pricing for Agriculturals, Metals and Energy* (West Sussex, England: John Wiley & Sons, 2005).
 - Chapter 1Fundamentals of Commodity Spot and Futures Markets: Instruments, Exchanges and Strategies
17. Anthony Saunders and Marcia Millon Cornett, *Financial Institutions Management: A Risk Management Approach, 6th Edition* (New York: McGraw-Hill, 2008).
 - Chapter 14.....Foreign Exchange Risk
18. Frank Fabozzi, *The Handbook of Fixed Income Securities, 7th Edition* (New York: McGraw-Hill, 2005).
 - Chapter 13.....Corporate Bonds

VALUATION AND RISK MODELS—Part I Exam Weight | 30%

- Value-at-Risk (VaR)
 - Applied to stock, currencies, and commodities
 - Applied to linear and non-linear derivatives
 - Applied to fixed income securities with embedded options
 - Structured Monte Carlo, stress testing, and scenario analysis
 - Extending VaR to operational risk
 - Limitations as a risk measure
 - Coherent risk measures
- Option valuation
 - Pricing options using binomial trees
 - The Black-Scholes-Merton Model
 - The “Greeks”
- Fixed income valuation
 - Discount factors, spot rates, forward rates, and yield to maturity
 - Arbitrage and the Law of One Price
 - One factor measures of price sensitivity
- Country and sovereign risk models and management
 - Fundamental analysis
 - Contingent claims approach
- External and internal credit ratings
- Expected and unexpected losses
- Operational risk
- Stress testing and scenario analysis

Readings for Valuation and Risk Models

19. Linda Allen, Jacob Boudoukh and Anthony Saunders, *Understanding Market, Credit and Operational Risk: The Value at Risk Approach*.
- Chapter 3Putting VaR to Work
 - Chapter 5Extending the VaR Approach to Operational Risks
20. Hull, *Options, Futures, and Other Derivatives, 7th Edition*.
- Chapter 11Binomial Trees
 - Chapter 13The Black-Scholes-Merton Model
 - Chapter 17The Greek Letters
21. Bruce Tuckman, *Fixed Income Securities, 2nd Edition* (Hoboken, NJ: John Wiley & Sons, 2002).
- Chapter 1Bond Prices, Discount Factors, and Arbitrage
 - Chapter 2Bond Prices, Spot Rates, and Forward Rates
 - Chapter 3Yield to Maturity
 - Chapter 5One-Factor Measures of Price Sensitivity

22. Caouette, Altman, Narayanan, and Nimmo, *Managing Credit Risk, 2nd Edition*. (New York: John Wiley & Sons, 2008).
 - Chapter 6The Rating Agencies
 - Chapter 23.....Country Risk Models
23. Dale F. Gray, Robert C. Merton and Zvi Bodie, “Contingent Claims Approach to Measuring and Managing Sovereign Credit Risk,” *Journal of Investment Management*, Vol. 5, No. 4 (2007).
24. Arnaud de Servigny and Olivier Renault, *Measuring and Managing Credit Risk* (New York: McGraw-Hill, 2004).
 - Chapter 2External and Internal Ratings
25. Michael Ong, *Internal Credit Risk Models: Capital Allocation and Performance Measurement* (London: Risk Books, 2003).
 - Chapter 4Loan Portfolios and Expected Loss
 - Chapter 5Unexpected Loss
26. Kevin Dowd, *Measuring Market Risk, 2nd Edition* (West Sussex, England: John Wiley & Sons, 2005).
 - Chapter 2Measures of Financial Risk
27. John Hull, *Risk Management and Financial Institutions, 2nd Edition* (Boston: Pearson Prentice Hall, 2010).
 - Chapter 18.....Operational Risk
28. Jorion, *Value-at-Risk: The New Benchmark for Managing Financial Risk, 3rd Edition*.
 - Chapter 14.....Stress Testing
29. “Principles for Sound Stress Testing Practices and Supervision” (Basel Committee on Banking Supervision Publication, Jan 2009). Copy available at: www.GARPDigitalLibrary.org

FRM PART II—TOPICS AND READINGS

MARKET RISK MEASUREMENT AND MANAGEMENT—Part II Exam Weight | 25%

- Fixed income securities
 - Duration, DV01, and convexity
 - Key rate exposures
 - Hedging and immunization
 - Risk neutral pricing
 - Mortgage-backed securities: structure and valuation
- VaR and other risk measures
 - VaR mapping
 - Backtesting VaR
 - Expected shortfall (ES) and other coherent risk measures
 - Parametric and non-parametric methods of estimation
 - Modeling dependence: correlations and copulas
 - Extreme value theory (EVT)
- Volatility: smiles and term structures
- Exotic options

Readings for Market Risk Measurement and Management

- 30. Hull, *Options, Futures, and Other Derivatives, 7th Edition.***
- Chapter 18.....Volatility Smiles
 - Chapter 24.....Exotic Options
- 31. Tuckman, *Fixed Income Securities, 2nd Edition.***
- Chapter 6Measures of Price Sensitivity Based on Parallel Yield Shifts
 - Chapter 7Key Rate and Bucket Exposures
 - Chapter 9The Science of Term Structure Models
 - Chapter 21.....Mortgage-Backed Securities
- 32. Jorion, *Value-at-Risk: The New Benchmark for Managing Financial Risk, 3rd Edition.***
- Chapter 6Backtesting VaR
 - Chapter 11.....VaR Mapping
- 33. Kevin Dowd, *Measuring Market Risk, 2nd Edition.***
- Chapter 3Estimating Market Risk Measures
 - Chapter 4Non-parametric Approaches
 - Chapter 5Appendix—Modeling Dependence: Correlations and Copulas
 - Chapter 7Parametric Approaches (II): Extreme Value
- 34. Frank Fabozzi, *Handbook of Mortgage Backed Securities, 6th Edition* (New York: McGraw-Hill, 2006).**
- Chapter 1An Overview of Mortgages and the Mortgage Market
 - Chapter 31.....Valuation of Mortgage-Backed Securities

CREDIT RISK MEASUREMENT AND MANAGEMENT—Part II Exam Weight | 25%

- Subprime mortgages and securitization
- Counterparty risk and OTC derivatives
- Credit risk concentration
- Credit derivatives
 - Types and uses
 - Mechanics and structure
 - Valuation
- Structured finance and securitization
 - The structuring and securitization process
 - Agency problems and moral hazard in the securitization process
 - Tranching, subordination, and support
- Default risk
 - Quantitative methodologies
 - Loss given default and recovery rates
 - Estimating defaults and recoveries from market prices and spreads
 - The use of historical default rates and credit risk migration
- Expected and unexpected losses

Readings for Credit Risk Measurement and Management

35. Adam Ashcroft and Til Schuermann, “Understanding the Securitization of Subprime Mortgage Credit,” Federal Reserve Bank of New York Staff Reports, no. 318 (March 2008). Copy available at: www.GARPDigitalLibrary.org
36. Eduardo Canabarro and Darrell Duffie, “Measuring and Marking Counterparty Risk” in *ALM of Financial Institutions*, ed. Leo Tilman (London: Euromoney Institutional Investor, 2003). Copy available at: www.GARPDigitalLibrary.org
37. Darrell Duffie, “Innovations in Credit Risk Transfer: Implications for Financial Stability” (July 2008). Copy available at: www.GARPDigitalLibrary.org
38. Christopher Culp, *Structured Finance and Insurance: The Art of Managing Capital and Risk* (Hoboken, NJ: John Wiley & Sons, 2006).
 - Chapter 12.....Credit Derivatives and Credit-Linked Notes
 - Chapter 13.....The Structuring Process
 - Chapter 16.....Securitization
 - Chapter 17.....Cash Collateralized Debt Obligations
39. de Servigny and Renault, *Measuring and Managing Credit Risk*.
 - Chapter 3Default Risk: Quantitative Methodologies
 - Chapter 4Loss Given Default
40. Hull, *Options, Futures, and Other Derivatives, 7th Edition*.
 - Chapter 22Credit Risk
 - Chapter 23Credit Derivatives
41. Allen, Boudoukh and Saunders, *Understanding Market, Credit and Operational Risk: The Value at Risk Approach*.
 - Chapter 4Extending the VaR Approach to Non-tradable Loans
42. Stulz, *Risk Management & Derivatives*.
 - Chapter 18.....Credit Risks and Credit Derivatives
43. Ong, *Internal Credit Risk Models: Capital Allocation and Performance Measurement*.
 - Chapter 6Portfolio Effects: Risk Contributions and Unexpected Losses
44. “Studies on credit risk concentration: an overview of the issues and a synopsis of the results from the Research Task Force project” (Basel Committee on Banking Supervision Publication, November 2006). Copy available at: www.GARPDigitalLibrary.org

OPERATIONAL AND INTEGRATED RISK MANAGEMENT—Part II Exam Weight | 25%

- Calculating and applying risk-adjusted return on capital (RAROC)
- Estimating liquidity risk, sources of model risk,
- Evaluating the performance of risk management systems
- Validating VaR models
- Enterprise risk management (ERM)
- Economic capital
- Operational loss data
 - Frequency and severity distributions
 - Modeling and fitting distributions
 - Data sufficiency
 - Extrapolating beyond the data
- Failure mechanics of dealer banks
- Regulation and the Basel Accords
 - Minimum capital requirements
 - Methods for calculating credit, market, and operational risk
 - Liquidity risk management
 - Modeling risk aggregation
 - Stress testing
 - Revisions to the Basel II Accord
 - The Basel III framework

Readings for Operational and Integrated Risk Management

45. Michel Crouhy, Dan Galai and Robert Mark, *Risk Management* (New York: McGraw-Hill, 2001).
 - Chapter 14.....Capital Allocation and Performance Measurement
46. “Range of practices and issues in economic capital modeling” (Basel Committee on Banking Supervision Publication, March 2009). Copy available at: www.GARPDigitalLibrary.org
47. Dowd, *Measuring Market Risk, 2nd Edition*.
 - Chapter 14.....Estimating Liquidity Risks
 - Chapter 16.....Model Risk
48. Jimmy Hong, John Knight, Steve Satchell and Bernd Scherer, “Using approximate results for validating value-at-risk,” *The Journal of Risk Model Validation*, Volume 4/Number 3, Fall 2010: pp. 69-81.
49. Brian Nocco and René Stulz, “Enterprise Risk Management: Theory and Practice,” *Journal of Applied Corporate Finance* 18, No. 4 (2006): 8-20. Copy available at: www.GARPDigitalLibrary.org
50. Mo Chaudhury, “A review of the key issues in operational risk capital modeling,” *The Journal of Operational Risk*, Volume 5/Number 3, Fall 2010: pp. 37-66.

51. Eric Cope, Giulio Mignola, Gianluca Antonini and Roberto Ugoccioni, “Challenges and pitfalls in measuring operational risk from loss data,” *The Journal of Operational Risk*, Volume 4/Number 4, Winter 2009/10: pp. 3-27.
52. De Fontnouvelle, Patrick, Eric S. Rosengren and John S. Jordan, 2006. “Implications of Alternative Operational Risk Modeling Techniques.” Ch. 10 in Mark Carey and René Stulz (eds.), *Risks of Financial Institutions*, NBER, 475-505. And comment by Andrew Kuritzkes 505-511.
53. Duffie, Darrell, 2010. “Failure Mechanics of Dealer Banks.” *Journal of Economic Perspectives* 24:1, 51-72.

Readings for Basel Reference

Candidates are expected to understand the objective and general structure of the Basel II Accord and general application of the various approaches for calculating minimum capital requirements. Candidates are not expected to memorize specific details like risk weights for different assets.

54. “Basel II: International Convergence of Capital Measurement and Capital Standards: A Revised Framework—Comprehensive Version” (Basel Committee on Banking Supervision Publication, June 2006).
Copy available at: www.GARPDigitalLibrary.org
55. “Basel III: A global regulatory framework for more resilient banks and banking systems” (Basel Committee on Banking Supervision Publication, December 2010). Copy available at: www.GARPDigitalLibrary.org
56. “Basel III: International framework for liquidity risk measurement, standards and monitoring” (Basel Committee on Banking Supervision Publication, December 2010). Copy available at: www.GARPDigitalLibrary.org
57. “Guidelines for computing capital for incremental risk in the trading book—final version” (Basel Committee on Banking Supervision Publication, July 2009). Copy available at: www.GARPDigitalLibrary.org
58. “Revisions to the Basel II market risk framework—final version” (Basel Committee on Banking Supervision Publication, July 2009). Copy available at: www.GARPDigitalLibrary.org
59. “Developments in Modelling Risk Aggregation” (Basel Committee on Banking Supervision Publication, July 2009).
Copy available at: www.GARPDigitalLibrary.org

RISK MANAGEMENT AND INVESTMENT MANAGEMENT—Part II Exam Weight | 15%

- Portfolio construction
- Portfolio-based performance analysis
- Tests of the Capital Asset Pricing Model (CAPM)
- Portfolio and component VaR
- Risk budgeting
- Risk monitoring and performance measurement

- Hedge funds
 - Hedge fund strategies
 - Due diligence and fraud detection
 - Liquidity
 - Risk management of hedge funds
- Private equity

Readings for Risk Management and Investment Management

60. Grinold and Kahn, *Active Portfolio Management: A Quantitative Approach for Producing Superior Returns and Controlling Risk, 2nd Edition*. (New York: McGraw-Hill, 2000).
- Chapter 14.....Portfolio Construction
 - Chapter 17.....Performance Analysis
61. Eugene Fama and Kenneth French, 2004. “The Capital Asset Pricing Model: Theory and Evidence,” *Journal of Economic Perspectives* 18:3, 25-46.
62. Jorion, *Value-at-Risk: The New Benchmark for Managing Financial Risk, 3rd Edition*.
- Chapter 7Portfolio Risk: Analytical Methods
 - Chapter 17.....VaR and Risk Budgeting in Investment Management
63. Robert Litterman and the Quantitative Resources Group, *Modern Investment Management: An Equilibrium Approach* (Hoboken, NJ: John Wiley & Sons, 2003).
- Chapter 17.....Risk Monitoring and Performance Measurement
64. Lars Jaeger, *Through the Alpha Smoke Screens: A Guide to Hedge Fund Returns* (New York: Euromoney Institutional Investor Books, 2005).
- Chapter 5Individual Hedge Fund Strategies
65. Stephen Brown, William Goetzmann, Bing Liang, Christopher Schwarz, “Trust and Delegation”, May 28, 2010. Copy available at: www.GARPDigitalLibrary.org
66. Stephen Dimmock and William Gerken, “Finding Bernie Madoff: Detecting Fraud by Investment Managers,” (December 2009). Copy available at: www.GARPDigitalLibrary.org
67. Amir E. Khandani and Andrew W. Lo, “An Empirical Analysis of Hedge Funds, Mutual Funds, and U.S. Equity Portfolios”, June 24, 2009. Copy available at: www.GARPDigitalLibrary.org
68. Andrew W. Lo, “Risk Management for Hedge Funds: Introduction and Overview”, *Financial Analysts Journal*, Vol. 57., No. 6 (Nov.-Dec., 2001), pp. 16-33.
69. Leslie Rahl (editor), *Risk Budgeting: A New Approach to Investing* (London: Risk Books, 2004).
- Chapter 6.....Risk Budgeting for Pension Funds and Investment Managers Using VaR, by Michelle McCarthy
70. Steven N. Kaplan and Per Stromberg, 2009. “Leveraged Buyouts and Private Equity” *Journal of Economic Perspectives* 23:1, 121-146. Copy available at: www.GARPDigitalLibrary.org

CURRENT ISSUES IN FINANCIAL MARKETS—Part II Exam Weight | 10%

- Subprime mortgages, securitization, and subprime CDOs
- Causes, consequences, and lessons learned from the current crisis
- Impact of financial development on risk
- Sovereign risk
 - Historical view of sovereign defaults
 - Interpreting sovereign spreads
 - The U.S. and Irish credit crisis
- The Flash Crash
- The Lehman collapse
- Central counterparties
- Sound compensation practices

Readings for Current Issues in Financial Markets

71. Gary Gorton, “The Panic of 2007,” (August 2008). Copy available at: www.GARPDigitalLibrary.org
72. Raghuram Rajan, “Has Financial Development Made The World Riskier?” (September 2005). Copy available at: www.GARPDigitalLibrary.org
73. Carmen Reinhart and Kenneth Rogoff, “This Time is Different: A Panoramic View of Eight Centuries of Financial Crises.” Copy available at: www.GARPDigitalLibrary.org
74. Bennett Golub and Conan Crum, “Risk Management Lessons Worth Remembering from the Credit Crisis of 2007-2009,” (October 2009). Copy available at: www.GARPDigitalLibrary.org
75. “Findings Regarding the Market Events of May 6, 2010, (Executive Summary)” Report of the Staffs of the CFTC and SEC to the Joint Advisory Committee on Emerging Regulatory Issues (September 2010). Copy available at: www.GARPDigitalLibrary.org
76. Gregory Connor, Thomas Flavin, and Brian O’Kelly, “The U.S. and Irish Credit Crises: Their Distinctive Differences and Common Features.” Copy available at: www.GARPDigitalLibrary.org
77. Eli Remolona, Michela Scatigna and Eliza Wu, “Interpreting sovereign spreads,” BIS Quarterly Review, March 2007. Copy available at: www.GARPDigitalLibrary.org
78. “Making Over-the-Counter Derivatives Safer: The Role of Central Counterparties.” IMF Global Financial Stability Report, April 2010, Chapter 3. Copy available at: www.GARPDigitalLibrary.org
79. “FSF Principles for Sound Compensation Practices,” Financial Stability Forum, April 2009. Copy available at: www.GARPDigitalLibrary.org
80. Brunnermeier, Markus, 2009. “Deciphering the Liquidity and Credit Crunch 2007-2008.” *Journal of Economic Perspectives* 23:1, 77-100.
81. Examiner’s Report on Lehman, Appendix 8 (pages 1–49). Copy available at: www.GARPDigitalLibrary.org

2011 FRM Committee Members

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