CURRICULUM VITAE

NAME Stephen Ellwood SATCHELL

CURRENT POSITION The Reader of Financial Econometrics, College Teaching Fellow.

COLLEGE Trinity College, Cambridge University

DEPARTMENT Economics, Cambridge University

DATE OF BIRTH 22nd February 1949

CAREER 1971-73 - School Teacher

1973-74 - Computer Executive 1974-76 - Research Officer

1977-78 - Economic Advisor 10 Downing Street, (part-time)

1978-79 - Lecturer (Statistics Department) at LSE 1979-80 - Lecturer (Economics Department) at LSE

1980-86 - Lecturer, University of Essex1986- - Fellow, Trinity College

1986-89 - Assistant Lecturer, University of Cambridge 1989-2000 - University Lecturer at the University of Cambridge

1991-93 - Reader, Birkbeck College

2000 - The Reader of Financial Econometrics, University of

Cambridge

CURRENT RESEARCH

I am working on a number of topics in the broad areas of econometrics, finance, risk measurement and utility theory. I have an interest in both theoretical and empirical problems. Many of my research problems are motivated by practical investment issues. My current research looks at alternative methods of portfolio construction and risk management, as well as work on non-linear dynamic models. I am active in researching the UK mortgage and housing markets.

I have strong links with Inquire (Institute for Quantitative Investment Research). This is a city-based organization that finances academic research on quantitative investment. I am also on the management committee of LQG(London Quant Group).

JOURNAL AFFILIATIONS

I am the Editor of Journal of Asset Management (Palgrave Macmillan publishers) first issue, July 2000

I am the Series Editor of a book series, *Quantitative Finance* (Elsevier publishers).

I am the Editor of *Journal of Derivatives and Hedge Funds* (Palgrave Macmillan publishers). I am on the Editorial Board of *Applied Financial Economics, Journal of Financial Services Marketing, Journal of Bond Trading and Management* and *European Journal of Finance*.

I am Academic Editor of Henry Stewart's on-line lecture course on Risk Management.

I am the editor of a journal for Incisive-Media Ltd, *Journal of Risk Model Validation*. and was editor for another of their journals, *Journal of Financial Forecasting*.

PUBLICATIONS

FORTHCOMING PUBLICATIONS

The Link between Macroeconomic Factors and Style Returns, (with Qi Jessica Zhang, Peter Hopkins, and Robert Schwob), forthcoming in *Journal of Asset Management*.

Computing the Mean/Downside Risk Frontiers: The Role of Normality. (with A.D. Hall), forthcoming in *Optimizing the Optimizers*, S. Satchell (ed.).

Understanding Analysts's Forecasts (with R. J. Louth, P. Joos, and G. Weyns), forthcoming in *European Journal of Finance*.

Portfolio Skewness and Kurtosis (with A.D. Hall), forthcoming in *Equity Portfolio Risk Management*, E. Fishwick and S.Satchell (eds).

2009 PUBLICATIONS

Implementing risk appetite in the management of currency portfolios, (with Jinhui Luo and Philip Saks), *Journal of Asset Management*, pp. 380-397.

2008 PUBLICATIONS

Testing for Infinite Order Stochastic Dominance with Applications to Finance, Risk and Income Inequality (with J. Knight) *Journal of Economics and Finance*, vol. 32(1); 35-46.

The accuracy of credit scoring receiver operating characteristic in the presence of macroeconomic shocks, (with G. Christodoulakis), *Journal of Risk Model Validation*, Volume 2/ Number 3, Fall 2008.

2007 PUBLICATIONS

Endogenous Cross Correlation (with J.H.S. Yang) DAE Working Paper 0219,. in *Macro-economic Dynamics*, vol 11, S1,124-153.

The Underlying Return Generating Factors for REIT Returns: An Application of Independent Component Analysis (with C.M.Lizieri and Q.Zhang), in *Journal of Real Estate Economics*, 35(4); 567-596.

Analytic Models of the ROC Curve: Applications to Credit Rating Model Validation (with W. Xia), (QFRC Discussion paper, Number 181)(2006), in *The Validation of Risk Models* G.Christodoulakis *and* S.Satchell (editors)

Skew Brownian Motion and Pricing European Options (with R.Corns), in *European Journal of Finance* 13(6); 523-544.

Bayesian Analysis of the Black-Scholes Option Price. DAE Working Paper No. 0102, University of Cambridge. (With T.Darsinos) 2001. in *Forecasting Expected Returns*; S.Satchell(editor)

Bayesian Forecasting of Options Prices: A Natural Framework for Pooling Historical and Implied Volatility Information, DAE Working Paper No. 0116, University of Cambridge. (With T. Darsinos) 2001. Forecasting Expected Returns; S.Satchell(editor)

Changing Correlation and Equity Portfolio Diversification Failure for Linear Factor Models during Market Declines (with A. Sancetta). in *Applied Mathematical Finance; Vol* 14, No 3, 227-242, July 2007

The Best of Intentions? The Allocation of Resources between Large and Small Subjects, (with O.Williams), *Higher Education Review*, Vol 39.Number 2, Spring 2007.pp 65-73.

The Disappearance of Style in the US equity market, (with S.Hwang), *Applied Financial Economics, May* 2007, vol 17, pp 597-613.

The Behavioural Components of Risk Aversion (with G. B. Davies), *Journal of Mathematical Psychology, vol* 51,2007, pp 1-13.

Will Private Equity and Hedge Funds Replace Real Estate in Mixed-Asset Portfolios?" (with S. Bond, S. Huang, P. Williams) in the Fall 2007 PREA sponsored special issue of the *Journal of Portfolio Management*

Robust Optimisation for Utilising Forecasted Returns in Institutional Investment: (with C. Koutsoyannis) in *Forecasting Expected Returns*; S.Satchell(editor)

Optimal Forecasting Horizon for Skilled Investors, (with O. Williams); in *Forecasting Expected Rwturns*, S. Satchell(Editor)

The Hidden Binomial Economy and The Role of Forecasts in Determining Prices, (with O. Williams) in *Forecasting Expected Returns*; S. Satchell(editor)

Stochastic Volatility Models with Markov Regime Switching State Equations' with S.Huang and P.Valls in *Journal of Business ,Finance and Accounting, June/July, Vol* 34, issue 5-6, pp 1002-1024.

Analytic models of the ROC curve: Applications to credit rating model validation, *Journal of Risk Management in Financial Institutions*, (with Wei Xia), Volume 1, 1.

2006 PUBLICATIONS

Estimation of the Risk Aversion of the Representative U.K. Pension Fund Investor, (with Wei Xia), published as Satchell, S and W.Xei (2006), "A Matter of Attitude", Life and Pensions, December 2006.

Measures of Equity Duration, (with R. Lewin and M. Sardy). 2006. in *International Finance Review.*, Vol 7, Value Creation in Multinational Enterprise, edited by J. Jay Choi and Reid, chapter 13, pp315-349.

Asymmetry, Loss Aversion and Forecasting, in *Journal of Business*, 2006, Vol. 79, no4(with S.A.Bond)

Asymmetry and Downside Risk in Foreign Exchange Markets. (with S.A. Bond) in *The European Journal of Finance*, 2006, vol 12, no 4, pp313-332..

2005 PUBLICATIONS

- GARCH Model with Cross-sectional Volatility; GARCHX Model" (with S. Hwang), in *Applied Financial Economics*, Vol. 15, No. 3 (February, 2005). pp. 203-216.
- A Re-examination of Sharpe's Ratio for Log-Normal Prices. In *Applied Mathematical Finance*. Vol. 12, No. 1, (March 2005), pp. 87-100, (with J. Knight)
- Valuing Information Using Utility Functions: How Much Should we Pay for Linear Factor Models? (with S. Hwang) in *The European Journal of Finance* Vol. 11, No. 1 (February 2005) pp. 1-17.
- Simple and Cross Efficiency of CTA's Using Data Envelopment Analysis.(2003) (with Gregoriou, G, Rouah, F. and Diz, F.) in *The European Journal of Finance* October 2005, Vol. 11, No. 5, pp. 393-410.
- New Test Statistics for Market Timing with Applications to Emerging Markets Hedge Funds (2004) (with A. Sancetta) in *The European Journal of Finance*, October 2005, Vol. 11, no. 5 pp. 419-443.
- Edited special issue of Hedge-Fund Econometrics in *The European Journal of Finance* (October 2005).

Diversification When It hurts? The Joint Distribution of Real Estate and Equity Markets. (with J. Knight and C. Lizieri), 2005. *Journal of Property Research*, Vol 22,no 4.

Robust Cross-sectional Factor Modelling Approach to Equity Forecast Construction with S.M.Wright, *Economic and Financial Modelling*, Vol. 12 No. 4, Winter 2005, pp. 153-182.

2004 PUBLICATIONS

- Forecast Evaluation in the Presence of Unobserved Volatility. In *Econometric Reviews* pp. 203-216 (with G. Christodoulakis). 2004.
- Bayesian Estimation of Risk-Premia in an APT Context. Cambridge Working Papers in Economics 0329, in *Linear Factor Models in Finance*, J. Knight and S. Satchell (eds.) pp. 61-82, Butterworth and Heinemann. (with T. Darsinos)
- Small-Noise Arbitrage Pricing Theory (in *Linear Factor Models in Finance*, pp. 141-162, edited by J. Knight and S. Satchell, Butterworth and Heinemann).
- Linear Factor Models in Finance (with J. Knight, (eds)) (Butterworth Heinemann, 2004).
- Draw Downs as a Measure of Hedge Fund Risk: Some Stylized Facts (with A. Sancetta and G. Lande). In G. N. Gregoriou, V.N. Karavas and F. Rouah (editors), *Hedge Funds: Inside the Black Box Using A Quantitative Approach*. Chapter 13, pp. 235-246. Washington: Beard Books.

- The Copula Function as a Model and Approximation to Multivariate Distributions in *Econometric Theory 20* pp. 535-562 (with A. Sancetta)
- Measuring Style Tilting and Decomposing Style Risk (2004). in *Journal of Asset Management June*, Vol. 5, No. 1 pp. 18-28 (with T. Darsinos).
- Generalising the Universal Performance Measure. *Risk Magazine*, June 2004 pp. 80-84 (with T. Darsinos).
- Data Pooling: a necessity for the majority of UK mortgage lenders. *Credit Risk International*, (June, 2004)
- Calculating Hedge Fund Risk: the Draw Down and the Maximum Draw Down. in *Applied Mathematical Finance*, (2004) (with A. Sancetta), Vol. 11, pp 259-282.

2003 PUBLICATIONS

- Assessing the Merits of Rank-based Optimisation for Portfolio Construction, in S. Satchell and A. Scowcroft eds., *New Advances in Portfolio Construction and Implementation*, Butterworth-Heinemann, London. (With S. Hwang, S. Wright)
- New Advances in Portfolio Construction and Implementation, Butterworth and Heinemann (with A. Scowcroft) (eds.).
- Some Exact Results for Efficient Portfolios with Given Returns, in S. Satchell and A. Scowcroft eds., New Advances in Portfolio Construction and Implementation, Butterworth-Heinemann, London. (with G. Hillier).
- Value at Risk Linear Exponent (VARLINEX) Forecasts" (with Guoqiang Wang and Knight, J.), Quantitative Finance 3 (2003) 332-344.
- An Analysis of the Hedging Approach to Modelling Pension Fund Liabilities (with J. Randall) reprinted in *Asset and Liability Management Tools* A Handbook for Best Practice edited by Bernd Scherer.
- Mortgage Default and Posession: A Competing Hazards Approach. *Journal of Money, Credit and Banking* Vol. 35(2), pp. 425-442. (with B.M. Lambrecht and W.R.M. Perraudin)
- Utility Functions Whose Parameters Depend on Initial Wealth. Oct. 2003. *Bulletin of Economic Research*, Vol. 55, pp. 357-371 (with C. Pederson)
- Can NN Algorithms and macroeconomic data improve OLS Industry Returns Forecasts?(with C. Pedersen). June, 2003. *The European Journal of Finance, Vol. 9,no 3,273-289.*

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Correlated ARCH (CorrARCH): modelling the time-varying conditional correlation between fianacial asset returns *European Journal of Operational Research*, Vol. 139 (2), pp 351-370. (with G. Christodoulakis) 2002.

- On the Evolution of Global Style Factors in the MSCI Universe of Assets *International Transactions in Operational Research*, Vol. 9(1), pp 1-18. (with G. Christodoulakis) 2002.
- Calculating the Misspecification in Beta from Using a Proxy for the Market Portfolio, in *Applied Financial Economics* 12, pp. 771-781 (with S. Hwang)
- Performance Measurement of Portfolio Risk with Orthant Probabilities (with M. Lundin) in *Performance Measurement in Finance* (eds. J. Knight and S. Satchell), pp. 261-284. (Butterworth and Heinemann).
- Performance Measurement in Finance, Butterworth and Heinemann. (With J. Knight) (eds.) 2002.
- On the Foundation of Performance Measures under Assymetric Returns, *Quantitative Finance* 2, no. 3, pp. 217-223. (with C. Pederson) 2002.
- Molten Lava meets Market Langour, *Quantitative Finance*, Vol. 2, no. 6, pp. 405-406 (with A. Sancetta), 2002.
- Using Bayesian Variable Selection Methods to Choose Style Factors in Global Stock Return Models, *Journal of Banking and Finance* 26 pp. 2301-2325. (With S. Hwang and A. Hall), 2002.
- Statistical Properties of the Sample Semi-Variance, with an Application to Emerging Markets Data. in *Applied Mathematical Finance*, Vol. 9, no. 4 pp. 219-239 (With S.A. Bond)
- Efficient Estimation of the Stochastic Volatility Model via the Empirical Characteristic Function. Australian and New Zealand Journal of Statistics 44, pp. 319-335 (with J.L. Knight and J. Yu), 2002.

2001 PUBLICATIONS

- Forward and Spot Rates in a Bi-variate TAR Framework, European Journal of Finance Vol. 7, pp. 131-143 (with R. Daccó) 2001.
- Lower Partial-Moment Capital Asset Pricing Models: A Re-examination, 1996, *IFR Discussion Paper No.20*, (in *Downside Risk*, Butterworth and Heinemann). 2001.
- On the Volatility of Financial Risk: An Investigation Using Returns from European Markets, *The European Journal of Finance*. (with C. Pederson, B. Eftekhari) 2001.
- VaR versus Tracking Error: the Strengths and Weaknesses of Two Performance Measures, in E. Acar, eds., *Measuring Added Value: In Financial Institutions, Financial Times* Prentice Hall, London. (with S. Hwang) 2001.
- Tracking Error: Ex-Ante versus Ex-Post Measures, *Journal of Asset Management*, Vol. 2, No. 3, 241-246. (with S. Hwang) 2001.
- Modelling Emerging Market Risk Premia using Higher Moments, *International Journal of Finance and Economics* 1999, 4:4, pp271-293, reprinted in *Return Distributions in Finance* (Satchell S E and Knight J (eds.)), Butterworth and Heinemann 2001, pp75-115. (with S. Hwang) 2001

- An Exponential Risk Measure with Application to UK Asset Allocation, *Applied Mathematical Finance* Vol.7 (2), 127-152. (with S. Hwang, and D.C. Damant) 2001.
- Forecasting Nonlinear Functions of Returns Using LINEX Loss Functions, *Annals of Economics and Finance* Vol.2., 187-213. (with S. Hwang, J. Knight). 2001.
- Pricing Derivatives Written on Assets with Arbitrary Skewness and Kurtosis, *Return Distributions in Finance*, pp.229-250, Butterworth and Heinemann. (with J. Knight) (eds.) 2001.
- A Note on Bayesian Inference in Asset Pricing, *IFR Discussion Paper No. 45* 1997, *Econometric Theory* 17, No.2, pp475-482. (with J. Knight) 2001.
- Returns Distributions in Finance, Butterworth and Heinemann. (with J. Knight) 2001.
- Efficiency, Considerations in the Negative Exponential Failure Time Model, *Handbook of Applied Econometrics and Statistical Inference* (Marcel Dekker). (with J. Knight) 2001.
- The Probability Functions of Options Prices, Risk-Neutral Pricing and Value-at-Risk, *Return Distributions in Finance*, pp.252-275. (With J. Knight and G. Wang) 2001.
- Global Equity Styles and Industry Effects: Portfolio Construction via Dummy Variables, *Journal of International Financial Markets*, *Inst. And Money*, 11, pp1-28. (With G. Kuo) 2001
- Investigating the Benefits of Mutuality: Mutual Versus Proprietary Annuity Provision. *Journal of Pensions Management*, Vol. 7, No. 1. (With R.A. Lewin) 2001.
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- On the Characterisation of Investor Preferences by Changes in Wealth, *Geneva Papers on Risk and Insurance: Theory* 26(3), pp. 175-194. (With C. Pederson) 2001.
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- Eighteenth Century British Trade: Home-spun or Empire Made, (with T.J. Hatton and J. Lyons) (1983), *Explorations in Economic History*, pp. 161-182.
- Approximations to the Finite Sample Distributions for Non-stable First Order Stochastic Difference Equations, (1984), *Econometrica*, September , pp. 1271-1289.
- Underestimation and Overestimation of the Leontief Inverse Revisited, (with S.Lahiri) (1985), *Economic Letters*, December, pp. 181-187.
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- Properties of the Expected Value of the Leontief Inverse, Some Further Results, (with S. Lahiri) (1986), *Mathematical Social Sciences*, February 2:1, pp. 69-82.

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- Differential Mortality in Rural Bangladesh, (with J. McIntoch and A. Nasim) (1986), *Journal of Applied Econometrics*, October , pp. 345-354.
- Source and Subgroup Decomposition Inequalities for the Lorenz Curve (1987) *International Economic Review*, June, pp. 323-330.
- Asymptotic Properties of the Maximum Likelihood and Non-linear least Squares Estimators for Noninvertible Moving Average Models, (with K. Tanaka) (1989), *Econometric Theory*, pp. 333-353.
- Conditional and Unconditional Independence, (with J. Knight) (1990), Econometric Theory, 6:2, p. 283.
- Random Variable Generation via Double Sampling, (with J. Knight) (1990), Econometric Theory, **6**:4, p. 487.
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- The Variance of Property Returns, Some Problems of Time-Weighted Measures, (with C. Lizieri) (1992), *Journal of Property Valuation and Investment*, pp. 541-547.
- Predicting British Financial Indices: An Approach Based on Chaos Theory, (with Y. Yoon and N. Linden) (1993), *Structural Change and Economic Dynamics*, **4:**1, pp. 145-162.
- Asymptotic Expansion for Random Walks with Normal Errors, (with J. Knight) (1993), in *Econometric Theory*, **9**:3, pp. 363-376.
- Exact Critical Regions and Confidence Intervals for the Maximum Likelihood Estimator in the Exponential Regression Model, (with J. Knight) (1993), *Economics Letters*, **41**:3, pp. 225-231.
- Some Generalisations of a Result by Muth on the Optimal Properties of Exponentially Weighted Forecasts, (with A. Timmermann), (1994) *Economics Letters*, **45**:2, pp. 261-266.
- Apprenticeships and Job Tenure: A Competing Risks Model with Time-varying Covariates, (with A. Booth) (1994), *Oxford Economic Papers*, **46**, pp. 676-695.
- A Bias Correction for Taken's Correlation Dimension Estimator (1994), Econometric Theory, **10:2**, p. 439.
- The Estimation of the Volatility of Stock Prices: A Comparison of Some Different Methods that Use High and Low Prices, (with C. Rogers and Y. Yoon) (1994), *Applied Financial Economics*, **4**, pp. 241-247.
- A Bias-Adjusted Black and Scholes Option Pricing Model, (with M. Ncube) (1995), *Applied Financial Economics*, **5**, 51-60.
- An Assessment of the Economic Value of Nonlinear Foreign Exchange Rate Forecasts, (with A.

- Timmermann) (1995), Journal of Forecasting, **14:**6, pp. 477-497.
- Statistical Modelling of Asymmetric Risk in Asset Returns, (with J. Knight and K. Tran) (1995), Applied Mathematical Finance, 1:2, pp. 155-172.
- Some Statistics for Testing the Influence of the Number of Transactions on the Distribution of Returns, (with Y. Yoon) (1995), *Economic and Financial Computing*, Spring, pp. 21-37.
- Option Pricing with GARCH and Systematic Consumption Risk I, (with A. Timmermann) (1995), Derivatives Use, Trading and Regulation, 1:3, pp. 279-291
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- An Approximation to Garch, (with J. Knight) (1995), Econometric Theory, 11:1, Problem 95.1.3.
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- A Bias Correction for Taken's Correlation Dimension Estimator (Solution) (1995), *Econometric Theory*, **11:**4, p. 804.
- Confident Hedging-Finite Sample Properties of the Hedge Ratio, (with M. Ncube) (1996), *Derivatives Use, Trading, and Regulation*, **2**:2, pp. 144-158.
- Some Problems with Modelling Asset Returns using the Elliptical Class, (with B. Eftekhari) (1996), *Applied Economic Letters*, **3**, pp. 571-572.
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- Finite Sample Results for the Negative Exponential Regression Model, (with J. Knight) (1996), *Journal of Statistical Planning and Inference*, **50**, pp. 91-102.
- Approximating the Finite Sample Bias for Maximum Likelihood Estimators using the Score, (with B. Lambrecht and W. Perraudin) (1996), *Econometric Theory*, **12**:1, p. 199 (problem).
- Pricing a Boost Option, (with J. Knight) (1997), Derivatives, Use Trading and Regulation, 3:4, pp. 362-371.
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- The Analytic Properties of Trading Rules, (with E. Acar) (1997), *Applied Mathematical Finance*, **4**, pp. 1-16.

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- Property Company Performance and Real Interest Rates: A Regime-Switching Approach, (with C. Lizieri) (1997), *Journal of Property Research*, **14**:2, June, pp. 85-98.
- The Pricing of Market-to-Market Contingent Claims in a No-arbitrage Economy, (with R. Stapleton and M. Subramanian) (1997), *Australian Journal of Management*, **22**:1 June, pp. 1-20.
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- Daily Stock Returns in European Stock Markets Non-linearity, Predictability, and Transaction Costs (with A. Timmermann), *Non-Linear Dynamics in Economics*, edited by W.A. Barnett, A.P. Kirman and M. Salmon, CUP, 369-392, 1996.
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- Implied Volatility Forecasting, (with S. Hwang), in *Forecasting Financial Volatility* edited by J. Knight, S. Satchell, 1998, 193-225, Butterworth and Heinemann.
- GARCH Processes, Some Difficulties and a Suggested Remedy, (with J. Knight), *Forecasting Financial Volatility*, edited by J. Knight and S. Satchell, 1998, pp.321-346, Butterworth and Heinemann.
- GARCH Predictions and Predictions of Options Prices Processes Applied to UK Stocks, (with J. Knight), *Forecasting Financial Volatility*, edited by J. Knight and S. Satchell, 1998, pp.226-244, Butterworth and Heinemann.
- Choosing the Right Measure of Risk: A Survey, *The Current State of Economic Science*, (with C. Pedersen), edited by S.B. Dahiya, 1998.
- An Assessment of the Economic Value of Non-Linear Foreign Exchange Rate Forecasts, with A. Timmermann, published in *Journal of Forecasting*, 14, 1995, 447-497, reprinted in *Economic Forecasting* edited by T.C. Mills, Edward Elgar (1999).
- A Data Matrix to Investigate Independence, Over-reaction and/or Shock Persistence in Financial Data, (with R. Daccó), *Decisions Technologies for Computational Finance Proceedings of the Fifth International Conference, Computational Finance* edited by A.P.N. Refenes. Kluwer Academic Publishers, 1999 pp. 49-60.

BOOKS AND UNPUBLISHED PAPERS

A) <u>BOOKS</u>

Advanced Statistical Methods in Social Sciences, Francis Pinter (with Dr. N. Schofield, M. Chatterjii, and

P. Whiteley), 1986.

Advanced Trading Rules, Theory and Practice (edited with E. Acar), 1997, Butterworth and Heinemann.

Forecasting Financial Volatility (edited with J. Knight), 1998, Butterworth and Heinemann., 2nd edition, 2004. 3rd edition, Elsevier, 2007

Returns Distributions in Finance (edited with J. Knight), 2001, Butterworth and Heinemann.

Managing Downside Risk (edited with F. Sortino), 2001, Butterworth and Heinemann...

Performance Measurement (edited with J. Knight), 2002, Butterworth and Heinemann.

Advances in Portfolio Construction and Implementation (edited with A. Scowcroft), 2003. Butterworth and Heinemann

Linear Factor Models in Finance (edited with J. Knight) (Butterworth Heinemann, 2004).

Forecasting Expected Returns (Elsevier, 2007).

Risk Model Validation (Edited with G. Christodoulakis) (Elsevier, 2007).

Collecting and High Net Worth Investment, (Elsevier, 2009).

Optimizing the Optimizers, (Elsevier, 2009).

B) PAPERS (PAST)

Are Stock Prices Driven by the Volume of Trade? Empirical Analysis of the FT30, FT100 and Certain British Shares over 1988-1990, (with Y. Yoon), 1991.

Variance Bounds Tests Using Options Data, (M. Ncube and P. Seabright), 1992.

The Use of High-Low Volatility Estimators in Option Pricing, (with A. Timmermann), 1992.

Misspecification in Measurement of the Correlation Dimension, (with Y. Yoon), 1992.

Can We Hedge the FT30? (with C. Rogers and Y. Yoon), 1992.

Estimation of Stationary Stochastic Processes via the Empirical Characteristic Function, (with J. Knight), 1993.

Modelling U.K. Mortgage Defaults Using a Hazard Approach Based on American Options, (with M. Ncube), 1994.

Elliptical Distributions and Models of Garch Volatility, 1994.

Estimating the Mean-Generalized - Gini CAPM, 1995.

The Distribution of the Maximum Drawdown for a Continuous Time Random Walk (with E. Acar and J. Knight), 1995.

- Analytical Properties of Rebalancing Strategies in TAA Models, (with M. Leigh), 1995.
- The Effects of Serial Correlation on Normality Tests, (with Y. Yoon), 1996.
- Index Futures Pricing with Stochastic Interest Rates: Empirical Evidence from FT-SE 100 Index Futures, (with Y. Yoon), 1996.
- Forecasting the Single and Multiple Hazard. The Use of the Weibull Distribution with Application to Arrears Mortgages Facing Repossession Risk, (with Y. Shin), 1996.
- Tactical Style Allocation: Applications of the Markov Switching Model to Value-Growth Investment and Tactical Asset Allocation, (with Y. Yoon), 1997.
- Modelling Mortgage Population Dynamics, (with R.L. Kosowski), 1997.
- Evolving Systems of Financial Asset Returns: AutoRegressive Conditional Beta , Working Paper. (With G. Christoulakis) 2000
- Bayesian Analysis of the Black-Scholes Option Price. DAE Working Paper No. 0102, University of Cambridge. (With T. Darsinos) 2001.
- Bayesian Forecasting of Options Prices: A Natural Framework for Pooling Historical and Implied Volatility Information, DAE Working Paper No. 0116, University of Cambridge. (With T. Darsinos) 2001.
- The Implied Distribution for Stocks of Companies with Warrants and/or Executive Stock Options, DAE Working Paper No. 0217, University of Cambridge. (With T. Darsinos) 2002.
- On the Valuation of Warrants and Executive Stock Options: Pricing Formulae for Firms with Multiple Warrants/Executive Options, DAE Working Paper No. 0218, University of Cambridge. (With T. Darsinos) 2002.
- Reconciling Grinblatt and Titman's Positive Period Weighting Performance Measure with Loss Aversion: An application to UK active managers, Mimeo, University of Cambridge. (With N. Farah) 2002.
- The Asset Allocation Decision in a Loss Aversion World, Financial Econometric Research Centre working paper WP01-7, Cass Business School. (With S. Hwang) 2001.
- Returns to Moving Average Trading Rules: Interpreting Realized Returns as Conventional Rates of Return (with G. Kuo).
- On the Use of Revenues to Assess Organizational Risk (with R. Lewin).
- Improving the Estimates of the Risk Premia Application in the UK Financial Market, DAE Working Paper No. 0109, University of Cambridge. (With M. Pitsillis) 2001
- Ex-Ante versus Ex-Post Excess Returns, mimeo. (with D. Robertson) 2001.

- The Impact of Technical Analysis of Asset Price Dynamics, DAE Working Paper No. 0219, University of Cambridge. (With J-H Yang) 2002.
- A Bayesian Confidence Interval for Value-at-Risk. Submitted to the DAE Working Paper Series. (with Contreras, P.). 2003

PAPERS (CURRENT)

- "Using the Large Deviation Technique to Estimate Asymmetric Financial Risk", Institute for Financial Research, Birkbeck College, IFR 1/2003 (with Ba Chu and Knight, J.). 2003
- A Bayesian Confidence Interval for Value-at-Risk. Submitted to the DAE Working Paper Series. (with Contreras, P.). 2003
- The Impact of Background Risks on Expected Utility Maximisation (with V. Merella).
- Valuation of Options in a Setting With Happiness-Augmented Preferences (with V. Merella) (QFRC discussion paper, Number 182), (2006).
- Information Ratios, Sharpe Ratios and the Trade-off Between Skill And Risk (with P. Spence and A.D. Hall)
- The Impacts of Constraints on the Moments of an Active Portfolio (with P. Spence and A.D. Hall)
- Exact Properties of Optimal Investment for Institutional Investors (with J. Knight), Birkbeck College WP, 0513, 2005.
- Distribution of Constrained Portfolio Weights and Returns, (with J. Knight,).
- Improved Testing for the Validity of Asset Pricing Theories in Linear Factor Models, Financial Econometric Research Centre working paper WP99-20, Cass Business School. (With S. Hwang) 2001.

Some Exact Solutions for Stationary Distributions of TAR models (with J. Knight).

Optimal Portfolio for Skew Symmetric Distributions, (with R. Corn).

Uncertain Survival and Time Discounting: Intertemporal Consumption Plans for Family Trusts, (with S. Thorp).

An Experimental Survey of Investment Decisions for Retirement Savings, (with H. Bateman, J. Louviere, S. Thorp, and T. Islam).

Scenario Analysis with Recursive Utility: Dynamic Consumption Paths for Charitable Endowments, (with S. Thorp), working paper, UTS.

Incorporating Gain-Loss and Mean-Variance in a Single Framework, (with S. Cavaglia, and K. Scherer).

'Heuristic Portfolio Optimisation: Bayesian Updating with the Johnson Family of Distributions',

Callanish Capital Partners Technical Paper (with R. J. Louth)

'The Impact of Ratings on the Assets Under Management of Retail Funds', S&P Internal Report, (with R. J. Louth).

'The Impact of Ratings on the Performance of Retail Funds', S&P Internal Report (with R. J. Louth)

EDUCATION

1965-9 - BA in Economics, Mathematics, Statistics and Politics, University of New South Wales.

1971 - Diploma in Education, Balmain Teachers' College

1972 - Teachers Certificate, Department of Education, NSW

1972-73 - MA in Mathematics, University of Sydney

1974-75 - M. Commerce in Economics, University of New South Wales

1976-80 - Ph.D. in Economics, University of London (The Ph.D. was supervised by Professor J.D. Sargan), examined by P. Phillips and D. Sargan.

1990 - MA (Cambridge).

1995 - Ph.D (Cambridge), examined by P. Robinson and P. Schmidt.

2001 - FIA (Institute of Actuaries) Honorary

SUPERVISION

Have supervised students from all colleges in Paper 12, now Paper 11. Have supervised papers 1, 2, 5, 6 of Prelim and papers 7, 11, and 12 of Part 2 (now 6, 10, and 11).

TEACHING

1973 - Taught for two years in high school, was inspected and received Teacher's Certificate.

1975 - Taught again at NCR, learnt and taught various computing languages.

1976-78 - Taught Introductory Econometrics in a September Mathematics Course to MA in Economics students at the LSE.

1977 - Whilst Lecturer in Statistics, taught:

- (i) post-graduate course in Causal Analysis
- (ii) post-graduate course in Advanced Time-Series

1978 - Shared courses in Econometric Theory

1979-86 - At Essex: Taught courses in Econometric Theory

- (i) Statistics
- (ii) Econometrics
- (iii) Computing
- (iv) Mathematical Economics
- (v) Finance

1987-90 - Finance, Econometrics (Cambridge Papers 12, 25, 31)

1990-91 - Taught Advanced Econometrics at Birkbeck.

1991-92 - Taught Introduction to Mathematical Economics. Advanced Econometrics.

BASE (Birkbeck Advanced Studies in Economics) course on Finance

- Taught September course Mathematics, taught Theory of Finance (M.Sc.), Financial Econometrics (M.Sc.), Financial Econometrics (B.Sc.).

1993-2004 - Taught Papers 7, 12, 31 201, 231, 301 and 321 (not all simultaneously).

2005-2007 Taught Papers 7, 11, and 403, also taught Risk Management in Msc, Financial Engineering, Birkbeck, and Corporate Finance, University of Sydney.

CONSULTING EXPERIENCE

My consulting experience is very extensive, particularly in the areas of asset management and investment technology. I have supervised the building and maintenance of portfolio risk models. I have organised conferences for risk managers, investment professionals, and academics. I have carried out risk analysis on investment strategies and investment products. I can provide specific details on any of these areas if requested. I have worked with large numbers of international financial institutions and can provide testimonies as to my value – added if required.

I also work in mortgages, house prices, and real estate generally; recently, I designed with G. Christodoulakis the FT House Price Index for Acadametrics. I have also built mortgage default and loss models for Acadametrics. In conjunction with Acadametrics, I have been involved in the validation of risk models for lending institutions; this has been part of Basle II work in the recent past.

GENERAL CONTRIBUTION

I received colours from the LSE for cross-country running in 1977 and 1978 and received colours. I was also Secretary of London University Cross-Country Club 1978. I represented Trinity College at cross-country running 1987-1988, completed the London Marathon on 5 occasions, best 3.04.41

(1987). I was reserve for Cambridge University Marathon Team (1990). In recent years, I ran 10 km in 44.32, Oct 2000, 44.05 in Mar, 2001; 44.48 in Jan, 2003, 44.52 in March 2005, 42.53 in Feb, 2006, 44.24 in April 2007. I have won a number of medals in Veteran's road running.

CAMBRIDGE FACULTY ADMINISTRATION

At various stages I have been on:

- Management Board for Management Studies Tripos
- Statistics Committee (Chair)
- Graduate Admissions Committee, was acting Admissions Officer 1989
- Organised Seminar Series in Finance
- Organising Seminar Series in Econometrics
- Future Needs and Lecture List Committee
- Faculty Board
- Appointments Committee

College Administration

- Director of Studies (1987-) and Director of Admissions in Economics (1987-1994) Trinity College
- Finance Committee (1991-2003) and Treasurer of Trinity in Camberwell (charity) (1989-1992) plus other minor committees. Inspector of Accounts 1994-5 and 1996-97.
- Wine Committee from 2005 to present.

Birkbeck Administration 1991-92

- Department Seminar Organiser
- Chairman Finance Examinations
- Appointments Committee
- Ph.D. Admissions
- M.Sc. Finance Admissions
- Jointly responsible for the creation of the new M.Sc. Finance (currently 70 students) which has now run successfully for 15 years.

Cambridge Administration 1993 to present

- Appointments Committee
- M.Sc. Finance Admissions
- Chairman Finance Exams
- M.Sc. Finance Co-ordinator
- 1993-94 Coordinator Papers 12, 31, 201, 231. MSc Finance Admissions
- <u>1994-95</u> Coordinator Papers 12 and 231.
- 1995-96 Coordinator Papers 12, 201,231. Chairman ETE Exams.

<u>1996-1999</u> Coordinator Papers 7 and 12.

1999-2000 Acting Graduate Chairman

2000-2001 Coordinator Paper 301.

2002-2006 Coordinator Papers 6 and 11. Head of Part 1 Examiners (2004).

PROFESSIONAL CONTRIBUTIONS

Refereeing

I have refereed articles for the *Journal of Econometrics, Econometrica, IER, Mathematical Social Sciences, Journal of Public Economics, Review of Economic Studies, Econometric Theory,* and *Journal of Applied Econometrics* plus many other journals.

Visiting and Seminars

I have given seminars at many British and Australian Universities and have been a visitor at Monash University (1985), (1987) and the University of New South Wales (1986) and Australian National University (1986), (1987). I have visited the University at Western Ontario (1988) and been a Visiting Fellow to University College, London. In 1989, I visited Complutense, Madrid. I am currently 4 times a Visiting Professor at Birkbeck College, London (1994 -). I recently visited University of Technology, Sydney (1998-2006). I have been appointed Visiting Professor at CASS/CUBS (2000-2006) and Visiting Professor at Birkbeck College (2000-2006) and Visiting Lecturer in Applied Mathematics at Oxford University (2002-2004). I am currently an Adjunct Professor at UTS (Sydney), and have had an association since 1997.

Supervision and Examination

I have supervised numerous post-graduate students and have successfully supervised the Ph.D.'s of A. Nasim at Essex and of M. Ncube and Y. Yoon, B. Eftekhari and S Hwang, G. Kuo, C. Pedersen, M. Sokalska, S. Bond, L. Middleton, M. Pitsillis, T. Darsinos, A. Sancetta, S. Yang, R. Lewin, G. Davies, W. Cheung, R. Corns, O.Williams and P.Contreras at Cambridge, plus other Cambridge students on a joint supervision basis including A. Timmermann and L. Shi. Other successful PhD students supervised at Birkbeck include Y. Hatgioniddes, R. Daccó, M. Karanassou, G. Christodoulakis, B. Chu and Wei Jin.

My current students consist of five Cambridge Ph.D. students in Economics and one in Management Studies and five Birkbeck students. I have been an Examiner every year that I have taught at University. I have been external examiner at Queen Mary College and London School of Economics (Econometrics), and at London School of Economics (Economics), Imperial College, and Essex University. I have also examined over thirty doctoral dissertations in Econometrics, Finance and Land Economy at universities in Great Britain, Europe, Canada, and Australia.

Awards and Prizes

My research project was awarded a prize (the Inquire Prize for the best presentation at the annual

Inquire Conference, Bournemouth, 1991 value £3,000).

Received Econometric Theory Multa Scripsit Award (1997).

My paper The Pricing of Market-to-Market Contingent Claims in a No-Arbitrage Economy was runner-up 1997 E. Yetton Award for the best paper published in AJM (1997).

Received Honorary Membership of the Institute of Actuaries (2001), received F.I.A.

Fund Raising

I have raised well in excess of £500,000 since 1991, I give details below:

I raised £105,000 for a financial econometrics project, the research was done at the Department of Applied Economics (Cambridge). This was funded by Inquire and the Newton Trust. The research project brought Professor W. Perraudin to Cambridge and employed Y. Yoon.

I have received £9,000 from the Newton Trust for 1993-94; and have had 2 research grants from ESRC joint with W. Perraudin, total value about £60,000. I have received £17,500 from Inquire for 93-94. I have received a further £20,000 from the Newton Trust (1993).

I started a new research project on the Econometrics of Emerging Markets. I received £30,000 from the Newton Trust (1994) and £10,000 from Inquire (1995) and £30,000 from Kleinwort Benson Investment Management (1995) plus a further £28,000 from Alpha Strategies (1998). This project has employed R. Daccó, and S. Huang.

I received £26,000 from the DSS to work on Pension Funds (joint with C. Pratten). I received £10,000 from Inquire (1996). I received a further £10,000 from Inquire (1997). In 1998, I received £7,500 for research on trading rules from a private donor and a further £25,000 from the Newton Trust. I received £4,500 research donation from Alpha Strategies and £2,500 from General-Re to speak at their annual conference (joint with C. Pratten), plus £6,500 from Inquire (1998) and £9,000 from Inquire (2000), £8,000 from Inquire (2003) and a grant of £6,000 from Acadametrics to employ J. Zhang.

I have received an ESRC grant of £80,000, which employed A. Sancetta for two years (2003-2004).

In 2005 I received with S. Hwang and B. Chu £45,000 from the ESRC to research on risk-management and non-linear correlation.

I have also received two grants of 3000 pounds each from Reading University(2005-2006) to work on real estate finance and a grant of (approx.) 20.000 pounds in 2006, joint with S.Bond and S.Hwang to work on asset allocation issues, the grant being from IRF.

Popular Articles

Making Money Out of Chaos, Investors Chronicle, 10th July 1992. (Interview)

Articles in the International Broker, (with Allan Timmermann), (15 pieces), listed next.

Weekly columns on Investment Techniques:

- Equity switch programme (Vol. 6, page 7)
- Making money out of chaos (Vol. 7, page 6)

- Where random walks trips up (Vol. 8, page 7)
- Ignorance can be profitable (Vol. 9, page 7)
- Making money from market volatility (Vol. 10, page 7)
- High-low prices in options trading (Vol. 11, page 7)
- Can heavy trading be profitable? (Vol. 12, page 7)
- Economic variables show stock returns (Vol. 13, page 7)
- No mean return on shares (Vol. 14, page 9)
- Do option prices augur a crash? (Vol. 15, page 9)
- Puzzles in closed-end fund prices (Vol. 16, page 9)
- Capital asset pricing model challenged (Vol. 17, page 9)
- How dividends affect share prices (Vol. 18, page 9)
- The relationship between price and volume (Vol. 19, page 9)
- How persistent are financial market shocks? (Vol. 22, page 9)

Research work written up by International Management (April 1993).

Article in the *Professional Investor* (May 1995), Short-termism (with D.C. Damant), (pages 21-27).

Article in the *Professional Investor* (July 1995), Accounting for Derivatives (with D.C. Damant).

Book Review on Ethnic Minorities and Higher Education in Higher Education Review, 1996, 28:2, 96.

Article in the Professional Investor (June 1996), Downside Risk (with D.C. Damant).

Contribution to discussion British Actuarial Journal, Volume 3, Part I, pages 10-11, 1997

Contribution to discussion British Actuarial Journal, 1998.

Article on Lloyd's Syndicate Valuations Methodology, (ALM News), 1998.

Research discussed in Observer (26th April 1998, page 11).

Research discussed in Inside Monthly (April 1998, pages 12-14).

Interviewed on Bloomberg TV (27th February 1998)

Pension Scheme Investment Policies, DSS Research Report No. 82 (with C. Pratten), 1998.

Designed the FT Acadametrics House Price Index, 2003. This Index appears monthly in the FT and is usually discussed by journalists and market pundits.

Contribution to discussion, British Actuarial Journal, 2006.

The Impact of Utility on Endowment Strategy, Professional Investor, April 2007.

Interviewed on ABC re financial crisis(October 2008)

Research Affiliations (past and present)

Head of Research, Bita-Risk.

Academic Advisor, Alpha Strategies

Advisory Panel, IFC (Subsidiary of the IMF)

Academic Advisor, Kleinwort Benson Asset Management

Academic Advisor Kiln Colesworth Stewart (Member's Agents, Lloyds)

Academic Panel, Panagora Asset Management (1992-1998)

U.K. Representative, Pension Research Institute (State University of California)

Fellow, Pensions Institute (Birkbeck College)

Academic Adviser, Quantec

Academic Panel, State Street Global Advisors

Research Advisor, Thesys Forecasting, currently Acadametrics.

Visiting Professor, Cass Business School, City University,

Visiting Professor University of Technology, Sydney.

Visiting Professor, Birkbeck College.

Academic Advisor, Style Research Associates

Visiting Lecturer, University of Oxford, applied mathematical finance diploma.

Academic Adviser, Northern Trust.

Academic Advisory Board, Old Mutual Asset Management.

Expert Witness between fund Manager and Pension Fund., 2003.

Expert Witness between fund Manager and Pension Fund, 2004-2006.

Expert Witness between Insurance Company and Lettuce Grower.

Adviser in Risk Management to the Governor of the Bank of Greece.

Head of Research, BITA Risk..

Member, Advisory Board, Quantitative Finance Research Centre, UTS.

Member, Steering Committee, CIMF, Cambridge University.

Area Coordinator, Fundamentals of Economic Analysis, Libros de Economia y Empresa, Real Academia de Ciencias Morales Y Politicas.

Program Committees

European Meeting of the Econometric Society (1997)

Forecasting FX Conference organized by Imperial College and B.N.P. (1996 to 2007)

Inquire UK (2006, 2007)

Program Committee, UK Inquire.

Prize Committee, European Inquire.

Conferences and Seminars (2009)

Presented seminars at:

Sydney University (April 3rd);

Macquarie Bank (April 7th),

CRMC Sydney (April 8th);

Sydney Q group, April 15th.

Conferences (2008)

Finance Conference, London, October, key-note speaker.

Chair, LQ conference (Cambridge, September), presented.

Prize Committee, Inquire Europe(Bordeaux, October).

Conferences (2007)

Finance Conference, Imperial College, March 2007, Discussant.

Finance Conference, Zurich, March 2007. Invited Key Note Speaker.

Alpha Strategies Finance Conference, April 2007, Duke University, chaired conference.

UKSIP Lecture on Endowments, April 2007.

Alpha Strategies Finance Conference, September 2007, Oxford University, chaired conference.

Conferences (2006)

Alpha Strategies Finance Conference, April 2006, Duke University, chaired conference.

Risk Management Conference, June 2006, Bank of Greece, Athens. Gave paper, helped organize programme.

Asset Allocation Summit, July 2006, London, presented paper.

New Zealand Econometrics Conference Dunedin August 2006, chaired session, gave paper, was on prize committee.

Alpha Strategies Finance Conference, September 2006, Cambridge University, chaired conference.