

CURRICULUM VITAE

ROBERT F. ENGLE

July 2006

BUSINESS ADDRESS

New York University
Salomon Center
44 West Fourth Street, Suite 9-62
New York, NY 10012-1126
Tel: 212-998-0710
Fax: 212-995-4220
Email: rengle@stern.nyu.edu
<http://www.stern.nyu.edu/~rengle>

PERSONAL INFORMATION

Born: November 1942
Married, two children
Citizenship: U.S.A.

EDUCATION

B.S., Williams College, 1964, with Highest Honors in Physics
M.S., Physics, Cornell University, 1966
Ph.D., Economics, Cornell University, 1969

ACADEMIC POSITIONS

Michael Armellino Professor in the Management of Financial Services, NYU Stern School of Business, 2000-
Professor, Department of Finance, Stern School of Business, New York University, 1999.
Chair, University of California, San Diego, 1990 - 1994.
Chancellors' Associates Chair in Economics, 1993 -
Professor, University of California, San Diego, 1977
Associate Professor, University of California, San Diego, 1975-1977.
Associate Professor, Massachusetts Institute of Technology.
Assistant Professor, Massachusetts Institute of Technology, 1969-1974.

HONORS and AWARDS

Honors

Affiliated Faculty, Statistics Group, 2006
Member, National Academy of Sciences, 2006
Doctorate Honoris Causis, Universite de Savoie, France 2005
Editorial Board, Real Estate Economics, 2004
Nobel Prize for Economics, 2003
Fellow, American Academy of Arts and Sciences, 1995
Econometric Society Council, 1994
Fellow, American Statistical Association, 2000
The Institute for Quantitative Research in Finance, Roger F. Murray Prize Competition, 1991
NBER Research Associate, 1987 - Present
Fellow of the Econometric Society, 1981
Excellence in Teaching from MIT Graduate Economics Association, 1974-1975

Invited Lectures

Lecture on "Execution Cost", *HEC School of Management*, Paris, France. June 8, 2006.
Presentation on "Measuring and Modeling Execution Cost and Risk" at *INSEAD*, Fontainebleau, France.
June 9, 2006.

Lecture on “Execution Risk” at the *Microstructure of Financial and Money Markets Conference*, Paris, France. June 6, 2006.

Edmund R. Mechalik Distinguished Lecture in the Mathematical Sciences, “Global Volatility: It’s Measurement, Interpretation, and Causes”, *University of Pittsburgh*. April 7-9, 2006.

Speaker: “Downside Risk and its Implications for Financial Management”, *Q-Group Conference – Institute for Quantitative Research in Finance*, West Palm Beach, Florida. March 31-April 3, 2006.

Speaker: “Financial Volatility – Causes, Consequences, and Global Patterns”, *Midwest Economics Association*, Chicago. March 24-25, 2006.

Will Mann Richardson Lectureship, *Austin College*. March 3-5, 2006.

Lecture and Workshop on “Execution Risk”, *University of Toronto*. Feb. 17-19, 2006.

Keynote speaker “Allied Social Science Associations Annual Convention, KUU Conference, *American Economic Association*. Boston, MA. January 6-8, 2006.

Public Lectures at *Chongqing University*, *Wuhan University*, *Huanzang University*, *National Taiwan University*, *TABF Inauguration*, *NBER Trio Conference*, *Tokyo University*. December 2005

Lecture: “A Brief History of Time”, *Economics Roundtable for University of California, San Diego*. August 2005.

Keynote Speaker: “Underlying Dynamics of Credit Correlations”, *Risk Magazine Quant Congress*, New York, NY. November 8, 2005.

Hedge Fund Lecture Principal Speaker on “Measuring Downside Risk”: *IXIS - NYU Banking Conference Series on Hedge Funds*. September 2005.

Stern Honors Society Lecture, Stern School of Business – New York University. November 3, 2005.

Opening Address: “The Spline GARCH Model for Unconditional Volatility and its Global Macroeconomic Causes”, *Statistical and Applied Mathematical Sciences Institute Conference*. Duke University, North Carolina. September 2005

“Downside Risk – Econometric Models and Financial Implications”, *ASTIN – AFIR Conference*, Zurich, Switzerland. September 2005

Key Note Speaker, *International Conference on Finance*, University of Copenhagen, Denmark. September 2005

Chair Speaker, *Econometrics Society World Congress*, London, England. August 2005.

“MBS and Credit Derivatives – The Recent Development”, *13th annual PBFAE Conference* - Rutgers University, New Brunswick. June 10, 2006.

Lecture: *Changing Structures in International and Financial Market and the Effects on Financial Decision Making*, Venice, Italy. June 2nd and 3rd, 2005.

Lecture on “Frontiers in Time Series Analysis”, *Journal of Applied Econometrics Annual Conference*, Sardinia, Italy. May 29-31, 2005.

Financial Econometrics Conference, University of Montreal, May 19th, 2005

Induction Ceremony Key Note Speaker, *Penncrest High school*, May 18th, 2005

Paper presentation on Microstructure, *National Bureau of Economic*. Cambridge, MA – May 6, 2005.

Keynote Speaker, *Morgan Stanley Equity Market Microstructure Research Conference*. May 12th-13th, 2005

“Stern Scholar in the Parlor”, Hosted by Leonard Stern, Stern School of Business. April 20th, 2005

“Statistics Day”, *University of Maryland Conference on Statistics*. April 15th, 2005

Federal Reserve System’s Fourth Annual Community Affairs Research: *Federal Reserve Bank of New York*, April 8th, 2005

“Dean’s Roundtable Luncheon”, *Stern Executive Board*, Stern School of Business - NYU. April 5th, 2005

Lecture: *Citigroup Conference*, April 6th, 2005

Presentation on “Testing and Valuing Dynamic Correlations for Asset Allocation”, *Research Conference for Corporate Associates*. Stern School of Business – NYU. April 2005

Public Lecture: Budapest Collegiums, “Downside Risk: Implications for Financial Management”, *European Cultural Foundation*. March 23, 2005.

Lecture on “Downside Risk: Implications for Financial Management”, *the Czech National Bank, Czech Economic Society and CERGE-EI*. March 17, 2005.

Lecture: “A Simple GARCH Approach to Default Correlations”, *International Association of Financial Engineers*. New York, NY: March 2, 2005

“Cutting Edge Innovations and Derivatives”, *Credit Suisse First Boston First Annual Meeting*, March 2005

Joint lunch of the AEA/AFA Annual Meeting, Philadelphia, 2004
 Econometric Institute/Princeton University Press lecture series at Erasmus University, 2003.
 Nobel Lecture, Stockholm, 2003
 Speaker, Bank of Italy, 2003
 Speaker, Ente Einaudi, Rome, 2003
 Speaker, Erasmus Econometric Institute Lectures and Princeton University Press Monograph, 2003
 Lecturer, New Frontiers in Financial Volatility Modeling, NYU STER-Universita di Firenze, 2003
 Discussant, 5 Star Conference, NYU Stern, 2001
 Invited Speaker, New York Federal Reserve, 2001
 Invited Speaker, Handbook of Financial Econometrics, Princeton, 2001
 Keynote Speaker, Int'l Conf. on Modeling & Volatility & Forecasting Financial Volatility, Perth, 2001
 Keynote Speaker, Finish Statistical Association Meeting, Vaasa, Finland 2001
 Invited Speaker, High Frequency, Volatility & Market Microstructure, Denmark, 2001
 Invited Speaker, Journal of Applied Econometric Lecture Series, Cambridge, UK, 2001
 Invited Speaker, Brown University, 2001
 Invited Speaker, CNRS Meeting, Aussois, France, 2001
 Invited Speaker, University of Capetown, South Africa, 2001
 Invited Speaker, Fields Lecture, University of Toronto, 2001
 Invited Speaker, University of Montreal, Canada, 2001
 Invited Speaker, University of Iowa, 2000
 Keynote Speaker, German Financial Association Meeting, Konstanz, Germany, 2000
 Invited Speaker, Neutralization Conference, Duke University, NC, 2000
 Keynote Speaker, Asia Pacific Finance Association, Shanghai, 2000
 Invited Lecture Series, Academica Sinica, Taiwan, 2000
 Invited Speaker, Latin American Meeting of the Econometric Society, Cancun, 1999.
 A.W. Phillips Lecture, Australasian Meeting of the Econometric Society, Melbourne, 1997
 Frank Paish Lecture, Annual Meeting of the Royal Economic Society, Swansea, 1996
 Fisher-Schultz Lecture, European Meeting of the Econometric Society, Istanbul, 1996
 Presented the Pareto Lecture for the Annual Meeting of ASSET, Istanbul, Turkey, 1995
 Invited Speaker, Brazilian Meeting of the Econometric Society, Florianopolis, 1994
 Invited Speaker, European Meeting of the Econometric Society, Upsalla, Sweden, 1993
 Invited Speaker, Latin American Meeting of the Econometric Society, Mexico City, 1992
 Invited Speaker, Australasian Meeting of the Econometric Society, Sydney, 1991
 Invited Speaker, Far Eastern Meeting of the Econometric Society, Seoul, 1991
 Presented address at European Meeting of Econometrics Society, 1987
 Invited Speaker, Fifth World Congress of the Econometric Society, 1985

GRANTS

05/98 - 04/01	NSF SBR-9730062 \$229,080 Accomplishment Based Renewal of: Autoregressive Conditional Duration, Arch, Common Features, and Cointegration
06/95 - 06/98	NSF SBR-9422575 \$197,941 Autoregressive Conditional Duration, ARCH, Common Features, and Cointegration
07/92 - 06/95	NSF SES-91-22056,\$216,000 ARCH, Cointegration and Common Features: Theory and Application
05/91 - 04/94	NSF INT-9016998, US-France Cooperative Research: Multinational Econometric Policy Analysis
11/89 - 10/91	NSF SES 89-10273, \$107,848, New Developments in Time Series Models for Economics and Finance
09/87 - 01/89	NSF SES 8705884, \$84,000, Multivariate ARCH Models
04/85 - 09/87	NSF SES 8420680, \$91,000, Research on ARCH Models
01/83 - 01/85	NSF SES 8209221, \$60,000 Econometric Research on ARCH Models
07/80 - 03/83	NSF SES 80-08580, \$190,711, Econometric Models with Stochastic Variance
09/78 - 08/81	NSF SOC78-09476, \$89,094, Development of Regression Diagnostics Based on Lagrange Multiplier Tests
08/77 - 07/80	NSF SOC77-07166, \$148,000, Disaggregation and Forecasting-Simultaneous Analysis of

Regional Data

PROFESSIONAL SERVICES

Member, Nominating Committee for Council, Econometric Society, 1995
 Council, Econometric Society, 1994
 Planned and Organized conference on Multivariate Time Series and Financial Econometrics, 1994
 Associate Editor, Review of Economics and Statistics, 1992
 Advisory Editor, Empirical Finance, 1992
 Member, Econometric Society Fellows Nominating Committee, 1992
 Organized Time Series meeting in La Jolla, October 1990
 Planned and Organized conference on ARCH Models in La Jolla, April 1990
 Associate Editor, Journal of Applied Econometrics, 1988-
 Chair, Econometric Society Fellows Nominating Committee, 1988
 Member, Econometric Society Fellows Nominating Committee, 1987
 Planned and organized conference on ARCH Models in La Jolla, April 1987
 Co-Editor of Journal of Applied Econometrics, 1985-1989
 Associate Editor, Journal of Forecasting, 1985 - present
 Member, Economic Panel, National Science Foundation, 1979-1981
 Associate Editor, Econometrica, 1975-81
 Associate Editor, Journal of Regional Science, 1978-
 Program Committee of Econometric Society Meetings for Theoretical Econometrics, 1976
 Steering Committee, NBER-Census Conference on Seasonality, 1975-1976
 Program Committee of Econometric Society Meetings for Urban Economics, 1975

OTHER AFFILIATION

Faculty Research Associate, NBER
 Principle, Robert F. Engle, Econometric Services

ONE WEEK OR LONGER LECTURESHIPS

Stockholm School of Economics, Stockholm, June 1999
 Universidad Carlos III de Madrid, July 1998
 Arrabida, Portugal, July 1998
 London School of Economics, Financial Markets Group, March 1992
 University of New South Wales, Sydney, July 1991
 Vienna, Institute for Advanced Studies, May 1991
 Paris, INSEE, June 1990
 Helsinki, Finland
 Maastricht, The Netherlands
 Bagni di Lucca, Italy
 Peoples University, China

PUBLICATIONS

1. "Effects of aggregation over time on dynamic characteristics of an economic model," (with T.C. Liu) in Burt G. Hickman, ed., *Econometric Models of Cyclical Behavior, Studies in Income and Wealth*, v. 2, no. 36, National Bureau of Economic Research, New York, 1972.
2. "An Econometric Simulation Model of Intra-Metropolitan Housing Location: Housing, Business, Transportation and Local Government," (with Franklin M. Fisher, John R. Harris and Jerome Rothenberg) *The American Economic Review* 62 (1972): 87-97.
3. "Issues in the Specification of an Econometric Model of Metropolitan Growth," *Journal of Urban*

- Economics* 1 (1974): 250-267.
4. "Specification of the Disturbance for Efficient Estimation," *Econometrica* 42 (1974): 135-146.
 5. "Band Spectrum Regression," *International Economic Review* 15 (1973): 1-11.
 6. "A Disequilibrium Model of Regional Investment," *Journal of Regional Science* 14 (1974): 367-376.
 7. "De Facto Discrimination in Residential Assessments: Boston," *National Tax Journal* 28 (1975): 445-451.
 8. "An Asset Price Model of Aggregate Investment," (with Duncan Foley), *International Economic Review* 16 (1975): 625-647.
 9. "Equilibrium in Regional Investment: A Reply," *Journal of Regional Science* 15 (1975): 235-238.
 10. "Some Finite Sample Properties of Spectral Estimators of a Linear Regression," (with Roy Gardner), *Econometrica* 44 (1976): 149-165.
 11. "Interpreting Spectral Analysis in Terms of Time Domain Models," *Annals of Economic and Social Measurement* 5 (1976): 89-109.
 12. "Simultaneous Estimation of the Supply and Demand for Household Location in a Multizoned Metropolitan Area," (with Katharine Bradbury, Owen Irvine, and Jerome Rothenberg), in *Residential Location and Housing Markets* (Gregory K. Ingram, ed.), (Ballinger 1977): 51-86.
 13. "Policy Pills for a Metropolitan Economy," *Papers and Proceedings of the Regional Science Association* 35 (1976): 191-205.
 14. "Constraints Often Overlooked in Analysis of Simultaneous Equation Models: Comment," *Econometrica* 44 (1976): 617-819.
 15. "Estimating structural models of seasonality," in *Seasonal Analysis Of Economic Time Series*, ed. A. Zellner (U.S. Department of Commerce, Bureau of Census, 1978).
 16. "Hypothesis Testing in Spectral Regression; The Lagrange Multiplier Test as a Regression Diagnostic," in *Evaluation of Econometric Models*, ed. Jan Kmenta and James Ramsey, (Academic Press, 1980).
 17. "Testing Price Equations for Stability Across Frequency Bands," *Econometrica* 46 (1978): 869-881.
 18. "Long Term Residential Load Forecasting," (with C.W.J. Granger, Allan Andersen, and Ramu Ramanathan) in *Forecasting and Modeling Time of Day and Seasonal Electricity Demands* (Electric Power Research Institute, Aspen, Colorado, 1977).
 19. "Residential Load Curves and Time-Of-Day Pricing: An Econometric Analysis," (with C.W.J. Granger, Ramu Ramanathan, and Allan Andersen), *Journal of Econometrics* 9 (1979): 13-32.
 20. "Review of *The Econometrics of Panel Data*," ed. Pascal Mazodier, *Economic Journal* 89 (1979): 999-1001.
 21. "An Exploratory Policy Oriented Econometric Model of a Metropolitan Area: Boston," in *Essays in Quantitative Economics and Development in Memory of T.C. Liu*, ed. L.R. Klein, M. Nerlove, S.C. Tsiang (Academic Press, 1980).
 22. "The Regional Response to Factor Supplies: Estimates for the Boston SMSA," in *Interregional Movements and Regional Growth; Coupe Papers on Public Economics*, ed. William Wheaton (Urban Institute, 1979).

23. "Some problems in the estimation of daily load shapes and peaks," (with C.W.J. Granger, Allen Mitchem, Ramu Ramanathan), in *Modeling and Analysis of Electricity Demand by Time-of-Day*, EPRI, EA-1304, December 1979.
24. *Regional Load Curve Models, Volumes 2, 4*, (with Granger and Ramanathan), EPRI EA-1672, Final Report of RP-1008.
25. "Exact Maximum Likelihood Methods for Dynamic Regressions and Band Spectrum Regressions," *International Economic Review* 21 (1980):391-407.
26. "Testing some propositions about Proposition 13," (with Richard Attiyeh), *National Tax Journal* 32 (1979): 131-146.
27. "A Time Domain Approach to Dynamic Factor Analysis and Mimic Models," (with Mark Watson), *Les Cahiers de Seminaire d'Econometrie* No. 22, 1980.
28. "Estimation of the Price Elasticity of Demand Facing Metropolitan Producers," *Journal of Urban Economics* 6 (1979): 42-64.
29. "A One-Factor Multivariate Time Series Model of Metropolitan Wage Rates," (with Mark Watson), *Journal of the American Statistical Association* 76 (1981): 774-781.
30. "Autoregressive Conditional Heteroskedasticity With Estimates of the Variance of U.K. Inflation," *Econometrica* 50 (1982): 987-1008.
31. "Wald, Likelihood Ratio and Lagrange Multiplier Tests in Econometrics," in *Handbook of Econometrics, vol II*, ed. Griliches and Intrilligator (Amsterdam: North Holland, 1984), 775-826.
32. "Multiperiod forecast error variances of inflation estimated from ARCH models," (with Dennis Kraft), in *Applied Time Series Analysis of Economic Data*, ed. A. Zellner (Washington, D.C.: Bureau of the Census, 1983), 293-302.
33. "A Note on Robust Methods for ARIMA Models," in *Applied Time Series Analysis of Economic Data*, ed. A. Zellner (Washington, D.C.: Bureau of the Census, 1981), pp. 176-177.
34. "A Microeconomic Analysis of Vacant Housing Units," (with R. Marshall), in *The Urban Economy and Housing*, ed. Grieson (Lexington, 1983), 105-123.
35. "Applications of spectral analysis in econometrics," (with C.W.J. Granger), *The Handbook of Statistics, Vol. III, Time Series and the Frequency Domain*, ed. Krishniah and Brillinger (Amsterdam: North Holland, 1983), 93-109.
36. "Exogeneity," (with David F. Hendry and Jean-Francois Richard), *Econometrica* 51 (1983): 277-304.
37. "Alternative Algorithms for the Estimation of Dynamic Factor, MIMIC, and Varying Coefficient Regression Models," (with Mark Watson), *Journal of Econometrics* 23 (1983): 385-400.
38. "A General Approach to Lagrange Multiplier Model Diagnostics," *Journal of Econometrics* 20 (1982): 83-104.
39. "Estimates of the Variance of U.S. Inflation Based on the ARCH Model," *Journal of Money, Credit and Banking* 15 (1983): 286-301.
40. "A comment on 'The Econometric Analysis of Economic Time Series,'" *International Statistical Review*

- 51: 149-150.
41. "Two-step modeling for short term forecasting," (with Ramu Ramanathan, C.W.J. Granger) in *Studies in the Development and Implementation of Forecasting and State Estimation Procedures in the Electric Power Industry*, ed. D.W. Bunn and E.D. Farmer (New York: Wiley and Sons, 1983).
 42. "Short-Term Forecasting of Electricity Sales: A Comparison of New Methodologies," (with Granger, Brown, Joiner, Stern and Wolin), in *Forecasting in an Era of Technological Change: Proceeding of Fifth Forecasting Symposium*, EPRI EA-4031, 1985, pp. 19-1 to 19-18.
 43. "Combining Competing Forecasts of Inflation Based on a Multivariate ARCH Model," (with Dennis Kraft and C.W.J. Granger), *Journal of Economic Dynamics and Control* 8 (1984): 151-165.
 44. "A Dymimic Model of Housing Price Determination," (with Mark Watson and David Lilien), *Journal of Econometrics*, 28 (1985): 307-326.
 45. "Wholesale and Retail Prices: Bivariate Modeling with Forecastable Variances," (with C.W.J. Granger and Russell Robins), in *Model Reliability*, ed. David Belsley and Edwin Kuh, (Cambridge, MA: MIT Press, 1986), 1-17.
 46. "Weather Normalization of Electricity Sales," (with Granger, Ramanathan, Train and Ignelzi), EPRI, 1983.
 47. "Forecasting Electricity Sales Over the Short Term: A Comparison of New Methodologies," EPRI, 1986, (with Robert Goodrich).
 48. "Discussion of 'Diagnostic Tests as Residual Analysis' by Pagan and Hall," *Econometric Reviews* 2 (1983): 223-228.
 49. "Econometric Forecasting - A Brief Survey of Current and Future Techniques," (C.W. J. Granger), in *Forecasting in the Social and Natural Sciences*, ed. K.C. Land and S.H. Schneider, (Reidel Publishing Co., 1987), 117-140.
 50. "The Billing Cycle and Weather Variables in Models of Electricity Sales," (with Kenneth Train, Patrice Ignelzi, Clive Granger, Ramu Ramanathan), *Energy* 9 (1984): 1041-1047.
 51. "Model Selection for Forecasting," (with S. Brown), *Journal of Computation in Statistics*, 1985.
 52. "Small-Sample Properties of ARCH Estimators and Tests," (with David Hendry and David Trumble), *Canadian Journal of Economics* 18 (1985): 66-93.
 53. "Testing for Coefficient Stability with a Stationary AR(1) Alternative," (with Mark Watson), *Review of Economics and Statistics* 67 (1985): 341-346.
 54. "Semi-parametric estimates of the relation between weather and electricity demand," (with C.W.J. Granger, J. Rice and A. Weiss), *Journal of American Statistical Association* 81 (1986): 310-320.
 55. "Transportation Costs and the Rent Gradient," (with N. Edward Coulson), *Journal of Urban Economics* 21 (1987): 287-297.
 56. "The Kalman Filter: Applications to Forecasting and Rational Expectations Models," (with Mark Watson), Invited Paper to the World Congress of the Econometric Society, Cambridge, 1985, in *Advances in Econometrics Fifth World Congress, Volume I*, ed. Truman Bewley), pp. 245-283.
 57. "Estimation of Time Varying Risk Premia in the Term Structure: the ARCH-M Model," (with David Lilien and Russell Robins), *Econometrica* 55 (1987): 391-407.

58. "Co-integration and Error Correction: Representation, Estimation and Testing," (with C.W.J. Granger), *Econometrica* 55 (1987): 251-276.
59. "Modeling the Persistence of Conditional Variances," (with Tim Bollerslev), *Econometric Reviews* 5 (1986): 1-50.
60. "Forecasting and Testing in Co-integrated Systems," (with Sam Yoo), *Journal of Econometrics* 35 (1987): 143-159.
61. "A Capital Asset Pricing Model with Time Varying Covariances," (with T.P. Bollerslev and J.M. Wooldridge), *Journal of Political Economy* 96 (1988): 116-131.
62. "Merging Short and Long Run Forecasts: An Application of Seasonal Cointegration to Monthly Electricity Sales Forecasting," (with Granger and Hallman), *Journal of Econometrics* 40 (1989): 45-62.
63. "A Comparison of Adaptive Structural Forecasting Methods for Electricity Sales," *Journal of Forecasting* 7 (1988): 149-172.
64. "Seasonal Integration and Cointegration," (with S. Hylleberg, C.W.J. Granger, B.S. Yoo) *Journal of Econometrics* 44 (1990): 215-238.
65. "Asset Pricing with a Factor ARCH Covariance Structure: Empirical Estimates for Treasury Bills," (with V. Ng, M. Rothschild) *Journal of Econometrics* 45 (1990): 213-237.
66. "Meteor Showers or Heat Waves? Heteroskedastic Intra-daily Volatility in the Foreign Exchange market," (with T. Ito, W.L. Lin) *Econometrica* 58 (1990): 525-542.
67. "Cointegrated Economic Time Series: A Survey with New Results," (with B.S. Yoo) in *Long Run Economic Relations: Readings in Cointegration*, ed. by R. Engle and C.W.J. Granger, (Oxford: Oxford University Press, 1991), 237-266.
68. *Long Run Economic Relations: Readings in Cointegration*, (eds. R. Engle and C.W.J. Granger (Oxford: Oxford University Press, 1991).
69. "Editor's Introduction," (with C.W.J. Granger) in *Long Run Economic Relations: Readings in Cointegration*, (eds. R. Engle and C.W.J. Granger), (Oxford: Oxford University Press, (1991), 1-16
70. "Modeling Peak Electricity Demand," (with C. Mustafa and J. Rice), *Journal of Forecasting* 11(1992): 241-251.
71. "Implied ARCH Models from Options Prices," (with C. Mustafa), *Journal of Econometrics* 52 (1992): 289-311.
72. "A Multi-Dynamic Factor Model for Stock Returns," (with V. Ng and M. Rothschild), *Journal of Econometrics* 52 (1992): 245-266.
73. "Semi-Parametric ARCH Models," (with G. Gonzalez), *Journal of Business and Economic Statistics* 9 (1991): 345-359.
74. "Measuring Risk Aversion From Excess Returns on a Stock Index," (with R. Chou and A. Kane), *Journal of Econometrics* 52 (1992): 201-224.
75. "Where Does the Meteor Shower Come From? The Role of Stochastic Policy," (with T. Ito and W.L. Lin), *Journal of International Economics* 32 (1992): 221-240.

76. "Seasonal Cointegration: The Japanese Consumption Function," (with C.W.J. Granger, S. Hylleberg, H.S. Lee), *Journal of Econometrics* 55 (1993): 275-298.
77. "On The Determination of Regional Base and Regional Base Multipliers," (with S. Brown and E. Coulson), *Regional Science and Urban Economics* 22 (1992): 619-635.
78. "ARCH Models in Finance," (eds. R. Engle and M. Rothschild), *Journal of Econometrics* 52 (1992): 245-266.
79. "Editors Introduction" (with M. Rothschild), *ARCH Models in Finance*, eds. R. Engle and M. Rothschild, *Journal of Econometrics* 52 (1992): 1.
80. "Testing Super Exogeneity and Invariance," (with D. Hendry), *Journal of Econometrics*, 56 (1993): 119-139.
81. "On the Theory of Growth Controls," (with R. Carson and P. Navarro), *Journal of Urban Economics* 32 (1992): 269-283.
82. "Time Varying Volatility and the Dynamic Behavior of the Term Structure," (with V. Ng), *Journal of Money, Credit and Banking* 25 (1993): 336-349.
83. "Statistical Models for Financial Volatility," *Financial Analysts Journal* (Jan/Feb 1993): 72 - 78.
84. "Arbitrage Valuation of Variance Forecasts Using Simulated Options," (with C. Hong, A. Kane and J. Noh) *Advances in Futures and Options Research* 6 (1993): 393-415. Excerpt reprinted in Financial Forecasting - 2002.
85. "Common Volatility in International Equity Markets," (with R. Susmel), *Journal of Business and Economic Statistics* 11 (1993): 167 - 176.
86. "Common Persistence in Conditional Variances," (with T. Bollerslev), *Econometrica* 61 (1993): 167-186.
87. "Cointegration - The Early Days" (with C.W.J.Granger), *Citation Classics* 25 (1993).
88. "Testing for Common Features," (with S. Kozicki), *Journal of Business and Economic Statistics* 11 (1993): 369 - 380.
89. "A Comment on Hendry and Clements on The Limitations of Comparing Mean Square Forecast Errors," *Journal of Forecasting* 12 (1993): 642-644.
90. "Common Trends and Common Cycles in Latin America," (with J. Issler), *Revista Brasileira de Economia* 47 (1993): 149-176.
91. "Common Trends and Common Cycles," (with Farshid Vahid), *Journal of Applied Econometrics* 8 (1993): 341-360.
92. "Measuring and Testing the Impact of News On Volatility," (with Victor Ng) *Journal of Finance* 48 (1993): 1749-1778.
93. "A Long Memory Property of Stock Market Returns and a New Model," (with Zhuanxin Ding and Clive W.J. Granger), *Journal of Empirical Finance* 1 (1993): 83-106.
94. "Hourly Volatility Spillovers Between International Equity Markets," (with R. Susmel) *Journal of*

- International Money and Finance* 13 (1994): 3-25.
95. "Do Bulls and Bears Move Across Borders? International Transmission of Stock Returns and Volatility," (with W.-L. Lin, Takatoshi Ito), *Review of Financial Studies* 7 (1994): 507-538.
 96. *Handbook of Econometrics, Volume IV*, ed. with D. McFadden, (Amsterdam: North Holland, 1994).
 97. "ARCH Models," (with D. Nelson and T. Bollerslev) in *Handbook of Econometrics, Volume IV*, ed. R. Engle and D. McFadden (Amsterdam: North Holland, 1994), 2959-3038.
 98. "Forecasting Volatility and Option Prices of the S&P 500 Index," (with Jaesun Noh and Alex Kane), *Journal of Derivatives* 2(1994): 17-30.
 99. "Multivariate Simultaneous GARCH," (with K. Kroner), *Econometric Theory* 11 (1995): 122-150.
 100. "Estimating Common Sectoral Cycles," (with J. Issler), *Journal of Monetary Economics* 35 (1995): 83-113.
 101. "GARCH Gammas," (with Joshua Rosenberg), *Journal of Derivatives* 2 (1995): 47-59.
 102. "Nonsynchronous Common Cycles," (with Farshid Vahid), *Journal of Econometrics* 80 (1997): 199-221.;
 103. "Estimating Diffusion Models of Stochastic Volatility," (with G.J. Lee) forthcoming in *Modeling Stock Market Volatility*, ed. Peter Rossi, Academic Press.
 104. "ARCH: Selected Readings," Oxford University Press, 1995.
 105. "Grappling with GARCH," (with Joseph Mezrich), *Risk* (1995): 112-117.
 106. "Index-Option Pricing With Stochastic Volatility and the Value of Accurate Variance Forecasts," (with Alex Kan and Jaeson Noh), *Review of Derivatives Research* 1 (1997): 139-157.
 107. "Seasonal Common Features: Global Unemployment," (with Svend Hylleberg), *Oxford Bulletin of Economics and Statistics* 58 (1996): 615-630. Reprinted in "The Econometrics of Economics Policy", ed. A. Banerjee and D. Hendry, Blackwell Publishers, 1997.
 108. "Forecasting the Frequency of Changes in Quoted Foreign Exchange Prices with the ACD Model," (with Jeffrey R. Russell), *Journal of Empirical Finance* (1997) 12:187-212.
 109. "Short-Run Forecasts of Electricity Loads and Peaks," (with C.W.J. Granger, R. Ramanathan, F. Vahid-Araghi, and C. Brace), *International Journal of Forecasting* (1997) 13, 161-174.
 110. "GARCH for Groups," with (Joseph Mezrich), *Risk* (1996): 36-40.
 111. "Autoregressive Conditional Duration: A New Model for Irregularly Spaced Transaction Data," *Econometrica* (1998) 66: 1127-1162.
 112. "Correlations and Volatilities of Asynchronous Data," (with Pat Burns and Joe Mezrich), *Journal of Derivatives* (1998) Summer: 1-12.
 113. "The Econometrics of Ultra High Frequency Data," *Econometrica* (2000) 68: 1-22.
 114. "Stochastic Permanent Breaks," (with Aaron Smith), *The Review of Economics and Statistics* (1999) 81: 553-574.
 115. "A Permanent and Transitory Component Model of Stock Return Volatility", (with G.J. Lee) in ed. R.F. Engle and

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- a. "Forecasting Variance of Variance: The Square-root, the Affine and the CEV GARCH Models," with Isao Ishida - under revision
- b. "Common Features: An Overview Of Theory And Applications," with Juri Marcucci – under revision
- c. "Asymmetric Dynamics in the Correlations of Global Equity and Bond Returns," with Lorenzo Cappiello and Kevin Sheppard - under revision
- d. "Time Varying Arrival Rates of Informed and Uninformed Traders," with David Easley, Maureen O'Hara and Liuren Wu - under revision
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- i. "Modeling the Impacts of Market Activity on Bid-Ask Spreads in the Option Market," (with Young-Hye Cho). -under revision
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