

SYLLABUS

Financial Econometrics I, BUSN 6350-18989, Fall 2019

General Information

Time and Location: T 10:30AM - 1:20PM, Lab #2

Instructor: Dr. Xiaojin (Aaron) Sun

Email: xsun3@utep.edu

Office: BUSN-222

Office Hours: By appointment

Course Overview

This two-semester sequence of PhD Financial Econometrics is an in-depth study of quantitative methods as employed in finance and accounting research. The range of topics covered in this course will span a large part of econometrics generally with a particular interest in those techniques adapted to the analysis of panel data sets.

In the Fall semester, we will begin with a quick review on linear models, instrumental variables, maximum likelihood, and generalized method of moments (GMM), as well as relevant hypothesis and specification tests. We will then turn to basic panel data models, particularly fixed and random effects models. The linear model will be extended to dynamic models and recently developed GMM estimation techniques in the Spring semester. The last section of the course will focus on the core nonlinear limited dependent variable models for both cross-section and panel data sets. Topics include models for binary, multinomial and count data, and the complications of censoring, truncation and sample selection.

Course Objectives

This course aims to equip students with the econometric tools needed to analyze finance and accounting data. Students are expected to acquire theoretical knowledge on key econometric methods and practical ability to apply that knowledge in their own research.

Textbook

- *Econometric Analysis of Panel Data* by Badi H. Baltagi, 5th Edition. Wiley. ISBN: 978-1-118-67232-7.
- **(Optional)** *Introductory Econometrics: A Modern Approach* by Jeffrey M. Wooldridge, 6th Edition. Cengage Learning. ISBN: 978-1-305-27010-7.

- **(Optional)** *Microeconometrics: Methods and Applications* by A. Colin Cameron and Pravin K. Trivedi, Cambridge University Press. ISBN: 9780521848053.
- **(Optional)** *Microeconometrics Using Stata* by A. Colin Cameron and Pravin K. Trivedi, Revised Edition. Stata Press. ISBN: 978-1-59718-073-3.

Statistical Software

- Stata (available via UTEP MyAPPS)

Grading Policy

The class grade will be determined by the following components:

- **Homework Assignments (10%×5):** Five homework assignments will be given during the semester. Assignments will usually be collected on Mondays by 5PM unless otherwise announced. No late submissions will be accepted. Your homework should be typed in LaTeX (or Microsoft Word).
- **Term Project and Presentation (50%):** You will have to use the knowledge acquired in this class to replicate the empirical analysis in a paper published in one of the top journals. The replication should consist of
 1. complete Stata code that produces all your results,
 2. nicely formatted figures and tables produced by your code, which correspond to those in the original paper,
 3. and a verbal discussion of these figures and tables.

The last day of the semester (December 3rd) will be reserved for presentations. Each student will have about 40 minutes.

Grading Scale: 90+=A, 80-89=B, 70-79=C, 60-69=D, 59 and below=F.

Tentative Course Schedule

Core Methods: A Quick Review

(Please read Wooldridge Chs 1-12 and Appendices A-E)

Linear Models	Lecture Notes
Maximum Likelihood Estimation	Lecture Notes
Generalized Method of Moments	Lecture Notes
Hypothesis and Specification Tests	Lecture Notes

Panel Data Models

Simple Panel Data Methods	Baltagi (Ch 4.1)
Advanced Panel Data Methods	Baltagi (Chs 2&3)
Hypothesis Testing with Panel Data	Baltagi (Ch 4)
Serial Correlation and Heteroskedasticity	Baltagi (Ch 5)

Limited Dependent Variable Models

Binary Outcome Models	Lecture Notes
Multinomial Models	Lecture Notes
Tobit and Selection Models	Lecture Notes
Models of Count Data	Lecture Notes

Preliminary Reading List

- David Card, "Using Geographic Variation in College Proximity to Estimate the Return to Schooling," NBER Working Paper No. 4483.
- Joshua D. Angrist and Alan B. Krueger, "Does Compulsory School Attendance Affect Schooling and Earnings?" *The Quarterly Journal of Economics*, Volume 106, Issue 4, November 1991, Pages 979-1014, <https://doi.org/10.2307/2937954>
- Brent R. Moulton and William C. Randolph, "Alternative Tests of the Error Components Model," Vol. 57, No. 3 (May, 1989), pp. 685-693
- Badi H. Baltagi, Young-Jae Chang and Qi Li, "Monte Carlo results on several new and existing tests for the error component model," *Journal of Econometrics*, Volume 54, Issues 1-3, October-December 1992, Pages 95-120

- G.S. Maddala, "Applications of limited dependent variable models in finance," Handbook of Statistics, Volume 14, 1996, Pages 553-566
- Kai Li and Nagpurnanand Prabhala, "Self-Selection Models in Corporate Finance," (September 2005). Robert H. Smith School Research Paper No. RHS 06-020. Available at SSRN: <https://ssrn.com/abstract=843105>
- Clive S. Lennox, Jere R. Francis, and Zitian Wang, "Selection Models in Accounting Research," The Accounting Review: March 2012, Vol. 87, No. 2, pp. 589-616.