

10^{ème} SEMINAIRE PARISIEN DE VALIDATION DES MODELES FINANCIERS

28 juin 2012

IAE, Université Paris 1 Panthéon-Sorbonne, 21 rue Broca, 75005 Paris

Programme :

15h00 – 16h00. **Alok Gupta** (Deutsche Bank London & New York)

A Bayesian Approach to Robust Calibration of Local Volatility Models

16h00 – 16h15. Questions

16h15 – 16h30. Pause

16h30 – 17h30. **Piotr Karasinski** (EBRD London)

Mindless Fitting?

17h30 – 17h45. Questions

17h45. Cocktail

Deadline for registration 25/06/2012
Reply to ModelValidation@zeliade.com

Abstracts :

A Bayesian Approach to Robust Calibration of Local Volatility Models

We consider a general calibration problem for derivative pricing models, which we reformulate into a Bayesian framework to attain posterior distributions for model parameters. It is then shown how the posterior distribution can be used to estimate prices for exotic options. We apply the procedure to a discrete local volatility model and work in great detail through numerical examples to clarify the construction of Bayesian estimators and their robustness to the model specification, number of calibration products, noisy data and misspecification of the prior.

Mindless Fitting?

We are required to mark-to-market non-plain, exotic, products consistently with the market-observed prices of liquid vanilla products.

Thus for each exotic we must have a one-to-one mapping between vanilla prices and the exotic's price. Such mapping is called the mark-to-market model as it produces mark-to-market price and risk exposure. Risk management policies (risk limits, desire to minimise volatility of the mark-to-market P&L) typically compel traders to hedge exotics with vanillas such that the combined risk exposure, measured by the mark-to-market model, is close to zero.

In the traditional approach we set the price of an exotic equal to its' value given by a traditional derivatives valuation model that assumes a certain stochastic evolution of the relevant risk factors. To fit vanilla prices practitioners often use (are forced to use?) over-parametrised models in which risk factor dynamics can be counter-intuitive. Does this produce a good model, i.e., does hedging to such model's risk exposure result in realised replication cost that is close to the initial exotic's price the model produces? How can we find an answer to this question?

What are the alternatives? Can we start with a price of an exotic produced by a standard derivatives valuation model, with risk factors' dynamics that makes sense (who is to judge?), and somehow, externally, adjust the price to reflect the difference between market and model prices of relevant vanilla options? Would the resulting mapping produce a hedging model that is better than the one based on the traditional approach?

About the speakers :

Alok Gupta took first degrees at Cambridge University and Imperial College before completing his DPhil at Oxford University. His research was primarily in the use of Bayesian techniques in calibrating financial models to understand the degree of model uncertainty in option pricing/hedging. The work was extended to formulate measures of this uncertainty and ultimately to minimise the associated costs of mis-pricings/hedging. Having held a Research Fellowship at Oxford University, Alok now works in FX High Frequency Algorithmic Trading at Deutsche Bank in London & New York.

Piotr Karasinski's career spans more than 25 years and covers all areas of quantitative finance. Educated in physics at Warsaw and Yale universities, he landed on Wall Street by sheer accident. He has worked for a number of leading firms in New York and London and currently is a Senior Advisor at the European Bank for Reconstruction and Development in London.

Les Fondateurs



Les Organismes



FINANC ONCEPTS

Le groupe de travail

Le Séminaire Parisien de Validation des Modèles financiers a pour objectif de réunir des chercheurs universitaires et des professionnels du milieu financier et bancaire autour du thème de la validation des modèles financiers. Le séminaire se réunit sur une base trimestrielle autour de deux communications, l'une d'un chercheur académique et l'autre d'un praticien des marchés. Un temps d'échange entre les participants clôture chaque séance.

The Parisian Model Validation Seminar

The purpose of the Parisian Model Validation Seminar is to gather academic researchers and practitioners involved in the field of model risk and model validation. The seminar has a session every three months, organized around an academic talk followed by a practitioner one. A time of discussion/networking follows each session.

Modalités pratiques & Inscription

La participation au séminaire est gratuite et ouverte à tous sur inscription préalable, dans la mesure des places disponibles.

Pour vous inscrire, envoyez votre nom, prénom, affiliation professionnelle et vos coordonnées (e-mail, téléphone) par e-mail à ModelValidation@zeliade.com avant la date limite.

Practical matters & Registration

The Seminar can be attended free of charge. An email registration will be required to check for available seats.

To register, please send your name, surname, professional affiliation and contacts (e-mail, phone) by e-mail to ModelValidation@zeliade.com before the registration deadline.

Comité d'organisation

Jean-Michel Beacco, Rama Cont, Pierre Contencin, Patrick Hénaff, Claude Martini, Eric Moulines.

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