Kay Giesecke

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Academic Appointments

Assistant Professor, 2005–present
Department of Management Science and Engineering, Stanford University

Visiting Assistant Professor, 2003–2005
School of Operations Research and Industrial Engineering, Cornell University

Post-Doctoral Research Fellow, 2001–2003
School of Operations Research and Industrial Engineering, Cornell University
National Research Center, Humboldt University Berlin, Germany

Education

Dr. rer. pol. (Ph.D. Economics), 2001
Humboldt University Berlin, Germany

Diplom-Wirtschaftsingenieur (M.Sc. Electrical Engineering & Economics), 1998
Ilmenau University of Technology, Germany

Publications

Time-Changed Birth Processes and Multi-Name Credit Derivatives (with X. Ding and P. Tomecek)
Operations Research, forthcoming

Simulating Point Processes by Intensity Projection (with H. Kakavand and M. Mousavi)
Proceedings of the 2008 Winter Simulation Conference, IEEE Press, 2008

Measuring the Risk of Large Losses (with T. Schmidt and S. Weber)
Journal of Investment Management **6**(4), 1–15, 2008

Estimating Tranche Spreads by Loss Process Simulation (with B. Kim)
Proceedings of the 2007 Winter Simulation Conference, IEEE Press, 967–975, 2007

Default and Information
Journal of Economic Dynamics and Control **30**(11), 2281–2303, 2006

Credit Contagion and Aggregate Losses (with S. Weber)
Journal of Economic Dynamics and Control **30**(5), 741–767, 2006

Cyclical Correlations, Credit Contagion, and Portfolio Losses (with S. Weber)
Journal of Banking and Finance **28**(12), 3009-3036, 2004

Forecasting Default in the Face of Uncertainty (with L. Goldberg)
Journal of Derivatives **12**(1), 11–25, 2004
Reprinted in *The Foundations of Credit Risk Analysis*, W. Semmler and L. Bernard (Eds.), Edward Elgar, 2007

Correlated Default with Incomplete Information
Journal of Banking and Finance **28**(7), 1521-1545, 2004

Sequential Defaults and Incomplete Information (with L. Goldberg)
Journal of Risk **7**(1), 1–26, 2004

In Search of a Modigliani-Miller Economy (with L. Goldberg)
Journal of Investment Management **2**(3), 1–6, 2004

A Simple Exponential Model for Dependent Defaults
Journal of Fixed Income **13**(3), 74–83, 2003

Contributions to Books

Portfolio Credit Risk: Top Down vs. Bottom Up Approaches
In *Frontiers in Quantitative Finance: Credit Risk and Volatility Modeling*, R. Cont (Ed.), Wiley, 2008

Forecasting Extreme Financial Risk, (with L. Goldberg)
In *Risk Management: A Modern Perspective*, M. Ong (Ed.), 537–555, Elsevier, 2005
Reprinted in *ICFAI Journal of Financial Risk Management* **3**(4), 53-67, 2005

Credit Risk Modeling, (with L. Goldberg and T. Backshall)
In *Handbook of Fixed Income Securities*, F. Fabozzi (Ed.), 779–798, Wiley, 2004

Credit Risk Modeling and Valuation: An Introduction
In *Credit Risk: Models and Management, Vol. 2*, D. Shimko (Ed.), 487–525, Risk Books, 2004
Reprinted in *ICFAI Journal of Financial Risk Management* **2**(1), 1-40, 2004

Completed Working Papers

Risk Analysis of Collateralized Debt Obligations (with B. Kim), 2009

An Overview of Credit Derivatives, 2008

Self-Exciting Corporate Defaults (with S. Azizpour), 2008

Premia for Correlated Default Risk (with S. Azizpour), 2008

The Correlation-Neutral Measure for Portfolio Credit, 2007

Pricing Credit From the Top Down With Affine Point Processes (with E. Errais, L. Goldberg), 2007

A Top Down Approach to Multi-Name Credit (with L. Goldberg), 2007

The Market Price of Credit Risk: The Impact of Asymmetric Information (with L. Goldberg), 2007

Forecasting Corporate Liquidation (with X. Ding and E. Errais), 2006

Dependent Events and Changes of Time (with P. Tomecek), 2005

Pricing Equity Default Swaps (with P. Tomecek and S. Weber), 2005

Patent

"Method and Apparatus for an Incomplete Information Model of Credit Risk," Co-inventor
Foundation of *BarraCredit*, a commercial software suite of credit asset analytics tools for the financial industry, co-developed with MSCI Barra

Selected Honors

Graduate Teaching Award, Stanford University, 2007

Gauss Prize, German Society for Actuarial and Financial Mathematics, 2003

Doctoral Fellowship, Deutsche Forschungsgemeinschaft, 1998-2003

Post-Doctoral Fellowship, Deutsche Forschungsgemeinschaft, 2002-2003

Deutsche Bundesbank Fellow, 2002

Selected Research Grants

Morgan Stanley, 2008 ($25K, Co-PI)

Mizuho-DL Financial Technology, 2008-2009 ($200K, PI)

J.P. Morgan Chase Academic Outreach Program, 2004-2008 ($150K, PI)

Global Association of Risk Professionals, 2007 ($12K, PI)

Stanford University, Presidential Research Grant, 2006-2007

American Express, 2005-2006 ($100K, PI)

Econa AG, 2006 ($13K, PI)

Moody's, 2006 ($43K, Co-PI)

Stanford University, David Morgenthaler II Faculty Scholar, 2005

Editorial Responsibilities

Associate Editor of *Operations Research*, 2008–present

Associate Editor of *Operations Research Letters*, 2009–present

Associate Editor of *IIE Transactions*, 2009–present

Professional Activities

Journal, Book and Funding Proposal Reviewer

Economics: Econometrica, Journal of Economic Dynamics and Control, Journal of Econometrics, Energy Economics, Journal of Financial Intermediation, Bank of England Working Papers Series, Journal of the European Economic Association, Review of Econometrics, Elsevier, Academic Press, National Science Foundation

Finance: Mathematical Finance, Journal of Finance, Finance and Stochastics, Journal of Computational Finance, SIAM Journal on Financial Mathematics, Financial Analysts Journal, Journal of Derivatives, Risk Magazine, Journal of Banking and Finance, Journal of Risk, Quantitative Finance, Journal of Futures Markets, Journal of Credit Risk, Swiss Society for Financial Market Research, International Journal of Theoretical and Applied Finance, Asia-Pacific Financial Markets, Applied Mathematical Finance, Social Sciences and Humanities Research Council of Canada

Operations Research and Applied Mathematics: Management Science, Operations Research, SIAM Journal on Multiscale Modeling and Simulation, Annals of Operations Research, IIE Transactions, Applied Mathematics and Computation, Operations Research Letters, International Journal of Management Science, Physica A, Nonlinear Analysis: Modeling and Control, IMA Journal of Management Mathematics, Springer-Verlag

Conference Organizer

2nd SIAM Conference on Financial Mathematics, Mini-Symposium on Credit Risk, 2008

American Mathematical Society 114th Annual Meeting, Special two day session on Financial Mathematics, January 2008 (with J.P. Fouque, R. Sircar, K. Solna)

INFORMS Annual Meeting, Session on Financial Engineering, November 2006

Stanford Conference on Quantitative Finance, August 2006 (with T. Lai)

Financial Mathematics Program at Stanford University

Member of Steering Committee, Chair of Curriculum Committee

Member of Mathematical Finance Advisory Board, Rutgers University

Member of Technical Advisory Board, Julius Finance Corporation, New York

Student Supervision

Post-Doctoral Students (Principal Advisor)

Hossein Kakavand

Doctoral Students (Dissertation Advisor)

Xiaowei Ding, Ph.D. in progress

Baeho Kim, Ph.D. in progress

Jack Kim, Ph.D. in progress

Matt Leduc, Ph.D. in progress

Shahriar Azizpour, Ph.D. 2008, Estimating Self-Exciting Models of Corporate Default
Quantitative Analyst, Live Finance, Credit Suisse, New York

Eymen Errais, Ph.D. 2006, Pricing and Hedging Credit and Interest Rate Derivatives
Quantitative Analyst, Synthetic CDO Trading, Barclays Capital, New York

Doctoral Students (Reading or Oral Committee)

Bjorgvin Sigurdsson (MS&E, 2005), Pete Meindl (MS&E, 2006), Jeremy Graveline (GSB, 2006), Andreas Eckner (Statistics, 2007), Guillaume Horel (Statistics, 2007), Tiago Requeijo (Mathematics, 2007), Wei Zhen (Statistics, 2008), Manuel Zamfir (Mathematics, 2008), Zhifeng Zhang (GSB, 2008), Benjamin Armbruster (MS&E, 2008)

Media Coverage of Research

SIAM News, Volume 42, Number 1, 2009, "Contagion and Frailty in Clustering of Corporate Defaults"

Pension and Investments, May 12, 2008, "The Smart Money"

Professional Investor, April, 2004, "Six Steps to Better Credit Returns"

Teaching Experience

Investment Practice, Stanford University

Investment Science Honors, Stanford University

Credit Risk: Modeling and Management, Cornell and Stanford Universities

Financial Engineering with Stochastic Calculus, Cornell University

Applied Financial Engineering, Cornell University

Credit Derivatives and Structured Credit Instruments, Free University Berlin

Executive Education

Correlated Corporate Default Risk, International Monetary Fund, Washington, 2008

Quantitative Credit, Stanford Financial Engineering Program, Hong Kong, March and October 2008

Giesecke on Portfolio Credit, Risk Leading Lights, New York and London, December 2007

Quantitative Credit, Morgan Stanley, March 2007

Credit Risk, European Commission, Luxembourg, September 2006

Portfolio Credit Risk, JP Morgan, March 2006

Risk Management and Derivatives School, Risk, New York, December 2005

Advanced Credit Risk Measurement & Modeling, Risk, Frankfurt, February 2005

Credit Masterclass, Global Association of Risk Professionals, New York, January 2005

Credit Risk Modeling, Bayerische Landesbank, Munich, December 2004

Non-Academic Work Experience

Deutsche Bank, Credit Control Division, Paris (July–September 1997)

Deutsche Bank, Credit Risk Methodology & Research, Frankfurt (April–June 1997)

KPMG Management Consulting, IT Division, Berlin (August–September 1996)

HypoVereinsbank International, Corporate Credit Division, Luxembourg (March 1995)

Selected Invited Lectures

Global Association of Risk Professionals Convention

Professional Risk Managers International Association, Stanford, 2008

Bachelier World Congress, London, 2008

Winter Simulation Conference, Miami, 2008

2nd SIAM Conference on Financial Mathematics, Plenary Lecture, New Brunswick, 2008

The Mathematics of Defaultable Securities, Plenary Lecture, Princeton, May 2008

Daiwa International Workshop on Financial Engineering, Kyoto, February 2008

American Mathematical Society, Annual Meeting, San Diego, January 2008

Winter Simulation Conference, Washington, December 2007

Credit Risk Summit, New York, November 2007

Stevanovich Center 2007 Conference on Credit Risk, Chicago, October 2007

Correlations and Copulas, Plenary Lecture, Melbourne, September 2007

14th INFORMS Applied Probability Conference, Eindhoven, July 2007

Fields Institute for Research in Mathematical Sciences, Toronto, June 2007

2007 Decision and Risk Analysis Conference, Dallas, May 2007

CreditMinds 2007, Geneva, March 2007

INFORMS Annual Meeting, Pittsburgh, November 2006

Conference on Lévy Models in Credit, Edinburgh, September 2006

German Mathematical Society Conference, Bonn, September 2006

Quant Congress USA, New York, July 2006

Numerical Methods for Finance, Plenary Lecture, Dublin, June 2006

ICBI Global Derivatives Trading & Risk Management, Paris, May 2006

J.P. Morgan, New York, March 2006

Stanford-Tsukuba Workshop on Financial Engineering, Stanford, March 2006

Global Association of Risk Professionals, San Francisco, January 2006

Quantitative Methods in Finance, Plenary Lecture, Sydney, December 2005

Fields Institute for Research in Mathematical Sciences, Credit Risk Conference, London, Nov. 2005

INFORMS Annual Meeting, San Francisco, November 2005

J.P. Morgan Workshop on Credit Risk, New York, October 2005

Newton Institute, Developments in Quantitative Finance, Cambridge, February 2005

The Inaugural Fixed Income Conference, Prague, September 2004

Frontiers in Financial Mathematics, Summer School on Copulas, Bologna, September 2004

Bank of Italy, Ente Einaudi, Rome, September 2004

Daiwa International Workshop on Financial Engineering, Keynote Speaker, Tokyo, August 2004

Global Association of Risk Professionals, Credit Risk Summit, New York, June 2004

J.P. Morgan Chase, Global Derivatives Research Conference, West Point, May 2004

Frontiers in Finance, Petits Déjeuners de la Finance, Paris, December 2003

Center for Applied Probability at Columbia University, 10th Workshop on Derivative Securities & Risk Management, New York, November 2003

Erasmus Center for Financial Research, 12th Symposium, Rotterdam, May 2003

BNP Paribas, Credit Derivatives Research, London, May 2003

J.P. Morgan Chase, Derivatives Research, New York, June 2003

UC Berkeley, Mathematics Colloquium, Berkeley, March 2003

Courant Institute, Mathematical Finance Seminar, New York, February 2003

Credit Risk Conference, Paris, February 2003

Mathematical Sciences Research Institute, Event Risk Workshop, New York, November 2002

RISK Credit Summit, London, October, 2001

RISK MathWeek, London and New York, November and December 2000

Selected Conference Presentations

World Congress on Computational Finance: The First Decade, London, March 2007

Bachelier Finance Society, Third World Congress, Chicago, July 2004

HEC Montreal, Second International Conference on Credit Risk, April 2004

9th International Conference on Computing in Economics and Finance, Seattle, July 2003

German Finance Association, Annual Meeting, Cologne, October 2002

European Investment Review, Annual Conference, London, September 2002

Econometric Society, European Meeting, Venice, August 2002

European Finance Association, Annual Meeting, Berlin, August 2002

Russian Academy of Sciences, Risk in Complex Systems, St. Petersburg, July 2002

9th International Conference on Computational Finance, London, May 2002

HEC Montreal, First International Conference on Credit Risk, Montreal, April 2002

European Finance Association, Annual Meeting, London, August 2000

Global Association of Risk Professionals, Research Conference, London, June 2000

7th International Conference on Computational Finance, London, May 2000