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Higher Education: Post Doc Habilitation, 2002; and Dr. sc. pol., 1998; Kiel University.

M.S., Statistics, 1993, Colorado State University.

Bachelor of Arts (Economics), and Bachelor of Science (Applied Mathematics and Statistics), 1990, SUNY Stony Brook.

Academic Positions & Other Work Experience: Full Professor January 2007 - Present
Department of Banking and Finance, University of Zurich

Visiting Professor / Lecturer 2008 - 2012
Department of Econometrics, University of Geneva

Associate Professor September 2003 - December 2006
Department of Banking and Finance, University of Zurich

Director April 2003 - August 2003
Institute of Statistics and Econometrics, Kiel University, Germany.

Assistant Professor April 1999 - March 2003
Institute of Statistics and Econometrics, Kiel University, Germany.

- Editorial Work:**
- Associate Editor: Journal of the Royal Statistical Society, Series A (JRSS-A), since January 2015.
 - Editorial Board Member: International Journal of Academic Research in Management (IJARM), since 2013.
 - Editorial Board Member: Annals of Financial Economics (AFE), since 2013.
 - Editorial Board Member: Econometrics, since 2013.
 - Editorial Board Member: Journal of Risk and Financial Management (JRFM), since 2013.
 - Advisory Board Member: Brazilian Journal of Economics and Finance, since 2011.
 - Associate Editor: *Economics*, <http://www.economics-ejournal.org/>
 - Associate Editor: Operations Research and Decisions (Wroclaw University of Economics, and Wroclaw University of Technology), since 2011
 - Associate Editor: Computational Statistics & Data Analysis, 2009-2013.

- Honors:** Keynote Speech. The Annual Meeting of the Taiwan Finance Association, National Tsing Hua University, Hsinchu, Taiwan, May, 2014
- Member:**
- International Advisory Board, MODSIM (Modelling and Simulation Society of Australia and New Zealand)
 - Leading Scientist: Computational Optimization Methods in Statistics, Econometrics and Finance (COMISEF), 2008-2011.
<http://comisef.wikidot.com/members>
 - Co-Chair: European Consortium for Informatics and Mathematics (ERCIM), Working Group: Computational Econometrics and Financial Time Series, <http://www.dcs.bbk.ac.uk/ercim/TrackCFE.html>
 - Verein für Socialpolitik: Ausschuss für Ökonometrie
- Current Papers:**
- “Density and Risk Prediction with Non-Gaussian COMFORT Models”, with P. Polak.
- “Portfolio Optimization in a Non-Elliptic Asymmetric Tail Dependence Asset Universe with Large Numbers of Assets: Use of a DCC Multivariate Noncentral Student’s t Model”, with J. Krause and P. Polak.
- “MARC-MARS: Modeling Asset Returns via Conditional Multivariate Asymmetric Regime-Switching”, with P. Polak.
- “Saddlepoint Approximation of Expected Shortfall for Transformed Means”, with S. Broda and J. Krause.
- “An Asymmetric Multivariate Student’s t Distributions with Different Degrees of Freedom and Possible Independent Marginals”, with R. Butler and P. Polak.
- “A Simple and Powerful Test for the Stable Paretian Distribution”.
- “A New, Powerful Test for Composite Normality”.
- Refereed Journal Articles:**
- “COMFORT: A Common Market Factor Non-Gaussian Returns Model”, with Pawel Polak, forthcoming in **Journal of Econometrics**, 2015.
- “Fast Methods for Large-Scale Non-Elliptical Portfolio Optimization”, Special Issue “Recent Developments in Quantitative Finance”, **Annals of Financial Economics**, 9(2), 2014, ID: 1440001. Lead Article.
- “A Fast, Accurate Method for Value-at-Risk and Expected Shortfall”, with Jochen Krause, in: **Econometrics**, 2, 2014.
- “ALRIGHT: Asymmetric LaRge-Scale (I)GARCH with Hetero-Tails”, with Pawel Polak, forthcoming, **International Review of Economics and Finance**, 2014.
- “Time-varying Mixture GARCH Models and Asymmetric Volatility”, with M. Haas, J. Krause and S.-C. Steude, in: **North American Journal of Economics and Finance**, 26, 2013.
- “Multivariate Asset Return Prediction with Mixture Models”, **European Journal of Finance**, 2013.

“Stable Mixture GARCH Models”, with S. Broda, M. Haas, J. Krause and S.-C. Steude, in: **The Journal of Econometrics**, 172(2), 2013.

“CHICAGO: A Fast and Accurate Method for Portfolio Risk Calculation”, with S. Broda, **Journal of Financial Econometrics**, Vol. 7(4), 2009.

“Evaluating the Density of Ratios of Noncentral Quadratic Forms in Normal Variables”, with S. Broda, **Computational Statistics and Data Analysis**, Vol. 53(4), 2009.

“Asymmetric Multivariate Normal Mixture GARCH”, with M. Haas and S. Mittnik, **Computational Statistics and Data Analysis**, Vol. 53(6), 2009.

“Assessing and Improving the Performance of Nearly Efficient Unit Root Tests in Small Samples”, with S. Broda and K. Carstensen, **Econometric Reviews**, Vol. 28(5), 2009.

“An Econometric Analysis of Emission Trading Allowances”, with Luca Taschini, **Journal of Banking and Finance**, Vol. 32, 2008.
The 6th most cited article since 2007 in that journal, see:
<http://www.journals.elsevier.com/journal-of-banking-and-finance/most-cited-articles/>

“Risk Prediction: A DWARF-like Approach”, with S.-C. Steude, **The Journal of Risk Model Validation**, Vol. 2(1), 2008.

“Uniform Saddlepoint Approximations for Ratios of Quadratic Forms”, with R. Butler. **Bernoulli**, Vol. 14(1), 2008.

“Bias-Adjusted Estimation in the ARX(1) Model”, with S. Broda and K. Carstensen. **Computational Statistics and Data Analysis**, Vol. 51, 2007.

“Saddlepoint Approximations for the Doubly Noncentral t Distribution”, with S. Broda. **Computational Statistics and Data Analysis**, Vol. 51, 2007.

“Accurate Value-at-Risk Forecasting Based on the Normal-GARCH Model”, with C. Hartz and S. Mittnik. **Computational Statistics and Data Analysis**, Vol. 51, 2006.

“Modeling and Predicting Market Risk With Laplace-Gaussian Mixture Distributions”, with S. Mittnik and M. Haas. **Applied Financial Economics**, Vol. 16, 2006.

“Value-at-Risk Prediction: A Comparison of Alternative Strategies”, with K. Kuester and S. Mittnik. **Journal of Financial Econometrics**, Vol. 4, No. 1, 2006.

Reproduced in: THE FOUNDATIONS OF CREDIT RISK ANALYSIS, edited by Willi Semmler and Lucas Bernard, Edward Elgar Publishing, 2007.

“A New Approach to Markov-Switching GARCH Models”, with S. Mittnik and M. Haas, **Journal of Financial Econometrics**, Vol. 2, No. 4, 2004.

“Modeling German Monthly Money Demand”, **Applied Economics Quarterly**, Vol. 50, No. 2, 2004.

“Mixed Normal Conditional Heteroskedasticity”, with S. Mittnik and M. Haas, **Journal of Financial Econometrics**, Vol. 2, No. 2, 2004.

“Computing Moments of Ratios of Quadratic Forms in Normal Variables”, **Computational Statistics and Data Analysis**, Vol. 42, No. 3, 2003.

“Saddlepoint Approximation and Bootstrap Inference for the Satterthwaite Class of Ratios”, with R. Butler, **Journal of the American Statistical Association**, Vol. 97, No. 459, 2002.

“Calculating the Density and Distribution Function for the Singly and Doubly Noncentral F ”, with R. Butler, **Statistics and Computing**, Vol. 12, No. 1, 2002.

“Stationarity of Stable Power–GARCH Processes”, with S. Mittnik and S. Rachev, **Journal of Econometrics**, Vol. 106, 2002.

“Testing the Stable Paretian Assumption”, **Mathematical and Computer Modelling**, Vol. 34, 2001.

“Diagnosing and Treating the Fat Tails in Financial Returns Data”, with S. Mittnik and S. Rachev, **Journal of Empirical Finance**, Vol. 7, 2000.

“Conditional Density and Value-at-Risk Prediction of Asian Currency Exchange Rates”, with S. Mittnik, **Journal of Forecasting**, Vol. 19, 2000.

“A Simple Estimator for the Characteristic Exponent of the Stable Paretian Distribution”, with S. Mittnik, **Mathematical and Computer Modelling**, Vol. 29, 1999.

“Approximate Distributions for the Various Serial Correlograms”, with R. Butler, **Bernoulli**, Vol. 4, No. 4, 1998.

“Unconditional and Conditional Distributional Models for the Nikkei Index”, with S. Mittnik and S. Rachev, **Asia-Pacific Financial Markets**, Vol. 5, No. 2, 1998.

“A Tail Estimator for the Index of the Stable Paretian Distribution”, with S. Mittnik and S. Rachev, **Communications in Statistics–Theory and Methods**, Vol. 27, No. 5, 1998.

- Contributions in Edited Volumes:** “Mixture and Regime-switching GARCH Models”, with Markus Haas, in Bauwens, L; Hafner, C; and Laurent, S., (eds.) **Handbook of Volatility Models and Their Applications**, 2012, Wiley.
- “Saddlepoint Approximations: A Review and Some New Applications”, with Simon Broda, in Gentle, J. E.; Härdle, W. K.; and Mori, Y., (eds.) **Handbook of Computational Statistics**, 2nd edition, 2012, Springer Verlag, Berlin.
- “Expected Shortfall for Distributions in Finance”, with Simon Broda, in Cizek, P.; Härdle, W. K.; and Weron, R., (eds.) **Statistical Tools for Finance and Insurance**, 2nd edition, 2011, Springer Verlag, Berlin.
- “Prediction of Financial Downside–Risk with Heavy–Tailed Conditional Distributions”, with S. Mittnik, in Rachev, S. T. (editor) **Handbook of Heavy Tailed Distributions in Finance**, Volume 1, Chapter 9, Elsevier North–Holland, 2003.
- “On Median Unbiased Inference for First Order Autoregressive Models”, with Kai Carstensen, Chap. 3 in **Contributions to Modern Econometrics: From Data Analysis to Economic Policy**, Kluwer Academic Publishers, 2003.
- “Stable Paretian Modeling in Finance: Some Empirical and Theoretical Aspects”, with S. Mittnik and S. Rachev, in Adler, R., Feldman, R. and Taqqu, M., (eds.) **A Practical Guide to Heavy Tailed Data**, 1998, Birkhäuser, Boston, MA.
- Referred Conference Proceedings:** “Forecasting Financial Time Series: Normal GARCH with Outliers or Heavy Tailed Distribution Assumptions?”, with Christoph Hartz, in **Proceedings of the Thailand Econometric Society, Chiang Mai University**, 2012.
- Book Reviews:** “Financial Modeling Under Non-Gaussian Assumptions”, by E. Jondeau, S.-H. Poon and M. Rockinger, Springer, 2007; **Journal of the American Statistical Association**, Vol. 104, No. 486, 2009.
- Textbooks:** “Intermediate Statistics: A Computational Approach”, in preparation.
- “Fundamental Statistics: A Computational Approach”, in preparation.
- “Intermediate Probability: A Computational Approach”, **John Wiley & Sons**, September 2007, 415 pages.
Reviewed in *Journal of the American Statistical Association*, September 2009, Vol. 104, No. 487.
- “Fundamental Probability: A Computational Approach”, **John Wiley & Sons**, March 2006, 488 pages.
Reviewed in *The American Statistician*, May 2008, Vol. 62, No. 2.
- Grants:** Recipient of SNSF grant 105218–150277, entitled “Portfolio Optimization and Risk Management Under Non-Elliptical Distributions”, for 455,498 Swiss francs, starting January 2014, for a period of three years. The money was earmarked for post doctoral students Jochen Krause and Pawel Polak, and a new PhD student.

**Conference
Organization:**

- Organizer, jointly with David Veredas (Free University of Brussels): Latest Developments in Heavy-Tailed Distributions, March 26-27, 2010, Brussels, Belgium.
- Scientific Programme Committee Member: 3rd International Conference on Computational and Financial Econometrics, October 29-31, 2009, Limassol, Cyprus.
- Co-Chair: 2nd International workshop on Computational and Financial Econometrics (CFE'08) 19-21 June 2008, Neuchâtel, Switzerland.
- Scientific Programme Committee Member: International Workshop on Computational and Financial Econometrics, April 20-22, 2007, Geneva, Switzerland.

**Invited
Conference
Presentations:**

- “Fast Methods for Large-Scale Non-Elliptical Portfolio Optimization”.
- The 8th International Conference of the Thailand Econometric Society (TES2015), Chiang Mai, Thailand, January 7-9, 2015.
 - CEQURA Conference 2014 on Advances in Financial and Insurance Risk. Munich, Germany, October 1-2, 2014.
 - Keynote Speech. The Annual Meeting of the Taiwan Finance Association, National Tsing Hua University, Hsinchu, Taiwan, May 23-24, 2014

“Large Scale Multivariate Non-Elliptical Asset Return Density Prediction and Fast Portfolio Construction”, The Seventh International Conference Of the Thailand Econometric Society, Chiang Mai, Thailand, January, 2014.

“Sharpening Sharpe: Using Conditional Measures with non-Gaussian DCC Models for Improved Portfolio Performance”, The Ninth ICSA International Conference: Challenges of Statistical Methods for Interdisciplinary Research and Big Data, Hong Kong, 20-23 December, 2013

“Large Scale Multivariate Non-Elliptical Asset Return Density Prediction and Fast Portfolio Construction”, Workshop Zurich–Kyoto, Session “Financial Risks and Related Problems”, November 21, 2013

“COMFORT-CCClass: A Common Market Factor Non-Gaussian Returns Model”, The 59th World Statistics Congress, Hong Kong, 25-30 August 2013.

“COMFORT-CCClass: A Common Market Factor Non-Gaussian Returns Model”, Third Joint Statistical Meeting of the Deutsche Arbeitsgemeinschaft Statistik, Statistics under one umbrella, March 18-23, 2013

“Large-Scale Accurate Multivariate Return Density Forecasting: A Survey and New Results”, 20th International Conference on Computational Statistics (COMPSTAT 2012), August 2012, Limassol, Cyprus.

“COMFORT-CCClass: Density Prediction and Portfolio Allocation using a Common Market Factor Non-Gaussian CCC Model”, 2012 Financial Management Association (FMA) Asian Conference, Phuket, Thailand, July, 2012.

“MARC-MARS: Modeling Asset Returns via Conditional Multivariate Asymmetric Regime-Switching”, The Fifth Conference of Thailand Econometric Society, Chiang Mai, Thailand, January, 2012.

“MARC-MARS: Modeling Asset Returns via Conditional Multivariate Asymmetric Regime-Switching”, International Workshop on Statistical Computing in Quantitative Finance and Biostatistics, Feng Chia University, Taichung, Taiwan, December 2011.

“Stable Mixture GARCH Models and Portfolio Allocation”, 7th IASC-ARS, Academia Sinica, Taipei, Taiwan, December, 2011.

“Multivariate Asset Return Prediction with Mixture Models”, Conference on Latest Developments in Financial Econometrics, Brussels, Belgium, March 2011.

“Multivariate Asset Return Prediction with Mixture Models”, The Fourth Conference of Thailand Econometric Society, Chiang Mai, Thailand, January, 2011.

“Asymmetric Multivariate Student’s t Distributions Endowed with Different Degrees of Freedom”, Rmetrics Conference, Singapore, February, 2010.

“Chicago: A Fast and Accurate Method for Portfolio Risk Calculation”, The Third Conference of Thailand Econometric Society, Chiang Mai, Thailand, January, 2010.

“Modern GARCH Models and VaR Prediction”, International Summer School on Risk Measurement and Control 2006, Rome, Italy; June, 2006.

“Stable Mixture GARCH Models”, Deutsche Bundesbank Conference on: Heavy tails and Stable Paretian Distributions in Finance and Macroeconomics – in Celebration of the 80th birthday of Professor Benoit B. Mandelbrot, Eltville, Germany; November, 2005.

“Analyzing and Exploiting Asymmetries in the News Impact Curve”, Workshop on Financial Risk and Time Series Analysis (Satellite Workshop of the 2005 NBER/NSF Time Series Conference), Munich, Germany; September, 2005.

“Bias-Adjusted Autoregressive Point Estimation in the ARMAX(1, q) Model”, Ausschluß für Ökonometrie (Verein für Socialpolitik), Marburg, Germany; March, 2005

“Bias-Adjusted Autoregressive Point Estimation in the ARMAX(1, q) Model”, Workshop on Risk Analysis in Finance and Insurance, Munich, Germany; June, 2004.

“Value-at-Risk Prediction: A Comparison of Alternative Strategies”, Center for Financial Studies workshop on New Directions in Financial Risk Management, Frankfurt, Germany; November, 2003.

“Diagnosing and Treating the Fat Tails in Financial Returns Data”, Journal of Empirical Finance Conference on Risk Management, Algarve, Portugal; November, 1999.

**Regular
Conference
Presentations:**

“Dynamic COMFORT: A Common Market Factor Non-Gaussian Returns Model with Dynamic Conditional Correlations”, The 2013 IMS-FPS Workshop, June 19-21, 2013, National University of Singapore.

4th Annual International Conference on Mathematics & Statistics, Athens, Greece, June 14-17, 2010.

Stochastic Modeling Techniques and Data Analysis, Chania, Crete, Greece, June 8-11, 2010.

Forecasting in Rio, Rio de Janeiro, Brazil, July 29-31, 2008.

International Workshop on Computational and Financial Econometrics, Geneva, Switzerland, April 20-22, 2007.

Swiss Society Of Economics And Statistics (SSES) Annual Meeting: Finance And Financial Econometrics, University of St. Gallen, Switzerland, March 22-23, 2007

Swiss Statistics Meeting, Lugano, Switzerland, November 15-17, 2006.

61st European Meeting of the Econometric Society (ESEM), Vienna, August 24-28, 2006.

International Association for Statistical Computing 3rd World Conference on Computational Statistics & Data Analysis, Cyprus, Greece; October, 2005.

Mixtures 2001, Hamburg, Germany; July, 2001.

Euroworkshop on Statistical Modelling—Mixed Models, Munich, Germany; November, 2000.

10th European Conferences of the Econom[etr]ics Community (EC²), Financial Econometrics, Madrid, Spain; December, 1999.

52nd Session of the International Statistical Institute, Helsinki, Finland; August, 1999.

14th International Workshop on Statistical Modelling, Graz, Austria; July, 1999.

19th International Symposium on Forecasting, Washington D.C., USA; June, 1999.

5th International Conference of the Society for Computational Economics, MA, USA; June, 1999.

4th Spring Meeting of Young Economists, Amsterdam, The Netherlands; April, 1999.

9th European Conferences of the Econom[etr]ics Community (EC²), Forecasting in Econometrics, Stockholm, Sweden; December, 1998.

Econometric Society European Meeting (ESEM), Berlin, Germany; August, 1998.

Barcelona Finance Meeting, Barcelona, Spain; September, 1997.

51st Session of the International Statistics Institute, Istanbul, Turkey; August, 1997.

2nd International Conference on Computing in Economics and Finance, Geneva, Switzerland; June, 1996.