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EDUCATION

- 2003–2005 **Universität Karlsruhe (TH)**, Chair of Statistics, Econometrics and Mathematical Finance
Ph.D. in Finance: Thesis “Optimal portfolio management in highly volatile markets” under the supervision of Prof Svetlozar Rachev, graduated with honors.
- 2000–2002 **Sofia University**
Graduated M. Sci. in Applied Probability and Statistics at the Faculty of Mathematics and Informatics (GPA 6.00, maximum is 6.00).
Master Thesis: “Univariate Stable Distributions – computational issues in the applications”.
- 1996–2000 **Sofia University**
Graduated B. A. in economics at the Faculty of Economics and Business Administration (GPA 5.80, maximum is 6.00).

PROFESSIONAL EXPERIENCE

- 04.2010–Present **EDHEC-Risk Institute Asia**
Programme Director of the Executive MSc in Risk and Investment Management for Asia.
Head of Research of EDHEC Risk Institute–Asia.
- 06.2003-03.2010 **FinAnalytica, Inc.**
Head of Quantitative Research
Achievements:
 - Efficiently managing a quant team resulting in fast execution of research tasks.
 - The quant team has successfully designed and planned the implementation of sophisticated financial models to solve complex problems raised by clients, such as a large hedge fund based in

Chicago, Aviva Investors, Tremont, UBS O'Connor, and UBS Stamford.

- Developed key models: the Cognito copula model, Skewed T distributions framework, optimization of reward/risk ratios, etc.

Key Responsibilities:

- Lead and oversee financial models technologies research of the company; leads the quant team.
- Financial and mathematical modeling in new modules and products
- Advise and help the project manager to define detailed tasks and deadlines
- Make decision on urgent, unplanned tasks related to mathematical models subject to client-imposed procedures

06.2001–06.2003

Bravo Group Ltd

Senior Quant

Achievements:

- Implemented the main fat-tailed framework in Cognito based on stable distributions

03.2000–06.2001

Bravo Group Ltd

Junior Quant

Achievements:

- Implemented a fat-tailed scenario generation engine deployed in GZ Bank, Stuttgart, Germany

Major Projects

08.2007-10.2008

Cognito System

- Designed scenario based Tail Risk Budgeting framework including marginal and percentage contribution to ETL and VaR and Implied Return analysis which became the key selling features of the Fund-of-Funds Cognito suite.
- Compiled a comprehensive documentation of the methodology behind the Cognito system.

04.2005-06.2006

UBS O'Connor Project

- Designed a portfolio optimization problem beating their performance by more than 50%.
- Built the testing framework in MATLAB.
- Designed the implementation in Cognito.

04.2001-06.2003

Cognito System

- Designed of Portfolio Optimization module
- Designed and implemented the Stable distribution parameter estimation modules.
- Designed and implemented the Monte Carlo scenario generation modules.
- Backtested and verified calculation modules of Cognito System in the MATLAB environment.

01.2001-04.2001

GZ Bank

- Integration and deployment of Mercury Stable Simulations Module and Mercury External Evaluator for complex interest rate derivatives at GZ Bank, Frankfurt.

PUBLICATIONS

Articles published/forthcoming in refereed journals

1. Stoyanov, S., Rachev, S., Racheva-Iotova, B., Fabozzi, F. (2011): Fat-tailed models for risk estimation, *Journal of Portfolio Management*, Winter 2011, Vol. 37, No. 2: pp. 107–117.
2. Stoyanov, S., Racheva-Iotova, B., Rachev, S., Fabozzi, F. (2010): Stochastic models for risk estimation in volatile markets: A survey, *Annals of Operations Research*, Vol. 176 (1), pp. 293-309.
3. Stein M., Rachev S., Stoyanov S. (2010): Broad Market Risk for Sector Fund of Funds: A Copula-Based Dependence Approach, *Investment Management and Financial Innovations*, 2.
4. Rachev, S., Biglova, A., Ortobelli, S., Stoyanov, S. (2010): A note on the impact of non-linear reward and risk measures, *Journal of Applied Functional Analysis*, 5(1), pp. 194-203.
5. Ortobelli, S., Rachev, S., Biglova, A., Stoyanov, S. (2010): Portfolio selection based on a simulated copula, *Journal of Applied Functional Analysis*, 5(2), pp. 177-194.
6. Stoyanov, S., Rachev, S., Fabozzi, F. (2009): Construction of probability metrics on classes of investors, *Economics Letters*, Vol. 103, No. 1 (April 2009), pp 45-48.
7. Stein, M., Rachev, S., Stoyanov, S. (2009): R Ratio Optimization with Heterogeneous Assets using Genetic Algorithm, *Investment Management and Financial Innovations*, 6(2), pp 117-134.
8. Biglova, A., Rachev, S., Stoyanov, S., Ortobelli, S. (2009): Analysis of the factors influencing momentum profits, *Journal of Computational Analysis and Applications*, 4(1), pp. 81-106.
9. Stoyanov, S., Rachev, S., Ortobelli, S., Fabozzi, F. (2008): Relative deviation metrics and the problem of strategy replication, *Journal of Banking and Finance*, 32, Issue 2, pp 199-206.
10. Sun, W., Rachev, S., Stoyanov, S., Fabozzi, F. (2008): Multivariate Skewed Student's *t* Copula in Analysis of Nonlinear and Asymmetric Dependence in German Equity Market, *Studies in Nonlinear Dynamics & Econometrics*, Vol. 12.2/3, pp. 1-35.
11. Biglova, A., Kanamura, T., Rachev, S., Stoyanov, S. (2008): Modeling, risk assessment and portfolio optimization of energy futures, *Investment Management and Financial Innovations*, 5(1), pp. 17-31.

12. Rachev S. T., Ortobelli S., Stoyanov S., Fabozzi F. and Biglova, A. (2008): Desirable properties of an ideal risk measure in portfolio theory, *International Journal of Theoretical and Applied Finance*, 11(1), pp 1-36.
13. Stoyanov, S., Rachev, S., Fabozzi, F. (2008): Probability metrics with applications in finance, *Journal of Statistical Theory and Practice, special volume: Recent Advances in Applied Probability, Vol. 2, No. 2 (June 2008)*, pp. 253-277.
14. Dokov, S., Stoyanov, S., Rachev, S. (2008): Computing VaR and AVaR of Skewed T distribution, *Journal of Applied Functional Analysis*, 3, pp. 189-209.
15. Stoyanov, S., Rachev, S. (2008): Asymptotic distribution of the sample average Value-at-Risk, *Journal of Computational Analysis and Applications*, 10, pp. 465-483.
16. Stoyanov, S., Rachev, S. (2008): Asymptotic distribution of the sample average Value-at-Risk in the case of heavy-tailed returns, *Journal of Applied Functional Analysis*, 3, pp. 443-461.
17. Rachev, S., Jasik, T., Stoyanov, S., Fabozzi, F. (2007): Momentum Strategies Based on Reward-Risk Stock Selection Criteria, *Journal of Banking and Finance*, 31 (8), pp. 2325-2346.
18. Stoyanov, S., Rachev, S., Fabozzi, F. (2007): Optimal financial portfolios, *Applied Mathematical Finance, Volume 14, Issue 5*, pp. 401-436.
19. Svetlozar T. Rachev, Stoyan V. Stoyanov, Chufang Wu, and Frank J. Fabozzi (2007): Empirical Analyses of Industry Stock Index Return Distributions for the Taiwan Stock Exchange, *Annals of Economics and Finance*, 8-1, pp. 21-31.
20. Samorodnitsky, G., Rachev, S. T., Jeong-Ryeol Kurz-Kim and Stoyanov, S. (2007): Asymptotic Distribution of Unbiased Linear Estimators in the Presence of Heavy-Tailed Regressors and Residuals, *Probability and Mathematical Statistics*, 27, pp. 275-302.
21. Fabozzi, F., Racheva-Iotova, B., Stoyanov S. (2006): An empirical examination of the return distribution characteristics of agency Mortgage Pass-Through securities, *Applied Financial Economics*, 16, pp. 1085-1094.
22. Stoyanov, S., Samorodnitsky G., Rachev, S., Ortobelli, S. (2006): Computing the portfolio Conditional Value-at-Risk in the α -stable case, *Probability and Mathematical Statistics, Vol.26*, pp. 1-22.
23. Ortobelli, S., Rachev, S., Stoyanov, S., Fabozzi, F. and Biglova, A. (2005): The proper use of risk measures in portfolio theory, *International Journal of Theoretical and Applied Finance, Vol. 8, No. 8 (December 2005)*, pp. 1-27.
24. Ortobelli, S., Biglova, A., Huber, I., Racheva-Iotova, B., Stoyanov S. (2005): Portfolio choice with heavy-tailed distributions, *Journal of Concrete and Applicable Mathematics, Vol.3, No.3*, pp. 353-376.
25. Biglova, A., Ortobelli, S., Rachev, S., Stoyanov S. (2004): Different approaches to risk estimation in portfolio theory, *Journal of Portfolio Management, Fall 2004*, pp. 103-112.

26. Stoyanov S., Racheva-Iotova B. (2004): Univariate stable laws in the field of finance - parameter estimation, *Journal of Concrete and Applicable Mathematics*, Vol.2, No.4, pp. 24-49.
27. Stoyanov S., Racheva-Iotova B. (2004): Univariate stable laws in the field of finance - approximations of density and distribution functions, *Journal of Concrete and Applicable Mathematics*, Vol.2, No.1, pp. 38-57.
28. Jordanov, I., Stoyanov, S. and Vassilev, A. (2004): Price dynamics in a two region model with strategic interaction, in *Mathematics and education in mathematics (Bulgarian)*, pp. 144-149, *Union of Bulgarian Mathematicians, Sofia*.
29. Woerner S., Racheva-Iotova B., Stoyanov S. (2002): Calibration of a basket option model applied to company valuation, *Mathematical Methods of Operations Research*, 55, pp. 247-263.

Papers published/forthcoming in edited/contributed books

1. Rachev, S., Racheva-Iotova, B., Stoyanov, S., Fabozzi, F. (2010): Risk management and portfolio optimization for volatile markets, *The Handbook of Portfolio Construction: Contemporary Applications of Markowitz Techniques*, John Guerard, Jr. (editor), Springer-Verlag, pp 493-511.
2. Sereda, E., Bronstein, E., Rachev, S., Fabozzi, F., Sun, W., Stoyanov, S. (2010): Distortion risk measures in portfolio optimization, *The Handbook of Portfolio Construction: Contemporary Applications of Markowitz Techniques*, John Guerard, Jr. (editor), Springer-Verlag, pp 649-675.
3. Rachev, S., Martin, D., Racheva-Iotova, B., Stoyanov, S. (2009): Stable ETL Optimal Portfolios & Extreme Risk Management, *G. Bol et al. (eds), Risk Assessment: Decisions in Banking and Finance*, Springer/Physika, pp. 235-262.
4. Stoyanov S., Rachev S., Fabozzi, F. (2008): Principles of optimization for portfolio selection, *Handbook of Finance vol 3*, ed. Frank J. Fabozzi, pp 763-774.
5. Racheva-Iotova, B., Stoyanov S. (2008): Post-modern approaches for portfolio optimization, *the Handbook on IT and Finance*, Seese-Weinhardt-Schlottmann (eds), Springer-Verlag, pp 613-633.
6. Rachev, S., Stoyanov, S., Biglova, S., Fabozzi, F. (2005): An Empirical examination of daily stock return distributions for U.S. stocks, *Daniel Baier, Reinhold Decker, and Lars Schmidt-Thieme (eds.) Data Analysis and Decision Support*, Springer Series in Studies in Classification, Data Analysis, and Knowledge Organization (Berlin: Springer-Verlag, 2005), pp. 269-281.
7. Stoyanov S., Racheva-Iotova B. (2004): Numerical methods for stable modeling in financial risk management, *Rachev, S., (Ed) Handbook of Computational and Numerical Methods in Finance*, Birkhauser, pp. 299-329.

8. Racheva-Iotova B., Stoyanov S., Rachev, S. (2003): Stable non-Gaussian credit risk model; The Cognition approach, *Bol et al (Eds), Credit Risk - Measurement, Evaluation and Management, Springer, pp. 175-193.*
9. Woerner S., Racheva-Iotova B., Stoyanov S. (2001): Modelling a biopharmaceutical company as a compound option, *Proceedings of the Conference on Modeling and Control of Economic Systems. SME 2001, Klagenfurth, Austria, pp. 242-244.*

Papers under review

Stoyanov S. (2011): A moment expansion of downside risk measures.

Stoyanov S., Rachev S, Fabozzi F. (2010): CVaR sensitivity with respect to tail thickness, under review in Journal of Econometrics.

Stoyanov, S., Rachev, S., Fabozzi, F. (2009): Metrization of stochastic dominance rules

Stoyanov, S., Rachev, S., Fabozzi, F. (2009): Sensitivity of portfolio VaR and CVaR to portfolio return characteristics, under review in Journal of Risk.

Book

Rachev, S., Stoyanov, S., Fabozzi, F., *Advanced Stochastic Models, Risk Assessment and Portfolio Optimization: The ideal Risk, Uncertainty and Performance Measures*, Wiley, Finance, New York (2008)

Rachev, S., Stoyanov, S., Fabozzi, F., *A Probability Metrics Approach to Financial Risk Measures*, Blackwell-Wiley Publishing (2011).

Patents

Inventors: Rachev, S., Racheva-Iotova, B., Stoyanov, S., Martin, R., (2005) Title: *System and method for providing optimization of a financial portfolio using a parametric leptokurtic distribution.*

TECHNICAL SKILLS

- Expert in MATLAB for research and prototyping
- Java SE
- Python
- LaTeX.

LANGUAGES

- Bulgarian – mother tongue
- English – fluent
- German – basic

- Russian – basic

INTERESTS

- Distributed computing projects
- Swimming
- Long-distance running.