

SYLLABUS

Financial Econometrics I, BUSN 6350-16179, Fall 2020

General Information

Time and Location: Th 6:00-8:50PM, Blackboard Collaborate Ultra

Instructor: Dr. Xiaojin (Aaron) Sun

Office: BUSN-237

Email: xsun3@utep.edu

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. Upon completion of the course, students should be able to understand and use basic econometric tools in the analysis of cross-sectional and panel data, replicate empirical results from the applied literature, and undertake empirical analysis using standard statistical software.

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. (An introductory text which I highly recommend for students without econometrics background)

- **(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**

Please ask the computer lab to install Stata for your UTEP computer. The software is also available via UTEP MyAPPS with some inconvenient restrictions.

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 end of day unless otherwise announced. No late submissions will be accepted. Your homework should be typed in LaTeX or Microsoft Word and submitted in pdf documents. Stata codes need to be submitted in do files. Please name your homework submissions using the homework number followed by your last name, e.g., HW1_Sun.pdf and HW1_Sun.do.
- **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. a brief description of the paper,
 2. a complete Stata do file that produces all your results,
 3. nicely formatted figures and tables produced by your code,
 4. a verbal discussion of these figures and tables,
 5. and a further explanation in case some results in the paper are not successfully replicated.

The last two weeks of the semester will be reserved for presentations. If possible, we may reschedule the two classes for two consecutive days of the last week. Each student will have about 30 minutes. Please mark the following important dates:

- Oct 31: Send me the paper you pick for my approval.
- Nov 30: Send me the slides for your presentation.
- Dec 10: Send me the complete replication with Stata code.

You may find [this link](#) helpful for your replication project.

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.

Academic Integrity

The University of Texas at El Paso prides itself on its standards of academic excellence. In all matters of intellectual pursuit, UTEP faculty and students must strive to achieve excellence based on the quality of work produced by the individual. In the classroom and in all other academic activities, students are expected to uphold the highest standards of academic integrity. Any form of academic dishonesty is an affront to the pursuit of knowledge and jeopardizes the quality of the degree awarded to all graduates of UTEP. It is imperative, therefore, that the members of this academic community understand the regulations pertaining to academic integrity and that all faculty insist on adherence to these standards.

Any student who commits an act of academic dishonesty is subject to discipline. Academic dishonesty includes, and is not limited to cheating, plagiarism, collusion, the submission for credit of any work or materials that are attributable in whole or in part to another person, taking an examination for another person, and any act designed to give unfair advantage to a student or the attempt to commit such acts. Proven violations of the detailed regulations, as printed in the Handbook of Operating Procedures (HOP), and available in the Office of Student Life and on the homepage of the Office of Student Life at www.utep.edu/dos, can result in sanctions ranging from disciplinary probation, to a failing grade on the work in question, to a failing grade in the course, to suspension or dismissal, among others.

Disabilities Statement

I will make any reasonable accommodations for students with limitations due to disabilities, including learning disabilities. Please see me personally before or after class in the first two weeks or make an appointment, to discuss any special needs you might have. If you have a documented disability and require specific accommodations, you will need to contact the Disabled Student Services Office in the East Union Building, Room 106 within the first two weeks of classes. The Disabled Student Services Office can also be reached in the following ways:

Web: <http://www.utep.edu/dsso>

Phone: (915) 747-5148

E-Mail: dss@utep.edu

Copyright Statement

All materials used in this course are protected by copyright law. The course materials are only for the use of students currently enrolled in this course and only for the purpose of this course. They may not be further disseminated.

COVID-19 Accommodations

Students are not permitted on campus when they have a positive COVID-19 test, exposure or symptoms. If you are not permitted on campus, you should contact me as soon as possible so we can arrange necessary and appropriate accommodations.

COVID-19 Precautions

You must STAY AT HOME and REPORT if you (1) have been diagnosed with COVID-19, (2) are experiencing COVID-19 symptoms, or (3) have had recent contact with a person who has received a positive coronavirus test. Reports should be made at screening.utep.edu. If you know of anyone who should report any of these three criteria, you should encourage them to report. If the individual cannot report, you can report on their behalf by sending an email to COVIDaction@utep.edu.

For each day that you attend campus - for any reason - you must complete the questions on the UTEP screening website (screening.utep.edu) prior to arriving on campus. The website will verify if you are permitted to come to campus. Under no circumstances should anyone come to class when feeling ill or exhibiting any of the known COVID-19 symptoms. If you are feeling unwell, please let me know as soon as possible, and alternative instruction will be provided. Students are advised to minimize the number of encounters with others to avoid infection.

Wear face coverings when in common areas of campus or when others are present. You must wear a face covering over your nose and mouth at all times in this class. If you choose not to wear a face covering, you may not enter the classroom. If you remove your face covering, you will be asked to put it on or leave the classroom. Students who refuse to wear a face covering and follow preventive COVID-19 guidelines will be dismissed from the class and will be subject to disciplinary action according to Section 1.2.3 Health and Safety and Section 1.2.2.5 Disruptions in the UTEP Handbook of Operating Procedures.