BOSTON COLLEGE
Department of Economics

EC 761: Econometrics II   Fall 1997
Prof. Baum   Carney 230, 552-3673
email `baum@bc.edu`   Office hrs F 2-4 and by appt.

Required text: Greene, *Econometric Analysis*, 3d ed. (G)

Other useful texts:

> **Johnston**, *Econometric Methods*, 3d edition,
> **Kmenta**, *Elements of Econometrics,*
> **Pindyck & Rubinfeld**, *Econometric Models and Economic Forecasts*

Objectives: This course continues EC760B to provide the required Ph.D. level introduction to econometric theory and methods. It takes as prerequisite the fundamentals of mathematical statistics addressed in EC 730 and EC760A. EC 761 elaborates on aspects of OLS regression analysis and presents an introduction to several major techniques widely used in applied econometric work: simultaneous equations, panel data estimators, limited dependent variable models, and nonlinear time series models. Some emphasis will be placed on the analysis of large data sets. The course is designed to build a solid base of theoretical understanding, and exercise this theory with economic applications, providing a base of practical knowledge for the practitioner.

A sizable segment of your requirements in the course will include use of an econometric computer package (Stata 5.0, RATS 4.30, or ox 1.11, all available on `fmrisc.bc.edu`) for the solution of applied problems, and discussion of the empirical findings. Empirical assignments which develop these skills are an important part of the course, and lead to your preparation of an empirical research paper using appropriate econometric tools to address an interesting question in economics or finance.

> **Requirements:**   Problem sets, total 30%
> Empirical research paper, 30%
> Final exam, 40%

> **Notes :**   Problem sets will not be accepted after their due dates.
> Work on problem sets should be largely your own.
> The empirical research paper must be your own work.

Topics to be covered (references to Greene) as time permits

1. G § 9.1-9.2   Data problems

2. G § 11.1-11.4   Nonspherical disturbances and generalized LS

3. G § 12-13   Heteroskedasticity

4. G § 13   Autocorrelated disturbances

5. G § 14   Models for panel data

6. G § 15.4-15.7   SUR model, demand systems, flexible functional form, GMM

7. G § 16   Simultaneous equations models

8. G § 18   Time series models

9. G § 19.1-19.4   Logit and probit models

10. G § 20.1-20.4   Truncation, censoring, selection models

Empirical research paper

The empirical research paper might best consider a topic of interest, on which there is published empirical work, which you might modify, extend, and/or replicate on a different data set. The empirical work involved should be nontrivial (i.e. something more than running a single regression) and written up in the form of a good empirical journal article. Grading of the paper will be based on the appropriateness and quality of the empirical work, the quality of the exposition of the underlying economic problem, and the overall quality of the manuscript.

One good place to look for leads would be the Journal of Applied Econometrics; although many of the papers in this journal use advanced methodology, the data sets used in these studies are all available from the JAE website (see the "Guide to Data Resources" link on our departmental homepage). Once you have an idea of the study on which you will base your work, you should investigate data availability. A great deal of data of all sorts is available on the Internet; finding it is another issue. I also have access to a number of high-frequency datasets (some of which are described in the "Economic and Financial Data" link on that page).

Feel free to contact me about data availability, and appropriateness of the research strategy. There will be a formal due date for a research proposal in late October or early November, so start thinking now about what you will do for the paper.