WBS

THE 4th FIXED INCOME CONFERENCE

The Dorchester Hotel, London
19th / 20th / 21st September 2007

Due to the huge success of our previous three Fixed Income Conferences in Prague and Amsterdam, WBS Training are pleased to announce that we will be heading to London in September 2007. The three streamed format will be retained, with Credit Derivatives, Interest Rate Modelling and Hybrid Derivatives streams.

This year we will also have three workshops on Wednesday 19th September; Interest Rate Modelling, Credit Derivatives and Engineering BGM.

The 4th Fixed Income Conference Presenter List:

Jesper Andreasen
Head of Fixed Income Quantitative Research, Bank of America

Alexandre Antonov
Senior Quantitative Analyst, NumeriX

Nordine Bennani
Head of Credit Derivatives Quantitative Research, DrKW

Alan Brace
National Australia Bank

Damiano Brigo
Managing Director and Global Head, Q-SCI (Fitch-QFR), DerivativeFitch

Youssef Elouerkhaoui
Head of Credit Derivatives Research Europe, Citigroup

Helyette Geman
Professor of Mathematical Finance Birkbeck, University of London and ESSEC Business School

Giuseppe Di Graziano
Deutsche Bank

Jon Gregory
Global Head of Credit Derivatives Research, Barclays Capital

Patrick Hagan
Head, Quantitative Analytics, Chief Investment Office, JP Morgan

Marc Henrard
Head of Quantitative Research, Bank for International Settlements

Chris Hunter
Hybrids Trader, BNP Paribas

Peter Jaeckel
Global Head of Credit, Hybrid, Inflation and Commodity Derivative Analytics, ABN Amro

Lars Jebjerg
Fitch Ratings

Jean-Paul Laurent
University of Lyon

Jens Lund
Head of Product Development, Nordea

Fabio Mercurio
Head of Financial Models, Banca IMI

Massimo Morini
Financial Consultant

Raoul Pietersz
Vice President, ABN Amro

Riccardo Rebonato
Global Head of Market Risk, CM & Head of Quantitative Research, Royal Bank of Scotland

The 4th Fixed Income Conference Presenter List:

Lutz Schloegl
Fixed Income Quantitative Research, Lehman Brothers

Jacob Sidenius
Senior Quantitative Analyst, JPMorgan

Aleksei Tourkine
Quantitative Analyst, Interest Rates & Hybrid Derivatives, Société Générale

Manlio Trovato
Complex Interest Rate Options Analytics, Merrill Lynch

Julian Turc
Head of Quantitative Credit Strategy, Société Générale

Alicia Vidler
Merrill Lynch

Wednesday 19th September

Pre-Conference Workshop Day:

Pat Hagan: Interest Rate Modelling Workshop
Damiano Brigo: Credit Derivatives & Hybrids Workshop
Alan Brace: Engineering BGM Workshop

Workshop fee: £899:00 + UK VAT (No Discount)

Interest Rate Modelling Workshop: Pat Hagan (SOLD OUT)

Patrick Hagan received his Ph.D and B.S in Applied Mathematics from Caltech. Over the years he has worked at Bloomberg and several banks designing trading systems for fixed income, credit, and foreign exchange derivatives, as well as developing the component models, calibration methods, and numerical algorithm. He is now Head of Quantitative Analytics, Chief Investment Office at JP Morgan. Before entering finance he was Deputy Director of the CNLS and a member of the Computer Research and Applications group at Los Alamos. He has also worked at Exxon Science Laboratories, and has taught at Caltech, Stanford, the Institute for Mathematics and its Applications, and NYU.

9:00 – 10:30 / Managing Smile Risk

- **Swap market basics and delta trading**
- **Vanilla interest rate options and managing vega risk**
- **Theory of Dupire and local vol models**
- **The SABR model, vanna, volga and managing smile risk**
- **Levy based models**

10:30 – 10:45 Morning Break

10:45 – 12:30 / Managing Exotic Interest Rate Products

- **Key interest rate risks**
- **Calibration/pricing/hedging cycle**
- **Models for exotics**

  HJM models
  BGM models
  Short rate models
  Markovian models

- **Summary**

12:30 – 13:30 Lunch Break

Wednesday 19th September

13:30 – 15:15 / Practical Pricing of Exotics

- **Auto-calibration/global calibration**
- **LGM model**
- **Calibration strategy and choice of calibration instruments**
- **Example: calibration and pricing Bermudan swaption**
- **Price, risks, hedging and the calibration instruments**
- **Extension to other callable exotics**

   Callable Inverse Floaters, Superfloaters, Range Notes and Captions

15:15 – 15:30 Afternoon Break

15:30 – 17:00 / Pricing Callable Range Notes

- **Adjusters and risk migration**

   The need for risk migration
   Adjusters
   Adjusted price

- **Callable range notes**

   Deal definition
   LGM model (reprise)
   Convexity adjustment and payoff replication
   Pricing with adjusters
   Swaption and caplet risks

Wednesday 19th September

Credit Derivatives & Hybrids Workshop: Damiano Brigo

Damiano Brigo obtained a Ph.D. in stochastic filtering with differential geometry in 1996 from the Free University of Amsterdam, following a BSc in Mathematics from the University of Padua. In 1997 he moved to financial modeling at Banca INTESA in Milan, dealing with the pricing/hedging of equity, basket and interest-rate derivatives and with Risk Measurement.

In 1998 he moved to Banca IMI, where he has been appointed as Head of the Credit Models department, after formerly working on cross-currency and interest-rate derivatives and smile modeling. Over the years he has published several academic and practitioner-oriented articles in financial modeling, probability and systems theory journals. He is author of the book "Interest Rate Models: Theory and Practice" for Springer-Verlag.

He teaches regularly at post-university and Master courses in Milan and for professional training companies in London. He is Fixed Income professor at Bocconi University in Milan. He has been included in scientific committees of international conferences occurring at MIT and other academic and professional institutions. Damiano has also been listed as the most cited author in Risk Magazine in 2006. His current professional interests include default and credit modeling, counterparty risk, interest-rate and smile modeling and risk measurement.

9:00 – 10:30 / Implied Correlation

- **Credit Correlation: Compound and Base**
- **Problems with Compound Correlation**
- **Problems with Base Correlation**
- **Consistency at single tranche level**
- **Negative expected tranche losses profiles**

10:30 – 10:45 Morning Break

10:45 – 12:30 / Implied EXpected Tranche Loss

- **A model independent approach?**
- **Implied Expected Tranche Loss Surfaces**

12:30 – 13:30 Lunch

13:30 – 15:15 / Mapping Correlation Information Across Pools

- **Mapping Correlation on Bespoke Portfolios**
- **Testing the mapping methods: iTraxx vs CDX**

15:15 – 15:30 Afternoon Break

15:30 – 17:00 / Dynamic Loss Models

Dynamic Loss Models for next Generation Products
The GPL and GPCL approaches to loss dynamics
Hints at CPDO's and pool spread dynamics

Wednesday 19th September

Engineering BGM Workshop: Alan Brace

Alan Brace worked in industry, university and government jobs before entering finance in 1988. He started as the quant in a trading team at ANZ in Sydney, then moved to Citibank and later National Australia Bank (NAB), all jobs concentrating on interest rate modeling. He was a joint author of the paper "The market model of interest rate dynamics", that describes the log-normal forward model now widely used in the market in one form or another. He recently did a three year stint in New York at BNP-Paribas before returning to Sydney in 2005, where he now works in Market Risk at NABSession

1: Introduction

Forward construction of BGM out of HJM
Intuition behind model
Bond and swap basics
Definition shifted BGM
Backward construction

Session 2: Swaprate dynamics

Shift and stochastic parts
The approximate
Black swaption formula
Properties of spot and terminal measures
Interpolation of yieldcurves between nodes

Session 3: Correlation & Calibration

Correlation:

Various approaches
Forward correlation from swaprate correlation

Calibration:

Various approaches
Exact calibration to caplets and coterminal swaptions using a separable volatility function
Pedersen method of approximate fit to full swaption volatility matrix using a quasi-homogeneous volatility function.

Session 4: Pricing

Pricing by simulation
Glasserman type simulation
Bigstep type simulation
Pricing by one factor timeslicer (sort of lattice)
Uses of each

Session 5: Callable options

Pricing by simulation
Glasserman type simulation
Bigstep type simulation
Pricing by one factor timeslicer (sort of lattice)
Uses of each

Session 6: Hedging

Pathwise deltas for barriers and Bermudans
Perturbation method for vegas

Day Schedule	09:00 – 17:00
Morning Break	10:30 – 10:45
Lunch	12:30 – 13:30
Afternoon Break	15:15 – 15:30

Conference

Day 1: Thursday 20th September
Credit Derivatives Stream

08:10 – 08:40 / Registration

08:40 – 09:20 / Chairman's Opening Comments:
/ Norddine Bennani

09:30 – 10:50 / Stochastic Credit Spread Modelling:
/ Lutz Schloegl, Lehman Brothers

- **Jump-to-default risk vs spread jump risk**
- **Leveraged credit-linked notes, credit CPPI gap risk**
- **Credit spread distributions in a time-changed barrier hitting time model**
- **Application of CDS market models**

10:50 – 11:10 Morning Break

11:10 – 12:30 / New results for the pricing and hedging of CDOs:
/ Jean-Paul Laurent, University of Lyon

- **Comparison of CDO pricing models through stochastic orders**
- **Comprehensive approach to copula, structural and Poisson models**
- **Hedging of credit spread risks in intensity models**
- **Hedging of default risks in contagion models**

12:30 – 13:35 Lunch

13:35 – 14:55 / Dynamic Credit Correlation Modeling:
/ Giuseppe Di Graziano, Deutsche Bank

- **Copula Models for Credit Correlation Pricing: Pros and Cons**
- **A Brief Introduction to Markov Chains in Financial Modelling**
- **Dynamic Correlation Modelling using Markov Chains: The Di Graziano-Rogers approach**
- **Numerical Methods:**
- **1. Efficient Simulation of Markov Chains**
- **2. Inverting Laplace Transforms: The Abate-Whitt Method**

14:55 – 15:15 Break

15:15 – 16:35 / Exploring the Credit Tails: Leveraged Super
/ Seniors and CDPCs:
/ Jon Gregory, Barclays Capital

• **Super Senior Impact on the Capital Structure**
• **Pricing of Super Senior Tranches**
• **Pricing of Leveraged Super Senior Trades**
• **Analysis of CDPCs**

16:35 – 17:15 / Credit Derivatives Panel:
/ Latest Practical Developments in Credit
/ Derivatives Modelling

Moderator: Jon Gregory, Barclays Capital

Panelists:

• **Norddine Bennani**
• **Matthias Neugebauer**
• **Lars Jebjerg**

Gala Dinner 19:30

Day 2: Friday 21st September
Credit Derivatives Stream

09:00 – 10:30 / Advanced Pricing and Hedging in a Dynamic
/ Credit Model:
/ Youssef Elouerkhaoui, CITIGROUP

- **Motivation: From the Bottom-Up to the Top-Down Approach**
- **A dynamic version of the Marshall-Olkin Model**
- **Numerical Implementation: Asymptotic Series Expansion**
- **Dynamic Loss Distribution**
- **The Forward Skew**
- **Hedging strategies based on quadratic risk minimization**

10:30 – 11:00 Morning Break

11:00 – 12:30 / Recovery Rates:
/ Alicia Vidler, Merrill Lynch (TBC)

- **Empirical findings**
- **Recovery ratings**
- **Standard treatment of recovery rates when pricing credit products**
- **Trading recovery rates: absolute and relative value trading**
- **Recovery rates in credit models**
- **Calibration of recovery rates**

12:30 – 13:30 Lunch

13:30 – 15:00 / Dynamic Modelling for Portfolio Credit Derivatives:
/ Norddine Bennani, Dresdner Kleinwort

- **Top-Down approach versus Bottom-Up approach.**
- **Trade-off between simple model definition and the necessity of a flexible and well-specified underlying.**
- **From model definition to implementation: practical issues for pricing and calibration.**
- **Understanding implied correlation smile dynamics and the impact of auto-correlation**

15:00 – 15:15 Afternoon Break

15:15 – 16:45 / The Term Structure of Loss Distributions:
/ Jakob Sidenius, JPMorgan

- **Where do we need the Term Structure?**
- **Forward Copulas**
- **Chaining of Copulas**
- **Examples**
- **Numerical Results**

End of Conference

Day 1: Thursday 20th September
Hybrid Derivatives Stream

08:10 – 08:40 / Registration

08:40 – 09:20 / Chairman's Opening Comments:
/ Chris Hunter

09:30 – 10:50 / New Classes of Models for Equity, Interest Rates,
/ Credit Hybrids:
/ Helyette Geman, Birkbeck, University of London
/ and ESSEC Business School

- **Acceptable Numéraires and Invariance principles**
- **Creating Stochastic Volatility through Stochastic Time Changes: the CGMY example**
- **Local Volatility Models: from Gyongi's theorem to Dupire's equation**
- **Local Lévy Models to capture forward skews**
- **From Local Volatility to Stochastic Volatility Models for Equity Derivatives: the case of Stochastic Interest Rates**

10:50 – 11:10 Morning Break

11:10 – 12:30 / A Lego Approach To Hybrid Modeling:
/ Jesper Andreasen, Bank of America

- **Each Lego block consists of two components: stochastic rates and index**
- **Rates can be nominal, real, dividends, convenience yield**
- **Index can be fx, cpi, equity, commodity, etc**
- **Rates are modelled using multi-factor Cheyette models with stochastic volatility**
- **Index can be modelled as Black-Scholes, Heston SV, Merton jump, general Levy, local vol or a mix of these**
- **The Lego blocks are then stacked to create models for multicurrency-interest rate-inflation-fx-commodity-equity hybrids**
- **Closed-form calibration and efficient simulation**

12:30 – 13:35 Lunch

13:35 – 14:55 / Equity-Credit Modelling and Trading Using
/ Volatility Surfaces with Application to CDS Curves:
/ Julien Turc, Société Générale

- **Problems with using equity-credit models in the investment grademarket**
- **Pricing hard and soft default: an approach based on short-term CDS and a local volatility function**
- **Relative value analysis**
- **Application to CDS curves**

14:55 – 15:15 Afternoon Break

15:15 – 16:35 / Credit / IR Hybrids:
/ Damiano Brigo, DerivativeFitch

- **Correlation between interest rates and credit spreads**
- **Counterparty risk neutral pricing in simple Interest Rate swaps**
- **Counterparty risk neutral pricing in more exotic Interest Rate Derivatives**
- **Contingent Credit Default Swaps on interest-rate underlyings**

16:35 – 17:15 / Hybrid Derivatives Panel:
/ Latest Practical Developments in Hybrid
/ Derivatives Modelling

Moderator: Chris Hunter, BNP Paribas

Panelists:

- **Damiano Brigo**
- **Julian Turc**
- **Alicia Vidler**

Gala Dinner 19:30

Day 2: Friday 21st September
Hybrid Derivatives Stream

09:00 – 10:30 / Collateralised Volatility Obligations: The Case of
/ Commodity-linked Credit Obligations:
/ Lars Jebjerg, Fitch Ratings

- **Market Context**
- **Commodities-linked Credit Obligations (CCOs) as a credit derivatives securitization arbitrage product**
- **Synthetic CDO structure: trigger events and payoff severity**
- **Assets, analytical considerations. Fitch's modelling approach**
- **Extensions: Shorts, calls, payoffs**

10:30 – 11:00 Morning Break

11:00 – 12:30 / IR, FX Hybrids:
/ Chris Hunter, BNP Paribas

Bullet points to follow.

12:30 – 13:30 Lunch

13:30 – 15:00 / Embedding Inflation and Stochastic Drift in
/ Interest Rate Modelling:
/ Manlio Trovato, Merrill Lynch

- **Combining stochastic drift and stochastic volatility modelling**
- **The impact of inflation and deflation scenario to the volatility smile**
- **The impact of drift regimes to yield curve shapes and the correlation structure**
- **Pricing exotics with stochastic drift**

15:00 – 15:15 Afternoon Break

15:15 – 16:45 / New Paths for Modelling of Interest Rate Hybrids:
/ Applications to Rate / Credit and Rate-Inflation
/ Products: Aleksei Tourkine, Société Générale

- **Rate-credit hybrids overview**
- **MARCH model**
- **Applications**
- **Similarities in rate-credit and rate-inflation hybrid modelling**
- **Basic modelling considerations**
- **"Market models" for inflation**
- **A simple market model for rate-inflation hybrids**

End of Conference

Day 1: Thursday 20th September
Interest Rate Modelling Stream

08:10 – 08:40 / Registration

08:40 – 09:20 / Chairman's Opening Comments:
/ Pat Hagan

09:30 – 10:50 / Quantifying Counterparty Risk:
/ Jens Lund, Nordea

- **What is the purpose of measuring counterparty risk?**
- **What is a good model for counterparty risk measuring?**
- **Going general or fast for specific products?**
- **Different products - different models**
- **Various implementation techniques**

10:50 – 11:10 Morning Break

11:10 – 12:30 / Robust Construction of Swaption Smiles and the
/ Vanna-Volga Method for CMS Adjustments:
/ Fabio Mercurio, Banca IMI

- **Robust construction of volatility smiles:**
- **Application to swaption volatilities**
- **The CMS convexity adjustment: definitions and assumptions**
- **The Vanna-Volga approach for swaption volatilities**
- **Pricing CMS swaps and options**
- **Comparison with the SABR functional form**

12:30 – 13:35 Lunch

13:35 – 14:55 / Efficient Risk by Simulation in Market Models for
/ TARNs and Callables:
/ Raoul Pietersz, ABN Amro

- **Targeted accrual redemption notes**
- **Risk - discontinuity - simulation**
- **Importance sampling**
- **Smooth valuation**
- **Stable risk**

14:55 – 15:15 Break

15:15 – 16:35 / Hyp Hyp Hooray!
/ Peter Jaeckel, ABN Amro

Abstract:

A new stochastic-local volatility model is introduced. The new model's structural features are carefully selected to accommodate economic principles, financial markets' reality, mathematical consistency, and ease of numerical tractability when used for the pricing and hedging of exotic derivative contracts. Also, we present a generic analytical approximation for Black volatilities for plain vanilla options implied by any parametric-local-and-stochastic-volatility model, apply it to the new model, and demonstrate its accuracy.

Contents:

I.	**Local-stochastic volatility models**
II.	**Hyperbolic local volatility**
III.	**Hyperbolic stochastic volatility**
IV.	**Watanabe unleashed**
V.	**Delta**
VI.	**Time dependency approximations**
VII.	**Wing adjustments**

16:35 – 17:15 / Interest Rate Modelling Panel:
/ Latest Practical Developments in Interest Rate
/ Modelling

Moderator: TBC

Panelists:

• **Peter Jaeckel**
• **Raoul Pietersz**
• **Manlio Trovato**

Gala Dinner 19:30

Day 2: Friday 21st September
Interest Rate Modelling Stream

09:00 – 10:30 / Explicit results in the LIBOR Market Model:
/ Marc Henrard, Bank for International Settlements

- **Local volatility and smile**
- **Explicit formulas for vanillas**
- **Simple exotic**

10:30 – 11:00 Morning Break

11:00 – 12:30 / A SABR-Compatible Extension of the LIBOR
/ Market Model:
/ Riccardo Rebonato, Royal Bank of Scotland

- **The role of SABR for plain-vanilla pricing: exact solutions and asymptotic approximations**
- **LMM versus SABR: turning a series of snapshots into a model**
- **Finding a financially-motivated extension**
- **Time-homogeneity versus mean-reversion: what is the market suggesting? Reviewing the empirical evidence**
- **A simple, almost instantaneous calibration that recovers the SABR prices in a financially justifiable manner.**
- **Caplets and swaptions: is the SABR model self-consistent?**
- **Improving computational speed: displaced diffusion and CEV compared**

12:30 – 13:30 Lunch

13:30 – 15:00 / A Basket of Heston Models and its Analytical
/ Approximation via the Markovian Projection:
/ Alexandre Antonov, NumeriX

- **Review of analytical approximation methods**
- **Brief history of Markovian projection**
- **Projection to skew and smile models**
- **Basket of Heston models: analytical approximation for options on the basket index:**
1.   **Application of the Markovian projection technique using small volatility expansion**
2.   **New research on error reduction for big vol-of-vols**

15:00 – 15:15 Break

15:15 – 16:45 / Libor Market Model and the Swaption
/ SmileMassimo Morini, Financial Consultant

- **Modelling the skew with a local volatility function, or with rate/volatility correlation?**
- **Stochastic Volatility Libor Models: calibration and parameter regularity**
- **SABR model: parameter indetermination and hedging with correlation**
- **A Term Structure Libor Model consistent with SABR dynamics**
- **A simple formula for Term Structure SABR models**
- **Calibration, parameter stability, out-of-sample tests**

Event fees:

☐ Workshop: £899:00 + UK VAT (No discount)

☐ Main Conference: £1699:00 + UK VAT

Group Bookings:

Receive an extra 5% discount with 3 or more delegate bookings from the same institution.

Delegate details:

Company:	
Name:	
Position:	
Name:	
Position:	
Name:	
Position:	
Department:	
Address:	
Country:	
Phone:	
E mail:	
Date:	
Signature:	

To register please fax the completed booking form to:

Fax: +44 (0) 1273 201360

Flight details:

All delegates flying into London on the morning of the event are reminded that they should arrive 30 minutes before the workshop starts for registration. The hotels West End location is approximately 1 hour from all 3 main London airports, Heathrow, Gatwick and City. Returning flights should equally allow for the events finishing time.

Hotel Contact Information:

The Dorchester
Park Lane
London W1K 1QA
United Kingdom

Tel: +44 (0) 20 7629 8888
Fax: +44 (0) 20 7629 8080
http://www.dorchesterhotel.com

Sponsorship:

World Business strategies Ltd, offer sponsorship opportunities for all events,
E-mail headers and the web site.
Contact Sponsorship: +44 (0) 1273 201352

Disclaimer:

World business strategies command the rights to cancel or alter any part of this programme.

Cancellation:

By completing of this form the client hereby enters into a agreement stating that if a cancellation is made by fax or writing within two weeks of the event date no refund shall be given. However in certain circumstances a credit note maybe issued for future events.

Prior to the two week deadline, cancellations are subject to a fee of 25% of the overall course cost.

Registration:

Tel: +44 (0) 1273 201352

Fax: +44 (0) 1273 201360

Contact:

http://www.wbstraining.com

sales@wbstraining.com