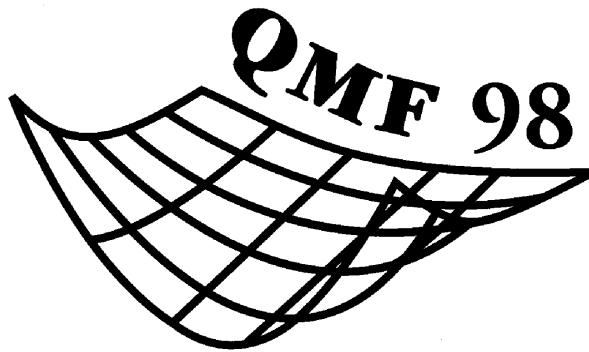


QUANTITATIVE METHODS IN FINANCE 1998 CONFERENCE



Sydney, Australia
14 - 17 December 1998

Manly Pacific Parkroyal Hotel
55 North Steyne, Manly

CONFERENCE PROGRAM

ORGANISED BY



University of Technology, Sydney
School of Finance and Economics
School of Mathematical Sciences
Faculty of Business

SUPPORTED BY

Bachelier Finance Society

SUNDAY 13 DECEMBER 1998

REGISTRATION AND WELCOME DRINKS

6.00-8.00pm In Gilberts Restaurant, Manly Pacific Parkroyal Hotel,
55 North Steyne, Manly

MONDAY 14 DECEMBER 1998

7.45am Registration and Coffee

Chair: Eckhard Platen

8.15am Welcome

8.20-9.00am Opening Lecture
Albert Shiryaev
Steklov Mathematical Institute, Moscow, Russia, and President, Bachelier Finance Society
On the Distributions of the Downfalls in Prices

9.00-9.30am **Steve Kou**, Mark Broadie and Paul Glasserman
Columbia University, New York, USA
Connecting Discrete and Continuous Path-Dependent Options

9.30-10.00am **Nizar Touzi** and Mete Soner
University Paris Dauphine, Paris, France
Super-replication Under Gamma Constraints

10.00-10.30am **Jin-Chuan Duan** and Stanley Pliska
Hong Kong University of Science and Technology, Hong Kong
Option Valuation with Co-Integrated Asset Prices

10.30-11.00am *Morning Tea*

Chair: Carl Chiarella

11.00-11.30am **Peter Carr** and Dilip Madan
Morgan Stanley, New York, USA
Towards a Theory of Volatility Trading

11.30-12.00pm **Frank Milne**
Queen's University, Kingston, Canada
Financial Markets with Transaction Costs and Taxes

12.00-12.30pm **Yuri Kabanov** and G. Last
Universite de Franche-Comte, Besancon, France
Hedging in a Model with Transaction Costs

12.30-2.00pm *Lunch*

Chair: Peter Carr

2.00-2.30pm **Jeff Dewynne**
University of Southampton, Southampton, UK
Volatility, Implied Volatility and Volatility Surfaces

2.30-3.00pm **Farid AitSahlia**
Hewlett Packard Laboratories, Palo Alto, USA
Valuation and Exercise of American Barrier Options

3.00-3.30pm **Les Clewlow** and Silio David Aparicio
University of Warwick, Coventry, UK
A Comparison of Hedging Strategies for Exotic Options

3.30-4.00pm *Afternoon Tea*

4.00-6.00pm **Parallel Sessions**

Chair: Jin-Chuan Duan

Ballroom

1. **Daniel Dufresne**
University of Melbourne, Melbourne, Australia
On the Valuation of Average Options
2. **Rob Zvan**, P.A. Forsyth and K.R. Vetzal
University of Waterloo, Waterloo, Canada
A General Finite Element Approach for PDE Option Pricing Models
3. **Vicky Henderson** and David Hobson
University of Bath, Bath, UK
Local Time, Coupling and the Passport Option
4. **Paul Rider**, Alex Antic, Volf Frishling and Adam Kucera
Commonwealth Bank of Australia, Sydney, Australia
Pricing Barrier Options with Time Dependent Drift, Volatility and Barriers
5. **Gianluca Fusai**
University of Florence, Florence, Italy
A Generalization of the Levy Arc-Sine Law and the Pricing of Corridor Derivatives
6. **John Wilson** and Robert Lamy
Wake Forest University, Winston, USA
An Analysis of the Credit-risk Based Capital Allocation Process

Chair: Frank Milne

Barton Room

1. **John Price**
Maharishi University of Management, Fairfield, USA
Minimal Mathematical Finance
2. **David Edelman**
University of Wollongong, Wollongong, Australia
On the Financial Value of Information
3. **Robert Webb**
University of Virginia, Charlottesville, USA
The Information Content of Treasury Auctions for Treasury Futures Prices
4. **Samuel Wong** and Jin-Chuan Duan
Hong Kong University of Science and Technology, Hong Kong
Regime Switching with Feedback
5. **Shinn-Juh Lin** and Jian Yang
University of Technology, Sydney, Australia
Intraday Asset Returns Dynamics and Buy/Sell Trading Information
6. **Chandrasekhar Krishnamurti**, Shantaram Hegde, Raghendra Jha and Hari Nagarajan
National University of Singapore, Singapore
Price Discovery and Market Integration in Indian Stock Markets

SYDNEY HARBOUR DINNER CRUISE

Please meet in the Foyer of the Manly Pacific Parkroyal at 6.30pm for the bus trip to Mosman wharf. Please remember to bring your ticket.

Please note, only those who have booked and paid in advance are able to attend the harbour cruise.

Chair: Nizar Touzi

8.30-9.00am

Dilip Madan, Helyette Geman and Marc Yor
University of Maryland, College Park, USA
 Asset Prices are Brownian Motion: Only in Business Time
 9.00-9.30am

9.00-9.30am

Alexander Novikov, Nino Kordzakhia and Ian Wright
University of Newcastle, Newcastle, Australia
 Time-dependent Barrier Options and Boundary Crossing Probabilities

9.30-10.00am

Paul Glasserman and Xiaoliang Zhao
Columbia University, New York, USA
 Arbitrage-Free Discretization of Lognormal Forward Libor and Swap Rate Models

10.00-10.30am

John Schoenmakers and Brian Coffey
Delft University, Delft, The Netherlands
 LIBOR Rate Models, Related Derivatives and Calibration

10.30-11.00am

Morning Tea

Chair: Steve Kou

11.00-11.30am

Ton Vorst and Bert Menkeveld
Erasmus Centre for Financial Research, Rotterdam, The Netherlands
 A Pricing Model for American Options with Stochastic Interest Rates

11.30-12.00pm

Takeaki Kariya, Kenji Kamizono, Regina Liu and Teruo Nakatsuma
Hitotsubashi University, Kunitachi, Japan
 New Control Variate Estimators for an Asian Option

12.00-12.30pm

Yue Kuen Kwok
Hong Kong University of Science and Technology, Hong Kong
 Some Theoretical Studies for Option Pricing Algorithms

1.30-2.00pm

Lunch

Chair: Daniel Dufresne

2.00-2.30pm

Andrew Carverhill
Hong Kong University of Science and Technology, Hong Kong
 Commodity Futures and Forwards: The HJM Approach

2.30-3.00pm

Jorgen Aase Nielsen and Klaus Sandmann
University of Aarhus, Aarhus, Denmark
 Pricing of Asian Exchange Rate Options Under Stochastic Interest Rates as a Sum of Delayed Payment Options

3.00-3.30pm

Carl Chiarella and Oh Kang Kwon
University of Technology, Sydney, Australia
 Forward Rate Dependent Markovian Transformations of the Heath-Jarrow-Morton Term Structure Model

3.30-4.00pm

Afternoon Tea

4.00-6.00pm

Parallel Sessions

Chair: Les Clewlow

Ballroom

1. **Volf Frishling** and Paul Rider
Commonwealth Bank of Australia, Sydney, Australia
 Implementation Issues of Term Structure Models
2. **Erik Schloegl**, Alan Brace and Marek Musiela
University of New South Wales, Sydney, Australia
 A Simulation Algorithm Based on Measure Relationships in the Lognormal Market Models

3. **Antoon Pelsser**, Phil Hunt and Joanne Kennedy
Erasmus University, Rotterdam, The Netherlands
Markov-Functional Interest Rate Models
4. **Petko Kalev** and Brett Inder
Monash University, Melbourne, Australia
The Information Content of the Term Structure of Interest Rates
5. **Nick Webber** and Chia-Hsuan Kuan
University of Warwick, UK
Valuing Interest Rate Derivatives Consistent with a Volatility Smile
6. **Michael Hanke**
University of Economics & Business Administration Vienna, Vienna, Austria
Some Notes on the Pricing and Hedging of Options When Companies Deal in Options on Their Own Stock

Chair: John Price

Barton Room

1. **Junichi Imai**
Tokyo Institute of Technology, Tokyo, Japan
An Alternative Lattice Approach for a Multidimensional Process
2. **Andrew Matacz**
ABN AMRO, Sydney, Australia
Path Integral Approach to Option Pricing
3. **Jun Yu**, Qi-Man Shao and Hao Yu
University of Western Ontario, London, Canada
A Test Statistic and its Application in Financial Modelling
4. **Kuldeep Kumar**, Clarence Tan and Ranadir Ghosh
Bond University, Gold Coast, Australia
Detecting Chaos in Time Series with Application to Australian Stock Data
5. **Ken Seng Tan** and Phelim Boyle
University of Waterloo, Waterloo, Canada
Valuation of Complex Financial Derivatives Using Scrambled Low Discrepancy Sequences
6. **Detlef Seese**, Ralf Herrmann, Marting Kreidler, and Kai Zabel
University Karlsruhe, Karlsruhe, Germany
Fuzzy Genetic Trading Systems - A New Approach

GALA CONFERENCE DINNER

Manly Pacific Parkroyal, Ballroom. Pre-dinner drinks at 7.30pm and dinner at 8.00pm. Please bring your ticket.

Please note, only those who have booked and paid in advance are able to attend the conference dinner.

WEDNESDAY 16 DECEMBER 1998

Chair: Ton Vorst

8.30-9.00am

Marco Avellaneda
New York University, New York, USA
Inverse Problems in Quantitative Financial Modelling

9.00-9.30am

Peter Buchen
University of Sydney, Sydney, Australia
The Generalised Inverse Method for Asset Price Distributions

- 9.30-10.00am **Ruediger Frey** and Wolfgang Runggaldier
ETH Zurich, Zurich, Switzerland
Nonlinear Filtering Techniques for Estimation and Risk-Management in Partially Observed Stochastic Volatility Models
- 10.00-10.30am **Wolfgang Runggaldier** and Ruediger Frey
Universita' di Padova, Padova, Italy
On Estimation and Hedging in Stochastic Volatility Models: a Stochastic Filtering Approach.
- 10.30-11.00am *Morning Tea*
- Chair: Volf Frishling**
- 11.00-11.30am **Chris Strickland** and Les Clewlow
University of Warwick, Coventry, UK
Pricing Interest Rate Exotics in Multi Factor Gaussian Interest Rate Models
- 11.30-12.00pm **Michael Sorensen**
University of Copenhagen, Copenhagen, Denmark
Estimating Functions for Stochastic Volatility Models
- 12.00-12.30pm **William Ziemba**
University of British Columbia, Vancouver, Canada
The Russell-Yasuda Kasai Financial Planning Model
- 12.30-1.00pm **Eckhard Platen**
University of Technology, Sydney, Australia
A Financial Market Model
- 1.00-2.00pm *Lunch*
- 2.00-3.20pm **Parallel Sessions**
- Chair: John Wilson**

Ballroom

1. **David Allen**, Lyn Thomas and Nigel Morkel-Kingsbury
Edith Cowan University, Joondalup, Australia
A Hidden Markov Chain Model for the Term Structure of Bond Credit Risk Spreads
2. **Lara Cathcart** and **Lina El Jahel**
Imperial College of Science, Technology and Medicine, London, UK
Pricing Defaultable Bonds: A Middle-way Approach Between Structural and Reduced Form Models
3. **Rachel Pownall**, Kees Koedijk and Ronald Huisman
Maastricht University, Maastricht, The Netherlands
VaR+: Implications of Fat Tails in Risk Management
4. **Ning Gong** and Tao Li
University of Melbourne, Melbourne, Australia
Role of Index Bonds in an Optimal Dynamic Asset Allocation Problem with Real Subsistence Consumption

Chair: Samuel Wong

Barton Room

1. **Marcello Pericoli**, F. Fornari, C. Monticelli, and M Tivegna
Bank of Italy, Rome, Italy
The Impact of News on the Lira Exchange and Long-Term Interest Rates (March 1994 - November 1996)
2. **Jan M. Podivinsky**
University of Southampton, Southampton, UK
Testing for Misspecification of Term Structure Dynamics
3. **Antje Dudenhausen**, Erik Schloegl and Lutz Schlögl
University of Bonn, Bonn, Germany
Robustness of Gaussian Hedges under Parameter and Model Misspecification

4. **Joao Pedro Nunes**
Warwick Business School, Coventry, UK
 Interest Rate Derivatives in a Duffie and Kan Model with Stochastic Volatility:
 Application of Green's Functions

3.20 - 3.50pm

Afternoon Tea

3.50-5.30pm

Parallel Sessions

Chair: Wolfgang Runggaldier

Ballroom

1. **Yoshio Miyahara**
Nagoya City University, Nagoya City, Japan
 Relative Entropy Methods in the Pricing Theory in Incomplete Markets
2. **David Heath**, Eckhard Platen and Martin Schweizer
University of Technology, Sydney, Australia
 Comparison of Some Key Approaches to Hedging in Incomplete Markets
3. **Peter Mansfield** and Bruce Brown
University of Tasmania, Hobart, Australia
 First Passage Times, Brownian Clocks, and the Stable Indices of Financial Returns
4. **Thierry Ane** and Helyette Geman
University Paris IX Dauphine, Paris, France
 Stochastic Volatility and Transaction Time: an Activity-Based Volatility Estimator
5. **Michelle Barnes**
University of Adelaide, Adelaide, Australia
 Aggregation of Short-Memory Processes, the Volatility of Stock Market Return Indices
 and Long Memory

Chair: Robert Webb

Barton Room

1. **Natasha Tsykin**
University of Melbourne, Melbourne, Australia
 Macroeconomic Expectations Generation and the Informational Efficiency of the All
 Ordinaries Share Price Index Futures Contract
2. **David Robinson**
University of Melbourne, Melbourne, Australia
 Nonlinear Dependence, Asymmetry and Thresholds in the Volatility of Australian
 Futures Markets
3. **Jiro Hodoshima**, Xavier Garza-Gomez and Michio Kunimura
Nagoya City University, Nagoya City, Japan
 Panel Data Analysis of Return and Beta In the Japanese Stock Market
4. **Nakatani Tomoaki** and Itoh Shigeru
Obihiro Univ. of Agriculture and Veterinary Medicine, Obihiro, Japan
 A Search for the Source of ARCH Effect in the Soybeans Futures in Japan: Does
 Chicago Affect the Price Variability in Tokyo?
5. **Cornelis Los**
Nanyang Technological University, Singapore
 Nonparametric Efficiency Testing of Asian Stock Markets

SYDNEY OPERA HOUSE
AUSTRALIAN BALLET, MADAM BUTTERFLY

Please take a ferry from Manly wharf to Circular Quay by **6.30pm**. A quick meal can be obtained at Circular Quay on the way to the Opera House. The performance begins at **7.30pm**. You must bring your ticket to the ballet to gain entrance to the theatre.

THURSDAY 17 DECEMBER 1998

Chair: Dilip Madan

- 8.30-9.00am **Chris Heyde**
The Australian National University, Canberra, Australia and Columbia University, New York, USA
Modelling and Inference for Risky Asset Time Series with Heavy Tails and Strongly Dependent Differences
- 9.00-9.30am **John van der Hoek** and Robert Elliott
The University of Adelaide, Adelaide, Australia
Using Hull and White Two Factor Model
- 9.30-10.00am **Uwe Kuechler**
Humboldt - University of Berlin, Berlin, Germany
On Stochastic Differential Equations with Time Delay
- 10.00-10.30am **Ron Lagnado**
Pareto Research Inc., Malibu, USA
- 10.30-11.00am **Ragnar Norberg**
University of Copenhagen, Copenhagen, Denmark
Financial Risk in Life Insurance
- 11.00-11.30am *Morning Tea*

EXCURSION TO PALM BEACH

Please meet in the foyer of the Manly Pacific Parkroyal at **11.30am** and bring your ticket. The bus will leave from the hotel shortly after 11.30am and return by 5.00pm.

Please note, only those who have booked and paid in advance are able to attend the tour.