

**ECON 612:****Advanced Econometric Methods II**

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Introduction:

In the second part of this course, we will focus on a variety of techniques employed when a regressor of interest can not reasonably be viewed as exogenous. This estimation problem is quite common, arising because the regressor of interest is partly determined either by other important factors which cannot be readily measured, or shaped by the dependent variable, or has a value observed only for a non-randomly determined sub-group of the population.

Identifying the effect of the regressor of interest on the dependent variable in the face of this endogeneity requires additional information. This information can either be obtained outside the context of the estimating equation, or it can be obtained by exploiting variation in the dependent and independent variables over time. We will discuss estimation techniques of both sorts.

Course Requirements:*Required Texts:*

Kennedy, Peter. 1998. *A Guide to Econometrics*. 4<sup>th</sup> ed. (Cambridge, MA: MIT Press).

Wooldridge, Jeffrey. 2000. *Introductory Econometrics*. (Thomson Learning).

Additional readings may also be assigned.

*Data:*

We will be using data from the National Longitudinal Survey of the Labor Market Experiences of Youth (NLSY). The NLSY is a longitudinal survey of 12,686 youths, first surveyed in 1979, when they were between the ages of 14 and 21. These kids have been surveyed in nearly every year since then. You will be provided more information about the sample, and about obtaining the data in class.

More information about the data can be obtained at:

<http://www.bls.gov/nls/nlsy79.htm>

*Computer Software:*

In this class you will be required to carry out some assignments in SAS, and some assignments using STATA. It is assumed that you have access to both software packages.

*Assignments and Grading:*

Grades for the 2<sup>nd</sup> half of the course will be determined based on a student's performance on each of these.

Requirement:	Weight:
Problem sets	50%
Class Participation	10%
Final exam (in class)	40%

## Course Outline

	<u>Topic:</u>	<u>Estimated Schedule:</u>
I	Introduction to 2 <sup>nd</sup> Half and to the NLSY	March 20
II	Properties of a Good Estimator <i>Kennedy, Chapter 2</i>	April 1
III	Understanding Bias and Inconsistency <i>Kennedy, Chapter 3</i> <i>Wooldridge, Chapter 3</i>	April 3

### Solutions Using Cross-Sectional Data

IV	Instrumental Variables <i>Kennedy, Chapter 9, Sections 1 and 2</i> <i>Wooldridge, Chapter 15</i>	April 8 - 15
V	Selection Bias and Estimation Techniques <i>Kennedy, Chapter 16, Sections 1 - 3</i> <i>Wooldridge, Chapter 17</i>	April 17 - 24

### Solutions Using Pooled Cross-Sectional Data

VI	Difference in Difference Estimators <i>Wooldridge Chapter 13</i>	April 29 - May 1
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### Solutions Using Panel Data

VII	Fixed and Random Effects Models <i>Kennedy, Chapter 14</i> <i>Wooldridge, Chapter 14</i>	May 6 - 13
VIII	Review Angrist and Krueger, "Empirical Strategies In Labor Economics"	May 13