



## The Latest Developments: Interest Rate Derivatives & Hybrids Workshop

Central London 27th / 28th / 29th November 2006

---

---

This workshop provides THREE booking options

Register to ANY ONE day TWO days or all THREE days of the workshop

Register to ANY TWO days of the workshop and receive £200 discount

Register to ALL THREE workshop days and receive £300 discount

---

## Topics:

### Interest Rate Modelling: From Basic – Hybrids Workshop

- **Interest-rate modelling: the basics**
- **Applications: short rate models, positive-interest models, chaotic models**
- **Interest rate and foreign exchange hybrids**
- **Conditional variance models for foreign-exchange volatility**
- **Interest rate and inflation hybrids**
- **Payout structures for inflation-linked hybrid products**
- **Interest rate and credit hybrids**
- **Market-information models for credit-linked structures**

Presenters:

**Dorje C. Brody:** Royal Society University Research Fellow, Imperial College London

**Lane P Hughston:** Professor of Financial Mathematics, King's College London

### Latest Developments: Interest Rate Modelling Techniques

- **Stochastic volatility term structure models for callable swaps**
- **Modeling challenges with callable swaps**
- **The Swaption Smile and CMS Convexity Adjustments**
- **Introducing the displaced diffusion LIBOR model with uncertain shifts**
- **Calibration of LIBOR Market Model**
- **Linear and Nonlinear Pricing of Swaptions**
- **Generic and CMS Market Models and Measures**
- **Extending LIBOR and swap market models**

Presenters:

**Claudio Albanese:** Chair of Mathematical Finance, Imperial College London

**Przemyslaw Bachert:** Ernst & Young

**Dariusz Gatarek:** Glencore International

**Fabio Mercurio:** Head of Financial Models, Banca IMI

**Raoul Pietersz:** Senior Derivatives Researcher, ABN Amro

### Latest Developments: Interest Rate Hybrid Products

- **On the Term Structure of Portfolio Loss Distributions**
- **FX Hybrids Modelling**
- **Modelling the long-dated FX smile**
- **Skew dynamics on FX and interest rates**
- **Impact of skew dynamics on exotics**
- **Correlation Smile and Hybrid Pricing**
- **Evolution of the Correlation Smile**

Presenters:

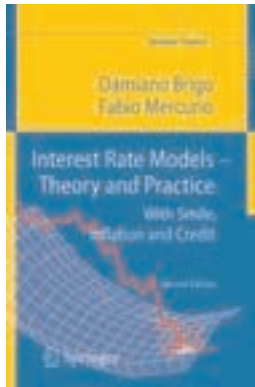
**Messaoud Chibane:** Senior Quantitative Analyst, Bank of America

**Chris Hunter:** Hybrids Trader, BNP Paribas

**Pierre-Olivier Rieu:** Quantitative Researcher, Deutsche Bank

**Jakob Sidenius:** Senior Quantitative Analyst, JPMorgan

# All delegates will receive a complimentary copy of The 2nd Edition: Interest Rate Models – Theory and Practice



## **Interest Rate Models – Theory and Practice**

**With Smile, Inflation and Credit**  
**Series: Springer Finance**  
**Damiano Brigo, Fabio Mercurio,**

**2nd Edition, 2006, Approx 1000 p, Hardcover**

**The 2nd edition of this successful book has several new features. The calibration discussion of the basic LIBOR market model has been enriched considerably, with an analysis of the impact of the swaptions interpolation technique and of the exogenous instantaneous correlation on the calibration outputs.**

**A discussion of historical estimation of the instantaneous correlation matrix and of rank reduction has been added, and a LIBOR-model consistent swaption-volatility interpolation technique has been introduced.**

**The old sections devoted to the smile issue in the LIBOR market model have been enlarged into a new chapter. New sections on local-volatility dynamics, and on stochastic volatility models have been added, with a thorough treatment of the recently developed uncertain-volatility approach.**

**Examples of calibrations to real market data are now considered.**

**The fast-growing interest for hybrid products has led to a new chapter. A special focus here is devoted to the pricing of inflation-linked derivatives.**

**The three final new chapters of this second edition are devoted to credit.**

**Since Credit Derivatives are increasingly fundamental, and since in the reduced-form modeling framework much of the technique involved is analogous to interest-rate modeling, Credit Derivatives – mostly Credit Default Swaps (CDS), CDS Options and Constant Maturity CDS - are discussed, building on the basic short rate-models and market models introduced earlier for the default-free market. Counterparty risk in interest rate payoff valuation is also considered, motivated by the recent Basel II framework developments.**

## Day 1: Basic - Advanced - Hybrids Workshop

08:30 – 17:30 / Lane P Hughston, King's College London &  
Dorje C. Brody, Imperial College London

### 8:30 – 10:30 / Interest-Rate Modelling: The Basics

- Probabilistic foundations (the essentials, less the irrelevancies)
- Discount bonds and interest rates, dynamics of discount bonds
- Interest-rate modelling: why take an axiomatic approach?
- Axiom one: the money-market account
- Axiom two: arbitrage-free asset-price dynamics
- Axiom three: the floating rate note
- Axiom four: the discount-bond system
- What is the difference between the "pricing kernel method" and so-called "risk-neutral valuation"?
- Relation to Baxter, Constantinides, Flesaker-Hughston,
- Heath-Jarrow-Morton, Hunt & Kennedy, Rogers, Rutkowski, etc.
- Market completeness issues: pricing vs hedging
- Pricing kernels: the economic foundations, and why we cannot do without them
- Applications: short rate models, positive-interest models, chaotic models
- Swaptions, caps, and CMS products

10:30 – 10:45 Break

### 10:45 – 12:30 / Interest-Rate Modelling: The Basics

- Matrix models for exchange-rate systems
- Geometrical interpretation of foreign exchange volatility
- On the relation between market price of risk and volatility
- Foreign pricing kernels
- Conditional variance models for foreign-exchange volatility
- Applications for FX-IR and equity-index products

12:30 – 13:45 Lunch

### 13.45 – 15:15 / Interest Rate and Inflation Hybrids

- Inflation-linked bonds
- Payout structures for inflation-linked hybrid products
- General theory of inflation dynamics
- The foreign-exchange analogy for inflation models
- Price processes for real and nominal discount bonds
- Models for real pricing kernels
- Valuation of inflation-linked derivatives

15:15 – 15:30 Break

### 15.30 – 17:30 / Interest Rate and Credit Hybrids

- Market-information models for credit-linked structures
- Price processes for credit-risky bonds
- Options on credit-risky debt
- Correlation issues: introducing the X-factor approach
- Extension to equity-linked products and IR/credit/equity hybrids

Cocktail Party Tuesday 28th November 17:30 – 19:30 (All delegates are invited to the cocktail party)

## Day 2: Latest Developments: Interest Rate Modelling Techniques

08:30 – 10:30 / Generic and CMS Market Models and Measures:  
2 hours / Raoul Pietersz, ABN AMRO

- Extending LIBOR and swap market models
- Ease of volatility calibration
- Expressions for drift under terminal and spot measures
- Reduced factor fast drift calculations for LIBOR, swap and CMS models
- Applications to callable CMS swaps

10:30 – 10:45 Break

10:45 – 12:45 / The Swaption Smile and CMS Convexity  
2 hours / Adjustments: Fabio Mercurio, Banca IMI

- The swaption smile quoted by market
- Calibration with the SABR functional form
- Introducing the CMS convexity adjustments
- Valuing CMS convexity adjustments with the SABR functional form
- A joint calibration to swaptions and CMS swap spreads
- The pricing of CMS spread options

12:45 – 13:45 Lunch

13:45 – 15:15 / Calibration of LIBOR Market Model -  
1 hour 30 minutes / a Practitioner's Approach:  
/ Dariusz Gatarek and Przemyslaw Bachert

- LIBOR rate lognormal approximations
- Linear and nonlinear pricing of swaptions
- Swap rate lognormal approximation
- Numerical example of European swaptions
- Brownian bridge drift approximation
- Comparison of pricing methods & potential extensions

15:15 – 15:30 Break

15:30 – 17:30 / Stochastic Volatility Term Structure Models for  
2 hours / Callable Swaps: Claudio Albanese, Imperial  
/ College London

- Modeling challenges with callable swaps
- Local calibration and risk management with SABR
- Stochastic volatility and regime switching term structure models
- Implementation on functional lattices
- Global calibration
- Using the Markov functional model for local calibration refinements
- Case study: Constant maturity callable swaps and callable swap spreads
- Callable CMS spread range accruals and TARNs on spread options

Cocktail Party Tuesday 28th November 17:30 – 19:30 (All delegates are invited to the cocktail party)

## Day 3: Latest Developments: Interest Rate Hybrid Products

09:00 – 10:30 / FX Hybrids modelling: Messaoud Chibane,  
1 hour 30 minutes / Bank of America

### Examples of typical products

- Power Reverse Dual Currency knock outs and cancellables
- FX inverse floaters
- FX tarns
- Quantoed structures

### History of FX model for long dated structures

- The standard model: the Two Currency Hull-White
- Cross-Currency Libor Market Models
- Modelling the long-dated FX smile

10:30 – 10:45 Break

10:45 – 12:30 / Skew dynamics on FX and interest rates:  
1 hour 45 minutes / Pierre-Olivier Rieu, Deutsche Bank

- Impact of skew dynamics on exotics
- Model choice
- FX calibration
- Interest rates calibration
- Comparison of the two models

12:30 – 13:30 Lunch

13:30 – 15:00 / On the term structure of portfolio loss distributions:  
1 hour 30 minutes / Jakob Sidenius, JPMorgan

- Kinematics and constraints
- Calibration to market
- Dynamics and constraints
- Calibration of dynamics
- Applications to deals

15:00 – 15:15 Break

15:15 – 17:15 / Correlation Smile and Hybrid Pricing:  
2 hours / Chris Hunter, BNP Paribas

- Term structure of correlation
- Modeling correlation tails
- Implied Correlation
- Local Correlation
- Evolution of the Correlation Smile

End of day 17:15

Cocktail Party Tuesday 28th November 17:30 – 19:30 (All delegates are invited to the cocktail party)



The Latest Developments:  
Interest Rate Derivatives &  
Hybrids Workshop

Central London 27th /28th / 29th  
November 2006

**Workshop Fees:**

- Any One day: £999 + UK VAT
- Any Two days: £1798 + UK VAT  
(Including £200 Discount)
- All Three days: £2697 + UK VAT  
(Including £300 Discount)

30% discount Academic delegates

**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.

**Complimentary inbound transfer service:**

WBS Training now extend our premium service to all our clients. This includes a complimentary inbound transfer from London airports to central London hotels for all workshops. If you require this service simply inform us up to 2 working days prior to your arrival (flight number, arrival time, airport and hotel destination) and we will arrange a complimentary pick up. You will be given a phone number to call on arrival and will be greeted at the airport by our partner taxi company.

**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](mailto:sales@wbstraining.com)