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Setting a Higher Standard in Risk Education

PRMIA AND GEORGIA STATE UNIVERSITY
RISK MANAGEMENT EXECUTIVE EDUCATION PROGRAMS

FINANCIAL RISK MODELING, CALCULATION OF ECONOMIC CAPITAL, AND THE DESIGN OF PRUDENTIAL REGULATION 2013

In the last decade, few topics have been discussed as intensely and vigorously among financial professionals as financial regulation. This course provides a broad overview of the design and evaluation of financial regulation. We develop the technical tools necessary to analyze regulation---theoretical models, econometric and numerical techniques---and also provide a detailed introduction to recent regulatory frameworks such as Basel III. We also discuss the economic motives for the prudential regulation of financial institutions and the considerations that would go into its optimal design.

This course is designed as a four-day intensive course with the possibility to sign up for a limited number of days, depending on each participant's background and interest. Participants who sign up for the full four-day program will earn a certificate from Georgia State University's J. Mack Robinson College of Business and also PRMIA.

September 9 - 12, 2013

Georgia State University
Atlanta, GA





A Higher Standard for Risk Professionals

Formed in 2002 as a non-profit, member-led association of professionals, the Professional Risk Managers' International Association (PRMIA) is dedicated to advancing the standards of the risk profession worldwide through the free exchange of ideas. We are committed to providing resources to help our members achieve these standards from the cradle to the pinnacle of their careers.



The largest business school in the South and part of a major research institution, Georgia State University's J. Mack Robinson College of Business has 200 faculty, 8,000 students and 75,000 alumni. With programs on five continents and students from 88 countries, the college is world-class and worldwide. Its part-time MBA is ranked among the best by the Aspen Institute, Bloomberg Businessweek and U.S. News & World Report, and its Executive MBA is on the Financial Times list of the world's premier programs. Located in Atlanta, the Robinson College and Georgia State have produced more of Georgia's top executives with graduate degrees than any other school in the Southeast. Over the past several years university officials have committed funding for five key programs of distinction identified as strategically important for the enhancement of the university's reputation of which one is risk and its management. As a result, the risk management academic programs at Georgia State are some of the most innovative in the world. More information is online

KEY OBJECTIVES AND LEARNING OUTCOMES

- Introduction to recent changes in the financial regulation landscape, including Basel III and Solvency II
- Application of Risk-adjusted Return of Capital (RAROC) and Economic Value Added (EVA)
- Overview of advanced financial modeling techniques
- Understanding numerical approaches to calculating capital requirements
- Designing financial regulation in an optimal manner

WHAT YOU WILL LEARN

Participants will be exposed to advanced financial modeling techniques and recent changes in the financial regulation landscape, particularly pertaining to quantitative requirements. Participants will become familiar with advanced models for financial risk management.

Those who sign up for all four days will attend the advanced part of the course, which focuses on the implementation of financial risk models in the context of economic capital calculations and the optimal design of financial regulatory frameworks. The advanced portion covers techniques for modeling and forecasting financial volatility, interest rate risk, as well as individual and corporate credit risk.

WHO SHOULD ATTEND

This program is designed to develop the knowledge and understanding of risk management practices for those advancing their careers in financial risk management. The foundations apply across all sectors: banking, insurance, asset management, hedge funds, energy, securities, regulation/supervision and more.

- Risk Managers
- Consultants to the Financial Services Industry
- Financial Engineers
- Operational Risk Teams
- Basel III and Regulatory Teams of Banks

COURSE DELEGATE EXTRAS

In appreciation of your participation, each attending delegate will receive a digital version of the *Professional Risk Managers' Handbook: A Comprehensive Guide to Current Theory and Best Practices*. The *Professional Risk Managers' Handbook* is used in more than 105 countries, at 23 of the world's 25 largest banks and at the world's largest financial institutions. It also serves as the foundation of graduate level programs in risk management.

Supplemental classroom notes will also be provided.



FINANCIAL RISK MODELING, CALCULATION OF ECONOMIC CAPITAL, AND THE DESIGN OF PRUDENTIAL REGULATION

MONDAY, SEPTEMBER 9, 2013

- **MODULE 1 - Introduction to Recent Regulatory Frameworks**
Basel III, Solvency II, Dodd-Frank, etc. Discussion of different pillars with focus on quantitative regulations, particularly on capital requirements.
- **MODULE 2 - Calculation Framework for Economic Capital/Capital Requirements**
Definition of loss based on a simplified model of a bank's balance sheet. Definition of capital requirements. Discussion about market valuation and risk measures. Application of frameworks: Capital allocation, RAROC, EVA.

TUESDAY, SEPTEMBER 10, 2013

- **MODULE 3 - Financial Risk Models in the Context of Capital Requirements**
Discussion of key features of risky asset returns and introduction of tractable models to capture those features (historical simulation, JP Morgan's RiskMetrics, and GARCH models). Basic implementation of these models, including techniques for their estimation and the forecasting of future volatility and tail-risk measures.
- **MODULE 4 - Revisiting the EC/Capital Requirement Framework**
Application of the models presented in the Module 3 to calculation framework for economic capital introduced in Module 2. Implementation in the context of a stylized financial institution (commercial bank). Discussion of model risk.

WEDNESDAY, SEPTEMBER 11, 2013

- **MODULE 5 - Advanced Financial Risk Modeling**
Presentation of vector autoregressive models, factor models, and transition models (time-dependent Markov chains, ordered probit models) with applications to interest rate risk and credit risk modeling. The discussion emphasizes techniques to model and forecast the term structure of interest rates and credit default probabilities.

THURSDAY, SEPTEMBER 12, 2013

- **MODULE 6 - Calculation of Economic Capital via Nested Simulations**
Numerical approaches to calculating capital requirements based on (nested) Monte Carlo simulations: Monte Carlo basics, calculation of confidence intervals for capital requirements, optimal allocation of numerical resources to inner and outer simulations in a nested simulation framework, and the use of more advanced approaches to increase the numerical efficiency (screening, least-squares Monte Carlo, etc.) Revisit the applications from Module 2 (capital allocation, performance measurement via RAROC and EVA) with the advanced models seen in Module 5.
- **MODULE 7 - Optimal Design of Financial Regulation**
Discussion of how financial regulation should be designed in an optimal manner. Specifically, we distinguish a bank's shareholder value and its social value that also considers net cash flows to and from the regulator, and analyze the impact of different regulatory schemes. This discussion helps understand the effects of financial regulation, and its interaction with other regulatory policies and the financial environment.

FINANCIAL RISK MODELING, CALCULATION OF ECONOMIC CAPITAL, AND THE DESIGN OF PRUDENTIAL REGULATION

September 9 - 12, 2013

8:00 a.m. - 5:00 p.m.

Georgia State University

Buckhead Center

COURSE FEE

You may register for individual modules or the entire course. Seating preferences will be given to those who register for the complete program.

	ENTIRE COURSE PRICE	US \$4,495	CPE Credits	36
<i>Consisting of the following modules:</i>				
Modules 1 & 2		US \$ 1,125		9
Modules 3 & 4		US \$ 1,125		9
Module 5		US \$ 1,125		9
Modules 6 & 7		US \$ 1,125		9

REGISTRATION

Online: http://prmia.org/events/view_events.php?eventID=4693

Phone: +1 612-216-4739

E-mail: training@prmia.org

Invoicing is available

ADDITIONAL PRICING INFORMATION

- A \$500 early registration discount applies to the entire course if registrations are received by August 9, 2013.
- Multiple registration discounts are available for companies registering two or more delegates.
- Sustaining Members of PRMIA receive a discounted price.

CANCELLATION

A refund (less a US \$500 administration fee) will be made if formal notice of cancellation is received two weeks prior to the date of the event. We regret that no refunds will be made after that date. Substitutions may be made at no extra charge.

CONTACT INFORMATION

For more information regarding discounts, refunds, complaint and/or program cancellation policies, please contact our offices at 1-612-216-4739. To contact the PRMIA staff, visit the "Contact Us" link at www.prmia.org or send an email to training@prmia.org.

The program may change due to unforeseen circumstances.

A certificate of completion will be awarded to those individuals who take the complete course.



As a participant in the CFA Institute Approved-Provider Program, PRMIA has determined that this program qualifies for 30 credit hours. If you are a CFA Institute member, notify training@prmia.org at any time after registration, and CE credit

for your participation in this program will be automatically recorded in your CE Diary upon your completion of this training course.



Earn Up to 36 CPE Credits

Program Level: Intermediate

Prerequisites: See page 2

Delivery Method: Group-Live

PRMIA is registered with the National Association of State Boards of

Accountancy (NASBA) as a sponsor of continuing professional education on the National Registry of CPE Sponsors. State boards of accountancy have final authority on the acceptance of individual courses for CPE credit. Complaints regarding registered sponsors may be addressed to the National Registry of CPE Sponsors, 150 Fourth Avenue North, Suite 700, Nashville, TN, 37219-2417.

Web site: www.nasba.org.

COURSE FACULTY



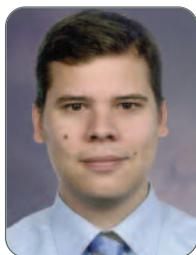
DR. AJAY SUBRAMANIAN is the Bruce A. Palmer Professor of Risk Management and Insurance in the Robinson College of Business at Georgia State University. His current research interests are in dynamic corporate finance, asset pricing theory and mathematical finance. Dr. Subramanian's research appears in the *Journal of Finance*, the *Journal of Financial Economics*, the *Review of Financial Studies*, *Management*

Science, *Journal of Financial and Quantitative Analysis*, *Accounting Review*, *Mathematical Finance*, *SIAM Journal on Applied Mathematics*, *Risk* and other journals. Immediately after obtaining his Ph.D. from Cornell University, Dr. Subramanian spent four years in industry as a quantitative research associate with the investment firm Susquehanna International Group in Bala Cynwyd, PA. He received his doctoral and M.S. degrees in mathematics from Cornell University. He also received a M.A. degree in physics from Stony Brook University. As an undergraduate student at the Indian Institute of Technology in Bombay, he obtained a bachelor of technology degree in engineering physics.



DR. RICHARD LUGER holds a joint appointment as associate professor in the Department of Economics and the Department of Risk Management and Insurance. His research interests cover a wide array of topics related to econometric methodology especially the analysis of financial markets data. Dr. Luger's research appears in the *Journal of Econometrics*, the *Journal of Times Series Analysis*, and the *Journal*

of *Empirical Finance* among others. Prior to joining Georgia State, Richard Luger was an assistant professor in the Department of Economics at Emory University, and before that he worked as a research economist at the Bank of Canada. He is originally from Canada and earned his doctorate in economics from the University of Montreal. He also received a master's degree in economics from McGill University, a bachelor's degree in applied mathematics from Concordia University, and a bachelor's degree in computer science from the University of Montreal.



DR. DANIEL BAUER Daniel Bauer is an assistant professor of risk management and insurance in the Robinson College of Business at Georgia State University. He specializes in the development of new mathematical models for the valuation and risk management of insurance products and insurance-linked securities. Other interests include the economics of annuitization and computational finance. Professor Bauer received his doctorate in Mathematics from Ulm University, from where he also holds a Diploma in Economical Mathematics.

Furthermore, he obtained an M.S. degree from San Diego State University where he studied Statistics as a Fulbright scholar. He is among the first junior members of the German Society for Actuarial and Financial Mathematics and an immediate candidate of the German Society of Actuaries.

COURSE DIRECTORS



BARRY WOOD Barry Wood is the Director of External Relations (DER) for the Department of Risk Management and Insurance in the Robinson College of Business at Georgia State University. In this role, Mr. Wood is responsible for project managing a number of initiatives of the department, expanding the number of employers that interview and hire our graduates, and enhancing the overall reputation of the

department. In addition to his role as DER, he also teaches a course on understanding the recent financial crisis in the Freshman Learning Community. Mr. Wood received his Masters of Business Administration with a concentration in finance from the University of Notre Dame.



DAN STOLTZ, M.S. is Senior Director of Executive Education and Lecturer at Georgia State University's J. Mack Robinson College of Business. He has 23 years of experience designing senior-level training programs that integrate the topics of leadership, innovation, and strategy. Dan plays the lead role in working with senior executives to design customized executive education programs that accelerate the leader-

ship development process. His past and current clients include Cox Enterprises, the FBI Crime Labs, GE Energy, NCR Corporation, Regions Financial, Rollins Inc., and the NASA Johnson Space Center to name just a few. Dan earned a M.S. in Marketing from Colorado State University and a B.B.A. in Management and Psychology from Eastern Michigan University.

CONTACT INFORMATION

To contact the PRMIA staff, visit the "Contact Us" link at www.prmia.org or send an e-mail to training@prmia.org or call +1-612-216-4739