ECON 407: Syllabus

Syllabus for Cross Section Econometrics

ECON407/ PUBP615

Fall 2017

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Course Summary

In this course we will explore econometric techniques for testing microeconomic theories at the individual or firm level. With the advent of computers and associated data on economic behavior, the past few decades has seen an explosion of applied economic research using a wide range of techniques for this type of data- termed cross section data and cross section econometrics. In this course, you will learn about these techniques, will learn to be an educated consumer of econometric research, and will apply these techniques to real data. We will also derive many of the properties of the statistical techniques used in this course, but primarily at the end of the course you will

- Understand the strengths and weaknesses of cross section techniques
- Know how to test the validity of modeling assumptions
- Know the proper econometric technique for a wide variety of Cross-Section settings

Computing, Computers, and the Class

- We will make extensive use of Stata (or if you optionally decide to use it, R). For stata you may want to buy your own copy of the software (through the Grad Plan at stata.com) and the cost is around \$100. Alternatively, a College-owned version especially well suited to very large data sets can be run remotely on a Unix machine (stat.wm.edu) from your laptop through X11 or other means. If you decide to go this route, know that the start-up costs are higher and you will likely need assistance from IT to get everything set up. If you plan on using stat.wm.edu, please deal with these logistics during the first week of class. Additionally, there are computer labs around campus (e.g. Morton 240) where stata is accessible. R is free for you to install on as many machines as you like, is open-source, and is also available on lab computers.
- Computers: We will make some use of the main computer in the classroom for much of what we do together in class. The data for course examples and problem sets will be available on the web for the duration of the course, but you should have archival copies and working backups of all of the programs you have written to take the data from raw to final form. All computer work you do in this class must self-generate the full analysis and write-up using markdoc or Rmarkdown as described above.
- The class: Ensure that you understand the material before we move past it. Ask questions. We will on many classroom occasions employ actual data and Stata, and you may want to follow along on your own computers. I encourage you to bring your computers to class.

Acceptable Collaboration

Finally, I want to define acceptable collaboration. In this course, I want you to think for yourself in applying these techniques. Using resources outside of class and properly citing it, is perfectly with-in bounds. Taking ``.do" files from your fellow classmates or off of the web and treating them as your own work is not acceptable. Receiving assistance at every critical modeling step is also not acceptable. Asking a classmate about clarification of stata syntax (e.g.- I forgot how to ask for robust standard errors, could you help me with that?), is fine.

Class Schedule

Topic	Approx. Duration	Summary & Notes	Book^1
Introduction	3 weeks	Linear Algebra Intro/ Review	GA
		Stata Intro/Review	
		Review of Regression	G3,4
		Review of Endogeneity	G12,13.5,13.5.5
Panel Data	3 weeks	Fixed Effects	G9-9.7
		Random Effects	W10
Maximum Likelihood	1 week	Intro to Maximum Likelihood	G16
Truncation & Censoring	2 weeks	Tobit, Heckman, Poisson	G24
		and Negative Binomial	G25
Discrete Dependent Variables	3 weeks	Binomial Logit and Probit	G23
		Multinomial Logit and Probit	
Simulation and Bootstrap	1 week	Simulating standard errors	TBA
¹ G denotes Greene and W denotes Wooldridge.			

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