Course Description

Lecture: 10:30-11:50 Mondays and Wednesdays

Office Hours:
10-11am Fridays or by appointment. To arrange an appointment see me after class or contact me at petratodd@gmail.com or 215-898-4084. Class materials (notes etc.) will be made available on my webpage http://athena.sas.upenn.edu/~petra.

This course considers parametric, nonparametric and semiparametric estimation techniques that are used in microeconomics. Topics covered will include GMM, classical discrete choice (or qualitative response) modeling, choice-based sampling, simulation estimators, models with censoring and truncation (limited dependent variable models), sample selection models, nonparametric density and regression estimation methods, semiparametric models and panel data. Depending on time available, we might also cover some topics related to duration analysis.

The first part of the course considers the econometric problems introduced when the dependent variable is discrete. We discuss the development of classical discrete choice models and their link to utility maximization. We consider cases where the dependent variable is truncated or censored, and cases where the measurement process for the dependent variable is not independent of the behavioral process (‘sample selection’). The second part of the course considers ways of relaxing parametric assumptions through nonparametric and semiparametric estimation, with a focus on local polynomial methods. We will examine applications of nonparametric methods in the literature on semiparametric modeling. The third part of the course examines techniques for estimating panel data models.

Course Requirements

There will be 2 problem sets and a final exam. Problem sets may include empirical assignments that require some programming. You can do the programming in a language of your choice. Matlab, Gauss, Splus, FORTRAN or C are probably the most useful languages for the assignments. A free version of Splus (called R), which has features similar to Matlab, can be downloaded. The problem sets will count for 40% of the final grade and the final exam for 60%.
Recommended Readings

General Reference Texts:

The chapters from the Manski and McFadden book which can be downloaded from Berkeley’s web site http://emlab.berkley.edu/users/mcfadden/discrete.html.

- Lancaster, T. The Econometric Analysis of Transition Data, Cambridge University Press.

Recommended Readings by Topic

(A) Classical Discrete Choice Models

General references:

Amemiya (Chapter 9)

Greene (Chapter 20)

Manski, C.F. and D.L. McFadden (eds), Structural Analysis of Discrete Data with Econometric Applications, MIT Press, 1981. (Chapters 1 and 5)


Additional papers:
BUNCH, DAVID S. “Estimability in the Multinomial Probit Model” in Transportation Research B.


(B) CHOICE-BASED SAMPLING

General references:

MANSKI, C.F. AND D.L. McFADDEN (EDS), Structural Analysis of Discrete Data with Econometric Applications, MIT Press, 1981. (Chapter 1, Chapter 2)

Additional paper:


(C) SIMULATION ESTIMATORS

General reference:

MANSKI, C.F. AND D.L. McFADDEN (EDS), Structural Analysis of Discrete Data with Econometric Applications, MIT Press, 1981. (Chapter 7)


GOURIEROUX, CHRISTIN AND ALAIN MONFORT Simulation-Based Econometric Methods, Oxford University Press, 2002.


Additional paper:


3
(D) Models with Censoring, Truncation


Amemiya, T., Chapter 10.

(F) Sample Selection


(F) Nonparametric Estimation Methods

General references:


Pagan, A. and A. Ullah *Nonparametric Econometrics*


Additional papers:


(G) SEMIPARAMETRIC MODELS


INDEX MODELS


PARTIAL LINEAR MODELS


DISCRETE CHOICE MODELS
General reference:

**Amemiya, T.**, Chapter 9.

Additional papers:


**Tobit Models**


(II) **Panel Data Models**
General references:


Additional papers:


Bundell, Richard and Stephen Bond “Initial conditions and moment restrictions in dynamic panel data models” in *Journal of Econometrics*, Vol. 87, Issue 1,