

Mark Joshi: Pricing exotic interest rate derivatives The LIBOR market model in QuantLib

**Book before September 30th to Receive a 20% 'Early Bird' Discount
and before November 30th to receive a 10% Discount.**

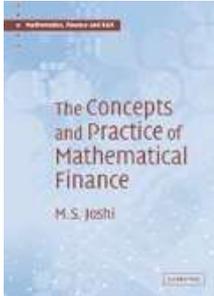
This **three-day course** will be led by an international expert who played a large role in the coding of the LIBOR market model in the QuantLib C++ open-source project. He will examine the practical problems that arise when implementing the LIBOR market model to price exotic interest rate derivatives. Each issue will be discussed at theoretical, practical and coding levels. The solution of these using QuantLib classes will be the focus of the course.

We will see how QuantLib provides a free easily-extendible implementation that achieves rapid pricing and sensitivity computation, and stable calibration to the market; whilst being able to cope with path-dependence, discontinuous pay-offs and early exercise features.

Day 1 Basics and Calibration	<ul style="list-style-type: none">➤ Why market models and theoretical underpinnings.➤ Achieving a speedy Monte Carlo implementation: drift computation, drift approximation, accelerating convergence, latest implementations of Sobol➤ QuantLib classes: MarketModelEvolver, LogNormalFwdRatePc, LogNormalFwdRateIpc, LogNormalCotSwapRatePc, LMMDriftCalculator, NormalFwdRatePc, BrownianGenerator, SobolRsg➤ Calibration: time homogeneity, correlation structures, the pseudo-square root as a fundamental building block, stable simultaneous calibration to caplets and swaptions, period mismatches,➤ QuantLib classes: MarketModel, SwapForwardMappings, FwdToCotSwapAdapter, CotSwapToFwdAdapter, PiecewiseConstantAbcdVariance, CTSMMCapletCalibration, CTSMMCapletMaxHomogeneityCalibration, capletSwaptionPeriodicCalibration
Day 2 Early Exercise and Greeks	<ul style="list-style-type: none">➤ Pricing products with early exercise features, obtaining lower bounds. Least-squares method. Anderson's method. Orthogonalization,➤ QuantLib classes: NodeData, collectNodeData, MarketModelExerciseValue, LongstaffSchwartzExerciseStrategy, MarketModelBasisSystem, MarketModelParametricExercise, genericLongstaffSchwartzRegression➤ Upper bounds for callable products.➤ QuantLib classes: UpperBoundEngine➤ Greek computation: partial proxy simulation and the conditional analytic method.➤ QuantLib classes: ConstrainedEvolver, LogNormalFwdRateEulerConstrained
Day 3 Skew and Smiles	<ul style="list-style-type: none">➤ Using displaced diffusion to achieve skew➤ QuantLib classes: how existing classes already include Displaced Diffusion➤ Using Heston stochastic volatility to obtain smile: Monte Carlo implementation➤ QuantLib classes: adding an extra evolver to implement stochastic volatility➤ Analytic approximations of the stochastic vol LMM, calibration, SABR and the LMM➤ QuantLib classes: possible ways to extend to encompass these cases

About the Speaker

Mark Joshi obtained a B.A. in mathematics (top of year) from the University of Oxford in 1990, and a Ph.D. in pure mathematics from the Massachusetts Institute of Technology in 1994. He was an Assistant Lecturer in the department of pure mathematics and mathematical statistics at Cambridge University from 1994 to 1999. Following which he worked for the Royal Bank of Scotland from 1999 to 2005 as a quantitative analyst at a variety of levels, finishing as the Head of Quantitative Research for Group Risk Management. He joined Melbourne University in November 2005 as an Associate Professor.



Mark's book "***The Concepts and Practice of Mathematical Finance***," CUP 2003 has become a standard introductory text in the area, and his other book "C++ Design Patterns and Derivatives Pricing," CUP 2004, has also proved popular. He has published twenty pure mathematics papers, as well as writing over twenty papers on financial mathematics, many of which deal with the practical aspects of implementing market models.

Further Information

Dates: 3 Days – 25 - 27th February 2009

Venue: Ada Lovelace Room, Institute of Physics, London, UK

Cost: £2600 inc. VAT (£2212.77 exc. VAT)

Registration

Please Return Application form to:

LIBOR Market Models,
MoneyScience Ltd,
4 St Pauls Road,
Bristol,
BS8 1LT, UK

Comments from Previous Delegates*

"Great Interactivity"

"Relevant and timely coverage of recent developments"

"Very Practical"

"Relaxed, Broad coverage"

*Attending March 2008 event: Implementing the LIBOR Market Model

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Registration Form

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Participant's E-mail address (If different from above):	
Position:	
Telephone:	
Company Name:	
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Cancellation

If a person which has registered for this course is unable to attend for whatever reasons, a substitute representative may be appointed to participate in advance. Cancellation will be accepted only in written form no later than twenty calendar days prior date of the course while a cancellation fee in the amount of 10% of the price or block price will be charged. Cancellation of the participation within a period of less than twenty calendar days prior to the date of the course is not possible for the technical and the organisational reasons. MoneyScience reserve the right at all times to cancel participation or cancel the entire seminar for whatever unspecified reasons, including possible force majeure. In this case, the price will be refunded in full to the applying participant.

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MoneyScience Master Class

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MoneyScience Masterclasses are English-language seminars, training sessions and practical workshops delivered by expert, qualified tutors. Our objective is to provide industry professionals with advanced financial know-how and up-to-date analytical methods and skills.

Tuition Language

MoneyScience Masterclasses are held in English and all relevant manuals, training software etc. are also provided in English. In order to benefit from participation, a good working knowledge of English, including common financial phrases and related terminology, is required.

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Clients who decided to participate, should submit their registration by mail to us in advance. Subject to availability, the participant will then receive a confirmation of participation. The number of participants is strictly limited to preserve an effective and focused learning environment.

Seminar Prices

The quoted seminar prices are per person and include all the course material, lunches and refreshments, The price does not include hotel accommodation. Quoted prices are inclusive of VAT.

Discounts

Bulk discounts are offered when submitting an application for the participation of more than one person. A 20% discount is offered when at least two participants from one company register and 30% is offered when at least 3 participants register.

Invoicing and Payment

An invoice for the seminar price will be sent to the participants on receipt of their Registration Form and should be paid within days. Full payment of the invoice must be made before the start of the course as a precondition of participation.

Terms of Cancellation

If for whatever reasons a registered participant is unable to attend, a substitute delegate may be appointed to participate instead. For cancellations received 20 days or more before the beginning of the seminar, a 10 % cancellation fee of the full price will be invoiced i.e. 90 % of the price is refunded. For cancellations received less than 20 days prior to the beginning of the seminar, the full price is payable i.e. no refund will be provided. All cancellations must be in writing. MoneyScience reserves the right to cancel the individual participation or cancel the entire seminar or part of it for whatever unspecified reasons, including possible force majeure. In this case, the price paid will be refunded in full or in part, accordingly.

Further Enquiries:

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