

This is a full-year course; in January we'll probably be starting Section 3, panel data analysis. The spring semester will cover other topics (beyond those listed) as time permits. In the spring you will also be completing the research paper that you begin in the fall.

Required (fall) work: Five homework assignments (50% of grade - including class participation), two short exams (20% of grade), and research paper (30% of grade). Note that grades for the fall semester won't be assigned until the end of the spring (since it's a full-year course).

Office Hours: Monday 2:00-2:30, Tuesday 3:00-4:00, Thursday 1:30-2:30 (or by appointment).
A copy of most readings will be available at the department office, as well as on reserve.

Assorted Texts and Reference Volumes:

Berndt, E. *The Practice of Econometrics: Classic and Contemporary*. Old but good introduction to econometrics; source of some homework material.

Gujarati, D. *Basic Econometrics*, McGraw-Hill. Basic text with good explanations – 4th edition.

Green, W.H., *Econometric Analysis*, Macmillan. More advanced text, lots of examples of applying econometric tools to particular problems – 5th edition.

Kennedy, P., *A Guide to Econometrics*, MIT Press. The basic source for my lectures on OLS estimation issues, and very readable (avoids technical presentations, but explains issues well). Introduces some more advanced techniques; see the 'technical notes' for more details on particular applications – 5th edition.

Griliches and Intriligator, eds, *The Handbook of Econometrics* (5 volumes) has chapters dealing with nearly everything you might want to know about in econometrics. It's a good place to start looking for information on a specific topic. The chapters are sometimes quite technical, and a few take 'idiosyncratic' approaches to particular econometric issues (reflecting the background of that particular author). Volume 4 and 5 are newer (1994 and 2001), and cover 'new' econometric topics.

Course Outline: (B, Guj, Gr, K, G+I chapter references to texts above)

0. Methodology Issues (G+I:25, K:21)

* Griliches, Z. "Data and Econometricians: The Uneasy Alliance", AER 75(2): pp 196-200 (May 1985).

* Leamer, E. "Let's Take the Con out of Econometrics", AER 73(1): pp 31-43 (March 1983).

* McAleer, M., A. R. Pagan, and P. A. Volker, "What will take the Con out of Econometrics?", AER 75(3): pp 293-307, (June 1985).

* Leamer, E. "Sensitivity Analyses would Help", AER 75(3): pp 308-313, (June 1985).

1. Basic OLS, and potential problems with OLS

A. Basic OLS (B:1,2; Guj:2-6; Gr: 3-6; K:3,4,14)

B. Model Specification (B:3; G+I:4,5,36,44; Guj:7-9,13; Gr: 7-9; K:5,6)

* Hausman, J. "Specification Tests in Econometrics", *Econometrica*, 46:6, November 1978, pp. 1251-1272.

* MacKinnon, J.G., "Model Specification Tests and Artificial Regressions", *JEL* 30(1): pp 102-46, March 1992.

Godfrey, L.G. Misspecification Tests in Econometrics, Cambridge University Press. Thorough treatment of hypothesis tests and specification tests in a variety of settings.

1. C. Problems in Errors and Data (B:4,5; Guj:10-12; Gr: 10-12; K:7-9,11)
<Heteroskedasticity, Serial Correlation, Multicollinearity>

White, H. "A Heteroskedasticity-Consistent Covariance Matrix Estimator and a Direct Test for Heteroskedasticity", *Econometrica*, 48:4, May 1980, pp. 817-838. Classic reference developing 'heteroskedasticity-consistent' standard errors (mostly technical article).

D. Influence Analysis (G+I:11; K:20)

Belsley, D., E. Kuh and R. Welsch Regression Diagnostics: Identifying Influential Data and Sources of Collinearity, John Wiley and Sons (1980).

Describes how to use influence analysis, also how to test precisely for collinearity. These procedures are used in SAS in PROC REG for influence and collinearity tests, so this is the best source for information (beyond that contained in the SAS manual).

Krasker, W. and R. Welsch. "Efficient Bounded-Influence Regression Estimation", Journal of American Statistical Association, v 77 (1982) 595-604.

Presents alternative regression approach, based in part on influence analysis ideas.

E. Simultaneous Equations (B:8-10; G+I:7; Guj:18-20; Gr: 14,15; K:10)

F. Articles related to homework assignments

* Corcoran, M. and G. Duncan, "Work History, Labor Force Attachment, and Earnings: Differences between the Races and Sexes" *Journal of Human Resources*, Winter 1979, 14:1, 3-20.

* Mroz, T. "The Sensitivity of an Empirical Model of Married Women's Hours of Work to Economic and Statistical Assumptions" *Econometrica*, July 1987, 55:4, 765-799.

2. Limited Dependent Variables (B:11; G+I:23,24,27; Guj:15; Gr: 21-22; K:15,16)

Maddala, G. - Limited Dependent and Qualitative Variables in Econometrics, Cambridge University Press. Excellent coverage of issues in this area - the major source for my lectures.

Manski, C. and D. McFadden Structural Analysis of Discrete Data with Econometric Applications, MIT Press 1981. Collection of papers on analysis of discrete data. Includes some applications.

McFadden, D. "The Measurement of Urban Travel Demand", *J Public Econ*, 3:303-28, 1974. The classic conditional logit application.

Amemiya, T. "Qualitative Response Models: A Survey" *JEL* 19:1488 (Dec 1981).

* Boskin, M. "A Conditional Logit Model of Occupational Choice", *Journal of Political Economy* 82(2):389-398, March-April 1974.

* Schmidt, P. and R. Strauss "The Predictions of Occupation Using Multiple Logit Models", *International Economic Review* 16(2) 471-86. June 1975

3. Panel Data (G+I:22,53; Guj:16; Gr: 13; K:17)

Hsiao, C. Analysis of Panel Data, Cambridge U. Press, 1986.

Chamberlain, G. "Multivariate Regression Models for Panel Data", *J Econometrics* 18:5-46 (1982).

Griliches, Z. and J. Hausman, "Errors in Variables in Panel Data", *Journal of Econometrics* 31(1):93-118, February 1986.

* Maddala, G.S. "Limited Dependent Variable Models using Panel Data" *Journal of Human Resources*, 22(3):307-338, Summer 1987.

* Gray, W. and J. Scholz, "Do OSHA Inspections Reduce Injuries? A Panel Analysis" *Law and Society Review* 27(1):177-213, June 1993.

4. Time Series, Macroeconometrics (B: 7; G+I: 17-19, 46-47; Guj: 21-22; Gr: 20; K: 18-19)

* Sims, C. "Money, Income, and Causality", AER 64(4):540-52, Sept. 1972

Sims, C. "Macroeconomics and Reality", Econometrica, 48(1):1-48, Jan. 1980.

Sims, C. and H. Uhlig "Understanding unit rooters: A helicopter tour" Econometrica 59(6):1591-1600, Nov. 1991.

Stock J. H. and M. W. Watson, "Variable Trends in Economic Time Series", Journal of Economic Perspectives 2(3):147-74, Summer 1988.

Dickey, D.A., D.W. Jansen and D.L. Thornton, "A Primer on Cointegration with an Application to Money and Income", Fed Bank St. Louis Review 73(2):58-78, March-April 1991.

* Ericsson, Neil R., David Hendry and Graham Mizon, "Exogeneity, Cointegration, and Economic Policy Analysis," Journal of Business and Economic Statistics, 16(4):370-387, October 1998.

5. Non-Parametric and Semi-Parametric Methods (G+I: 38,41-42; K:20)

* Blundell, Richard and Alan Duncan, "Kernel Regression in Empirical Microeconomics," Journal of Human Resources, 33(1): 62+, Winter 1998.

<with more readings, and possibly other topics, to be added as time permits>