

## Topics in Applied Economics I

### Faculty

Ghazala Azmat  
Paula Bustos  
Gabrielle Fack  
Albrecht Glitz  
Sergi Jimenez  
Stephan Litschig  
Francesc Ortega  
Karl Schlag  
Kurt Schmidheiny  
Carmit Segal  
Thijs van Rens  
Joachim Voth

### Schedule

Classes are scheduled on *Tuesdays and Wednesdays from 17:10 to 19:00 in room 20.101* during the first trimester (Fall 2008).

### Course description

This is an advanced Ph.D. course in *empirical research methods (applied econometrics)*, geared towards students doing or wanting to do applied research. We will assume you have taken the core graduate courses in econometrics and have a working knowledge of Stata. Other than that, each topic will assume relatively little prior knowledge, but will be taught at high speed. Interested faculty is welcome to attend the course.

Each class is a self-contained, 90 minutes lecture on a current topic in applied econometrics and will be taught by a different professor. Each lecture, we start with an applied introduction to the topic: What kind of problems are we considering? Why is it an important problem in practice? Then, we discuss the theory (depending on the topic: the details of the estimator; how to implement it in Stata; variance-covariance matrix; Monte Carlo evidence on small sample behavior; etc). Finally, we close with an application from the literature, in which the technique under discussion makes a difference. We will try to make the data and if necessary Stata code for the application available.

### Grading

Each lecture, we will hand out a problem set. Typically, the problem sets will include replicating and extending an existing paper in the literature in addition to some questions about the theory. Students are encouraged to try all problem sets, but they may choose eight to be handed in and graded (if more than 8 problem sets are handed in, the highest 8 grades count). In addition, there will be an exam,

with some choice about the questions. This will allow students to focus their efforts on the topics that are most relevant to them for their research.

## Readings

A detailed reading list for each topic will be posted on the course website. Readings include journal articles, both on the theory and on applications, but when available also references to textbooks or Stata manuals that may be more accessible. The contents of this course is based in part on the "What's New in Econometrics?" minicourse, taught by Guido Imbens and Jeffrey Wooldridge as part of the NBER summer institute 2007. The lecture notes of this course provide good background reading for many of the topics covered and are available on the web at <http://www.nber.org/~confer/2007/si2007/wneprg.html>.

## Outline

The topics below are organized by method. Each lecture will be a combination of a method and an application. This course is not primarily about econometric theory, but rather focuses on how the various techniques can and have been used in interesting economic applications.

### Introduction

- 1) September 30, 17:00-19:00 - Thijs van Rens and Kurt Schmidheiny  
Introduction
- 2) October 1, 17:00-19:00 - Kurt Schmidheiny  
Coding with Mata in Stata

### Experimental approach to actual data

- 3) October 7, 17:00-19:00 - Carmit Segal  
Laboratory and Field Experiments  
Application: *Discrimination: The Case of Beauty*
- 4) October 8, 17:00-19:00 - Paula Bustos  
Natural Experiments and Difference-in-Differences  
Application: *Schooling and Labor Market Consequences of School Construction in Indonesia*
- 5) October 14, 17:00-19:00 - Paula Bustos  
Heterogeneity and Local Average Treatment Effects  
Application: *Lifetime Earnings and the Vietnam Era Draft Lottery*

### Panel data estimators

- 6) October 15, 17:00-19:00 - Ghazala Azmat  
Panel Data Models  
Application: *Gasoline Demand in the OECD*
- 7) October 21, 17:00-19:00 - Ghazala Azmat  
Dynamic Panel Data Models  
Application: *From Education to Democracy?*
- 8) October 22, 17:00-19:00 - Sergi Jimenez  
Selection in Panel Data Models  
Applications: *Initial Offers in Wage Bargaining; Wage Settlements and COLA Clauses*

## **Standard Errors**

- 9) October 28, 17:00-19:00 - Thijs van Rens  
Robust Estimation of Standard Errors  
Application: *The Effect of Human Capital on Growth (TBC)*
- 10) October 29, 17:00-19:00 - Kurt Schmidheiny  
Clustering  
Application: *The Effect of Placebo Laws on Female Wages*
- 11) November 4, 17:00-19:00 - Thijs van Rens  
Two-step estimators  
Application: *Do Wages Fall in Recessions?*

## **Non-parametric statistics**

- 12) November 5, 17:00-19:00 - Gabrielle Fack  
Kernel estimation and semi-parametric regression  
Application: *TBA*
- 13) November 11, 17:00-19:00 - Karl Schlag  
Distribution-free and non-parametric hypothesis testing  
Application: *TBA*
- 14) November 12, 17:00-19:00 – Karl Schlag  
Distribution-free and non-parametric hypothesis testing, part II  
Application: *TBA*

## **Alternatives to least squares regression**

- 15) November 18, 17:00-19:00 - Albrecht Glitz  
Duration models  
Application: *Labor Market Transitions and Unemployment Duration*
- 16) November 19, 17:00-19:00 - Albrecht Glitz  
Quantile Regression  
Application: *Looking for Glass Ceilings in the Male-Female Wage Distributions*
- 17) November 25, 17:00-19:00 - Kurt Schmidheiny  
Multinomial Choice Models  
Application: *Predicting Demand for the Bay Area Rapid Transit System before it Existed*

## **Identification**

- 18) November 26, 17:00-19:00 - Stephan Litschig  
Regression Discontinuity Design  
Application: *TBA*
- 19) December 2, 17:00-19:00 - Joachim Voth  
When Turning Good Data into Bad is a Great Way Forward  
Application: *The Volatility of National Income Growth*
- 20) December 3, 17:00-19:00 - Francesc Ortega  
Weak Instruments and Many Instruments  
Application: *Have Pencils Changed the Wage Structure? (TBC)*

**The latest version of this syllabus is available at:**

<http://www.crei.cat/~vanrens/applied>