Econ 483 – Econometric Applications

Learning Objectives

This course intends to provide students with an understanding of and experience with the key methods economists use to quantify the relationships among economic variables. A major goal is to prepare students to read empirical papers in economics and the other social sciences and to do high quality empirical research in seminars and senior essays. Students will become reasonably proficient in the use of STATA, the leading computer program for statistical analysis in the social sciences.

Course Description

This course investigates applications of econometric tools using specific research papers and extended examples from the economics literature. A significant amount of lecture time will be devoted to formal presentation of several of the most commonly used estimation techniques. We use two classrooms: a regular classroom, ARC G070, and a computer lab, SAV 117. Check the detailed schedule on the next page. The classroom sessions will focus on theoretical background and econometric issues. The computer labs will take students through the practice of econometrics.

Prerequisites

Basic stat courses, such as ECON/STAT 311 or STAT 341. Basic math courses, such as Math 124, 125, and 126. (ECON 482 is NOT a prerequisite.)

Recommended Textbooks (They are available at Odegaard for 4 Hour Loan.)


STATA

The computer program STATA will be used extensively in the course. It is readily available on the computers in Savery Hall, but some students elect to purchase it anyway for the convenience. The current version is version 12, but versions 10 or later will be okay. You can purchase STATA by following the instructions at https://www.washington.edu/uware/stata/. Choose Intercooled STATA (Stata/IC), not Small STATA. Small STATA is not adequate for many of the applications we will consider. STATA contains an extensive on-line and embedded help facility.
Requirements

1. (48%) 1st midterm exam
2. (48%) 2nd midterm exam
3. (4%) final project
4. problem sets and computer lab in-class projects
   if you hand in all the problem sets on time and participate in all the projects,
   
   \[
   \begin{pmatrix}
   +0.1 \\
   +0.2 \\
   +0.3 \\
   +0.4 \\
   +0.5
   \end{pmatrix}
   \begin{pmatrix}
   \in [3.4, 3.8] \\
   \in [2.8, 3.3] \\
   \in [2.2, 2.7] \\
   \in [1.6, 2.1] \\
   \in [0.7, 1.5]
   \end{pmatrix}
   \]

   you get in the final grade if your grade based on the exams is

Timeline (the schedule is subject to change, but exam dates are fixed)

☐ 2 Lectures: Review of Statistics
   random variable, probability, expectation
   large sample theory
   estimation, hypothesis testing, confidence interval

   observational studies and experiments
   intergenerational correlation in height

☐ 4/17(W): Practice Introduction to STATA and Simple Regression
   the capital asset pricing model

☐ 4/22(M): Lecture, 4/24(W): Practice Multiple Regression Analysis
   going through a research paper
   human capital and wages

■ 4/29(M): 1st Midterm Exam (Open Book & Open Note, but No Calculator)

☐ 5/1(W): Practice Dummy Variables
   earnings gap between men and women
   black/white wealth gap

   estimation of returns to schooling using twins data
   children and labor supply
   marriage and wage rates

   economic assimilation of immigrant workers

   minimum wage and employment
   returns to schooling in indonesia

■ 6/3(M): 2nd Midterm Exam (Open Book & Open Note, but No Calculator)

☐ 6/5(W): Practice Using Public Raw Data

■ 6/12(W) 11:59PM: Final Project Due (Email Only)
Review of Statistics
random variable, probability, expectation
F 13, 14, 3, 4, 19, 20
W Appendix B
large sample theory
F 16, 17, 18
W Appendix C
estimation, hypothesis testing, confidence interval
F 12, 26, 27
W Appendix C

Introduction to Econometrics and Simple Regression
W 2
observational studies and experiments
F 1, 2
intergenerational correlation in height
F 10, 11, 12, W
the capital asset pricing model
B 2
weather and wine vintage quality
http://www.liquidasset.com/orley.htm

Multiple Regression Analysis
W 3, 4, 5
going through a research paper
W 19
class attendance and student learning

Dummy Variables
earnings gap between men and women
B 5
black/white wealth gap

1st Midterm Exam
□ Causality and Simultaneity

W 15, 16
estimation of returns to schooling using twins data

children and labor supply

marriage and wage rates

□ Panel Data Models & Difference-in-Difference

W 13, 14
minimum wage and employment

economic assimilation of immigrant workers

returns to schooling in indonesia

□ Limited Dependent Variables

W 17
labor force participation and labor supply
B 11

■ 2nd Midterm Exam

■ Final Project