A C HARVEY

CURRICULUM VITAE

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Degrees

1965-68	BA in Economics and Economic Statistics (First-Class Honours). University of York.
1968-69	MSc in Statistics, London School of Economics.

Posts Held

1969-71	Economist/Statistician in Central Bureau of Statistics, Nairobi, Kenya. Concerned with design, analysis and execution of urban and rural household budget surveys. Also responsible for updating the Kenya Cost of Living Index in 1971.
1971-77	Lecturer in Economic and Social Statistics, University of Kent at Canterbury. Main teaching responsibilities in Econometrics and Statistics.
1977-78	Visiting Professor, Department of Economics, University of British Columbia, Vancouver. Teaching Economics.
1978-80	Senior Lecturer in Statistics, London School of Economics. Teaching Econometrics and Statistics.
1981-84	Reader in Econometrics, London School of Economics.
1984-96	Professor of Econometrics, London School of Economics. (Head of Department (Convenor) 1989 to 1992).
1996-2014	Professor of Econometrics, University of Cambridge. (Chair of Faculty, 2004-7).
2014-	Emeritus Professor of Econometrics, University of Cambridge.

Research Projects

1975-77	Co-Director (with G D A Phillips) of SSRC financed project, "Testing for Specification Error in Econometric Models".
1977	Co-Director (with G D A Phillips) of SSRC financed project, "The Estimation and Testing of Econometric Models using the Kalman Filter".

1979-82 Principal researcher (with J D Sargan, D F Hendry, M J Desai and S Pudney) of SSRC financed project, "Programme in Methodology, Inference and Modelling".

1982-85 Principal researcher (with J D Sargan, M J Desai, W Buiter, J Durbin and S Pudney) of SSRC financed project, "Programme in Dynamic Econometric Models, Expectations, Innovations and Choice".

1986-89 Principal researcher on ESRC financed project "Multivariate Aspects of Structural Time Series Models".

1992-94 Principal researcher on ESRC financed project "Estimation and Diagnostic Checking of Unobserved Components Time Series Models"

1994-6 Principal researcher on ESRC financed project "Interrelationships in Economic Time Series"

1999-02 Principal researcher (with Prof R Martin and Dr M Weeks) on ESRC financed project "Dynamic Factor Models for Regional Time Series"

2006-7 Principal researcher on ESRC financed project "Time-varying quantiles".

2012-4 Principal researcher on Keynes Fund project, *Dynamic models for Volatility and Heavy Tails*.

Recent Teaching

M300 Econometrics: a core course on the M Phil in Economics at the University of Cambridge. Topics include regression, maximum likelihood, time series, systems of equations. (From 1996 to 2007)

M310 Further Time Series. An optional course on the M Phil in Economics.

Paper 6 Estimation and Inference. Part of a second year undergraduate course on Mathematics and Statistics

Journals

(a) Associate Editor, Journal of the American Statistical Association, 1980-1986.

(b) Associate Editor, Journal of Econometrics, 1980-1986.

(c) Associate Editor, Journal of Business and Economic Statistics, 1982-95.

(d) Associate Editor, Journal of Time Series Analysis, since 1989.

(e) Associate Editor, Journal of Economic Dynamics and Control, 1990-97.

Honours

Fellow of the Econometric Society (elected 1984)

Fellow of the British Academy (elected 1999)

Honorary Doctorate, University of Joensuu, Finland, 2004

A C Harvey - Publications

Books

(i) *The Econometric Analysis of Time Series* (1981). Philip Allan, Deddington. Paperback, 1983. Second edition, 1990. German translation, Oldenbourg Verlag, 1994. Chinese translation, Wu-Nan, 1998.

(ii) *Time Series Models* (1981). Philip Allan, Deddington. Japanese translation, Tokyo University Press, 1985. Second edition, 1993. German translation, Oldenbourg Verlag, 1995.

(iii) *Forecasting. Structural Time Series Models and the Kalman Filter* (1989). Paperback, 1990. Cambridge University Press.

(iv) *Dynamic models for Volatility and Heavy Tails*. Econometric Society Monograph. Cambridge University Press. June, 2013.

Editions

(i) *Time Series*, 1994. Edward Elgar.

(ii) *State Space and Unobserved Component Time Series Models*, (with S J Koopman and N Shephard), 2004, CUP.

(iii) *Readings in Unobserved Components Models*, (with T Proietti), 2005, OUP.

Articles in Journals

1. A Simple Test for Serial Correlation in Regression Analysis (with G D A Phillips). *Journal of the American Statistical Association*; December, 1974, 935-939.
2. A Comparison of the Power of Some Tests for Heteroscedasticity in the General Linear Model (with G D A Phillips). *Journal of Econometrics*, 1974, 307-316.
3. Spectral Analysis in Econometrics. *The Statistician*, 1975, 1-36.
4. Estimating Regression Models with Multiplicative Heteroscedasticity. *Econometrica*, 1976, 461-465.
5. Testing for Functional Misspecification in Regression Analysis (with P Collier). *Journal of Econometrics*, 1977, 103-119.
6. Preliminary Estimators for Robust Regression. *Journal of the American Statistical Association*, 1977, 910-913.
7. Discrimination between CES and VES Production Functions. *Annals of Economic and Social Measurement*, 1977, 463-471.
8. Linear Regression in the Frequency Domain. *International Economic Review*, 1978, 507-512.
9. Maximum Likelihood Estimation of Regression Models with Autoregressive-Moving Average Disturbances (with G D A Phillips). *Biometrika*, 1979.
10. Testing for Serial Correlation in Simultaneous Equation Systems (with G D A Phillips). *Econometrica*, 1980, 747-759.
11. On Comparing Regression Models in Levels and First Differences. *International Economic Review*, 1980, 707-720.

12. An Algorithm for Exact Maximum Likelihood Estimation of Autoregressive-Moving Average Models by Means of Kalman Filtering (with G Gardner and G D A Phillips). *Applied Statistics*, 1980, **29**, 311-322. Reprinted in Applied Statistics Algorithms, P Griffiths and I D Hill (eds), 206-221. Ellis Horwood, 1985.

13. Testing for Heteroscedasticity in Simultaneous Equation Models (with G D A Phillips). *Journal of Econometrics*, 1981, **15**, 311-340.

14. Testing for Serial Correlation in Simultaneous Equation Models: Some Further Results (with G D A Phillips). *Journal of Econometrics*, 1981, **17**, 99-105.

15. The Kalman Filter and its Applications in Econometrics and Time Series Analysis. *Methods of Operations Research*, 1981, **44**, 3-18.

16. Finite Sample Prediction and Overdifferencing. *Journal of Time Series Analysis*, 1981, **2**, 221-232.

17. An Algorithm for Finite Sample Prediction from ARIMA Processes (with C R McKenzie). *Applied Statistics*. 1982, **31(2)**, 180-187.

18. Testing for Contemporaneous Correlation of Disturbances in Systems of Regression Equations (with G D A Phillips). *Bulletin of Economic Research*, 1982, **34**, 79-91.

19. Forecasting Economic Time Series with Structural and Box-Jenkins Models (with P H J Todd), *Journal of Business and Economic Statistics*, 1983, **1**, 299-315. Reprinted in Modelling Seasonality, S Hylleberg (ed), 341-58. OUP, 1992.

20. Testing for Deterministic Trend and Seasonal Components in Time Series Models (with L Franzini), *Biometrika*, 1983, **70**, 673-682.

21. Estimating Missing Observations in Economic Time Series (with R Pierse). *Journal of the American Statistical Association*, 1984, **79**, 125-131.

22. Time Series Forecasting Based on the Logistic Curve. *Journal of the Operational Research Society*, 1984, **35**, 641-646.

23. A Unified View of Statistical Forecasting Procedures, (with discussion), *Journal of Forecasting*, 1984, **3**, 245-283.

24. Trends and Cycles in Macroeconomic Time Series. *Journal of Business and Economic Statistics*, 1985, **3**, 216-227.

25. The Estimation of Higher Order Continuous Time Autoregressive Models (with J H Stock). *Econometric Theory*, 1985, **1**, 97-112.

26. Analysis and Generalization of a Multivariate Exponential Smoothing Model, *Management Science*, 1986, **32**, 374-380.

27. The Effects of Seat Belt Legislation on British Road Casualties (with J Durbin). *Journal of the Royal Statistical Society*, Series A, 1986, **149**, 187-227.

28. Stochastic Trends in Dynamic Regression Models, with B Henry, S Peters and S Wren-Lewis. *Economic Journal*, 1986, **96**, 975-85.

29. Forecasting and Interpolation using Vector Autoregressions with Common Trends (with F J Fernandez-Macho and J Stock). *Annales d'Economie et de Statistique*, 1987, No. **6/7**, 279-288.

30. Assessing and Modelling the Cyclical Behaviour of Rainfall in North-East Brazil, with R Souza. *Journal of Climate and Applied Meteorology*, 1987, **26**, 1317-1322.

31. Continuous Time Autoregressive Models with Common Stochastic Trends (with J Stock). *Journal of Economic Dynamics and Control*, 1988, **12**, 365-384.

32. Efficient Estimation of Nonstationary Time Series Regression (with P Robinson). *Journal of Time Series Analysis*, 1988, **9**, 201-214.

33. Estimating Integrated Higher Order Continuous Time Autoregressions with an Application to Money-Income Causality (with J. Stock). *Journal of Econometrics*, 1989, **42**, 319-336

34. Time Series Models for Count or Qualitative Observations, (with C Fernandes). Invited paper at Summer Meeting of the American Statistical Association, Washington DC, 1989. *Journal of Business & Economic Statistics*, 1989, **7**, 409-422.

35. Time Series Models for Insurance Claims (with C Fernandes). *Journal of the Institute of Actuaries*, 1990, **116**, 513-28.

36. Seemingly Unrelated Time Series Equations and a Test for Homogeneity (with F J Fernandez). *Journal of Business and Economic Statistics*, 1990, **8**, 71-82.

37. Estimation Procedures for Structural Time Series Models (with S Peters). *Journal of Forecasting*, 1990, **9**, 89-108.

38. Structural Time Series Models in Inventory Control (with R Snyder). *International Journal of Forecasting*, 1990, **6**, 187-98.

39. On the Probability of Estimating a Deterministic Component in the Local Level Model (with N G Shephard). *Journal of Time Series Analysis*, 1990, **11**, 339-47.

40. Inter-Fuel Substitution, Technical Change and the Demand for Energy in the UK Economy (with P Marshall). *Applied Economics*, 1991, **23**, 1077-86.

41. Unobserved Component Time Series Models with ARCH Disturbances (with E Ruiz and E Sentana). *Journal of Econometrics*, 1992, **52**, 129-57.

42. Diagnostic Checking of Unobserved Components Time Series Models (with S J Koopman). *Journal of Business and Economic Statistics*, 1992, **10**, 377-89.

43. Estimation of Simultaneous Equation Models with Stochastic Trends (with M Streibel), *Journal of Economic Dynamics and Control* 1993, **17**, 263-87.

44. Detrending, Stylized Facts and the Business Cycle (with A Jaeger) *Journal of Applied Econometrics*, 1993, **8**, 231-47.

45. Forecasting Hourly Electricity Demand Using Time-Varying Splines (with S J Koopman), *Journal of the American Statistical Association*, 1993, **88**, 1228-36.

46. Multivariate Stochastic Variance Models (with E Ruiz and N Shephard), *Review of Economic Studies*, 1994, **61**, 247-64. Reprinted in (i) *ARCH Models*, RF Engle (ed). OUP; (ii) *Recent Developments in Time Series,* S Leybourne and T Mills (eds), Edward Elgar.

47. Seasonality in Dynamic Regression Models (with A Scott), *Economic Journal*, 1994, **104**, 1324-1345.

48. Structural Time Series Models in Medicine (with S Koopman), *Statistical Methods in Medical Research*, 1996, **5**, 23-49.

49. Intervention Analysis with Control Groups, *International Statistical Review* 1996, **64**, 313-28.

50. Estimation of an Asymmetric Stochastic Volatility Model for Asset Returns (with N G Shephard), *Journal of Business and Economic Statistics*, 1996, **14**, 429-434,

51. Trends, Cycles and Autoregressions, *Economic Journal*, 1997, **107**, 192-201.

52. The Modelling and Seasonal Adjustment of Weekly Observations (with S Koopman and M Riani), *Journal of Business and Economic Statistics*, 1997, **15**, 354-68.

53. Testing for Deterministic versus Indeterministic Cycles (with M Streibel), *Journal of Time Series Analysis*, 1998, **19**, 505-29.

54. Testing for a Slowly Changing Level with Special Reference to Stochastic Volatility (with M. Streibel), *Journal of Econometrics*, 1998, **87**, 167-89.

55. Tests of Common Stochastic Trends (with J. Nyblom). *Econometric Theory*, 2000, **16,** 176-99.

56. Estimating the Underlying Change in Unemployment in the UK, with discussion (with C.H. Chung). *Journal of the Royal Statistical Society Series A*, 2000, **163**, 303-39.

57. A Beveridge-Nelson Smoother (with T Proietti), *Economics Letters***,** 2000**, 67**, 139-46.

58. Signal Extraction and the Formulation of Unobserved Components Models (with S J Koopman), *Econometrics Journal*, 2000, **3**, 84-107**.**

59. Testing for the Presence of a Random Walk in Series with Structural Breaks (with F Busetti). *Journal of Time Series Analysis.* 2001, **22**, 127-50.

60. Testing in Unobserved Components Models, *Journal of Forecasting*, 2001, 20, 1-19.

61. Testing against Smooth Stochastic Trends (with J. Nyblom), *Journal of Applied Econometrics.* 2001, **16**, 415-29.

62. Computing observation weights for signal extraction and filtering (with S J Koopman). *Journal of Economic Dynamics and Control*, 2003, **27**, 1317-33.

63. Measurement and Testing of Inequality from Time Series of Deciles with an Application to U.S. Wages (with J Bernstein), *Review of Economics and Statistics*, 2003, **85**, 141-52.

64. General model-based filters for extracting trends and cycles in economic time series (with T. Trimbur) *Review of Economics and Statistics*, 2003, **85**, 244-55.

65. Seasonality Tests (with F. Busetti). *Journal of Business and Economic Statistics*, 2003, **21**, 420-36.

66. Convergence in the trends and cycles of Euro Zone income. (with V.M. Carvalho). *Journal of Applied Econometrics*, 2005, **20,** 275-289.

67. Growth, cycles and convergence in US regional time series. (with V. M. Carvalho). *International Journal of Forecasting*, 2005, **21**, 667-86.

68. Convergence of prices and rates of inflation (with Fabio Busetti and Silvia Fabiani). *Oxford Bulletin of Economics and Statistics*, 2007, 68, 863-77.

69. Inflation convergence and divergence within the European Monetary Union (with F. Busetti, L. Forni and F. Vendetti). *International Journal of Central Banking*, 2007, 3, 95-121.

70. Harvey, A.C., T. Trimbur and H.K. van Dijk (2007). Cyclical components in economic time series: a Bayesian approach. *Journal of Econometrics*, 140, 618-49.

71. Busetti, F. and A.C. Harvey (2008) Testing for Trend. *Econometric Theory*, 24, 72-87.

72. Harvey, A.C. and T. Trimbur (2008). Trend Estimation and the Hodrick-Prescott Filter. *Journal of Japanese Statistical Society* (volume in honour of H. Akaike), 38, 41-9.

73. Harvey, A.C. and D. Delle Monache (2009). Computing the Mean Square Error of Unobserved Components Extracted by Misspecified Time Series Models. *Journal of Economic Dynamics and Control*, 33, 283-95.

74. De Rossi, G. and A.C. Harvey (2009) Quantiles, expectiles and splines. *Journal of Econometrics*, 152, 179-85.

75. Harvey, A.C. (2009) The local quadratic trend model. *Journal of Forecasting*, 29, 94-108.

76. Harvey, A.C. and S.J. Koopman (2009). Unobserved Components Models in Economics and Finance. *IEEE Control Systems Magazine,* December, 2009, 71-81.

77. Harvey, A.C. (2010) Tracking a changing copula. *Journal of Empirical Finance*, 17, 485-500.

78. Busetti, F. and A.C. Harvey (2010) Tests of time-invariance. *Journal of Time Series Analysis*, 31, 435-50.

79. Busetti, F. and A.C. Harvey (2011) When is a copula constant? A test for changing relationships. *Journal of Financial Econometrics,* 9, 106-131

80. Harvey, A.C. (2011). Modelling the Phillips curve with Unobserved Components. *Applied Financial Economics, special issue in honour of Clive Granger*, 21, 7-17.

81. Harvey, A.C. and V. Oryshchenko (2012). Kernel density estimation for time series models. *International Journal of Forecasting,* 28, 3-14.

82. Harvey, A.C. and G. Sucarrat (2014) EGARCH models with fat tails, skewness and leverage. *Computational Statistics and Data Analysis,* 26, 320-338

83. Harvey, A.C. and A. Luati. (2014) Filtering with Heavy Tails, *Journal of the American Statistical Association*, 109, 1112-1122.

84. Harvey, A.C. and M. Caivano (2014) Time series models with an EGB2 conditional distribution. *Journal of Time Series Analysis*, 34, 558-71.

85. Harvey, A.C. and S. Thiele (2016) Testing against changing correlation. *Journal of Empirical Finance,* 38, 575-89.

86. Caivano, M., Harvey, A. C. and A. Luati (2016) Robust time series models with trend and seasonal components. *SERIEs, special issue in honour of Agustin Maravall (forthcoming)*

87. Harvey, A.C. and R-J. Lange (2017). Volatility Modelling with a Generalized t-distribution, *Journal of Time Series Analysis (forthcoming).*

Articles in Edited Volumes

1. The Estimation of Time-Varying Parameters from Panel Data. Paper presented at *CNRS Symposium on the Econometrics of Panel Data*, Paris, August 1977. *Annals de L'INSEE,* 1978, 203-227.

2. On the Relative Efficiency of Various Estimators of Regression Models with Moving Average Disturbances (with I D McAvinchey), in E G Charatis (ed), *Proceedings of the Econometrics Society European Meeting*, North Holland Publishing Co. Amsterdam, 1981.

3. The Estimation of Regression Models with Time-Varying Parameters (with G D A Phillips), in *Proceedings of Symposium in Honour of Oskar Morgenstern*, Vienna, May 1980. Physica-Verlag: Wurzburg, 1982.

4. Irregular Data Revisions (with C R McKenzie, D Blake and M Desai) in A Zellner (ed), *Proceedings of ASA-CENSUS-NBER Conference on Applied Time Series Analysis of Economic Data*. US Department of Commerce, Washington, DC, 1983, 329-347.

5. The Formulation of Structural Time Series Models in Discrete and Continuous Time. Invited paper at First Catalan International Symposium in Statistics, Barcelona, September 1983. *Questiio*, 1983, **7**, 563-575.

6. Missing Observations in Dynamic Econometric Models: A Partial Synthesis (with C R McKenzie), in E Parzen (ed) *Time Series Analysis of Irregularly Spaced Data*, (Lecture Notes in Statistics, No.25) Berlin; Springer-Verlag, 1984, 108-137.

7. Dynamic Models, the Prediction Error Decomposition and State Space, in *Econometrics and Quantitative Economics*, D F Hendry and K F Wallis (eds), 1984, 37-59. B Blackwell: Oxford.

8. The Effects of Seat Belt Legislation on Road Casualties in Great Britain: Report on Assessment of Statistical Evidence, (with J Durbin). Annex to *Compulsory Seat Belt Wearing Report by the Department of Transport*. London, HMSO, 1985.

9. ARIMA Models, in J Eatwell, M Millgate and P Newman. *The New Palgrave*. 1987, Vol.l, 111-112.

10. Applications of the Kalman Filter in Econometrics, in T Bewley (ed). *Advances in Econometrics. Fifth World Congress*, Vol.I. Cambridge University Press, 1987, 285-313.

11. Testing for Structural Change in Simultaneous Equation Models (with G D A Phillips) in P Hackl (ed.), Statistical Analysis and *Forecasting of Economic Structural Change*, Berlin: Springer-Verlag, 1989, 25-36.

12. Stochastic Trends in Simultaneous Equation Systems (with M Streibel), in *Economic Structural Change.* ed. P Hackl and A Westlund. Berlin: Springer-Verlag, 1991, 169-78.

13. Estimation, Smoothing, Interpolation and Distribution in Structural Time Series Models in Continuous Time (with J Stock), in Models, *Methods and Applications of Econometrics*, P C B Phillips (ed), 1993, 55-70.

14. Structural Time Series Models (with N G Shephard), in Maddala, G S, Rao, C R and H D Vinod (eds), *Handbook of Statistics. Vol. 11 : Econometrics*, Amsterdam: North-Holland, 1993, 261-302.

15. Time Series Models for Multivariate Series of Count Data (with K Ord and C Fernandes), in *Developments in Time Series Analysis*, T Subba Rao (ed), Chapman and Hall, 1993, 295-309.

16. Stochastic Volatility (with E Ghysels and E Renault) in Maddala, G S, Rao, C R and H D Vinod (eds), *Handbook of Statistics. Vol. 14 : Statistical Methods in Finance*, Amsterdam: North-Holland, 1996, 119-91.

17. Filters, in *Encyclopedia of Business Cycles, Panics. Crises and Depressions*, D Glasner (ed). New York, Garland, 1997, 227-231.

18. Trends and Cycles in Multivariate Time Series (with S Koopman) in *System Dynamics in Economic and Financial Models*, C. Heij, H. Schumacher, B. Hanzon and C. Praagman (eds). Chichester: John Wiley and Sons 1997, 269-298.

19. Structural Time Series Models (with S. J. Koopman), *Encyclopedia of Biostatistics*. P. Armitage (ed). Chichester: John Wiley and Sons, 1998.

20. Messy Time Series (with S J Koopman and J Penzer) in *Advances in Econometrics*, 1998, **13**, 103-143.

21. Long Memory in Stochastic Volatility, in *Forecasting Volatility in Financial Markets*. J Knight and S Satchell (eds), 1998, 307-320. Oxford: Butterworth-Heineman.

22. Trend Analysis, in *Encyclopedia of Environmetrics, Vol 4.* D.R Brillinger (ed), 2243-2257. Chichester: John Wiley and Sons, 2001. Updated 2016 in Wiley StatsRef: Statistics Reference Online

23. Trends, cycles and convergence. Ch 8 of Economic Growth: Sources, Trends and Cycles, *Proceedings of Fifth Annual Conference of Bank of Chile,* edited by N. Loayza and R. Soto, 2002, 221-250.

24. Tests for cycles, in *State space and unobserved component models*, Harvey, A C, Koopman S J and N Shephard (eds), 2004, 102-119, CUP.

25. A unified approach to testing for stationarity and unit roots. In *Identification and Inference for Econometric Models*, edited by Andrews, D.W. K. and J.H.Stock, 2005, 403-25. Cambridge University Press: New York.

26. Signal Extraction (with G de Rossi). *Palgrave Handbook of Econometrics*, vol 1, edited by K Patterson and T C Mills. 2006, 970-1000. Palgrave MacMillan.

27. Forecasting with Unobserved Components Time Series Models. *Handbook of Economic Forecasting*, edited by G Elliot, C Granger and A Timmermann. 2006, 327-412. North Holland.

28. *State space models*. New Palgrave, 2008. Durlauf, S. et al (eds).

29. Trend Estimation, Signal-Noise Ratios and the Frequency of Observations (with T. M. Trimbur). In *Growth and Cycle in the Eurozone*, Edited by G. L. Mazzi and G. Savio. 2007, 60-75. Palgrave MacMillan, Basingstoke.

30. Bayes Estimates of the Cyclical Component in Twentieth Century US Gross Domestic Product (with T. M. Trimbur and H. K. van Dijk). In *Growth and Cycle in the Eurozone*, Edited by G. L. Mazzi and G. Savio. 2007, 76 – 89. Palgrave MacMillan, Basingstoke.

31. Specification and Misspecification of Unobserved Components Models (with D. Delle Monache). In *Economic Time Series: Modeling and Seasonality,* Edited by W. R. Bell, S. H. Holan and T. S. McElroy, 2012, 83-108. Chapman and Hall/CRC.

Notes and Comments in Journals

1. A Note on the Efficiency of Kelejian's Method of Estimating Cobb-Douglas Type Functions with Multiplicative and Additive Errors. *International Economic Review*, 1976, 506-509.

2. An Alternative Proof and Generalization of a Test for Structural Change. *American Statistician*, 1976, 122-123.

3. Some Comments on Multicollinearity in Regression. *Applied Statistics*, 1977, 188-191.

4. On the Unbiasedness of Robust Regression Estimators. *Communications in Statistics A*, 1978, 779-783.

5. A Note on Testing for Gaps in Seasonal Moving Average Models (with J Tomenson), *Journal of the Royal Statistical Society*. Series B, 1981, 240-243.

6. A Note on Estimating and Testing Exogenous Variable Coefficient Estimators in Simultaneous Equation Models (with G D A Phillips). *Economic Letters*, 1984, **15**, 301-7.

7. A Note on the Estimation of Variances in State Space Models Using the Maximum *A Posteriori* Procedure (with S Peters). *IEEE Trans. on Automatic Control*, 1985, AC-30, 1048-1050.

8. Further Comments on Stationarity Tests in Series with Structural Breaks at Unknown Points, *Journal of Time Series Analysis.* 2003, **24**, 137-40.

9. A note on common cycles, common trends and convergence (with V Carvalho and T Trimbur). *Journal of Business and Economic Statistics*, 2007, 25, 12-20.

Recent Working Papers

1. Volatility Modeling with a Generalized t-distribution. CWPE 1517, June 2015.

2. Modeling the Interactions between Volatility and Returns. CWPE 1518, July, 2015.

Computer Programs

STAMP 8.0 Structural Time Series Analyser, Modeller and Predictor (with S J Koopman, J A Doornik and N Shephard).. London: Timberlake Consultants Ltd, 2008. Earlier versions in 1988, 1995, 2000, 2006.

PhDs Supervised

1. P Pereira, 1983: "Estimation of Econometric and Time Series Models with missing Observations".

2. L Hotta, 1983: "Identification and Testing of Hypotheses in Unobserved Components Models".

3. F J Fernandez Macho, 1986: "Estimation and Testing in Multivariate Structural Time Series Models".

4. L Figliouli, 1989: A State Space Approach to Non Linear and Non Gaussian Time Series Models".

5. P Gonzalez, 1989: "Modelos Estructurales de Series Temporales: Effectos de la Agregacion Temporal y el Muestreo Sistematico". (Awarded Ph.D at University of the Basque Country; first year of study at LSE).

6. N G Shephard, 1989: "Exact Distribution Theory for Local Trend Models".

7. H K Tan, 1990 : "Robust Estimation for Structural Time Series Models".

8. P Marshall Rivera, 1990: "Analysis of a Cross-Section of Time Series using Structural Time Series Models".

9. C Fernandes, 1990 : "Non-Gaussian Structural Time Series Models".

10. E Ruiz, 1992 : "Heteroscedasticity in Financial Time Series".

11. S J Koopman, 1992 : "Diagnostic Checks and Intra-Daily Effects in Time Series Models".

12. M Streibel, 1992 : "Stochastic Trends in Simultaneous Equation Systems".

13. T Proietti, 1998: "Unobserved Components in Time Series" (External London).

14. F Busetti, 2001: “Testing and estimation of models with stochastic trends”.

15. T Trimbur, 2003: “Cycles and trends in time series”.

16. G. de Rossi, 2004: "Estimation of Dynamic Term Structure Models in State Space Form".

17. Li Shan Shi, 2006: "Stochastic Volatility in Mean Option Pricing Models".

18. Davide Delle Monache, 2011: " Essays on State Space Models and Macroeconomic Modelling

19. Joao Jalles, 2012: "Essays in Applied Macroeconomics".

20. Philipp Andres, 2014: "Essays on Dynamic Conditional Score Models for Volatility"

21. Stephen Thiele, 2016: Time-Varying Parameter Models in Financial Econometrics

22. Ryoko Ito, 2016: Dynamic Conditional Score: Some Asymptotic Theories and Applications to High-Frequency Financial Data.

Consultancy Work Undertaken

1985-9	National Institute of Economic and Social Research advice given on various research projects
1986	Department of Transport - "Effects of Seat Belt Legislation in Great Britain"
1988-9	Department of Energy - "Modelling Energy Demand in UK"
1989	Institute of Actuaries Working Party on "Stochastic Investment Modelling". Report published 1992
1990-1	Electricity Power Research Institute (EPRI) - "Modelling Hourly Electricity Demand"
1991-2	Bank of England - "Report of the Seasonal Adjustment Working Party"
1997-8	Panagora - advice on financial econometrics
1997-9	Office for National Statistics - estimating change in U. K. unemployment
2007-8	Food Standards Agency – assessing the effects of health campaigns
2008	Department for Transport – rail demand