Macroeconomic Modeling and Forecasting

ECO 7380 - Spring 2001 - David Papell

The text for the course is Walter Enders, *Applied Econometric Time Series* (Wiley, 1995). It should be available in the bookstore. Granger and Newbold, Banerjee, Dolado, Galbraith, and Hendry, and Hamilton provide alternative treatments of some of the topics. The articles marked with a * will be placed in the filing cabinet outside my office.

I. Univariate Time Series

Enders, W., *Applied Econometric Time Series,* (Wiley, 1995)
Ch. 1, "Difference Equations"
Ch. 2, "Stationary Time-Series Models"
Ch. 3, "Trends and Volatility," Sections 1-7.

Hamilton, J., *Time Series Analysis,* (Princeton University Press, 1994)
Ch. 1, "Difference Equations"
Ch. 3, "Stationary ARMA Processes"

Granger, C. and P. Newbold, *Forecasting Economic Time Series*, (Academic Press, 1986)
Ch. 1, "Introduction to the Theory of Time Series"
Ch. 3, "Building Linear Time Series Models"

Banerjee, A, J. Dolado, J. Galbraith, and D. Hendry, *Co-integration, Error-Correction, and the Econometric Analysis of Non-Stationary Data*, (Oxford University Press, 1993)
Ch. 1, "Introduction and Overview"

II. Unit Roots and Persistence

Enders, W., Ch. 4, "Testing for Trends and Unit Roots," Sec. 1-5.

Hamilton, J., Ch. 15, "Models of Nonstationary Time Series"

Banerjee et.al., Chs. 3-4, 6.

* Campbell, J. and P. Perron, "Pitfalls and Opportunities: What Macroeconomists Should Know About Unit Roots," *NBER Macroeconomics Annual*, 1991, 141-163.

* Cochrane, J., "Comment on Campbell and Perron" *NBER Macroeconomics Annual*, 1991, 201-210.

* Nelson, C. and C. Plosser, "Trends and Random Walks in Macroeconomic Time Series: Some Evidence and Implications," *Journal of Monetary Economics*, 1982, 139-162.

* Papell, D., Murray, C. and H. Ghiblawi, "The Structure of Unemployment," *Review of Economics and Statistics*, 2000, 309-315, Section II.

* Murray, C. and D. Papell, "The Purchasing Power Parity Persistence Paradigm," forthcoming, *Journal of International Economics*, 2001.

* Murray, C. and D. Papell, "The Purchasing Power Parity Puzzle is Worse Than You Think: A Note on Long-Run Real Exchange Rate Behavior," unpublished, 2000.

Ng, S. and P. Perron, "Unit Root Tests in ARMA Models with Data Dependent Methods for the Selection of the Truncation Lag," *Journal of the American Statistical Association*, 1995, 268-281.

* Elliot, G., Rothenberg, T. and J. Stock, “Efficient Tests for an Autoregressive Unit Root,” *Econometrica*, 1996, 813-836.

Ng, S. and P. Perron, "Lag Length Selection and the Construction of Unit Root Tests with Good Size and Power," forthcoming, *Econometrica*.

Stock, J., "Unit Roots, Structural Breaks and Trends," in R. Engle and D. McFadden, eds., *Handbook of Econometrics*, Volume IV, 2739-2841.

Diebold, F. and M. Nerlove, "Unit Roots in Economic Time Series: A Selective Survey," in T. Fomby and G. Rhodes, eds., Advances in Econometrics, Volume 8, *Co-Integration, Spurious Regressions, and Unit Roots*, 1990, 3-70.

Schmidt, P., "Dickey-Fuller Tests with Drift," in Fomby and Rhodes, 161-202.

Kwiatkowski, D., Phillips, P., Schmidt, P. and Y. Shin, "Testing the Null Hypothesis of Stationarity Against the Alternative of a Unit Root: How Sure Are We That Economic Time Series Are Non Stationary?", *Journal of Econometrics*, 1992, 159-178.

Culver, S. and D. Papell, "Long-Run Purchasing Power Parity with Short-Run Data: Evidence with a Null Hypothesis of Stationarity," *Journal of International Money and Finance*, 1999, 751-768.

Christiano, L. and M. Eichenbaum, "Unit Roots in Real GNP: Do We Know, and Do We Care?", *Carnegie-Rochester Conference Series on Public Policy*, 1990, 7-62.

Baillie, R., "Long Memory Processes and Fractional Integration in Econometrics," *Journal of Econometrics*, 1996, 5-59.

Diebold, F. S. Husted and M. Rush, "Real Exchange Rates Under the Gold Standard," *Journal of Political Economy*, 1991, 1252-1271.

Baillie, R., Chung, C.F., and M. Tieslau, "Analysing Inflation by the Fractionally Integrated ARFIMA-GARCH Model," *Journal of Applied Econometrics*, 1996, 23-40.

III. Trend Breaks and Unit Roots

Enders, W., Ch. 4, "Testing for Trends and Unit Roots," Sec. 6-7.

* Perron, P., "The Great Crash, the Oil Price Shock, and the Unit Root Hypothesis," *Econometrica*, 1989, 1361-1402.

Christiano, L., "Searching for a Break in Real GNP," *Journal of Business and Economic Statistics*, 10, 1992, 237-249.

Banerjee, A., Lumsdaine, R., and J. Stock, "Recursive and Sequential Tests of the Unit-Root and Trend-Break Hypotheses: Theory and International Evidence," *Journal of Business and Economic Statistics, 1992*, 271-287.

* Zivot, E. and D. Andrews, "Further Evidence on The Great Crash, the Oil Price Shock, and the Unit Root Hypothesis," *Journal of Business and Economic Statistics*, 1992, 251-270.

* Ben-David, D. and D. Papell, "The Great Wars, The Great Crash, and Steady State Growth: Some New Evidence about an Old Stylized Fact," *Journal of Monetary Economics*, 1995, 453-475, Section 2.1.

Culver, S. and D. Papell, "Real Exchange Rates under the Gold Standard: Can They be Explained by the Trend Break Model?", *Journal of International Money and Finance*, 1995, 539-548.

Alba, J. and D. Papell, "Trend Breaks and the Unit Root Hypothesis for Newly Industrializing and Newly exporting Countries," *Review of International Economics*, 1995, 264-274.

* Perron, P. and T. Vogelsang, Nonstationarity and Level Shifts with an Application to Purchasing Power Parity," *Journal of Business and Economic Statistics*, 1992, 301-320.

* Papell, D., Murray, C. and H. Ghiblawi, "The Structure of Unemployment," *Review of Economics and Statistics*, 2000, 309-315, Section III.

* Vogelsang, T. and P. Perron, "Additional Tests for a Unit Root Allowing the Possibility of Breaks in the Trend Function," *International Economic Review*, 1998, 1073-1100.

* Perron, P., "Further Evidence on Breaking Trend Functions in Macroeconomic Variables," *Journal of Econometrics*, 1997, 355-385.

* Lumsdaine, R. and D. Papell, "Multiple Trend Breaks and the Unit Root Hypothesis," *Review of Economics and Statistics*, 1997, 212-218.

Ben-David, D., Lumsdaine, R. and D. Papell, "Unit Roots, Postwar Slowdowns, and Long-Run Growth: Evidence from Two Structural Breaks," unpublished, 2000.

Perron, P., Cati, R. and M. Garcia, "Unit Roots in the Presence of Abrupt Governmental Interventions with an Application to Brazilian Data," *Journal of Applied Econometrics*.

IV. Structural Change

* Vogelsang, T., "Wald-Type Tests for Detecting Shifts in the Trend Function of a Dynamic Time Series," *Econometric Theory*, 1997, 818-849.

* Ben-David, D. and D. Papell, "The Great Wars, The Great Crash, and Steady State Growth: Some New Evidence about an Old Stylized Fact," *Journal of Monetary Economics*, 1995, 453-475, Section 2.2.

* Bai, J., Lumsdaine, R., and J. Stock, "Testing for and Dating Common Breaks in Multivariate Time Series," *Review of Economic Studies*, 1998.

* Ben-David, D. and D. Papell, "Slowdowns and Meltdowns: Postwar Growth Evidence from 74 Countries," *Review of Economics and Statistics*, 1998, 561-571.

* Bai, J. and P. Perron, "Testing for and Estimation of Multiple Structural Changes," *Econometrica*, 1998, 47-78.

* Hegwood, N. and D. Papell, "Quasi Purchasing Power Parity," *International Journal of Finance and Economics*, 1998, 279-290.

* Bai, J., "Likelihood Ratio Tests for Multiple Structural Changes," *Journal of Econometrics*, 1999, 299-323.

* Papell, D., "The Great Appreciation, the Great Depreciation, and the Purchasing Power Parity Hypothesis," unpublished, 2000, Section II.

* Bai, J. and P. Perron, "Computation and Analysis of Multiple Structural Change Models," unpublished, 2000.

* Papell, D., Murray, C. and H. Ghiblawi, "The Structure of Unemployment," *Review of Economics and Statistics*, 2000, 309-315, Section IV.

Vogelsang, T., "Testing for a Shift in Mean without Having to Estimate Serial Correlation Parameters," *Journal of Business and Economic Statistics*, 1998, 73-80.

Perron, P., "A Test for Changes in a Polynomial Trend Function for a Dynamic Time Series" unpublished, University of Montreal, 1991.

Vogelsang, T., "Sources of Nonmonotonic Power when Testing for a Shift in the Trend of a Dynamic Time Series," *Journal of Econometrics*, 1999, 283-299.

Andrews, D., "Tests for Parameter Instability and Structural Change with Unknown Change Point," *Econometrica*, 1993, 821-856.

Andrews, D. and W. Ploberger, "Optimal Tests When a Nuisance Parameter is Present Only Under the Alternative," *Econometrica*, 1994, 1383-1414.

V. Heteroscedasticity and Nonlinear Structure

Enders, Ch. 3, "Trends and Volatility," Sections 1-7.

Hamilton, Ch. 21, "Time Series Models of Heteroskedasticity"

Bollerslev, T., Engle, R. and D. Nelson, "ARCH Models," in R. Engle and D. McFadden, eds., *Handbook of Econometrics*, Volume IV, 2959-3058.

Engle, R., "Autoregressive Conditional Heteroscedasticity with Estimates of the Variance of United Kingdom Inflation," *Econometrica*, 1982, 987-1007.

Bollerslev, T., "Generalized Autoregressive Conditional Heteroscedasticity," *Journal of Econometrics*, 1986, 307-327.

Diebold, F. *Empirical Modeling of Exchange Rate Dynamics*, Lecture Notes in Economics and Mathematical Systems No. 303, Springer-Verlag, 1988.

Baille, R. and T. Bollerslev, "The Message in Daily Exchange Rates: A Conditional-Variance Tale," *Journal of Business and Economic Statistics*, 1989, 297-305.

Engle, R. and T. Bollerslev, "Modelling the Persistence of Conditional Variances," *Econometric Reviews*, 1986, 1-50.

Lumsdaine, R. and S. Ng, "Testing for ARCH in the Presence of a Possibly Misspecified Conditional Mean," forthcoming, *Journal of Econometrics*.

Baillie, R., Bollerslev, T. and H. Mikkelsen, "Fractionally Integrated Generalized Autoregressive Conditional Heteroscedasticity," *Journal of Econometrics*, 74, 1997, 3-30.

* Brock, W., D. Hsieh, and B. LeBaron, *Nonlinear Dynamics, Chaos, and Instability*, (MIT Press, 1991). Chs. 2 and 4 and Appendix F.

Meese, R. and A. Rose, "An Empirical Assessment of Non-Linearities in Models of Exchange Rate Determination," *Carnegie-Rochester Conference Series*, 1992.

Engel, C. and J. Hamilton, "Long Swings in the Dollar: Are They in the Data and Do Markets Know It?", *American Economic Review*, 1990, 689-713.

VI. Multiple Time Series

Enders, W., Ch. 5, "Multiequation Time-Series Models"

Granger, C. and P. Newbold, Ch. 7, "Multiple Series Modeling"

Sims, C. "Money, Income, and Causality", in Rational Expectations and Econometric Practice (LS), R. Lucas and T. Sargent, Eds., 387-404.

Sims, C. "Macroeconomics and Reality," *Econometrica*, Jan. 1980, 1-48.

Taylor, J. "Output and Price Stability: An International Comparison", (Section 1), *Journal of Economic Dynamics and Control*, 1980, 109-132.

Fischer, S. "Relative Shocks, Relative Price Variability, and Inflation", *Brookings Papers on Economic Activity 1981*, No. 2, 381-431.

VII. Cointegration

Enders, W., Ch. 6, "Cointegration and Error Correction Models"

Banerjee, et.al., Chs. 5, 7-9.

Engle, R. and C. Granger, eds., "Introduction", in their *Long-Run Economic Relationships: Readings in Cointegration*, 1-16.

Hamilton, J., Ch. 19, "Cointegration"

* Campbell, J. and P. Perron, "Pitfalls and Opportunities...", 163-201.

Watson, M., "Vector Autoregressions and Cointegration," in R. Engle and D. McFadden, eds., *Handbook of Econometrics*, Volume IV, 2843-2915.

Engle, R. and C. Granger, "Co-Integration and Error Correction: Representation, Estimation and Testing," *Econometrica*, 1987, 251-266, also in their *Long-Run Economic...*, 81-111.

* MacKinnon, J., "Critical Values for Cointegration Tests," in Engle, R. and C. Granger, Eds., *Long-Run Economic...*, 267-276.

Shin, Y., "A Residual-Based Test of the Null of Cointegration Against the Alternative of No Cointegration, *Econometric Theory*, 10, 1994, 91-115.

Phillips, P.C.B., "Optimal Inference in Cointegrated Systems," *Econometrica*, 59, 1991, 283-306.

Papell, D., "Cointegration and Exchange Rate Dynamics," *Journal of International Money and Finance*, 1997, 445-460.

Phillips, P.C.B. and B. Hansen, "Statistical Inference in Instrumental Variables Regression with I(1) Processes," *Review of Economic Studies*, 57, 1990, 99-125.

Saikkonen, P., "Asymptotically Efficient Estimation of Cointegration Regressions," *Econometric Theory*, 7, 1991, 1-21.

Stock, J., "Asymptotic Properties of Least-Squares Estimators of Cointegrating Vectors," *Econometrica*, 55, 1987, 1035-1056.

Park, J.Y., "Canonical Cointegrating Regressions," *Econometrica*, 60, 1992, 119-144.

Bernard, A. and S. Durlauf, "Convergence of International Output Movements," *Journal of Applied Econometrics*, 1995, 97-108.

Loewy, M. and D. Papell, "Are U.S. Regional Incomes Converging? Some Further Evidence," *Journal of Monetary Economics*, 1996, 587-598.

Li, Q. and D. Papell, "Convergence of International Output: Time Series Evidence for 16 OECD Countries," *International Review of Finance and Economics*, 1999, 267-280.

VIII. Unit Roots and Cointegration with Panel Data

Quah, D., "Exploiting Cross-Section Variation for Unit Root Inference in Dynamic Data," *Economics Letters*, 44, 1994, 9-19.

* Levin, A., Lin, C., and J. Chu, "Unit Root Tests in Panel Data: Asymptotic and Finite Sample Properties," unpublished, Federal Reserve Board, 1997.

* Im, K., Pesaran, H., and Y. Shin, "Testing for Unit Roots in Heterogeneous Panels," unpublished, 1997.

* Pedroni, P., "Panel Cointegration: Asymptotic and Finite Sample Properties of Pooled Time Series Tests with an Application to the PPP Hypothesis," unpublished, Indiana University, 1997.

* Abuaf, N. and Philippe Jorion, "Purchasing Power Parity in the Long Run," *Journal of Finance*, 1990, 157-174.

* Frankel, J. and A. Rose, "A Panel Project on Purchasing Power Parity: Mean Reversion Within and Between Countries," *Journal of International Economics*, 1996, 209-224.

* Papell, D., "Searching for Stationarity: Purchasing Power Parity Under the Current Float," *Journal of International Economics, 43*, 1997, 313-332.

* O'Connell, P., "The Overvaluation of Purchasing Power Parity," *Journal of International Economics, 44*, 1998, 1-20.

Papell, D. and H. Theodoridis, "*The Choice of Numeraire Currency in Panel Tests of Purchasing Power Parity*," forthcoming, *Journal of Money, Credit, and Banking*.

Culver, S. and D. Papell, "Is There a Unit Root in the Inflation Rate? Evidence from Sequential Break and Panel Data Models," *Journal of Applied Econometrics*, 1997, 435-444.

*	Murray, C. and D. Papell, "Testing for Unit Roots in Panels in the Presence of Structural Change with an Application to OECD Unemployment," in B. Baltagi, T. Fomby, and C. Hill, eds., *Advances in Econometrics*, Vol. 15, JAI press, 2001.

*	Papell, D., "The Great Appreciation, the Great Depreciation, and the Purchasing Power Parity Hypothesis," unpublished, 2000, Sections III and IV.

*	Papell, D. "The Panel Purchasing Power Parity Endgame," unwritten, 2001.

*	Murray, C. and D. Papell, "Do Panels Help Resolve the Purchasing Power Parity Puzzle?," unwritten, 2001.