

Stephen Stretton

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Profile

Climate change policy and credit risk quantitative analyst with a first-class academic background and five years experience (three years in credit risk modelling; two years in climate change policy and economic/energy modelling). Specialist interests include: credit risk correlation, portfolio modelling, risk transfer, banking regulation, and climate change instruments. Available for permanent or contract work.

Education

- 2005-2006: **MPhil Economics, Gonville and Caius College, University of Cambridge**
Courses taken include: Microeconomics, Macroeconomics, Econometrics, Theory of Finance, Philosophical Issues in Economics. Dissertation: Energy Policy.
Econometric project: CAPM and the efficient market hypothesis.
- 2003-2005: **MA Philosophy, (part time) Birkbeck College, University of London**
General Philosophy, Epistemology & Methodology, Philosophy of Science;
Dissertation: Aristotelian Ethics.
- 2000-2001: **MSc Physics (1st Class), Gonville and Caius College, University of Cambridge**
Courses taken include: Quantum Field Theory; Information Theory, Monte Carlo Simulation & Bayesian Inference; Phase Transitions & Collective Phenomena.
Dissertation: Computational Modelling of Thin-film Magnetism.
- 1997-2000: **BA Mathematics, Gonville and Caius College, University of Cambridge**
Courses taken include: Algebra, Analysis, Mathematical Methods, Probability and Statistics, Stochastic Financial Models; Computational Modelling.
- 1990-1997: **King Edward's School Birmingham. Six A-Levels (all at grade A):**
Mathematics, Further Maths, Physics, Chemistry, Economics, General Studies.
AS French (grade A). Prize for Outstanding Academic Achievement.

Career History

- 2009 - 2010 Founding Fellow, E3 Foundation (Non-profit think tank, based in Cambridge)**
Developed vision and strategy for organisation. Built website <http://www.e3policy.org>. Currently fellow (part-time role, policy research).
- 2007- 2009 Research Associate, Cambridge Centre for Climate Change Mitigation Research (4CMR), Department of Land Economy, University of Cambridge**
(Funder: Tyndall Centre for Climate Change Research)

Responsibilities: Economic and energy modelling; climate change policy analysis.

Achievements:

- Completed major projects of international importance, including “Breaking the Climate Deadlock” for The Climate Group, presented by Tony Blair at the United Nations.
- Organised a major three-day international conference: the Cambridge Climate Summit 2008, “Entrepreneurship for a Zero Carbon Society”, bringing together technology, investment, and policy worlds.

- Wrote a full length monograph "A Short Guide to a Secure Future: Climate, Energy and the Future of the Economy", (awaiting publication: presently available online at <http://www.stephenstretton.com>).
- Updated the global Energy Technology Model of the econometric model E3MG with new data, including new methodologies for estimating capital cost.
- Successfully supervised three students for the MPhil in Environmental Policy, Department of Land Economy (topics included economics of cap & trade and electricity-sector investment). All three students gained good marks for their theses and examinations.
- Developed policy proposals on banking regulation, publicised online. Similar proposals were adopted by the UK government.

2004-2005 Consultant, Pari Passu Limited (working at the Royal Bank of Scotland)

Responsibilities: Updating, testing and validating credit risk models.

Achievements: Built and tested models of loss given default (LGD) for investment property, other property, shipping, and business assets lending. This involved a consultation process with interested parties in the bank, investigation of property valuation techniques and external recovery studies, and statistical validation work with internal loss data.

2001-2003 Associate, Barclays Capital, Portfolio Management (Large Corporate Loans)

Responsibilities: Designing and building a full suite of models for c.£50bn large corporate loan portfolio, advising my department on all aspects of quantitative analytics and banking regulation proposals, and interpreting the results of analytical tools.

Achievements: Created a full suite of models for the the loan portfolio including:

- **A portfolio credit risk model for the Barclays Capital large corporate portfolio**, similar to Moodys-KMV Portfolio Manager, but substantially more elegant, transparent and functional. Included measures of value at risk, expected shortfall- the risk contribution of different sectors of the portfolio; a new deal analyser against rest of the portfolio and a Monte Carlo simulation of loss distribution. This model was also used to value collateralised debt obligations
- **A single name credit derivatives pricing model and a mark-to-market tool** for the loan portfolio.

Skills

IT Skills: Visual Basic, Mathematica, R, Fortran, Web design (HTML and CSS), MS Office, OpenOffice, LaTeX; Microsoft Excel (advanced); C++, Java (basic).

Speaking and Presentation: Accomplished public speaker, taking part in numerous debates on energy policy, climate change, and finance - able to present information succinctly and powerfully.

Leadership and Management: Founded a non-profit think-tank the E3 Foundation. Developed personal management (goal setting, appraisal, and support), business and leadership skills.

Financial Skills: Familiarity with modelling a wide range of banking and derivative products.

Qualifications: Finance Securities Institute Certificate in Securities and Financial Derivatives.

Languages: French (conversational). German & Spanish (basic).

Other: Full clean driving license

Publications

Reports, Working Papers etc.

STRETTON, S. and SEWELL, M. 11th November 2009. "The Macroeconomic Costs and Benefits of Stronger Action to Mitigate Climate Change at the EU Level." *Report for E3G*.

BARKER, T. et al. September 2009. "Breaking the climate deadlock. Cutting the cost: The economic benefits of collaborative climate action." Presented by Tony Blair to UN Secretary General Ban Ki-moon at the opening ceremony of Climate Week NYC.

BARKER, T., SCRIECIU, S., CHEWPREECHA, U., SEWELL, M., POLLITT, H. and STRETTON, S. November 2009. "The Economic Benefits of International Cooperation in Mitigating Climate Change." *Tyndall Briefing Paper No 42*, Tyndall Centre For Climate Change Research. <http://www.tyndall.ac.uk/publications/briefing-notes/2009/bn42> .

BARKER, T. et al. 3rd August 2009. "The economic benefits of international cooperation in mitigating climate change. An analysis using the E3MG model (version 2.4), carried out for The Climate Group."

Conferences and Invited Presentations

STRETTON, S. 30th September 2009. "Pricing carbon and taxing energy: A guide for the perplexed." *Zero Carbon Britain 2 Policy Workshop*, Centre for Alternative Technology, Machynlleth, Wales.

STRETTON, S. 14th September 2009. "Climate change policy given political constraints." *Caius Graduate Arts Society*, Gonville and Caius College, University of Cambridge.

STRETTON, S. 30th March 2009. "The Critical Path - Energy System Decarbonization." *Zero Carbon Britain 2 Energy Supply Workshop*, Centre for Alternative Technology, Machynlleth, Wales.

STRETTON, S. 12th November 2008. "The Carbon Catch-22 - Financing Energy Systems Change." *Land Economy Seminar Series*, University of Cambridge.

STRETTON, S. 25th September 2008. "Financial Options to Promote Investment in Low Carbon Electricity." *British Institute of Energy Economics Academic Conference*, University of Oxford.

STRETTON, S., BARKER, T. and DAGOUMAS, A. 2nd July 2008. "Carbon and Energy Price Uncertainty Analysis Using the Global E3MG Model." *International Energy Workshop*, International Energy Agency, Paris.

Other

STRETTON, S., PILDITCH, S. and KENNEY, B. (Eds.). 2010. "The Atlas of Energy, Mapping the World's Energy Resources." Proposal book spreads completed for *Ivy Press*, Lewes, East Sussex.

Referees

Available on Request