

Economics 135:
Advanced Econometrics
Swarthmore College

Professor Jefferson
Office Hours: W 10:30am-12pm & by appt.

Spring 2006
Kohlberg 212, x690-6856

COURSE DESCRIPTION:

Quantitative methods used in estimating economic models and testing economic theories are studied. Students will (1) gain an understanding of certain statistical techniques that have proven useful in the analysis of economic data; (2) develop their ability to evaluate critically empirical research done by economists; and (3) gain experience formulating research questions in econometric terms.

TEXTS:

Verbeek, Marno (2004): A Guide to Modern Econometrics, 2nd Edition, Wiley & Sons, Chichester, England. (Required, denoted V).

Other econometrics texts are on reserve at McCabe Library. Selected articles, in PDF format, are on the campus network. The path is: \\Data-software\classes\Social Sciences\Economics\Econ 135\Readings for Econ 135

GRADING:

20% Seminar participation

20% Seminar presentation

20% One page abstract, data, and detailed outline (Due 16 March)

40% Empirical paper: 8-10 pages, double spaced, 12pt font. (Due 13 April)

Extension policy: A quarter grade point penalty will be imposed for each week after the April 13 due date.

SEMINAR STRUCTURE:

Each week there will be a reading assignment, usually from Verbeek but sometimes from supplements. You should come to seminar prepared to answer and ask questions about the reading. There will be nine problem sets. Each person must prepare each problem set. (However, you may work together in small groups, 2 or 3 people, on the problems.)

A portion of seminar time will focus on the problem sets. Six of the problem sets are empirical exercises. An assigned team will present that week's empirical exercise as a "reverse lab."

We will examine the motivations, intuitions, and analytics of the exercises. Emphasis will also be placed on the interpretation and the general applicability of the empirical exercises. Therefore, a premium will be placed on student preparation for the seminar time.

DATA SETS FOR EMPIRICAL EXERCISES and STATA:

To find the data sets for the computer-based exercises on the campus network, follow the path: \\Data-software\classes\Social Sciences\Economics\Econ 135\Data for Econ 135. Instructions for accessing Stata and a Stata tutorial are in the Readings for Econ 135 section of the Econ 135 folder.

EMPIRICAL PAPER:

The paper is an opportunity for you to analyze a topic that is of interest to you and to demonstrate your understanding of modern econometrics. Any feasible topic is acceptable.

A premium will be placed on clear and concise writing. Therefore, points will be deducted from your paper for poor writing *unless* you turn it in with a complete "WAed" draft *signed* by one of this semester's Writing Associates. All paper submissions must be hard copy. No electronic submissions.

DATA SOURCES FOR EMPIRICAL PAPER:

An Excel spreadsheet should contain your documented data set. That is, variable names, range, frequency, units, and source (for example, Web site address) should be indicated. The Economics department Web site contains links to a number of data sources. It is the natural place to start your search for data: <http://www.swarthmore.edu/SocSci/Economics/data.html>

SEMINAR OUTLINE

Introduction and Overview (week 1)

Writing an Empirical Paper in Economics (week 2)

Reading: Wooldridge, Jeffrey M. (2006): Chapter 19, Introductory Econometrics: A Modern Approach, 3rd edition. South-Western College Publishing, Cincinnati, Ohio.

Problem Set 1: Class handout

Review of Linear Regression (week 3)

Reading: V chapter 2 and 3. Fama, E. and K. French (2004): "The Capital Asset Pricing Model: Theory and Evidence," *Journal of Economic Perspectives*, Summer, Vol. 18, No. 3, pp. 25-46.

Problem Set 2: V chapter 2 - 2.3

Heteroskedasticity and Autocorrelation (week 4)

Reading: V chapter 4. English, W., Nelson, W., and B. Sack (2003) "Interpreting the Significance of the Lagged Interest Rate in Estimated Monetary Policy Rules", *Contributions to Macroeconomics*: Vol. 3: No. 1, Article 5.

Problem Set 3: V chapter 4 - 4.4

Instrumental Variables and Generalized Method of Moments (week 5)

Reading: V chapter 5. Angrist, J. and A. Krueger (2001): "Instrumental Variables and the Search for Identification: From Supply and Demand to Natural Experiments," *Journal of Economic Perspectives*, Vol. 15, No. 4, pp. 69-85.

Problem Set 4: V chapter 5 - 5.2

Maximum Likelihood and Specification Tests (week 6)

Reading: V chapter 6. Buse, A. (1982): "The Likelihood Ratio, Wald, and Lagrange Multiplier Tests: An Expository Note," *The American Statistician*, Vol 36, No. 3, pp. 153-157.

Problem Set 5: Discussion of class handout

Limited Dependent Variables Models (week 7)

Reading: V chapter 7. Horowitz J. and N. Savin (2001): "Binary Response Models: Logits, Probits, and Semiparametrics," *Journal of Economic Perspectives*, Vol. 15, No. 4, pp. 43-56.

Problem Set 6: V chapter 7 - 7.3

Spring Break (*no class* March 9)

Paper abstract, data diskette, and detailed outline due (week 8: *no class* March 16)

Univariate Time Series Models (week 9)

Reading: V chapter 8. Engle, R. (2001): "GARCH 101: The Use of ARCH/GARCH Models in Applied Econometrics," *Journal of Economic Perspectives*, Vol. 15, No. 4, pp. 157-168.

Problem Set 7: V chapter 8 - 8.3

Multivariate Time Series Models (week 10)

Reading: V chapter 9. Stock, J. and Watson, M. (2001): "Vector Autoregressions," *Journal of Economic Perspectives*, Vol. 15, No. 4, pp. 101-116.

Problem Set 8: V chapter 9 - 9.3

Panel Data Models (week 11)

Reading: V chapter 10. Corbin, A. (2001): "Country Specific Effect in the Feldstein-Horika Paradox: A Panel Data Analysis," *Economics Letters*, Vol. 72, No. 3, pp. 297-302.

Problem Set 9: V chapter 10 - 10.1

Paper due (week 12: *no class* April 13)

Paper Presentations, Conferences, and Consultations (weeks 13-14).