Forde
MARTIN

Lecturer in Financial Mathematics and Probability

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RESEARCH INTERESTS

- **Rough volatility**/GARCH models - simulation, calibration, statistical estimation.
- **Optimal trade execution** - with transient price impact/model uncertainty.
- **Entropic/Martingale Optimal Transport** - model-independent calibration for **exotic options**.

30 publications plus preprints available at webpage above,
h-index 16, 1105 citations on Google Scholar

EMPLOYMENT HISTORY

Lecturer
King's College London

Sep 2011 – Present London, UK

- Modules taught: FM14 **Advanced Volatility Models** and Path-dependent options, FM04 **Stochastic Analysis**, FM50 **Bloomberg** terminals mini-course; FM02 **Risk Neutral Valuation**, CM338 Mathematical Finance II (Continuous Time), FM01 Applied Probability and Stochastics (**measure theory**).
- Nominated for an **Excellence in Teaching award** four times.
- Lead coordinator for MSc/PhD Financial Mathematics admissions and MSc summer project

Research Fellow
Dublin City University

Sep 2008 – Aug 2011

- Supervised tutorials for MS117 Probability and MS136 Business Mathematics.

Visiting Assistant Professor
University of California at Santa Barbara (PSTAT Dept)

Sep 2006 – Aug 2008

- PSTAT 5E **Statistics with Economics** and Business Applications, PSTAT 170 Introduction to Mathematical Finance, PSTAT 160A Stochastic Processes, PSTAT 171 The Mathematics of Compound Interest.
- PhD-level courses: PSTAT 262 An Introduction to **Rough Paths**; PSTAT 262 **Large Deviations Theory** (with applications to finance).

CONSULTANCY

Modelling & Programming Consultant
Regent Markets Group

Aug 2011 – Apr 2012

- Formulated pricing models and code in Visual Basic/Excel and C++; calibrating stochastic volatility and Lévy **jump models**; pricing **quanto** products; model-independent bounds for barrier options.

EDUCATION

PhD Financial Mathematics
University of Bristol

2002 – 2006

MSci Mathematics (First Class)
University of Bristol

1996 – 2000

IT SKILLS

- Python, **Deep learning** with Tensorflow (applied to **Deep hedging**, Automated Market Makers (**AMMs**) for **crypto** coins, **optimal market making** with reinforcement learning), MATLAB, MOSEK, C++, Visual Basic/VBA, Mathematica, R
- **Other:** Excel, Bloomberg

GRANTS & AWARDS

AMAMEF Visiting Exchange Grant (10k Euros)
Imperial College London

Visiting exchange grant; research led to 8 joint published articles.

INDUSTRY EXPERIENCE

Instructor

CQF Workshop: Small-time/large-time asymptotics for stochastic volatility models

London

- **6-hour Volatility workshop** (via 7city/Wilmott CQF institute).
- Small-time, large-time and tail asymptotics for implied volatility under SABR, Heston and exponential Lévy models; practical implementation using Excel VBA and Mathematica.

Founder

StocVol.com

- Developed the StocVol toolpack - a suite of Mathematica notebooks for option pricing under stochastic volatility, exponential Lévy and credit models, in Mathematica and Excel.

Quantitative Analyst (Interest Rate Derivatives)

Commerzbank

Mar 2005 – Mar 2006 London

- Pricing Interest Rate derivatives under a displaced-diffusion LIBOR market model with CIR stochastic volatility in C++.

Quant Internship (FX options desk)

Dresdner Kleinwort Wasserstein

Aug 2004 – Oct 2004

- Pricing **FX cross-rate options** using Gaussian/Archimedean copulae (Gumbel/Frank), and fast calibration for a bivariate Heston model using a two-asset extension of the Renault-Touzi method.

Quant Internship (FX options desk)

HSBC

Aug 2003 – Nov 2003

- Pricing **time-window barrier options** using Implicit Finite Difference schemes

INVITED TALKS

Oxford; Cambridge; ETH Zürich; Imperial; UCL, Chicago; UCSB; ICBI Global Derivatives and Risk Management conference in Paris.