

SAMUEL N. COHEN

St John's College, Oxford, OX1 3JP, United Kingdom

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PERSONAL DETAILS

Date of Birth: 28 February 1984
Citizenship: Australia and United Kingdom
Languages: Fluent in English and French

INTERESTS

Stochastic Processes, Applied Probability, Mathematical Finance, Game Theory,
Statistical Estimation, Economic Theory.

EDUCATION

The University of Adelaide

- *Doctor of Philosophy (Ph.D.)*, 2008-2010

Principal Supervisor: RBC Professor Robert J. Elliott

Secondary Supervisor: Elder Professor Charles E. M. Pearce

Research project considering issues surrounding Dynamic Risk Measures, and the associated theory of Backward Stochastic Differential Equations, particularly with reference to situations driven by processes other than Brownian motion.

- *Bachelor of Mathematical Sciences (Hons.)*, 2007,
with First Class Honours in Statistics.
Supervisor: Elder Professor Charles E. M. Pearce
- *Bachelor of Mathematical and Computer Sciences*, 2006,
with majors in Pure Mathematics and Statistics.
- *Bachelor of Finance*, 2006

The Hamilton & Alexandra College, Class of 2002, School Dux.

RESEARCH & ADMINISTRATION

- St John's College, University of Oxford: Junior Research Fellow in Mathematics
2010–Present
- University of Adelaide: Administrative Assistant – Centre for International
Economic Studies
2005–2007

INVITED POSITIONS

- Université de Rennes I: Professeur Invité
July 2011

TEACHING

- Exeter College, University of Oxford: Lecturer
College tutor for first year pure mathematics (Algebra & Geometry) 2011
- University of Adelaide: Lecturer
Lecturer for “Introduction to Financial Mathematics I” and “Financial Modelling: Theory and Techniques” 2010
- University of South Australia: Lecturer and Course Coordinator
Lecturer and Course Coordinator for “Theory of Interest I” 2009
- University of Adelaide: Lecturer
Lecturer for “Statistical Practice I” and “Financial Modelling III”, including preparing tutorials, assignments, practicals, a mid-semester test, a final exam and determination of final grades. 2008

- University of Adelaide: Tutor & Marker 2003–2009
Tutor and Marker for “Financial Modelling III”, “Applied Probability III”, “Applied Econometrics III”, “Economic and Financial Data Analysis II”, “Introduction to Mathematical Statistics II”, “Statistical Theory and Modelling II”, “Statistics for Engineering (M)”, “Mathematical Economics II”, “Laplace Transforms, Probability & Statistics II”, “Numerical Analysis, Probability & Statistics II”, “Business Data Analysis I” and “Statistical Practice I”.
- University of Adelaide: Substitute Lecturer 2007
Substitute lecturer for “Economic and Financial Data Analysis II”.
- Bradford College, University of Adelaide: Tutor 2006–2008
Tutor of “Statistical Practice I” and “Statistical Practice I (Life Sciences)” for classes of specifically international students.

PUBLICATIONS Accepted/Published

- Cohen, S.N. and Elliott, R.J. Existence, Uniqueness and Comparisons for BSDEs in General Spaces, to appear in *Annals of Probability*
- Cohen, S.N. and Elliott, R.J. Backward Stochastic Difference Equations and nearly-time-consistent nonlinear expectations, *SIAM Journal of Control and Optimization* **49**:125-139
- Cohen, S.N., Elliott, R.J. and Pearce, C.E.M. A general comparison theorem for Backward Stochastic Differential Equations, *Advances in Applied Probability*, **42**(3), 878-898.
- Cohen, S.N. Pricing and risk measurement with Backward Stochastic Differential Equations, invited contribution in *AustMS Gazette* **37**(3), 168-169.
- Cohen, S.N. and Elliott, R.J. A General Theory of Finite State Backward Stochastic Difference Equations, *Stochastic Processes and their Applications*, **120**(4), 442-466.
- Cohen, S.N. and Elliott, R.J. Comparisons for Backward Stochastic Differential Equations on Markov Chains and related no-arbitrage conditions, *The Annals of Applied Probability*, **20**(1), 267-311.
- Cohen, S.N. and Elliott, R.J. Backward Stochastic Differential Equations on Markov Chains, *Communications on Stochastic Analysis*, **2**(2) (2008), 251-262.
- Cohen, S.N. and Elliott, R.J. Comparison Theorems for Finite State Backward Stochastic Differential Equations, in *Contemporary Quantitative Finance, Essays in Honour of Eckhard Platen*, Eds. C. Chiarella, A. Novikov, Springer, 2010, 135-158.
- Cohen, S.N. and Elliott, R.J. Backward Stochastic Difference Equations with Finite States, to appear in *Proceedings of the Workshop on Stochastic Analysis and Finance June 29-July 02, 2009*, Birkhauser.
- Pearce, C.E.M., Cohen, S.N. and Tuke, S.J. New Zealand palaeodemography: Pitfalls and possibilities, in *BIOMAT 2009: International Symposium on Mathematical and Computational Biology (Brasilia 1-6 August 2009)* Ed. R.P. Mondaini, World Scientific 2010, 194-212
- Cohen, S.N., Forbes, B. and Lee, P. First Steps Toward a New Optimised-Sampling Index Portfolio, presented at the 2nd Australian Business and Behavioural Sciences Association International Conference, Adelaide, (2006). Included in electronic proceedings.

Submitted

- Cohen, S.N. and Szpruch, L., A limit order book model for latency arbitrage
- Cohen, S.N., Quasi-sure analysis, aggregation and dual representations of sub-

linear expectations in general spaces

- Cohen, S.N., Chaos representations for Marked Point Processes
- Cohen, S.N., Ji, S. and Peng, S. Sublinear Expectations and Martingales in Discrete Time
- Cohen, S.N. Representing filtration consistent nonlinear expectations as g -expectations in general probability spaces.
- Elliott, R.J., Siu, T.K. and Cohen, S.N. Backward stochastic difference equations for dynamic convex risk measures on a binomial tree.
- Cohen, S.N. What risk measures are time consistent for all filtrations?
- Cohen, S.N. and Elliott, R.J. Time consistency and moving horizons for risk measures.
- Cohen, S.N., Elliott, R.J. and Pearce, C.E.M. A ring isomorphism and corresponding pseudoinverses.

Theses

- Problems in Backward Stochastic Differential Equations; with applications to nonlinear expectations and risk measures, PhD thesis, University of Adelaide, 2010
- Gains, claims and pains: Mathematical and Statistical Problems in Occupational Health and Safety, honours thesis, University of Adelaide, 2007.

CONFERENCES & PRESENTATIONS

- Mathematics in Finance (Fourth international conference), Kruger National Park, South Africa, August 2011
- Gastvortrag, Universität Leipzig, May 2011
- Oxford Mathematical & Computational Finance Internal Seminar, March 2011
- Mathematical Finance Seminar, Humboldt-Universität-zu-Berlin, February 2011
- Advances in BSDEs and Financial Applications, Tozeur, Tunisia, October 2010
- 6th Oxford-Princeton Workshop, Oxford, October 2010
- 6th Bachelier Finance Society World Congress, Toronto, June 2010
- ‘Lunch in the Lab’ seminar, University of Calgary, June 2010. (Invited speaker)
- Research Presentation, Shandong University, Jinan, China, March 2010.
- Postgraduate Workshop in Stochastics, UniSA, February 2010. (Invited Seminar)
- Quantitative Methods in Finance, December 2009.
- 2009 FIRN Doctoral Workshop, Sydney (Session Chair).
- FIRN Research day in Finance, October 2009.
- Undergraduate Seminar Series, University of Adelaide, October 2009
- 53rd Australian Mathematical Society Meeting (B.H. Neumann Prizewinner), 2009.
- First PRIMA Congress, Sydney, July 2009.
- Mathematical Society of South Australia, 2009 Annual Meeting.
- Statistical Society of Australia, SA Branch, April 2009 Meeting Speaker.
- Daiwa Securities Young Researchers Workshop 2009, Kyoto. (Invited presenter.)
- Symposium SA 2009, Adelaide.

- ANZIAM 2009 Conference, Caloundra (T.M. Cherry Prizewinner).
- 2008 FIRN Doctoral Workshop, Sydney.
- Talks representing the School of Mathematical Sciences, University of Adelaide, at the “Maths and Science Life Impact Day” 2008.
- Australian Postgraduate Workshop on Stochastic Processes and Modelling, 2008

SCHOLARSHIPS & PRIZES

- Adelaide Postgraduate Alumni University Medal (2011)
- Head of School’s Award for Lecturing Excellence in “Financial Modelling: Theory and Techniques” (2010)
- B.H. Neumann Prize (2009),
- T.M. Cherry Prize (2009),
- Head of School’s Award for Lecturing Excellence in “Financial Modelling III” (2008),
- Head of School’s Award for Lecturing Excellence in “Statistical Practice I” (2008),
- Australian Postgraduate Award (2008-2010),
- Adelaide University Medal (2007),
- Adelaide Honours Priority Scholarship (2007),
- Applied Probability Trust Prize (2007),
- Sir Ronald Fisher Memorial Scholarship (Statistics) (2006),
- David Murray Memorial Scholarship in Mathematical Sciences (2006),
- Adelaide University Summer Research Scholarship (2006),
- J.R. Wilton Prize (2005)
- AMSI/ICE-EM Summer Research Scholarship (2005),
- Dean’s Certificate for Outstanding Achievement (Economics) (2005),
- Australian Bureau of Statistics Scholarship (2003, 2004),
- E.A. Cornish Memorial Prize (2004),
- Dean’s Merit List for Economics (2004)
- Dean’s Certificate of Merit (Mathematics) (2003),
- Dean’s Merit List for Economics (2003),
- School Dux of 2002 (The Hamilton & Alexandra College, Hamilton, Victoria),
- Latrobe University Encouragement Award for Mathematics (2001),
- Jeremy King Memorial Prize for Service to the Community, (2001),
- Sir Reginald Ansett Memorial Scholarship, (1997),
- Various other school prizes & awards.

EXTRA- CURRICULAR ACTIVITIES

- 2008–9: Postgraduate Student Representative, School Board, School of Mathematics, University of Adelaide.
- 2009: Organiser of Inaugural SA Postgraduate Mathematics Symposium
- 2005–7: Undergraduate Student Representative, Faculty Board, Faculty of Engineering, Computer & Mathematical Sciences, University of Adelaide.
- 2006: Student Representative, Quality Assurance Review Committee, Faculty of Engineering, Computer & Mathematical Sciences, University of Adelaide.
- 2006: Student Representative, Student Representation Working Party, University of Adelaide.

- 2003–2010: Member of Holy Trinity Anglican Church – Sunday School Teacher and Young Adults Leader.
- 2005–6: President of the Adelaide Uni. Maths Students Society (AUMaSS)
2004: Club Treasurer
- 2006–8: Committee of the Stein Club, University of Adelaide.
2005: Vice President
2004: Club Treasurer
- Exchange Student to Lille, France (2000)
- School Prefect visiting Gaoyou, China (2002)