



SVETLOZAR (ZARI) TODOROV RACHEV

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🌐 [Google Scholar Link](#)

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EDUCATION

M.SC. IN MATHEMATICS

Sofia University, Bulgaria
July 1974

Thesis: "Reliability of Aging Systems"

Ph.D. IN MATHEMATICS

Lomonosov University
Moscow, USSR. Faculty of
Mechanics and Mathematics,
October 12, 1979.

Dissertation: *"The structure of the metrics in the space of random variables and their distributions."*

DOCTOR OF SCIENCE (Habilitation) in Physics and Mathematics, Steklov

Mathematical Institute,
Moscow, USSR. April 10, 1986.

Dissertation: *"Probability metrics and their applications to the stability problems for stochastic models"*

ABOUT

DATE OF BIRTH: September 6, 1951

CITIZENSHIP: U. S. A.

CURRENT POSITION: Professor, Department of Mathematics & Statistics,
Texas Tech University

PREVIOUS APPOINTMENTS

2017 – CURRENT

Professor, Department. of Mathematics & Statistics, Texas Tech University

2012 – 2016

Professor, College of Business Program Director, Finance and Accounting
Stony Brook University
Research Professor, Department of Applied Math and Statistics

2011 – 2012

Frey Family Foundation Chair of Quantitative Finance
Department of Applied Mathematics and Statistics
Stony Brook University

1998 – 2010

Endowed Chair of Statistics
Econometrics and Mathematical Finance
School of Economics and Business Engineering
Karlsruhe Institute of Technology

1989 – 1998

Professor, Department of Statistics and Applied Probability
University of California at Santa Barbara (1994-1995, Department Chairman)

1988 – 1988

Visiting Associate Professor
Stony Brook University

1987 – 1987

John H. Van Vleck, Visiting Professor, Wesleyan University, Connecticut
and Visiting Associate Professor, Centre for Stochastic Processes
University of North Carolina at Chapel Hill

1984 – 1986

Senior Research Fellow, Bulgarian Academy of Sciences
and Visiting Senior Research Fellow
Steklov Mathematical Institute, Academy of Sciences of the USSR, Moscow

1980 – 1984

Research Fellow, Mathematical Institute, Bulgarian Academy of Sciences

1977 – 1979

Post-graduate Student, Lomonosov University, Faculty of Mechanics and
Mathematics, Department of Probability, Moscow, USSR

1974 – 1977

Mathematician, Mathematical Institute, Bulgarian Academy of
Sciences



SVETLOZAR (ZARI) TODOROV RACHEV

AWARDS

Fellow of the Institute of Mathematical Statistics
Elected Member of the International Statistical Institute
Foreign Member of the Russian Academy of Natural Sciences
Honorary Doctor of Science at St. Petersburg Technical University
Senior Humboldt Professor Award
Barney E. Rushing, Jr., Faculty Distinguished Research Award - STEM at Texas Tech University
Excellence in Innovation Award at Texas Tech University

PUBLISHED/BROADCAST INTERVIEWS

ZARI RACHEV. FACTBOX-TOOLS TO PREDICT MARKET SHOCKS, REUTERS, MAY 24, 2009

<https://www.reuters.com/article/models-math/factbox-tools-to-predict-marketshocks-idUSL169274620090525>

<https://www.reuters.com/article/us-models-finanalytica/assessing-the-risk-of-a-cataclysm-idUSTRE54O00R20090525>

RISIKOMANAGER JOURNAL: Interview with Prof. Dr. Svetlozar Rachev, Chair of Statistics, Econometrics and Mathematical Finance at University of Karlsruhe (TH) and Prof. Stefan Mittnik (Ph.D.) Chair of Financial Econometrics at University of Munich New Approaches for Portfolio Optimization Parting with the Bell Curve

https://statistik.econ.kit.edu/download/doc_secure1/RM-Interview-RachevMittnik-EnglishTranslation.pdf

PATENTS

RACHEV ET AL. SYSTEM AND METHOD FOR THE VALUATION OF DERIVATIVES,

United States Patent, Serial No. 10/888,414, Filed July 9, 2004, Docket No. 031/0424:US.UTL, PATENT NUMBER 7,630,931, DATE OF PATENT: DECEMBER 8, 2009

RACHEV ET AL. SYSTEM AND METHOD FOR PROVIDING OPTIMIZATION OF A FINANCIAL PORTFOLIO USING A PARAMETRIC LEPTOKURTIC DISTRIBUTION, United States Patent, Serial No. 10/888,414, Filed July 9, 2004, Docket No. 031/0424:US.UTL, May, 2010

RACHEV ET AL. RISK MANAGEMENT SYSTEM AND METHOD FOR DETERMINING RISK CHARACTERISTICS EXPLAINING HEAVY TAILS OF RISK FACTORS, U.S. Patent Trademark Office, Patent No. 7,778,897, August 17, 2010

RACHEV ET AL. SYSTEM AND METHOD FOR PROVIDING REALLOCATION AND REVERSE OPTIMIZATION OF A FINANCIAL PORTFOLIO USING A PARAMETRIC LEPTOKURTIC DISTRIBUTION, United States Patent, U.S. Patent Trademark Office, Patent No. 7,890,409, February 15, 2011

RACHEV ET AL. SYSTEM AND METHOD FOR GENERATING RANDOM VECTORS FOR ESTIMATING PORTFOLIO RISK, United States Patent, U.S. Patent Trademark Office, Patent No. 8,170,941, May 1, 2012

MENTORED PH.D. STUDENTS

1. **PRACHI CHATURVEDI** (UCSB, DEPARTMENTS OF STATISTICS AND APPLIED PROBABILITY)
2. **BESSY ATHANASOPOULOS** (UCSB, DEPARTMENTS OF STATISTICS AND APPLIED PROBABILITY)
3. **BERTRAND GAMROWSKI** (ECOLE POLYTECHNIQUE, PARIS)
4. **THOMAS KOZUBOWSKI** (UCSB, DEPARTMENTS OF STATISTICS AND APPLIED PROBABILITY)
5. **ANNA PANORSKA** (UCSB, DEPARTMENTS OF STATISTICS AND APPLIED PROBABILITY)
6. **BENNY CHENG** (UCSB, DEPARTMENTS OF STATISTICS AND APPLIED PROBABILITY)
7. **CHUFANG WU** (UCSB, DEPARTMENTS OF STATISTICS AND APPLIED PROBABILITY)
8. **VERA HAYNATZKA** (UCSB, DEPARTMENTS OF STATISTICS AND APPLIED PROBABILITY)
9. **SEONKOO HAN** (UCSB, DEPARTMENTS OF STATISTICS AND APPLIED PROBABILITY)
10. **NORBERT SCHUMACHER** (UCSB, DEPARTMENTS OF STATISTICS AND APPLIED PROBABILITY)
11. **IRINA KHINDANOVA** (UCSB, DEPARTMENTS OF ECONOMICS)



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12. **YESIM TOKAT** (UCSB, DEPARTMENTS OF ECONOMICS)
13. **BILIANA BAGASHEVA** (UCSB, DEPARTMENTS OF STATISTICS AND APPLIED PROBABILITY)
14. **ANNA CHERNOBAI** (UCSB, DEPARTMENTS OF STATISTICS AND APPLIED PROBABILITY)
15. **ALEX VOLLERT** (UNIVERSITY OF KARLSRUHE, SCHOOL OF ECONOMICS AND BUSINESS ENGINEERING)
16. **CHRISTIAN PETER** (KARLSRUHE, SCHOOL OF ECONOMICS AND BUSINESS ENGINEERING)
17. **LORENA VINUEZA** (KARLSRUHE, SCHOOL OF ECONOMICS AND BUSINESS ENGINEERING) †
18. **STEFAN TRUECK** (KARLSRUHE, SCHOOL OF ECONOMICS AND BUSINESS ENGINEERING)
19. **CHRISTIAN MENN** (KARLSRUHE, SCHOOL OF ECONOMICS AND BUSINESS ENGINEERING)
20. **STEFAN WOERNER** (KARLSRUHE, SCHOOL OF ECONOMICS AND BUSINESS ENGINEERING)
21. **DYLAN D'SOUZA** (UCSB, DEPARTMENTS OF ECONOMICS)
22. **STOYAN STOYANOV** (KARLSRUHE, SCHOOL OF ECONOMICS AND BUSINESS ENGINEERING)
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25. **MARKUS.HOECHSTOETTER** (KARLSRUHE, SCHOOL OF ECONOMICS AND BUSINESS ENGINEERING)
26. **MICHAEL GREBECK** (UCSB, DEPARTMENTS OF STATISTICS AND APPLIED PROBABILITY)
27. **JORGE HERNANDEZ** (UCSB, DEPARTMENTS OF STATISTICS AND APPLIED PROBABILITY)
28. **CARLO MARINELLI** (COLUMBIA UNIVERSITY, DEPARTMENT OF STATISTICS)
29. **TEO JAŠIĆ** (KARLSRUHE, SCHOOL OF ECONOMICS AND BUSINESS ENGINEERING)
30. **DEZHONG WANG** (UCSB, DEPARTMENTS OF STATISTICS AND APPLIED PROBABILITY)
31. **SERGIO FOCARDI** (KARLSRUHE, SCHOOL OF ECONOMICS AND BUSINESS ENGINEERING)
32. **ANNA SERBINENKO** (KARLSRUHE, SCHOOL OF ECONOMICS AND BUSINESS ENGINEERING)
33. **CHRISTOPH MOELLER** (KARLSRUHE, SCHOOL OF ECONOMICS AND BUSINESS ENGINEERING)
34. **JAN FRAENKLE** (KARLSRUHE, SCHOOL OF ECONOMICS AND BUSINESS ENGINEERING)
35. **CHRISTIAN DIEKMANN** (KARLSRUHE, SCHOOL OF ECONOMICS AND BUSINESS ENGINEERING)
36. **MICHAEL STEIN** (KARLSRUHE, SCHOOL OF ECONOMICS AND BUSINESS ENGINEERING)
37. **CHRISTIAN SCHERRER-MONTBRUN** (KARLSRUHE, SCHOOL OF ECONOMICS AND BUSINESS ENGINEERING)
38. **THOMAS MEINL** (KARLSRUHE, SCHOOL OF ECONOMICS AND BUSINESS ENGINEERING)
39. **MATTHIAS SCHERER** (KARLSRUHE, SCHOOL OF ECONOMICS AND BUSINESS ENGINEERING)
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41. **OMID REZANIA** (KARLSRUHE, SCHOOL OF ECONOMICS AND BUSINESS ENGINEERING)
42. **SINAN AKTAN** (KARLSRUHE, SCHOOL OF ECONOMICS AND BUSINESS ENGINEERING)
43. **ALEXANDER BECK** (KARLSRUHE, SCHOOL OF ECONOMICS AND BUSINESS ENGINEERING)
44. **DIRK KRAUSE** (KARLSRUHE, SCHOOL OF ECONOMICS AND BUSINESS ENGINEERING)
45. **ABDOLREZA NAZEMI** (KARLSRUHE, SCHOOL OF ECONOMICS AND BUSINESS ENGINEERING)
46. **JOCHEN PAPENBROCK** (KARLSRUHE, SCHOOL OF ECONOMICS AND BUSINESS ENGINEERING)
47. **MICHAEL PIEPER** (KARLSRUHE, SCHOOL OF ECONOMICS AND BUSINESS ENGINEERING)
48. **XIAOCHU ZHANG** (STONY BROOK UNIVERSITY, DEPARTMENT. OF APPLIED MATH & STATISTICS)
49. **XIAOPING ZHOU** (STONY BROOK UNIVERSITY, DEPARTMENT. OF APPLIED MATH & STATISTICS)
50. **TETSUO KUROSAKI** (STONY BROOK UNIVERSITY, DEPARTMENT. OF APPLIED MATH & STATISTICS)
51. **BARRET SHAO** (STONY BROOK UNIVERSITY, DEPARTMENT. OF APPLIED MATH & STATISTICS)
52. **NAOSHI TSUCHIDA** (STONY BROOK UNIVERSITY, DEPARTMENT. OF APPLIED MATH & STATISTICS)
53. **ANGELA TSAO** (STONY BROOK UNIVERSITY, DEPARTMENT. OF APPLIED MATH & STATISTICS)
54. **YIKANG CHAI** (STONY BROOK UNIVERSITY, DEPARTMENT. OF APPLIED MATH & STATISTICS)
55. **TIANYU LU** (STONY BROOK UNIVERSITY, DEPARTMENT. OF APPLIED MATH & STATISTICS)
56. **YUZHONG ZHANG** (STONY BROOK UNIVERSITY, DEPARTMENT. OF APPLIED MATH & STATISTICS)
57. **HUA MO** (STONY BROOK UNIVERSITY, DEPARTMENT. OF APPLIED MATH & STATISTICS)
58. **XIANG SHI** (STONY BROOK UNIVERSITY, DEPARTMENT. OF APPLIED MATH & STATISTICS)
59. **PO-KENG CHENG** (STONY BROOK UNIVERSITY, DEPARTMENT. OF APPLIED MATH & STATISTICS)
60. **FANGFEI DONG** (STONY BROOK UNIVERSITY, DEPARTMENT. OF APPLIED MATH & STATISTICS)
61. **ABOOTALEB SHIRVANI** (TEXAS TECH UNIVERSITY, DEPARTMENT. OF MATHEMATICS & STATISTICS)
62. **YUAN HU** (TEXAS TECH UNIVERSITY, DEPARTMENT. OF MATHEMATICS & STATISTICS)
63. **ALI MUQADAS JAFFRI** (TEXAS TECH UNIVERSITY, DEPARTMENT OF ECONOMICS)



SVETLOZAR (ZARI) TODOROV RACHEV

LIST OF SVETLOZAR RACHEV'S POSTDOCTORAL STUDENTS

1. **Dr. Young Shin Kim** (Karlsruhe Institute of Technology, School of Business and Economics)
2. **Dr. Jiho Park** (Texas Tech University, Department. of Mathematics & Statistics)
3. **Dr. Davide Lauria** (Texas Tech University, Department. of Mathematics & Statistics)

CURRENT TEACHING AT TTU

https://www.depts.ttu.edu/math/teaching/current_schedules.php

FALL 2025

- MATH 4000-D01** Actuarial Mathematics for Life Contingent Risks
MATH 5099-005 Special Topics in Mathematical Finance-Risk Management & Portfolio Optimization
MATH 5099-006 ETF Portfolio Analytics Taiwan
MATH 6353-D01 Financial Derivatives and Stochastic Calculus
STAT 7000-002 Research: Long-Range Dependence in Financial Asset Dynamics An Empirical Investigation

PUBLICATIONS: BOOKS & MONOGRAPHS

W. Brent Lindquist, Svetlozar T. Rachev, Yuan Hu, and Abootaleb Shirvani, Advanced Tools for Risk Management, Springer series, "Dynamic Modeling and Econometrics in Economics and Finance," Springer, 2022.

<https://www.springer.com/series/5859/books?page=1>

Frank J. Fabozzi, Sergio M. Focardi, Svetlozar T. Rachev, and Bala Arshanapalli, Basics of Financial Econometrics: Tools, Concepts, and Asset Management Applications, Wiley, 2014.

<https://onlinelibrary.wiley.com/doi/book/10.1002/9781118856406.2>

Stoyan Stoyanov, Svetlozar Rachev, and Frank Fabozzi, Optimal Portfolio Management in Highly Volatile Markets, Scholars Press, 2013

<https://www.amazon.com/Optimal-Portfolio-Management-Volatile-Markets/dp/3639514130>

S. T. Rachev, L. B. Klebanov, S. V. Stoyanov, and F. Fabozzi, The Methods of Distances in the Theory of Probability and Statistics, John Wiley, 2013

<https://www.springer.com/gp/book/9781461448686>

S. T. Rachev, Y. Kim, M. Bianchi, and F. Fabozzi, Financial Models with Levy Processes and Volatility Clustering, Springer, 2011

<http://www.wiley.com/WileyCDA/WileyTitle/productCd-0470482354.descCd-tableOfContents.html>

S. T. Rachev, S. V. Stoyanov, and F. Fabozzi, A Probability Metrics Approach to Financial Risk Measures, Wiley-Blackwell, 2011

<http://www.wiley.com/WileyCDA/WileyTitle/productCd-1405183691.html>

Rachev, S. T., Hoechstetter, M., Fabozzi, F., Focardi, S., Probability and Statistics for Finance, John Wiley, Finance, 2010

<http://www.wiley.com/WileyCDA/WileyTitle/productCd-0470400935.html>

L. Klebanov, S. T. Rachev, and F. Fabozzi, Robust and Non-Robust Models in Statistics, NOVA-Science Publishers, 2009

https://www.novapublishers.com/catalog/product_info.php?products_id=10251

S. Trueck and S. T. Rachev, Rating Based Modeling of Credit Risk: Theory and Application of Migration Matrices, Academic Press Advances Finance, 2008

http://www.elsevier.com/wps/find/bookdescription.cws_home/716895/description#description

Rachev, S. T., Stoyanov, S., Fabozzi, F., Advanced Stochastic Models, Risk Assessment and Portfolio Optimization: The Ideal Risk, Uncertainty, and Performance Measures, John Wiley, Finance, 2007

<http://www.wiley.com/WileyCDA/WileyTitle/productCd-047005316X.html>



SVETLOZAR (ZARI) TODOROV RACHEV

S. T. Rachev, J. Hsu, B. Bagasheva, and F. Fabozzi, Bayesian Methods in Finance, John Wiley, 2007
<http://www.wiley.com/WileyCDA/WileyTitle/productCd-0471920835.html>

S. T. Rachev, S. Mittnik, Frank J. Fabozzi, S. Focardi, and T. Jasic, Financial Econometrics: From Basics to Advanced Modeling Techniques, John Wiley, 2007
<http://www.wiley.com/WileyCDA/WileyTitle/productCd-0471784508.html>

A. Chernobai, S. T. Rachev, and F. Fabozzi, Operational Risk: A Guide to Basel II Capital Requirements, Models and Analysis, John Wiley, 2007
<http://www.wiley.com/WileyCDA/WileyTitle/productCd-0471780510.html>

L. Klebanov, T. Kozubowski, and S. T. Rachev, Ill-Posed Problems in Probability and Stability of Random Sums, NOVA Science Publishers, 2006
https://www.novapublishers.com/catalog/product_info.php?products_id=4546

S. T. Rachev, C. Menn, and F. Fabozzi, Fat-Tailed and Skewed Asset Return Distributions: Implications for Risk Management, Portfolio selection and Option Pricing, John Wiley, 2005
<http://www.wiley.com/WileyCDA/WileyTitle/productCd-0471718866.html>

S. T. Rachev and S. Mittnik, Stable Paretian Models in Finance, Series in Financial Economics and Quantitative Analysis, John Wiley, 2000
<http://www.wiley.com/WileyCDA/WileyTitle/productCd-0471953148.html>

S. T. Rachev and L. Rueschendorf, Mass Transportation Problems, Vol II: Applications, Springer, 1999
<http://www.springer.com/statistics/book/978-0-387-98352-3>

S. T. Rachev and L. Rueschendorf, Mass Transportation Problems, Vol I: Theory, Springer, 1998
http://www.springer.com/mathematics/probability/book/978-0-387-98350-9/construction_of.html?id=2_V9AAAAIAAJ

S. T. Rachev, Probability Metrics and the Stability of Stochastic Models, Wiley, 1991
<http://www.springer.com/mathematics/probability/book/978-0-387-98350-9>

PUBLICATIONS: HANDBOOKS & SPECIAL VOLUMES

Rachev, S. T., Probability Metrics and the Stability of Stochastic Models, Wiley, Chichester, New York, 1991
http://books.google.com/books/about/Probability_metrics_and_the_stability_of.html?id=SgrvAAAAIAAJ

V. Kashnikov and S. T. Rachev, Mathematical Methods for Construction for Queuing Models, Nauka, (in Russian) 1988; English translation, Wadsworth & Brooks/Cole Advanced Books, 1990.
http://books.google.com/books/about/Mathematical_methods_for_construction_of.html?id=2_V9AAAAIAAJ

A. Kakosyan, L. Klebanov, and S. T. Rachev, Quantitative Criteria for Convergence of Measures, Ajastan Press, 1978 (in Russian)

W. Lindquist and S. Rachev, Mathematical and Empirical Finance, a special issue of the Journal of Risk & Financial Management, 2023

S. T. Rachev, E. Sun, F. Fabozzi, O. Charchano, and Y. Kim, A Quasi-Maximum Likelihood Estimation Strategy for Value-at Risk Forecasting: Application to Equity Index Futures? Markets, Handbook of Financial Econometrics and Statistics, SpringerReference.com April 15, 2013

S. T. Rachev, A. Chernobai, and F. Fabozzi, Composite Goodness-of-Fit Tests for Left Truncated Loss Sample, SpringerReference.com April 15, 2013

S. T. Rachev and F. Fabozzi (Guest Editors), Special Issue on Studies in Mathematical and Empirical Finance, Mathematical Methods of Operations Research, Vol. 69/3, July 2009
<http://www.springerlink.com/content/1432-2994/69/3/>

G. Bol, S. T. Rachev, and R. Würth (Editors), Risk Assessment: Decisions in Banking and Finance, Springer/Physika, 2009
<http://www.springer.com/business+%26+management/finance/book/978-3-7908-2049-2>



SVETLOZAR (ZARI) TODOROV RACHEV

S. T. Rachev (Editor), Handbook of Computational and Numerical Methods in Finance, Birkhäuser, 2004
<http://www.springer.com/birkhauser/mathematics/book/978-0-8176-3219-9>

G. Bol, G. Nakhaeizadeh, S. T. Rachev, T. Rieder, and K. Vollmer (Editors), Credit Risk: Measurement, Evaluations and Management, Springer Verlag, Physika-Verlag Series, 2003
<http://www.springer.com/business+%26+management/finance/book/978-3-7908-0054-8>

S. T. Rachev (Editor), Handbook of Heavy Tailed Distributions in Finance, North Holland Handbooks of Finance, Elsevier, 2003
http://www.elsevier.com/wps/find/bookdescription.cws_home/622468/description#description

S. T. Rachev (Editor), Mathematical Models in Market and Credit Risk Editor, Mathematical Methods of Operations Research, Vol. 55/2, 2002, Springer
<http://www.springerlink.com/content/1432-2994/55/2/>

S. Mittnik and S. T. Rachev (Editors), Stable Non-Gaussian Models in Finance and Econometrics, Mathematical and Computer Modeling, 29(10–12), 1999
<http://www.sciencedirect.com/science/journal/08957177/29>

S. Mittnik and S. T. Rachev (Editors), Distributional Modeling in Finance, Mathematical and Computer Modeling, 29(10–12), 1999
<http://www.sciencedirect.com/science/journal/08957177/29>

C. Heyde, Yu. Prohorov, R. Pyke, and S. T. Rachev (Editors), Athens Conference on Applied Probability and Time Series Analysis, Springer Verlag, 1995
<http://www.springer.com/mathematics/probability/book/978-0-387-94788-4>

G. Anastassiou and S. T. Rachev (Editors), Approximation, Probability and Related Fields, Plenum Press, 1994
<http://books.google.com/books?id=w-vuAAAAMAAJ&q=Approximation,+Probability+and+Related+Fields&dq=Approximation,+Probability+and+Related+Fields>

PUBLICATIONS: PAPERS (2025–2009)

NR refers to non-refereed papers.

2025

(NR) Binary Tree Option Pricing Under Market Microstructure Effects: A Random Forest Approach
A Deep, C Monico, WB Lindquist, ST Rachev, FJ Fabozzi
arXiv preprint arXiv:2507.16701

(NR) Behavioral Probability Weighting and Portfolio Optimization under Semi-Heavy Tails
A Jha, A Shirvani, AM Jaffri, ST Rachev, FJ Fabozzi
arXiv preprint arXiv:2507.04208

(NR) Implied Probabilities and Volatility in Credit Risk: A Merton-Based Approach with Binomial Trees
J Gnawali, A Shirvani, ST Rachev
arXiv preprint arXiv:2506.12694

A Unified Financial Index for Geopolitical and Environmental Risks: Construction, Risk Management, and Derivative Applications
AM Jaffri, A Shirvani, A Jha, ST Rachev, FJ Fabozzi
Risk Management, and Derivative Applications (June 01, 2025)

(NR) Forecasting Flash Crashes with Subordinated Lévy Processes
AM Jaffri, A Shirvani, A Jha, ST Rachev, FJ Fabozzi
Available at SSRN 5277718

(NR) Winners vs. Losers: Momentum-based Strategies with Intertemporal Choice for ESG Portfolios
A Jha, A Shirvani, A Jaffri, ST Rachev, FJ Fabozzi
arXiv preprint arXiv:2505.24250

(NR) Multivariate Affine GARCH with Heavy Tails: A Unified Framework for Portfolio Optimization and Option Valuation
A Jha, A Shirvani, A Jaffri, ST Rachev, FJ Fabozzi
arXiv preprint arXiv:2505.12198



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Bridging Asset Pricing and Market Microstructure: Option Valuation in Roll's Framework
D Lauria, WB Lindquist, ST Rachev, Y Hu
Journal of Risk and Financial Management 18 (5), 230

Sustainability-valued discrete option pricing in complete markets
Y Hu, WB Lindquist, ST Rachev
Journal of Sustainable Finance & Investment 15 (2), 403-437

Hedging via Perpetual Derivatives: Trinomial Option Pricing and Implied Parameter Surface Analysis
J Gnawali, WB Lindquist, ST Rachev
Journal of Risk and Financial Management 18 (4), 192

Beyond the bid-ask: strategic insights into spread prediction and the global mid-price phenomenon
Y He, A Shirvani, B Shao, S Rachev, F Fabozzi
Econometric Reviews, 1-42

Optimizing portfolios with Pakistan-exposed exchange-traded funds: Risk and performance insight
A Jaffri, A Shirvani, A Jha, ST Rachev, FJ Fabozzi
Journal of Risk and Financial Management 18 (3), 158

Environmental, Social and Governance-Valued Portfolio Optimization and Dynamic Asset Pricing
D Lauria, WB Lindquist, S Mitnik, ST Rachev
Journal of Risk and Financial Management 18 (3), 153

Risk-Adjusted Performance of Random Forest Models in High-Frequency Trading
A Deep, A Shirvani, C Monico, S Rachev, F Fabozzi
Journal of Risk and Financial Management 18 (3), 142

Alternatives to classical option pricing
WB Lindquist, ST Rachev
Annals of Operations Research 346 (1), 489-509

(NR) Featured Papers in Mathematics and Finance
WB Lindquist, SZ Rachev
MDPI-Multidisciplinary Digital Publishing Institute

(NR) ESG Financial Market with Informed Traders within the Bachelier-Black-Scholes-Merton Model
NA Nyarko, B Divulgama, P Yegon, B Lindquist, S Rachev, A Shirvani, ...
Preprints

(NR) Advancing Portfolio Optimization: Adaptive Minimum-Variance Portfolios and Minimum Risk Rate Frameworks
A Jha, A Shirvani, A Jaffri, ST Rachev, FJ Fabozzi
arXiv preprint arXiv:2501.15793

(NR) Optimizing Portfolios with Pakistan-Exposed ETFs: Risk and Performance Insight
A Jaffri, A Shirvani, A Jha, ST Rachev, FJ Fabozzi
arXiv preprint arXiv:2501.13901

(NR) Iterated Poisson Processes for Catastrophic Risk Modeling in Ruin Theory
D Hu, ST Rachev, H Sayit, H Yang, Y Yildirim
arXiv preprint arXiv:2501.11322

Editorial for the Special Issue of Journal of Risk and Financial Management: Featured Papers in Mathematics and Finance
SZT Rachev, WB Lindquist
Journal of Risk and Financial Management 18 (1), 43

(NR) Multiple Iterated Poisson Processes and Their Applications in Ruin Theory
D Hu, S Rachev, H Sayit, H Yang, Y Yildirim
Available at SSRN 5253345



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2024

T. V. Mahanama, A. Shirvani, S. Rachev, and F. J. Fabozzi. The financial market of indices of socioeconomic well-being, *Journal of Risk and Financial Management* 17 (1), 35, <https://doi.org/10.3390/jrfm17010035> (2024)

A. Jha, A. Shirvani, S. T. Rachev, F. J. Fabozzi. Beyond the Traditional VIX: A Novel Approach to Identifying Uncertainty Shocks in Financial Markets. *Journal of Risk and Financial Management*, 18(1), 11.

(NR) A. Deep, C. Monico, A. Shirvani, S. Rachev, F. J. Fabozzi. (NR) Assessing the Impact of Technical Indicators on Machine Learning Models for Stock Price Prediction. arXiv preprint arXiv:2412.15448.

S. Rachev, N. Asare Nyarko, B. Omotade, P. Yegon. Bachelier's market model for ESG asset pricing. *Journal of Risk and Financial Management*, 17(12), 553.

D. Lauria, J. Park, Y. Hu, W. B. Lindquist, S. T. Rachev, F. J. Fabozzi. An Empirical Implementation of the Shadow Riskless Rate. *Risks*, 12(12), 187.

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