Paul Glasserman

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Appointments

Jack R. Anderson Professor of Business, Columbia Business School, 2000–

Senior Vice Dean, Columbia Business School, 2004–2008

Chair, Division of Decision, Risk, and Operations, 1997–2004

Professor, 1995–

Associate Professor, 1992–1995

Assistant Professor, 1991–1992

Research Director, Program for Financial Studies, Columbia Business School, 2012–2015

Interim Director, Sanford C. Bernstein & Co. Center for Leadership and Ethics, 2005–2007

Professor (by courtesy), Department of Industrial Engineering and Operations Research, Columbia University, 1996–

Consultant, Office of Financial Research, U.S. Treasury, 2011–2012, 2013–

Visiting Scholar, Financial Intermediation Group, Federal Reserve Bank of NY, 2008–2012

Visiting Research Professor, Stern School of Business, New York University, Fall 2008

Visiting Member, Courant Institute of Mathematical Sciences, Fall 2008

Visiting Professor, Department of Operations Research and Financial Engineering, Princeton University, Spring 2001

Member of Technical Staff, Operations Research Department,
AT&T Bell Laboratories, 1988–1991

Honors and Awards

IAQF/Northfield Financial Engineer of the Year Award, 2020

Saul Gass Expository Award, INFORMS, 2016

Wasserstrom Family Distinguished Lecturer, Northwestern University, 2015

Nash Distinguished Lecturer, Carnegie-Mellon University, 2014

Humboldt Distinguished Lecturer in Applied Mathematics and Economics, Berlin, 2014

INFORMS Fellow, 2008

Risk Magazine's Quant of the Year Award, 2007; most cited author, 2009

WSC 40th Anniversary Landmark Paper Award, 2007

Lanchester Prize, INFORMS, 2006

IMS Medallion, Institute of Mathematical Statistics, 2006

INFORMS-CS Outstanding Publication Award, 2005

Wilmott Award for Cutting-Edge Research in Quantitative Finance, 2004

Research Fellow, FDIC Center for Financial Research, 2004

IBM University Partnership Awards 1998, 1999, 2000

The Erlang Prize in Applied Probability, 1996

National Young Investigator Award, National Science Foundation, 1994-1999

Outstanding Simulation Publication Award of The Institute of Management Sciences, 1992

AT&T Individual Performance Award, 1990.

Second Prize, George E. Nicholoson Student Paper Competition of the Operations Research Society of America, 1989.

United States Army University Research Initiative Fellowship, 1987.

Mathematics Department Honors, Princeton University, 1984.

Thomas J. Watson Memorial Merit Scholarship
of the International Business Machines Corporation, 1980-1984.

Teaching Awards

Dean's Award for Teaching Excellence in the Core, 2000

Finalist, Columbia University Presidential Teaching Award, 2000

Dean's Award for Teaching Excellence in the Core, 1994

Education

Harvard University, Ph.D., Applied Mathematics, 1988.

Princeton University, A.B., Mathematics, 1984.

Grants

Global Risk Institute (Canada), support for "News and Finance Markets" conference, 2016, 2017, 2018, 2019, and support for conference on "Systemic Risk in Insurance."

Global Risk Institute (Canada), "Financial Systemic Risk: A Network Science Approach," 2012–2016, with T. Hurd (McMaster University) and others.

Cambridge Centre for Risk Studies, "Robust Risk Measurement," 2011–2012

National Science Foundation, "Computational Methods in Risk Management and Financial Engineering," with M. Broadie and S.G. Kou, 9/09-8/12

National Science Foundation, "Computational Methods in Financial Engineering," with M. Broadie and S.G. Kou, 9/04-8/07

Moody's Corporation, "Fast Calculation of Prices and Sensitivities for Basket Default Swaps and Collateralized Debt Obligations," 2006

Federal Deposit Insurance Corporation, Center for Financial Research, "Decomposition of Portfolio Credit Risk", 2004

National Science Foundation, "Fast Simulation Methods for Risk Management", with P. Shahabuddin, 7/03–6/06

National Science Foundation, "Computational Methods in Financial Engineering," with M. Broadie and S.G. Kou, 9/00-8/03

Center for International Business Education and Research "The Role of Jumps in Explaining Prices of International Interest Rate Derivatives," 5/00,

IBM Corporation, "Monte Carlo Methods in Finance," 8/98-7/00

National Science Foundation, "Group Infrastructure Grant: Center for Applied Probability," 9/96-9/01,with nine other co-investigators.

National Science Foundation, "Large Deviations and Monte Carlo Methods," 10/95-9/97.

IBM Corporation, "Large Deviations and Monte Carlo Methods," 10/95-9/97.

National Science Foundation, "Monotone Control of Discrete-Event Systems," with David D. Yao. 9/92-8/95.

Electric Power Research Institute, with David D. Yao. 9/92-8/95.

Courses Taught

Topics in FinTech (PhD)

Applied Regression Analysis (MBA)

Statistics for Investments (MBA)

The Future of Financial Services (MBA)

Managerial Statistics (MBA)

Security Pricing: Models and Computation (MBA)

Monte Carlo Methods in Financial Engineering (Masters/PhD)

Systems Analysis and Simulation (MBA)

Topics in Discrete-Event Simulation (PhD)

Brownian Networks (PhD)

Doctoral Students Supervised Student name, dissertation title, position taken at graduation

Tai-Wen Liu, *Analysis and Simulation of a Multistage Production-Inventory System*, 1996; Rutgers University

Yashan Wang, *Service Levels in Production-Inventory Networks: Bottlenecks, Trade-offs, and Optimization*, 1998, MIT

Yan Jin, *Modeling and Assessing Stochastic Discount Factors*, 1998; Goldman Sachs

Harish Kumar, *Three Essays in Computational Finance*, 1999; Aeltus Investments

Jeremy Staum, *Early Stopping in Financial Simulations*, 2001; Cornell; tenured at Northwestern

Nicolas Merener, *Jump-Diffusion Models of Interest Rates*, 2002; Lehman Brothers; Universidad Torcuato DiTella

Bin Yu, *Weighted Monte Carlo and Pricing American Options*, 2003; Lehman Brothers

Jingyi Li, *Importance Sampling for Portfolio Credit Risk*, 2005; Credit Suisse

Zhiyong Chen, *Monte Carlo Methods for Portfolio Credit Derivatives*, 2006; Bear Stearns

Sira Suchintabandid, *Pricing CDOs and Other Credit Derivatives in Multifactor Models*, 2007; Chulalongkorn University

Zonjian Liu, *Sensitivity Estimates for Lévy-Driven Models in Finance*, 2008; Goldman Sachs.

Ken Kim, *Affine Processes in Finance: Numerical Approximation, Simulation and Model Properties*, 2008 Lehman Brothers; Korea Advanced Institute of Science and Technology

Qi Wu, 2011, *Analytical Solutions of the SABR Stochastic Volatility Model*, UBS; Chinese University of Hong Kong

Behzad Nouri, *Contingent Capital: Valuation and Risk Implications Under Alternative Conversion Mechanisms*, 2012; JPMorgan Chase

Xingbo Xu, *Financial Portfolio Risk Management: Model Risk, Robustness and Rebalancing Error*, 2013; Goldman Sachs.

Linan Yang, *Two Essays in Financial Engineering*, 2015; Goldman Sachs.

Chen Xie, *Asset Pricing Implications of the Volatility Term Structure*, 2015; starting own business.

Richard Neuberg, *Statistical Modeling of Credit Risk* 2016; Two Sigma.

Pu He (co-advisor), *Essays on Demand Estimation, Financial Engineering and Financial Economics* 2019; Two Sigma.

Yiwen Shen, *Empirical Modeling and Applications in Financial Economics and Healthcare Management*, 2021; HKUST

Mike Li, *Data Science in Finance: Robustness, Fairness, and Strategic Modeling*, 2024; Optiver.

Major School and University Committees

Advisory Board, Center for Responsible AI in Finance, 2024–

University Financial Conflicts of Interest Committee, 2020–

Provost's Tenure Review Advisory Committee, 2016–2019; Chair, 2018–2019

Chair, Financial and Business Analytics Center, Columbia Data Science Institute, 2016–

Chair, Search Committee for Associate Dean for Executive Education, 2016–2017, 2019

Business School Disciplinary Committee, 2016-2019

Columbia College Strategic Planning Committee, 2015–2016

Chair, Centers Review Committee, 2015-2016

Dean's Strategy Creation Committee, 2013–2104

Provost's Review Committee, Columbia University Press, 2013–2014

Provost's Faculty Advisory Committee, 2011

Chair, Search Committee for Associate Dean for Executive Education, 2010

Chair, Committee on the Crisis and the Curriculum, 2009

Foundations Curriculum Committee, 2006–2007

Columbia University Press Faculty Board, 2006–2011; Advisory Committee, 2014–

Diversity Council of the Professional Schools, 2006–2008

Chair, Business School Dean Search Committee, 2003–2004

University Search Committee for Vice President for Information Services and University Librarian, 2000-2001

Curriculum Review Committee, 1999-2000

Executive Committee of the Business School, 1997–2008

Promotions and Tenure Committee, 1995–2001, 2004–2008

MBA Committee, 2004–2006

Doctoral Committee, 1993–1996

Admissions Committee, 1995–2004

University Teaching Awards Committee, 1996–1997

Professional Activities

Chair, Selection Committee, INFORMS Morse Lectureship, 2023

Council Member, Bachelier Finance Society, 2016–2019

Area Editor, *Operations Research*, (Financial Engineering), 2015–2024

Member, INFORMS Investment Management Committee, 2011–2014

Departmental Editor, *Management Science* (Stochastic Models and Simulation), 1998–2003

Associate Editor, *Journal of Computational Finance*, 1997–2012

Associate Editor, *Mathematical Finance*, 2001–

Associate Editor, *Annals of Applied Probability*, 1999–2005

Associate Editor, *Finance and Stochastics*, 2000–2015.

Associate Editor, *SIAM Journal on Financial Mathematics*, 2009–2014.

Associate Editor, *Stochastic Systems*, 2010–

Associate Editor, *Journal of Derivatives*, 2011–2018

Area Editor, *ACM Transactions on Modeling and Computer Simulation*, 1996-1998

Associate Editor, *Management Science*, 1995-1998

Associate Editor, *Operations Research*, 1997-1998

INFORMS Von Neumann Prize Committee, 2012–2014, (chair in 2014)

INFORMS Applied Probability Society Publication Award Committee, 2008–2010, (chair in 2009)

Program Committee Co-Chair, INFORMS Applied Probability Society Conference, July 2005

Member INFORMS Outstanding Simulation Award Committe, 1994-1996 (Chair in 1995), 2006–2007 (Chair in 2007)

Member INFORMS Lanchester Prize Committee, 1997, 1998, 2004 and 2005 (Chair)

Judge, Nicholson Prize Competitions, 1991, 1994, 2015, 2016

Council Member, TIMS College on Applied Probability, 1992-1994.

Outside Activities Disclosed in accordance with Columbia Business School policies

Expert witness, Internal Revenue Service, 2021–2022

Contractor, United States Office of Financial Research, 2011–2012, 2013–

Member, Federal Reserve Board Model Validation Council, 2018–2020

Member, Standard and Poor's Academic Advisory Council, 2010–2015

Member, CDS Risk Committee, CME Group, 2013–2018

Member, Numerix Quantitative Advisory Board, 2011–

Independent director, Moody's Investor Services, 2015–2020; board chair, 2019–2020

Expert witness, U.S. Securities and Exchange Commission, fraud litigation, 2013-2014.

Consultant, U.S. Treasury Office of Debt Management as subcontractor to Sapient Consulting, 2009-2012

Consultant, Federal Reserve Bank of New York, Financial Intermediation Group, 2008–2009; 2017

Visiting scholar, De Nederlandsche Bank, June 2017

Paid lecture, International Monetary Fund, March 2018

Independent director, Merrill Lynch IQ Closed-End Funds, 2004-2010. Board chair, 2009-2010; audit committee chair, 2004-2008.

Independent trustee, BofA Funds Series Trust, 2011–2016; contracts committee chair, 2011–2016

Speaker before various industry groups and executive education audiences on derivatives, risk management, and quantitative finance

Chair, Education Committee of PRMIA, the Professional Risk Managers International Association, 2010–2012. Previously, chair, North American Academic Advisory Council of PRMIA, 2009–2010 and member, Education and Standards Committee of PRMIA, 2005–2010.

Director, 55 Residents Corporation, 2009–2017; vice-president, 2010–2017

Litigation support, patent infringement case, 2012–2017

Litigation support, internal investigation, 2018–2019

Personal U.S. citizen. Married to Elaine, father of Aaron and Ethan.

Papers (by topic)

Gradient Estimation

Glasserman, P., Sensitivity of Sample Values Not Generated by Inversion, *Journal of Opt. Theory and Appl.* **52**, 487-493, 1987.

Glasserman, P., Infinitesimal Perturbation Analysis of a Birth and Death Process, *Operations Research Letters* **7**, 43-49, 1988.

Glasserman, P., and Ho, Y.C., Aggregation Approximations for Sensitivity Analysis of Multiclass Queueing Networks, *Performance Evaluation* **10**, 295-308, 1989.

Glasserman, P., The Limiting Value of Derivative Estimators Based on Perturbation Analysis, *Stochastic Models* **6**, 229-258, 1990.

Glasserman, P., Discrete Time 'Inversion' and Derivative Estimation for Markov Chains, *Operations Research Letters* **9**, 305-313, 1990.

Glasserman, P., and Gong, W.B., Smoothed Perturbation Analysis for a Class of Discrete Event Systems, *IEEE Transactions on Automatic Control* **AC-35**, 1218-1230, 1990.

Glasserman, P., Structural Conditions for Perturbation Analysis of Queueing Systems, *Journal of the ACM* **38**, 1005-1025, 1991.

Glasserman, P., Structural Conditions for Perturbation Analysis Derivative Estimation: Finite Time Performance Indices, *Operations Research* **39**, 724-738, 1991.

Glasserman, P., Hu, J.Q., and Strickland, S.G., Strongly Consistent Steady-State Derivative Estimates, *Probability in the Engineering and Informational Sciences* **5**, 391-413, 1991.

Fox, B.L., and Glasserman, P., Estimating Derivatives via Poisson's Equation, *Probability in the Engineering and Informational Sciences* **5**, 415-428, 1991.

Glasserman, P., Derivative Estimates from Simulation of Continuous-Time Markov Chains, *Operations Research* **40**, 292-308, 1992.

Glasserman, P., Smoothing Complements and Randomized Score Functions, *Annals of Operations Research* **39**, 1-25, 1993.

Glasserman, P., Stationary Waiting Time Derivatives, *Queueing Systems* **12**, 369-390, 1993.

Glasserman, P., Regenerative Derivatives of Regenerative Sequences, *Advances in Applied Probability* **25**, 115-139, 1993.

Monte Carlo Methods and Applied Probability

Glasserman, P., and Gong, W.B., Time-Changing and Truncating K-Capacity Queues from One K to Another, *Journal of Applied Probability* **28**, 647-655, 1991.

Glasserman, P., and Yao, D.D., Some Guidelines and Guarantees for Common Random Numbers, *Management Science* **38**, 884-908, 1992.

Glasserman, P., Processes with Associated Increments, *Journal of Applied Probability* **29**, 313-333, 1992.

Glasserman, P., Stochastic Monotonicity and Conditional Monte Carlo for Likelihood Ratios, *Advances in Applied Probability* **25**, 103-115, 1993.

Glasserman, P., Filtered Monte Carlo, *Mathematics of Operations Research* **18**, 610-634, 1993.

Glasserman, P., and Vakili, P., Comparing Markov Chains Simulated in Parallel, *Probability in the Engineering and Informational Sciences* **8**, 309-326, 1994.

Glasserman, P., and Kou, S.-G., Analysis of an Importance Sampling Estimator for Tandem Queues, *ACM Transactions on Modeling and Computer Simulation*, **4**, 22-42, 1995.

Glasserman, P., and Yao, D.D., Stochastic Vector Difference Equations with Stationary Coefficients, *Journal of Applied Probability,* **32**, 851-866, 1995.

Glasserman, P., and Kou, S.-G., Limits of First Passage Times to Rare Sets in Regenerative Processes, *Annals of Applied Probability,* **5**, 424-445, 1995.

Glasserman, P., and Wang, Y. Counterexamples in Importance Sampling for Large Deviations Probabilities, *Annals of Applied Probability*, **7**, 731-746, 1997.

Glasserman, P., Heidelberger, P., Shahabuddin, P., and Zajic, T., A Perspective on Multilevel Splitting, in *Monte Carlo and Quasi-Monte Carlo Methods 1996* (H. Niederreiter et al., eds.), Springer, New York, 1998.

Glasserman, P., Heidelberger, P., Shahabuddin, P., and Zajic, T., Multilevel Splitting for Estimating Rare Event Probabilities, *Operations Research*, **47**, 585–600, 1999.

Glasserman, P., Heidelberger, P., Shahabuddin, P., and Zajic, T., A Large Deviations Perspective on the Efficiency of Multilevel Splitting, *IEEE Transactions on Automatic Control* **43**, 1666-1679, 1998.

Glasserman, P., and Staum, J., Resource Allocation Among Simulation Time Steps, *Operations Research* **51**, 908–921, 2003.

Glasserman, P., and Yu, B., Large Sample Properties of Weighted Monte Carlo Estimators, *Operations Research* **53**, 298-312, 2005.

Glasserman, P., and Yao, D., Optimal Couplings are Totally Positive and More, *Journal of Applied Probability* **41A**, 321–322, 2004.

Glasserman, P., and Juneja, S. Uniformly Efficient Importance Sampling for the Tail Distribution of Sums of Random Variables, *Mathematics of Operations Research* **33**, 36–51, 2008.

Discrete-Event Systems

Glasserman, P., and Yao, D.D., Algebraic Properties of Some Stochastic Discrete Event Systems, with Applications, *Discrete Event Dynamic Systems: Theory and Applications* **1**, 7-36, 1991.

Glasserman, P., and Yao, D.D., Monotonicity in Generalized Semi-Markov Processes, *Mathematics of Operations Research* **17**, 1-21, 1992.

Glasserman, P., and Yao, D.D., Generalized Semi-Markov Processes: Antimatroid Structure and Second-Order Properties, *Mathematics of Operations Research* **17**, 444-469, 1992.

Glasserman, P., and Yao, D.D., Monotone Optimal Control of Permutable GSMPs, *Mathematics of Operations Research* **19**, 449-476, 1994.

Glasserman, P., and Yao, D.D., Subadditivity and Stability of a Class of Discrete-Event Systems, *IEEE Transactions on Automatic Control,* **40**, 1514-1527, 1995.

Production-Inventory Systems and Operations Management

Glasserman, P., and Tayur, S., The Stability of a Capacitated, Multi-Echelon Production-Inventory System under a Base-Stock Policy, *Operations Research* **42**, 913-925, 1994.

Glasserman, P., and Tayur, S., Sensitivity Analysis for Base-Stock Levels in Multi-Echelon Production-Inventory Systems, *Management Science,* **41**, 263-281, 1995.

Glasserman, P., Hedging-Point Production Control with Multiple Failure Modes, *IEEE Transactions on Automatic Control,* **AC-40**, 707-711, 1995.

Glasserman, P., and Yao, D.D., Structured Buffer-Allocation Problems in Production Lines, *Discrete Event Dynamic Systems,* **6**, 9-41, 1996.

Glasserman, P., Allocating Production Capacity Among Multiple Products, *Operations Research*, **44**, 724-734, 1996.

Glasserman, P., and Tayur, S., A Simple Approximation for a Multistage Capacitated Production-Inventory System, *Naval Research Logistics* **43**, 41-58, 1996.

Glasserman, P., and Liu, T.W., Rare-Event Simulation for Multistage Production-Inventory Systems, *Management Science* **42**, 1292-1306, 1996.

Glasserman, P., and Liu, T.W., Corrected Diffusion Approximations for a Multistage Production-Inventory System, *Mathematics of Operations Research* **22**, 186-201, 1997.

Glasserman, P., Bounds and Asymptotics for Planning Critical Safety Stocks, *Operations Research* **45**, 244-256, 1997.

Glasserman, P., and Wang, Y. Inventory-Leadtime Trade-offs in Assemble-to-Order Systems, *Operations Research* **46**, 858–871, 1998.

Glasserman, P., and Wang, Y. Fill-Rate Bottlenecks in Production-Inventory Networks, *Manufacturing and Service Operations Management*, **1**, 62-76, 1999.

Financial Engineering and Risk Management

Broadie, M., and Glasserman, P., Estimating Security Price Derivatives using Simulation, *Management Science* **42**, 269-285, 1996.

Boyle, P., Broadie, M., and Glasserman, P., Simulation Methods for Security Pricing, *J. Economic Dynamics and Control* **21**, 1267-1321, 1997.

Broadie, M., and Glasserman, P., Pricing American-Style Securities by Simulation, *J. Economic Dynamics and Control* **21**, 1323-1352, 1997.

Broadie, M., Glasserman, P., and Kou, S., A Continuity Correction for Discrete Barrier Options, *Mathematical Finance*, **7**, 325-349, 1997.

Acworth, P., Broadie, M., and Glasserman, P., A Comparison of Some Monte Carlo and Quasi Monte Carlo Methods for Option Pricing, in *Monte Carlo and Quasi-Monte Carlo Methods 1996* (H. Niederreiter et al., eds.), Springer, New York, 1998.

Broadie, M., Glasserman, P., and Jain, G., Enhanced Monte Carlo Estimates of American Option Prices, *J. Derivatives*, (Fall) 25-44, 1997.

Broadie, M., and Glasserman, P., Monte Carlo Methods for Pricing High-Dimensional American Options: An Overview, *NetExposure*, December, 15-37, 1997.

Broadie, M., Glasserman, P., and Kou, S., Connecting Discrete and Continuous Path-Dependent Options, *Finance and Stochastics* **3**, 55-82, 1999.

Glasserman, P., Heidelberger, P., and Shahabuddin, P. Asymptotically Optimal Importance Sampling and Stratification for Pricing Path-Dependent Options, *Mathematical Finance*, **9**, 117-152, 1999.

Glasserman, P., and Zhao, X. Fast Greeks by Simulation in Forward LIBOR Models, *Journal of Computational Finance*, **3**, 5–39, 1999.

Glasserman, P., and Zhao, X. Arbitrage-Free Discretization of Lognormal Interest Rate Models, *Finance and Stochastics*, **4**, 35-69, 2000.

Glasserman, P., Shortfall Risk in Long-Term Hedging with Short-Term Futures Contracts, in *Option Pricing, Interest Rates and Risk Management*, E. Jouini, J. Cvitanic, and M. Musiela, eds., 477-508, Cambridge University Press, 2001.

Broadie, M., and Glasserman, P., A Stochastic Mesh Method for Pricing American Options, *Journal of Computational Finance* **7**, 35-72, 2004.

Broadie, M., Glasserman, P., and Ha, Z., Pricing American Options by Simulation Using a Stochastic Mesh with Optimized Weights, pp.32-50, in *Probabilistic Constrained Optimization: Methodology and Applications*, S. Uryasev, ed., Kluwer Publishers, Norwell, Mass., 2000.

Jin, Y., and Glasserman, P., Equilibrium Positive Interest Rates, *Review of Financial Studies*, **14**, 187-214, 2001.

Glasserman, P., and Wang, H., Discretization of Deflated Bond Prices, *Advances in Applied Probability*, **32**, 540-563 2000.

Glasserman, P., Heidelberger, P., and Shahabuddin, P., Importance Sampling in the Heath-Jarrow-Morton Framework, *Journal of Derivatives*, **7**, 32–50, 1999.

Glasserman, P., Heidelberger, P., and Shahabuddin, P., Variance Reduction Methods for Simulating Value-at-Risk, *Management Science*, **46**, 1349-1364, 2000.

Glasserman, P., and Staum, J., Conditioning on One-Step Survival in Barrier Option Simulations, *Operations Research* **49**, 923-937, 2001.

Glasserman, P., and Kou, S.G., The Term Structure of Simple Forward Rates with Jump Risk, *Mathematical Finance* **13**, 383–410, 2003.

Glasserman, P., Heidelberger, P., and Shahabuddin, P., Portfolio Value-at-Risk with Heavy-Tailed Risk Factors, *Mathematical Finance* **12**, 239-270, 2002.

Glasserman, P., and Merener, N., Numerical Solution of Jump-Diffusion LIBOR Market Models, *Finance and Stochastics* **7**, 1–27, 2003.

Glasserman, P., and Merener, N. Cap and Swaption Approximations in LIBOR Market Models with Jumps, *Journal of Computational Finance* **7** (Fall) 1–36, 2003.

Glasserman, P., and Merener, N. Convergence of a Discretization Scheme for Jump-Diffusion Processes with State-Dependent Intensities, *Proceedings of the Royal Society of London, A* **460**, 1–17, 2003.

Glasserman, P., and Yu, B., Number of Paths Versus Number of Basis Functions in American Option Pricing, *Annals of Applied Probability* **14**, 2090–2119, 2004.

Glasserman, P., and Yu, B., Pricing American Options by Simulation: Regression Now or Regression Later?, pp.213–226 in *Monte Carlo and Quasi-Monte Carlo Methods in Scientific Computing 2002*, (H. Niederreiter, ed.), Springer, Berlin, 2004.

Glasserman, P. Tail Approximations for Portfolio Credit Risk, *Journal of Derivatives*, **11** (Winter), 24–42, 2004.

Glasserman, P., and Li, J. Importance Sampling for Portfolio Credit Risk, *Management Science* **51**, 1643–1656, 2005.

Giles, M., and Glasserman, P., Smoking Adjoints: Fast Monte Carlo Greeks, *Risk* 19:88–92, 2006.

Glasserman, P. Measuring Marginal Risk Contributions in Credit Portfolios *Journal of Computational Finance* **9**, 1–41, 2006.

Glasserman, P., and Ruiz-Mata, J., Computing the Credit Loss Distribution in the Gaussian Copula Model: A Comparison of Methods, *Journal of Credit Risk*, **2**, 33–66, 2007.

Glasserman, P., Shahabuddin, P., and Kang, W. Fast Simulation of Multifactor Portfolio Credit Risk *Operations Research* **56**, 1200–1217, 2008.

Glasserman, P., Shahabuddin, P., and Kang, W. Large Deviations of Multifactor Portfolio Credit Risk, *Mathematical Finance* **37**, 345–379, 2007.

Chen, Z., and Glasserman, P. Fast Pricing of Basket Default Swaps, *Operations Research* **56**, 286–303, 2008.

Chen, Z., and Glasserman, P. Sensitivity Estimates for Portfolio Credit Derivatives Using Monte Carlo, *Finance and Stochastics* **12**, 507–540, 2008.

Chen, N., and Glasserman, P. Additive and Multiplicative Duals for American Option Pricing, *Finance and Stochastics* **11**, 153–179, 2007.

Glasserman, P., and Suchintabandid, S. Correlation Expansions for CDO Pricing, *Journal of Banking and Finance* **31**, 1375–1398, 2007.

Chen, N., and Glasserman, P. Malliavin Greeks Without Malliavin Calculus, *Stochastic Processes and Their Applications* **117**, 1689–1723, 2007.

Glasserman, P., and Kim, K.-K. Saddlepoint Approximations for Affine Jump-Diffusion Models, *Journal of Economic Dynamics and Control* **33**, 1, 37–52, 2009.

Glasserman, P., and Kim, K.-K. Moment Explosions and Stationary Distributions in Affine Diffusion Models, *Mathematical Finance* **20**, 1–34, 2010.

Glasserman, P., and Kim, K.-K. Gamma Expansion of the Heston Stochastic Volatility Model, *Finance and Stochastics* **15**, 267–296, 2011.

Glasserman, P., and Liu, Z. Sensitivity Estimates From Characteristic Functions, *Operations Research* **58**, 1611–1623, 2010.

Glasserman, P., and Liu, Z. Sensitivity Estimates for Lévy-Driven Models in Finance, *Journal of Computational Finance* **14**, 3–56, 2011.

Glasserman, P., and Kim, K.-K. Sensitivity Estimates for Compound Sums, pp.97–112 in *Monte Carlo and Quasi-Monte Carlo Methods 2008*, P. L'Ecuyer and A.B. Owen, eds., Springer-Verlag, Berlin, 2009.

Glasserman, P., and Wang, Z., Valuing the Treasury's Capital Assistance Program, *Management Science* **57**, 1195–1211, 2011.

Glasserman, P., and Xu, X., Portfolio Rebalancing Error with Jumps and Mean Reversion in Asset Prices, *Stochastic Systems* **1**, 109–145, 2011.

Glasserman, P., and Wu, Q. Forward and Future Implied Volatility, *International Journal of Theoretical and Applied Finance* **14**, 407–432, 2011.

Glasserman, P. Risk Horizon and Rebalancing Horizon in Portfolio Risk Measurement, *Mathematical Finance* **22**, 215–249, 2012.

Glasserman, P., and Nouri, B., Contingent Capital with a Capital-Ratio Trigger, *Management Science* **58**, 1816–1833, 2012.

Glasserman, P., and Suchintabandid, S., Quadratic Transform Approximation for CDO Pricing in Multifactor Models, *SIAM Journal on Financial Mathematics* **3**, 1, 137–162, 2012.

Glasserman, P., and Xu, X., Robust Portfolio Control with Stochastic Factor Dynamics, *Operations Research* **61**, 874–893, 2013.

Glasserman, P., and Xu, X., Robust Risk Measurement and Model Risk, *Quantitative Finance* **14**, 1, 29-58.

Bookstaber, R., Cetina, J., Feldberg, G., Flood, M., and Glasserman, P. Stress tests to promote financial stability: Assessing progress and looking to the future. *Journal of Risk Management in Financial Institutions* **7**, 1, 16–25, 2014.

Glasserman, P., Kang, C., and Kang, W., Stress Scenario Selection by Empirical Likelihood, *Quantitative Finance* **15**, 25–41, 2015.

Glasserman, P., and Young, H.P. How Likely is Contagion in Financial Networks?, *Journal of Banking and Finance* **50**, 383–399, 2015.

Glasserman, P., and Kang, W., Design of Risk Weights, *Operations Research* **62**, 1204–1220, 2014.

Bookstaber, R., Glasserman, P., Iyengar, G., Luo, Y., Venkatasubramaniam, V., and Zhang, Z. Process Systems Engineering as a Modeling for Analyzing Systemic Risk in Financial Networks, *Journal of Investing* **24**, 147–163, 2015.

Glasserman, P., Moallemi, C., and Yuan, K. Hidden Illiquidity with Multiple Central Counterparties, *Operations Research* 64(5), 1143–1158, 2016.

Glasserman, P., and Tangirala, G., Are the Fed's Stress Test Results Predictable?, *Journal of Alternative Investments* **18**(4), 82–97, 2016.

Glasserman, P., and Young, H.P., Contagion in Financial Networks, *Journal of Economic Literature* 54(3), 779–831, 2016.

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