QFRC Occasional Lecture
Tuesday 11 April

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Dynamic credit correlation modelling for synthetic CDOs

Synthetic CDOs are currently traded with strategies quite distinct from the cash-flow market. The established standard for mark-to-market and trading is given by the base correlation framework based on Gaussian copula and an iterative, local calibration procedure. Unfortunately, this framework is not very satisfactory as in general it is not arbitrage free, the base correlation curve is not guaranteed to exist (and indeed it disappeared in May 2005) and, when it exists, is not unique as the inclusion or equity tranchelets shifts it substantially. There is thus an effort towards establishing an alternative pricing framework and in this presentation I review the model I authored for this purpose.

The proposed new modelling framework is dynamic and rating based. The version published last year was based on a through-the-cycle calibration while I am currently developing a new a point-in-time version which is based on more precise statistics and is suitable not only for index tranches but also to concentration bespokes. The model is arbitrage free and can be calibrated to be consistently with rating transition probabilities and historical probability of defaults, single name CDS spreads including an adjustment for the market price of credit risk, index tranche spreads ranging from the think equity tranches to the senior tranches by identifying a market price for correlation risk. The model is numerically very efficient and highly precise and is based on a new class of high dimensional lattice models in continuous time. The many applications range from pricing the index spread to computing high precision single name CDS spread sensitivities, reconstructing the term structure of tranche spreads for off-the-runs and bespoke maturities and pricing hybrids. The point-in-time version being developed is expected to be suitable for pricing concentration bespokes and CDO tranche options consistently with CDS options.

4pm – 6pm, Tuesday 11 April
Seminar Room
School of Finance and Economics
Level 3, D-Block
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