Credit & Interest Rate Risk Workshop

27 November 2007

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Investors increasingly demand more sophisticated credit and interest rate products to help them meet their risk management and investment challenges. Originators are constantly competing and striving to innovate and create better solutions as they recognise the potential to generate income, hedge risk, reduce capital and preserve liquidity. Driven by this, credit derivatives and structured products are amongst the fastest growing investment and risk management products in today's capital markets.

The workshop describes the exposures financial agents hold to interest rate and credit risks; the instruments and strategies used to manage the risks; infrastructure of the markets; and pricing of instruments.

It provides essential background material on debt capital markets but also covers pricing methods in detail. Mathematical models are supported by illustrative cases studies, which help translate theory to practice. This allows the attendee to gain access to real solutions and techniques, which they are then able to implement for their own work.

Benefits of Attending

Attendees will:

- Receive a background to securitisation markets.
- Learn about the background to credit instruments, including the use of credit derivatives in CDOs.
- Get an explanation and illustration of market approaches and models.
- Review rating agency approaches.
- Gain insight on practical issues in the motivation, origination and structuring of CDOs.
- Understand the correlation and structuring implications behind CDO note pricing.
- Observe variations in approach using real world examples.

Target Audience

The material is suitable for both practitioners and academics at various levels. For the more experienced it gives insight to different methods and consolidates existing knowledge. For the less experienced it provides concrete background to the area.

The Presenter

Moorad Choudhry is Head of Treasury at KBC Financial Products in London, the derivatives and convertible bond trading arm of KBC Bank N.V., Brussels. He previously worked as a gilt-edged market maker and sterling bond trader with ABN Amro Hoare Govett Sterling Bonds Limited and Hambros Bank Limited, and in structured finance with JPMorgan Chase Bank. He began his City career at the London Stock Exchange in 1989.

Moorad is a Visiting Professor at the Department of Economics, London Metropolitan University; a Visiting Research Fellow at the ICMA Centre, University of Reading; a Senior Fellow at the Centre for Mathematical Trading and Finance, Cass Business School; and a Fellow of the Securities and Investment Institute.

Organised by:

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Agenda

Workshop by Moorad Choudhry,
Visiting Professor, London Metropolitan University

9.30 Fixed Income and Money Markets

Instruments and infrastructure; basic bond analysis

- Instrument type
- Interest rate risk
- Market conventions

Why important: An introductory lecture covering the two chapters on bonds and money markets in the PRMIA Handbook. This is essential background material on debt capital markets and will help to place graduate students research in finance into context.

10.30 Credit Derivatives I

Credit risk, credit ratings and credit risk management
Instruments: credit default swaps, total return swaps, credit linked notes

- Market conventions
- Applications

Why important: Credit derivatives use has grown to such an extent over the last 10 years that they are now a vital part of the debt capital markets. They have contributed to increased liquidity and accessibility for investors. They have also led to more efficient investor assessment because they have increased transparency with regard to relative value analysis. This lecture describes the main instrument types and discusses their main applications and use by banks and fund managers

11.30 Mid-morning break

11.45 Credit Derivatives II

The credit default swap basis
CDS pricing: the market approach from first principles
Why important: The existence of a liquid market in credit derivatives means that investors can access corporate credits along any part of the term structure, and can determine relative value of the synthetic market vis-à-vis the cash market. The CDS Basis is the main measure of this relative value and reflects the existence of mis-pricing and arbitrage opportunities. This lecture looks into the basis and its measurement from an investor viewpoint. The second half of the lecture is a non-quant approach to CDS pricing from first principles.

12.45 Lunch

14.00 Synthetic securitisation: the synthetic CDO

The use of synthetic CDOs for credit risk transfer and credit investment

- Synthetic securitisation
- Structuring
- Pricing the synthetic CDO note: default probability and correlation, and note price Sensitivity

Why important: Credit derivatives are important as building blocks of structured credit vehicles such as synthetic CDOs, SIVs and synthetic ABCP. These can be used for credit risk management as well as balance sheet management and fund management purposes. This lecture considers the structuring of such vehicles as well as the issues involved in valuing the synthetic CDO note tranche. This looks into the issues of default probability and default correlation.

15.00 Tea

Guest Presentation: Leela Mitra, CARISMA/Brunel University

Pricing and evaluating a bond portfolio using a regime-switching Markov model

We describe a pricing model for defaultable bonds which, through the introduction of three Markov chains, integrates credit and market risk, under consideration of the state of the economy. The model builds on the well-known work of Jarrow, Lando and Turnbull which models the migration of bonds between credit ratings using a Markov chain. We will discuss:

- Calibration of the model to historical data, under both the physical world and pricing measures.
- Use of model to price credit risky bonds portfolios.
- Determination of the distribution of credit risky bond portfolios values a year ahead, from this we can determine the Value at Risk (VaR) and Conditional Value at Risk (CVaR).

Some particular features of interest are:

- The whole yield curve is modelled; arbitrage across risk free interest rates is excluded (Heath-Jarrow-Morton condition).
- Use of quadratic programming to discover the underlying yield and credit spreads and introduction of constraints to remove anomalous pricing.
- Calibration of the risk neutral credit migration process using quadratic programming.

The Presenter

Leela Mitra is currently completing a PhD in Financial Mathematics at CARISMA, Brunel University. Leela received a 1st Class BA (Joint Honours) degree in Mathematics and Philosophy from King's College, London (University of London) in 1998.
Previously she worked as an Actuarial Consultant for Mercer HR, and Jardine Lloyd Thomson. The jobs involved financial modelling, consultancy skills and knowledge of company pension scheme legislation. She has completed the Diploma in Actuarial Techniques.
Her research area is focused on credit risk; modelling and management, in particular investigating and developing models which incorporate regime switching through hidden Markov chains. She is also a Modelling Consultant with OptiRisk Systems.

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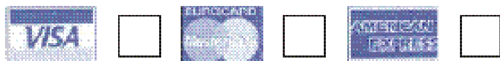

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Event

☐ Financial Innovation Workshop
19 November 2007

☐ Credit Risk & Interest Rate Risk Workshop
27 November 2007

☐ LDI/ALM Workshop
28 November

☐ EVT-Copula Workshop
30 November

Registration Fee

	1 Day	2 Days	3 Days	4 Days
Student	£ 75	£ 150	£ 210	£ 280
Academic	£ 105	£ 200	£ 295	£ 395
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