ECO 7452: Best Empirical Practices
Syllabus

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Office Hours: Wednesdays, 9:30-12 in MAT 320
Class Meeting Times: Tuesdays & Thursdays, 7th/8th period (1:55 - 3:50)
Course meets only from 3/6/23 to 4/28/23
Room: MAT 114

Course Description

A large part of current economic research is at least partially empirical, i.e. it uses statistical and econometric tools to analyze data. This course is a practical introduction to empirical research in economics and beyond, based on the more theoretical concepts learned in ECO 7415 and ECO 7938. The goal is to understand the challenges that come with working with data, to learn tools and good practices to overcome them, and to critically think about the setup and results of current work. We will discuss research articles that have answered interesting questions in a particularly neat and creative way, and you will get a sense of the toolkit that is commonly used by applied economists. Finally, I will ask you to work with popular datasets within homeworks, present a paper at the frontier of the literature, and develop a research proposal for an empirical project.

Course Requirements, Homework, and Grading

The final grade will consist of several parts:

1. In-class participation (15%)

2. Homeworks (20%)

3. Research Proposal (20%)

4. Presentation (15%)

5. Final Exam (30%)

There will be readings for each session (except the first one) and we'll discuss them during the first hour of each class. In most cases this will be an in-detail discussion of an assigned paper: For example about its assumptions, data, identification strategy, and results.

The second hour of each class will cover the tools used in the papers we cover in more depth. A particular focus will be on good empirical design, natural experiments and identification, instrumental variables, selection, and regression discontinuity designs. The homeworks will be partially based on the topics we cover in this part.

Presentation   I will also ask you to choose and present a paper in class. You can pick an empirical paper of your choice that has been published in a top 5 journal within the last 5 years. There are several restrictions:

1. It needs to be longer than 15 pages

2. It can not be a paper covered in class

3. It can not be a purely theoretical paper

4. It must have been published in 2013 or later

5. It must have been published in the American Economic Review, the Quarterly Journal of Economics, the Journal of Political Economy, Econometrica, or the Review of Economic Studies

The presentation should not be longer than 15 minutes and convey what the paper does, its contribution, methodology and data, as well as the results. You can work in groups of 2. Importantly, pick a paper that you like and that you're enthusiastic about. The goal of your presentation should be to convey what is great about the paper and to "teach" the contents of the paper to your classmates.

Homeworks   There will be several homeworks, which will ask you to work with popular datasets, use simulations, or derive certain results. You can work in groups, but each student has to submit his or her own solution. For the data analysis and simulations parts, you can either use R, Stata, or Matlab.

Research Proposal   Finally, an important requirement of the course is to find an empirical research question and turn it into a small research project by the end of the course. This involves writing a 4-page research proposal justifying why this is an interesting and relevant question and how you are going to answer it (data, method, etc.). Also here there are several restrictions:

1. It cannot be your previous work (Master's thesis, etc.)

2. It cannot be joint work

3. It must have an empirical component

4. You have to include at least one motivational figure

Your project will realistically not be a done and polished paper by the end of the course. I rather want you to come up with an interesting question, hypothesis, or empirical relationship along with suggestive evidence that this could turn into a good paper. If you have time, you can also use e.g. summary statistics, graphs, or regressions to make that point and I will do my best to help you along the way.

Textbooks and Readings

The readings are described below and are either available from the websites of the authors, from JSTOR (https://www.jstor.org), or the respective journal in which they have been published. You can get access either through a UF computer or log in using a VPN client (See http://www.uflib.ufl.edu/login/vpn.html for details). Some concepts will also be based on the book:

Joshua Angrist, Jörn-Steffen Pischke: "Mostly Harmless Econometrics"; Princeton University Press, 1st edition (2009), ISBN 0691120358,

which is a very popular introduction to applied empirical research and design.

Prerequisites

I expect a basic knowledge of graduate level econometrics, for example from taking ECO 7415 or ECO 7938. The course will not be overly technical or theoretical, but you should for example be familiar with the terms OLS regression, identification, or endogeneity. For the homeworks, some knowledge of R, Matlab, or Stata, is strongly recommended. If you are not sure if this is the right course for you, please contact me during the first week.

Tentative Course Schedule

Week 1

Session 1 (Mar 7): Introduction to Modern Empirical Research I
Topic: Course Introduction and good empirical design

Session 2 (Mar 9): Introduction to Modern Empirical Research II
Topic: Good empirical design, standard errors
Reading: Agan, Starr (2018): "Ban the Box, Criminal Records, and Racial Discrimination: A Field Experiment"; The Quarterly Journal of Economics 133 (1), pp. 191–235

Week 2

Session 3 (Mar 21): Selection, Natural Experiments I
Reading: Sandra Black (1999), "Do Better Schools Matter? Parental Valuation of Elementary Education"; *Quarterly Journal of Economics* 114 (2), pp. 577-99.

Session 4 (Mar 23): Natural Experiments II
Reading: Angrist, Bettinger, Bloom, King, and Kremer (2002): "Vouchers for Private Schooling in Colombia: Evidence from a Randomized Natural Experiment"; *American Economic Review* 92, pp. 1535-1558.

Homework 1 due
March 21: Paper for presentation choice due (by email)

Week 3

Session 5 (Mar 28): Instrumental Variables I
Reading: Acemoglu, Johnson, and Robinson (2001): "The Colonial Origins of Comparative Development: An empirical Investigation."; *American Economic Review* 91, 1369 - 1401.

Session 6 (Mar 30): Instrumental Variables II
Reading: Schlenker, Walker (2015): "Airports, Air Pollution, and Contemporaneous Health"; The Review of Economic Studies 83 (2), pp. 768–809.

Week 4

Panel Data, Controls, and Fixed Effects I

Reading: Donohue, Levitt (2001): "The Impact of Legalized Abortion on Crime"; *Quarterly Journal of Economics* 116 (2), pp. 379-420.

Panel Data, Controls, and Fixed Effects II

Reading: Neal and Johnson (1996): "The Role of Premarket Factors in Black-White Wage Differences"; *Journal of Political Economy* 104(5), pp. 869-895.

Homework 2 due

Week 5

Introduction: Regression Discontinuity

Reading: Chen, Ebenstein, Greenstone, Li (2013): "Evidence on the impact of sustained exposure to air pollution on Life Expectancy from China's Huai River policy."; *Proceedings of the National Academy of Sciences* 110(32), pp. 12936-12941.

Introduction: Propensity Score Matching

Reading: Malmendier and Tate (2009): "Superstar CEOs"; *Quarterly Journal of Economics* 124(4), pp. 1593-1638

Homework 3 due

Week 6

Quasi-Random Assignment

Reading: Hyman (2018): "Can Displaced Labor Be Retrained? Evidence from Quasi-Random Assignment to Trade Adjustment Assistance"; mimeo.

Introduction: Machine Learning and Variable Selection

Reading: 1. Blumenstock, Cadamuro, On (2015): "Predicting poverty and wealth from mobile phone metadata"; Science 350, pp. 1073-1076.
2. Naik, Raskar, Hidalgo (2016): "Cities Are Physical Too: Using Computer Vision to Measure the Quality and Impact of Urban Appearance"; American Economic Review: Papers & Proceedings 2016, 106(5): 128–132.

Homework 4 due

Week 7

Final Exam

Apr 25: Research Proposal due