EC 821
Time Series Econometrics
Fall 1996

Tuesday-Thursday 9:00-10:15
Carney 7

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The general objective of this course is to give student a firm grounding in modern time series analysis, with an emphasis on applications of interest to macroeconomists.

The course material consists mainly of chapters from the book by J.D. Hamilton Time Series Analysis (JH from now on). A recommended supplemental text is Applied Econometrics by W. Enders. Some useful survey articles can be found in the Handbook of Econometrics, volumes II and IV, which are on reserve in the library.

Grades will be assessed from problem sets (30%), midterm exam (30%), and final exam (40%).

There will be one problem set approximately every two or three weeks. They will consist of a mixture of theory and applied problems.

The midterm and final exams will be take-home empirical exercises.

1. Univariate Time Series and ARMA Models

JH, Ch. 1-7
Enders, Ch. 1-2

2. Forecasting

JH, Ch. 4

3. Spectral Representation and Estimation

JH, Ch. 6
Thomas Sargent, Macroeconomic Theory, Academic Press, New York.

4. Kalman Filter

JH, Ch 13
Andrew Harvey, Time Series Modelling (1981), Chapter 4, Philip Alan, Oxford.

5. VARs, Causality, Exogeneity

JH, Ch. 10-11
Enders, Ch. 5
Handbook of Applied Econometrics, H. Peraran and M. Wickens, eds., Vector Autoregressive Models: Specification, Estimation, Inference and Forecasting, Fabio Canova.

6. Unit Roots

JH, Ch. 15-17
Enders, Ch. 4
Handbook of Econometrics, Engle and McFadden, eds., Vol. IV, Chapter 46: Unit Roots, Structural Breaks, and Trends, by James Stock

7. Cointegration

JH, Ch. 18-20
Enders, Ch. 6
Handbook of Econometrics, Vol. IV, Chapter 47: Vector Autoregressions and Cointegration, by Mark Watson

8. Structural Change

Andrews, D. (1993) "Tests for parameter instability and structural change with unknown change point" Econometrica, 821-856.

Stock, J.H. and M.W. Watson (1996) "Evidence on structural instability in macroeconomic time series relations" Journal of Business and Economic Statistics, 1-10.

Handbook of Econometrics, Vol. IV, Chapter 46: Unit Roots, Structural Breaks, and Trends, by James Stock.

9. Non-Linear Models of the Business Cycle

Hamilton, J.D. (1989), "A new Approach to the Economic Analysis of Non-Stationary Time Series and the Business Cycle", Econometrica, 57, pp. 357-384.

Koop, G.K., and P. Beaudry (1993) "Do Recessions permanently Change Output?", Journal of Monetary Economics, 149-163.

Potter (1995) "A nonlinear approach to U.S. GNP," Journal of Applied Econometrics, 109-125.

Terasvirta, T., and H.M. Anderson (1992), "Characterizing Nonlinearities in Business Cycles Using Smooth Transition Autoregressive Models", Journal of Applied Econometrics, S119-S136.

Handbook of Econometrics, Vol. IV, Chapter 48: Aspects of Modelling Nonlinear Time Series, by Timo Terasvirta, Dag Tjostheim and Clive Granger.

10 . ARCH

JH Ch. 21
Enders, Ch. 3

Bollerslev, T., R.Y. Chou, and K. F. Kroner (1992), "ARCH Modeling in Finance: A Review of the Theory and Empirical Evidence", Journal of Econometrics, 52, 5, pp. 5-59.

Handbook of Econometrics, Vol. IV, Chapter 49: Arch Models, by Tim Bollerslev, Robert Engle, and Daniel Nelson.