

Institute for Research on Poverty

Summer 2008

A Course in Applied Microeconometrics

Guido Imbens
Jeffrey Wooldridge

imbens@harvard.edu
wooldril@msu.edu

The course will take place Monday August 4th, through Wednesday August 6th, in Madison, Wisconsin.

In this course, based on the course we taught at the NBER in the Summer of 2007, we will discuss developments in micro-econometrics over the last decade and a half. The focus will be on methods that are relevant for, and ready to be used by, empirical researchers, and the course is aimed exactly at such researchers. In contrast to much of the published literature in the more technical econometrics and statistics journals, we focus on practical issues important in implementation of the methods and for reading and understanding of the literature. There will be little discussion of technical details, for which we will refer to the literature.

There is no textbook for the course, although reference will be made to Wooldridge, J., (2001), *Econometric Analysis of Cross Section and Panel Data*, MIT Press.

In addition there will be detailed lecture notes that will be distributed prior to the course.

The level of the course is such that it will be accessible to researchers with some background in econometrics, including linear regression methods.

Topics that will be covered in the course span a range of areas in micro-econometrics, although it will not be comprehensive. In particular we do not cover time-series methods. Topics covered include

1. Program evaluation methods, including matching and propensity score methods
2. Instrumental variables in settings with heterogeneity, and local average treatment effects
3. Regression discontinuity methods, both sharp and fuzzy, and nonparametric methods in these settings
4. linear panel data, including strict exogeneity, and predetermined regressors
5. nonlinear panel data
6. bayesian methods, relation to classical/frequentist methods, computational methods
7. partial identification and bounds

8. control functions and their relation to instrumental variables and identification
9. quantile regression
10. effects of clustering on standard errors
11. stratification and weighting
12. difference-in-differences methods
13. missing data methods, missing at random, selection models
14. discrete choice models, including binary choice and multinomial choice, multinomial logit, conditional logit, nested logit, multinomial probit, mixed logit, Berry-Levinsohn-Pakes model
15. empirical likelihood and generalized method of moments
16. problems with weak and many instruments, two-stage-least-squares, limited-information-maximum-likelihood, Bekker standard errors