

Econometrics II
Tepper School of Business

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Some useful references for this course.

- General Econometric Reference

- Amemiya, Takeshi, **Advanced Econometrics**, Harvard University Press, 1985.
- Davidson, James, **Stochastic Limit Theory**, Oxford University Press, 1994.
- Davidson, Russell and James G. MacKinnon, **Econometric Theory and Methods**, Oxford University Press, 2004.
- Engle, Robert and Daniel L. McFadden editors, **Handbook of Econometrics**, Vol 4, North-Holland, 1994.
- Gallant, A. Ronald, **An Introduction to Econometric Theory**, Princeton University Press, 1997.
- Hall, Alastair R. **Generalized Method of Moments**, Oxford University Press, 2005.
- Mátyás, László **Generalized Method of Moments Estimation**, Cambridge University Press, 1999.
- Wooldridge, Jeffrey M., **Econometric Analysis of Cross Section and Panel Data** The MIT Press, 2002.

Course Objective

Students should learn how to establish the consistency and asymptotic normality for parameters estimated from nonlinear objective functions. The students should also learn how to calculate the parameter estimates and perform inference.

The general outline

The course starts with a basic overview of consistency and asymptotic normality for a nonlinear model. Emphasis is placed on the assumptions needed in the proofs. These will be fairly strong assumptions that will be weakened in future lectures. To help build intuition we will consider examples where the assumptions are not satisfied to see how the proof fails. (3 Lectures)

How modeling dynamic economic systems (stochastic dynamic programming problems) lead to estimation equations appropriate for GMM estimation. (1 Lecture)

The next section covers the Newey and McFadden chapter of the handbook of econometrics (available on the blackboard site for this course). Chapter 36 “Large Sample Estimation and Hypothesis Testing” by Newey and McFadden in the **Handbook of Econometrics** Vol 4. (8 Lectures)

Small sample problems with GMM and proposed solutions, e.g. continuously updated GMM and the empirical likelihood functions. (2 Lectures)

Grading

Your course grade will be determined by: 50% problem sets and 50% a take-home final exam. The final exam will be distributed on the last day of class.