

EC 821: Time Series Econometrics, Part 1  
Spring 2001

Professor Serena Ng

Carney Hall Rm 238

Office Hours: T, Th, 10:30-11:30 or by appointment

There are two parts to this course. Part I covers stationary time series. Part B, taught by Professor Bai, covers non-stationary time series. The course grade will be an equally weighted average of the two parts. For this half of the course, the grade will be based on 3 problem sets (60%), and a final exam (40%).

\* Problem sets are due in class three lectures after they are assigned. There will be a two point penalty per day with no exception.

\* Suggested day for the final exam is the last day of class.

Problem sets will consist of a mixture of theory and applied problems. The software RATS is available on FMRISC. The preferred alternative to RATS is Eviews. It is not on FMRISC, but a student version can be purchased directly from <http://www.eviews.com>. Gauss and Matlab are matrix programming languages and can also be used for the empirical exercises.

Required text:

Hayashi, F. Econometrics, Princeton University Press, 2000.

A highly recommended reference:

Hamilton, J. Time Series Analysis, Princeton University Press, 1994.

Other useful texts:

Harvey, A. Time Series Models, MIT Press.

Davidson, J. Econometric Theory, Blackwell Publishing.

Topics to be covered

1. Fundamental concepts of time series analysis:

- o Hayashi Ch. 2.2, Hamilton Ch. 2 and 7.

2. ARMA Models:

Hayashi Ch. 6. and Hamilton Ch. 3.

3. Spectral Analysis:

- o Hamilton Ch. 6, Harvey Ch. 6.

- o Den Haan, W. J. and A. Levin (1996), A practitioner's guide to robust covariance matrix estimation, NBER technical WP 197.

- o Andrews, D. W. K. (1991), Heteroskedasticity and autocorrelation consistent covariance estimation, *Econometrica*, 59: 816-854.
- o Andrews, D. W. K. and C. Monahan (1992), An improved heteroskedasticity and autocorrelation consistent covariance matrix estimator, *Econometrica*, 60: 953-66.

4. Forecasting:

- o Hamilton Ch. 4

5. Multivariate time series and VARs:

- o Hamilton Ch. 10-11.
- o Fabio Canova, Vector autoregressive models: specification, estimation, and inference, in *Handbook of Applied Econometrics*.
- o Blanchard O. and Quah D. (1989), The dynamic effects of aggregate demand and supply disturbances, *AER* 79: 655-673.
- o Bernanke, B. (1986), "Alternative explanations of the money income correlation", *Carneige Rochester Conference Series on Public Policy*, 25: 49-99.

6. Regressions with serially correlated errors:

- o Hayashi, Ch. 2.