

Deutsche Bundesbank Conference on:
Heavy tails and stable Paretian distributions in finance and macroeconomics
- in celebration of 80th birthday of Professor Benoît B. Mandelbrot

Deutsche Bundesbank conference centre, Eltville, Germany

10. – 12. November 2005

Organizers*:
Jean-Marie Dufour (Université de Montréal)
Jeong-Ryeol Kurz-Kim (Deutsche Bundesbank)

*The conference is also a part of a research project of the two organizers which is financially supported by the Alexander von Humboldt Foundation

Conference Programme

First day (November 10, 2005)

08:00 – 09:00 Registration

09:00 – 09:15 Opening speech: **H. Remspurger** (Deutsche Bundesbank)

09:15 – 10:15 Keynote: **B. B. Mandelbrot** (Yale University)

Fractal finance (origins and prospects): power laws and concentration

10:15 – 10:30 Coffee break

10:30 – 12:00 **Session 1. Exchange rates**

Chair : J.-M. Dufour (Université de Montréal)

C. G. de Vries (Erasmus University Rotterdam) :

A typology of currency crises

Discussant : M. Loretan (Board of Governors of the Federal Reserve System)

M. Loretan (Board of Governors of the Federal Reserve System) :

Statistical Properties of Exchange-Rate Fluctuations at Second-by-Second Frequencies

Discussant : R. Frey (Universität Leipzig)

12:00 – 13.30 Lunch

13:30 – 15:45 **Session 2. Financial risk**

Chair: C. G. de Vries (Erasmus University Rotterdam)

J. Danielsson (London School of Economics) and A. J. McNeil (Eidgenössische Technische Hochschule Zürich) :

Self excitement and extreme dependence in financial markets

Discussant : W. Härdle (Humboldt-Universität zu Berlin)

J. H. McCulloch (Ohio State University) :

The risk neutral measure and option pricing under log-stable uncertainty

Discussant : R. Runde (Universität Siegen)

R. Weron (University of Wrocław)

Heavy tails and electricity prices

Discussant : R. Kiesel (Universität Ulm)

15:45 – 16:00 Coffee break

16:00 – 18 :15 **Session 3. Portfolio management**

Chair : J. H. McCulloch (Ohio State University)

Y. Chen, **W. Härdle** and V. Spokoiny (Humboldt-Universität zu Berlin) :

GHICA – Risk analysis with GH distributions and independent components

Discussant : M.S. Paoletta (Universität Zürich)

S. Ortobelli (University of Bergamo) and S. T. Rachev (Universität Karlsruhe) :

Risk management and dynamic portfolio selection with stable Paretian distributions

Discussant : R. Ibragimov (Harvard University)

S. T. Rachev, S. Stoyanov, **T. Jasic** (Universität Karlsruhe) and F. J. Fabozzi (Yale University):

Devising zero-investment strategies using risk-adjusted stock ranking criteria and optimized-weighted portfolios

Discussant : U. Rieder (Universität Ulm)

18:15 – 18:45 Break / 18:45 – 19:15 Reception

19:30 – Dinner / Dinner speech: **A. Weber** (President of the Deutsche Bundesbank)

Second day (November 11. 2005)

09:00 – 10:30 **Session 4. Heavy-tailed distribution theory**
Chair : C. Klüppelberg (Technische Universität München)

R. Ibragimov (Harvard University):
On the robustness of economic models to heavy-tailedness assumptions
Discussant : D. Tasche (Deutsche Bundesbank)

J. P. Nolan (American University) :
Polar representations for multivariate stable densities and distribution functions
Discussant : A. McNeil (Eidgenössische Technische Hochschule Zürich)

10:30 – 11:00 Coffee break

11:00 – 12:30 **Session 5. Statistical inference for stable distributions**
Chair : J. P. Nolan (American University)

J.-M. Dufour (Université de Montréal) and J.-R. Kurz-Kim (Deutsche Bundesbank) :
Exact inference and optimal invariant estimation for the tail coefficient of symmetric alpha-stable distributions
Discussant : G. Samorodnitsky (Cornell University)

R. Garcia (Université de Montréal), E. Renault (University of North Carolina) and
D. Veredas (Université Libre de Bruxelles) :
Estimation of stable distributions by indirect inference
Discussant : M. J. Lombardi (European Central Bank)

12:30 – 14:00 Lunch

14:00 - 16:15 **Session 6. Statistical analysis in the presence of stable distributions**
Chair : S. Mittnik (Ludwig-Maximilians-Universität München)

M.-C. Beaulieu (Université Laval), J.-M. Dufour (Université de Montréal) and **L. Khalaf**
(Université Laval) :
Exact multivariate tests of asset pricing models with stable asymmetric distributions
Discussant : S. Ortobelli (University of Bergamo)

J.-R. Kurz-Kim (Deutsche Bundesbank), S.T. Rachev (Universität Karlsruhe) and
G. Samorodnitsky (Cornell University) :
Asymptotic distribution of unbiased linear estimators in the presence of heavy-tailed stochastic regressors and residuals
Discussant : N.N.

D. M. M. Samarakoon and **K. Knight** (University of Toronto) :
A note on unit root tests with infinite variance noise
Discussant : J.-R. Kurz-Kim (Deutsche Bundesbank)

16:15 – 16:45 Coffee break

16:45 – 18:30 **Round table**

The role of stable distributions for financial market analysis
B. B. Mandelbrot (Yale University),
C. G. de Vries (Erasmus University Rotterdam),
J.-M. Dufour (Université de Montréal),
P. Embrechts (Eidgenössische Technische Hochschule Zürich),
M. Loretan (Board of Governors of the Federal Reserve System)
J. H. McCulloch (Ohio State University)
moderated by **S. Mittnik** (Ludwig-Maximilians-Universität München)

18:30 – 19:00 Break / 19:00 – Dinner

Third day (November 12, 2005)

09:00 - 10:30 **Session 7. Volatility modelling 1**

Chair: W. Härdle (Humboldt-Universität zu Berlin)

O. E. Barndorff-Nielsen (University of Aarhus) :
Recent results in the study of volatility
Discussant : E. Lütkebohmert (Deutsche Bundesbank)

M. Haas, S. Mitnik (Ludwig-Maximilians-Universität München), **M. S. Paoletta** and
S.-C. Steude (Universität Zürich) :
Stable mixture GARCH models and VaR prediction
Discussant : J.P. Nolan (American University)

10:30 – 11:00 Coffee break

11:00 - 12:30 **Session 8. Volatility modelling 2**

Chair : J. Danielsson (London School of Economics)

C. Klüppelberg (Technische Universität München) :
On a new continuous-time GARCH model for high-frequency data
Discussant : O. E. Barndorff-Nielsen

M. J. Lombardi (European Central Bank) and G. Calzolari (University of Firenze) :
Indirect estimation of alpha-stable stochastic volatility models
Discussant : U. Kretschmer (Rheinische Friedrich-Wilhelms-Universität Bonn)

12:30 – 14:00 Lunch

14:00 – 16:15 **Session 9. Other models for heavy tails in finance**

Chair: G. Samorodnitsky (Cornell University)

P. Embrechts (Eidgenössische Technische Hochschule Zürich) :
Multivariate extremes and market risk scenarios
Discussant : D. Tasche (Deutsche Bundesbank)

J. Cotter (University College Dublin) and K. Dowd (Nottingham University) :
Extreme spectral risk measures: an application to futures clearing house
margin requirements
Discussant : P. Raupach (Deutsche Bundesbank)

M.S. Taqqu (University of Boston)
Spatial contagion in Financial markets
Discussant: N.N.

End