PHD COURSE – Asset Pricing II

Fabio Mercurio, Head of Financial Models, BANCA IMI, Italy

Venue: ASB, Fuglesangs Allé 4, room H210
Time: 19-20 April 2007

TOPICS

1. **Introductory elements**
   - General definitions and assumptions
   - A quick review on no arbitrage and change of numeraire
   - General pricing formula and choice of a convenient numeraire

2. **What is to be modelled?**
   - Instantaneous short rate modelling
   - Instantaneous forward rate modelling
   - Libor rate modelling

3. **The Libor market model**
   - Definitions
   - Possible parameterizations of the instantaneous covariance structure
   - Future volatility evolution
   - Dynamics under different measures
   - Efficient approximation of swaption volatilities

4. **Examples of pricing**
   - In arrears swaps
   - Target redemption notes
   - Bermudan swaptions

5. **Cross-currency Libor model**
   - Identifying the suitable numeraire
   - Differential swaps and quanto options
   - Pricing general two-currency options.

6. **Pricing the cap smile**
   - The shifted-lognormal model
   - The C.E.V. model
   - Other local volatility models
   - Stochastic volatility LIBOR models
   - The LIBOR model with uncertain parameters

7. **Pricing the swaption smile**
   - Description of market quotes
   - Calibration with the SABR functional form
   - Introducing the CMS convexity adjustment
   - A joint calibration to swaptions and CMS swap spreads
   - Pricing CMS spread options
READINGS


PROGRAMME

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<thead>
<tr>
<th>Thursday 19 April 2007 in room H210</th>
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<td>10.15 - 12.30</td>
<td>Lectures</td>
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<td>15.00 – 16.00</td>
<td>Extended session on Inflation Indexed Derivatives (open to non-participants)</td>
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