**RISK DAY 2005**

Mini-Conference on Risk Management in Finance and Insurance

organized by RiskLab (www.risklab.ch) and Center of Competence Finance in Zurich (www.ccfz.ch)

Location
ETH Zürich, Main Building, Roomasse 101, 2002 Zürich Lecture Theatre HG F5.
Refreshments in the «Uhrenhalle» (main hall, F-floor)

Time
Friday, October 21, 2005, Full day

Program

8.30–8.45
Prof. Dr. Paul Embrechts (Department of Mathematics, ETH Zürich)
Quantitative Risk Management: Concepts, Techniques and Tools

Abstract: Together with Alexander McNeil and Rüdiger Frey we just finished a book with the same title, Princeton University Press (2005), for details follow this link. In my talk I will present some examples from the book. In a series of interesting methodological research and relevant practical applications often go hand in hand in the field of QRM.

8.45–9.15
Prof. Dr. Peter Zewe (Socioeconomic Institute, University of Zurich)
How Much Internalization of Nuclear Risks Through Liability Insurance?

Abstract: An important source of conflict surrounding nuclear energy is that with a very small probability, a large-scale nuclear accident may occur. One way to internalize the associated financial risk is through mandating nuclear operators to have liability insurance. This paper presents estimates of consumers’ willingness to pay for increased financial security provided by an extension of coverage, based on the “hated choice” approach. A Swiss citizen with median characteristics may be willing to pay 0.2 Swiss cents per kwh to increase coverage beyond the current 0.7 billion (Sw) CHF. Marginal willingness to pay declines with higher coverage but records marginal cost at least up to CHF 4 bn. An extension of nuclear liability insurance coverage therefore may be efficiency-enhancing.

9.15–9.45
Dr. Christoph Schonthaler (Head of Risk Management, Alternative Investments and Mutual Funds, Credit Suisse)
Hedge Fund Market Risk Management

Abstract: Following the rapid recent growth of the hedge fund industry, it has become necessary to extend traditional methods of market risk management to make them suitable for hedge funds. In this talk, we identify the critical market-risk factors affecting the major hedge fund strategies, and demonstrate how exposure to these factors can be estimated. We show how to compute the value-at-risk of a hedge fund portfolio, and how to attribute it to equity markets, interest rates, currencies, and commodities at a given point in time. We also discuss critical stress scenarios for the various hedge fund strategies and suggest simple stress tests, paying special attention to credit- and liquidity risks and their impact on various arbitrage strategies. Finally, we sumarize the impact of different hedge fund strategies on the market risk profiles of traditional investments. This talk focuses on research and methodology that can be replicated based on public information, including daily hedge fund indices and hedge fund databases.

9.45–10.15
Coffee Break (Main Hall, F-floor, «Uhrenhalle»)

10.15–10.45
Prof. Dr. Martin Schweizer (Department of Mathematics, ETH Zürich)
Option pricing and large investors

Abstract: We give a short overview of some problems and issues in models of financial markets with a large investor. We also present some recent results that illustrate hidden subtleties in this topic. The main focus will be on pricing by replication.

15.00–15.30
Coffee Break (Main Hall, F-floor, «Uhrenhalle»)

15.30–16.00
Prof. Dr. Alexander McNeil (Department of Mathematics, ETH Zürich)
Self-Exciting Processes for Extremes in Financial Time Series

Abstract: The application of extreme value theory (EVT) methods to time series of financial returns has been a subject of interest in recent years. Most studies have focused on applying static tail estimation techniques under assumptions of stationarity, such as the Hill estimator or the generalized Pareto tail approximation method. The aim of this talk is to propose a new dynamic model for the occurrence of extremes above some high threshold in a financial time series. The model attempts to describe both the temporal occurrence and the magnitude of threshold exceedances and does so by employing a joint point process formulation with self-exciting structure and a parameterization inspired by standard EVT models. The model is applied to financial data and used to estimate a stylized Value-at-Risk (i.e., an extreme quantile of a conditional return distribution for the next time period).

16.00–16.30
Dr. Joerg Desbrosses (Partner, Global Financial Services Risk Management, Ernst & Young)
Validation of Rating Models

Abstract: With the implementation deadline of the new Basel II rules coming closer, banks now focus on the validation of their rating and scoring models. In this presentation we provide an overview of the approach to Model Validation and provide an example of measuring the accuracy of estimated default probabilities and the discriminatory power of a rating model.

16.30–17.00
Graduation Ceremony for the second cycle (2003/2005) of the Uni/ETH Zurich program Master of Advanced Studies in Finance
Talk: Raymond J. Bar, Chairman of the Board, Julius Bär Holding AG
From the UniETH Zurich Masters program to the financial services industry
Laudatio: Prof. Dr. Rujina Gibson

17.00–17.15
Official launch of the book
Quantitative Methods for Risk Management, authors Prof. Dr. Paul Embrechts, Prof. Dr. Rüdiger Frey, Prof. Alexander McNeil

17.15–18.15
Apero (Main Hall, F-floor, «Uhrenhalle»)

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**General Information**

Participation is free, and there is no official registration. Everyone is welcome, practitioners are especially encouraged to attend. We have not made any special arrangements for lunch since there are sufficient possibilities nearby, in particular at ETH and the University. There is also the Zürich Tourist information.

For hotel accommodation, please check the Zürich Tourism home page.

Organizers:
PD Dr. Walter Faro (Managing Director CCFZ, UBZin., Zürich and ETH Zürich)
Prof. Dr. Philipp Schönbucher (Department of Mathematics, ETH Zürich)

Conference Secretary:
Ms. Gail Shoham, CUF-CH (FDZ)
Phone: 044 632 40 16
sekretariat@wmat.math.ethz.ch
A happy customer . . .
Some Statistics

The book has

- 3 authors
- 699 pages
- 771 references
- 1.63 kg

Some useful tips for office exercise under [www.qrmtutorial.org/fitness...](http://www.qrmtutorial.org/fitness...)
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- A need for a textbook treatment of QRM at a technical yet accessible level
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- QRM has emerged as discipline in its own right and with its own methodology, blending fields such as financial and insurance mathematics, statistics and econometrics and economics
- A need for a textbook treatment of QRM at a technical yet accessible level
- Because we had nothing else to do...
Who was this book written for?

- For you!
- For courses in QRM for advanced undergraduate (MSc) or graduate students;
- For practitioner training
- For risk professionals working in the industry or at regulators;
- For academics working in the field;
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On the second edition

Do I need a copy of the second edition if I already have the first?
On the second edition

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Yes!!
What is new/different?

- Take into account developments since first edition of 2005 and in particular ‘lessons learned’ from financial crisis (But we feel that main messages of the first edition were vindicated during the crisis)
- More material on QRM in insurance (Solvency II)
- Extended treatment of credit risk, including topical issues such as counterparty credit risk, CDO pricing and a discussion of securitization
- Reorganisation to facilitate teaching and reading: shorter chapters; special topics at the end
- A proper market risk chapter and new material on risk measures and risk aggregation
Further developments

We are working on a webpage with additional teaching material (slides, exercises and R Code),

www.qrmtutorial.org/

joint with Marius Hofert
Thank you!

• to our families

• to the academic institutions supporting us during the project (ETH Zurich, Heriot-Watt University, WU Vienna) and many more

• to the many colleagues and students who gave useful feedback, including Stefan Altnner, Philippe Artzner, Jochen Backhaus, Guus Balkema, Michał Barski, Uta Beckmann, Reto Baumgartner, Wolfgang Breymann, Reto Bucher, Hans Bühlmann, Peter Bühlmann, Valérie Chavez-Demoulin, Dominik Colangelo, Marius Costeniuc, Freddy Delbaen, Rosario Dell’Aquila, Stefan Denzler, Alexandra Dias, Stefano Demarta, Catherine Donnelly, Douglas Dwyer, Damir Filipovic, Tom Fischer, Gabriel Frahm, Hansjörg Furrer, Rajna Gibson, Kay Giesecke, Enrico De Giorgi, Michael Gordy, Bernhard Hodler, Friedrich Hubalek, Marius Hofert, Andrea Höing, Christoph Hummel, Edgars Jakobsons, Alessandro Juri, Roger Kaufmann, Philipp Keller, Erwan Koch, Hans Rudolf
Künsch, Filip Lindskog, Hans-Jakob Lüthi, Natalia Markovich, Benoît Metayer, Andres Mora, Alfred Müller, Johanna Nešlehoverá, Monika Popp, Giovanni Puccetti, Lars Rösler, Wolfgang Runggaldier, David Saunders, Hanspeter Schmidli, Sylvia Schmidt, Thorsten Schmidt, Uwe Schmock, Philipp Schönbucher, Martin Schweizer, Torsten Steiger, Daniel Straumann, Dirk Tasche, Hideatsu Tsukahara, Laura Vana, Eduardo Vilela, Marcel Visser, Ruodu Wang, Jonathan Wendin and Mario Wüthrich
And now enjoy the Cocktail