

**ECO 7424 ECONOMETRIC MODELS AND METHODS**

**Spring 2019**

**Prof. C. Ai, MAT #336, 2-7859**

Lecture: MW 1:55pm - 3:50pm, MAT 2

Office Hour: MW 4:00pm - 5:30pm or by appointment

**Primary Texts**

Jeffrey M. Wooldridge, *Econometric Analysis of Cross Section and Panel Data*, The MIT Press, 2010.

William H. Greene, *Econometric Analysis*, 5th ed., Macmillan: New York 2001.

**Preparation**

Students should be prepared in linear algebra, probability and statistics at the level of Chapters 1-5 of Greene. Chapters 1-3 of Wooldridge provide good review. Course requirements include three in-class exams. Homework will be assigned and graded. Final grades will be based on the scores on the three exams (each exam counts 25%) and homework (25%). The dates for the tests will be announced in class.

**Reading Assignments**

*1. Linear Regression Model: Single Equation*

Greene, Ch. 2 - 8, 10 - 12

Wooldridge, Ch. 4 - 6

Fisher, F. "Tests of Equality Between Sets of Coefficients in Two Linear Regressions: An Expository Note", *Econometrica* Mar. 1970

T. S. Breusch, "Conflict Among Criteria for Testing Hypothesis: Extensions and Comments," *Econometrica*, 1979

Hausman, J. "Specification Tests in Econometrics," *Econometrica* (1978)

H. White, "A Heteroskedasticity-Consistent Covariance Matrix Estimator and A W. Newey and K. West, "A Simple, Positive Definite Heteroskedasticity and Autocorrelation Consistent Covariance Matrix," *Econometrica* 1987

*2. Linear Regression: System of Equations*

Greene, Ch. 14 - 15

Wooldridge 7 - 9

Fisher, F.M. *The Identification Problem in Econometrics*, Ch. 1, 2,

\*Hausman and Taylor "Identification in Simultaneous Equations System with Covariance Restrictions", *Econometrica*, pp.1527-1549, 1983

\*Hausman, Newey, and Taylor "Efficient Estimation and Identification of Simultaneous Equations Models with Covariance Restrictions" *Econometrica*, p. 849-854, 865-868, 1987

Fair, "The Estimation of Simultaneous Equation Models with Lagged Endogenous Variables and First Order Serially Correlated Errors," *Econometrica*, pp507-516,

Harvey and Phillips, "Testing for Serial Correlation in Simultaneous Equation Models," *Econometrica* 48, 1980

\*Godfrey, L. "Testing for Serial Correlation in Dynamic Simultaneous Equation Models," *Econometrica* 44, 1976.

Byron, "Testing Structural Specification Using the Unrestricted Reduced Form", *Econometrica*, 1974.

Berndt and Savin, "Conflict Among Criteria for Testing Hypotheses in the Multivariate Linear Regression Model," *Econometrica*, 1977 pp1263.

Brundy and Jorgenson, "Efficient Estimation of Simultaneous Equations by Instrumental Variables," *Review of Economics and Statistics*, pp270-224, 1971

#### Application:

A. Bhargava and J. Sargan, "Estimating Dynamic Random Effects Models from Panel Data Covering Short Time Periods," *Econometrica*, 51, pp1635-1660, 1983

### 3. *Panel Data*

Greene, Ch 13

Wooldridge 10 11

Hausman and Taylor, "Panel Data and Unobservable Individual Effects" *Econometrica* (1981)

Griliches and Hausman, "Errors in Variables in Panel Data," *Journal of Econometrics*

### 4. *Treatment Effect Model*

Wooldridge 18

Guido W Imbens and J Wooldridge (2009). Recent Developments in the Econometrics of Program Evaluation. *Journal of Economic Literature* 47(1), 5-86.

Alberto Abadie and Matias Cattaneo (2017). *Econometric Methods for Program Evaluation*