
Your Teacher

Kurt Schmidheiny
Universitat Pompeu Fabra
Jaume I Building 20.145
kurt.schmidheiny@upf.edu

Class Schedule

Lecture:
Monday 3:10pm - 5:00pm (23.S05)
Thursday 11.10am - 12:00pm (23.S05)

Práctica:
Thursday 12.10pm - 1:00pm (23.S05)

Course Homepage

There is a course homepage with slides, handouts and additional readings:

http://kurt.schmidheiny.name/teaching/bgse/empiricalmethods/
(username: bgse, password:   )

Please send emails directly to
kurt.schmidheiny@upf.edu
and not through the intranet.
About this course

Most widely used econometric tools:
OLS, IV, 2SLS, FE, RE, Probit/Logit

- What is it?
- How are they used?
- When can they be used?
- When can they not be used?
- What can go wrong?

This course is applied

This is not a course in theoretical econometrics

- Hands on real world data
- Hands on professional software
- Hands on relevant questions
- Hands on relevant answers

I.e.

- Hands off (most) mathematical proofs

This course is serious

Estimation is now often just a simple click away.

- Challenge is to use the right tools
- and interpret them correctly

This course enables you to ...

→ judge existing research results
→ perform your own research projects

This course deals with observational data

This course deals with Data which is non-experimental, i.e. not from experiments

- Data from surveys, public records, accounting, ...
- Traditional approach of econometrics
- Prevailing in empirical literature
- Widely used in current research

But experiments become more and more important.
Your other empirical course

"Designing and Evaluating Development Programs"
2nd Term 2011, by Ghazala Azmat (UPF)

- Methods to evaluate (development) programs
- Question driven: education, health, fertility, labor markets
- Design of study: experiment vs. observational data
- Designing experiments
- Advanced data analysis when no experiments are available or possible
- Policy lessons from published research
- Original research articles

The two courses are complementary.

Challenge of this course: Heterogeneity

This is a large class with students from very different backgrounds and with very different goals.

Heterogenous Backgrounds

Some of you ...

- have studied econometrics on a advanced level
- have never studied econometrics
- have strong formal training
- have weak formal training
- have performed sophisticated own empirical projects
- have never run a regression

Heterogenous Goals

Some of you ...

- want to use quantitative analysis in their work
- want to become deciders
- may want to do empirical research in a PhD
- may want to do a purely theoretical PhD

⇒ Some disappointment is inevitable.
⇒ I am positive that each of you will be challenged in some dimension.
Outline of the Course

1. Causal effects and the logic of randomized experiments
2. Linear regression: Estimation, small and large sample properties, hypothesis, testing, omitted variable bias, model selection, functional form, heteroscedasticity, autocorrelation, clustering
3. Instrumental variable estimation: Estimation, identification, weak instruments
4. Panel data: Fixed effects, random effects
5. Maximum likelihood estimation
6. Binary choice: Probit and logit

Level of the course

The level of this course is between introductory and advanced textbooks.

It is introductory concerning ...
• ... most of its topics
• ... its mathematical rigor (limited use of matrices)

It is advanced concerning ...
• ... some of its topics
• ... its mathematical rigor (we do use math)
• ... the applications

It is slightly below the level of Greene (2007), *Econometric Analysis*, Pearson. A textbook that I do NOT recommend.

Introductory textbooks

  Pearson Addison-Wesley
  South-Western Cengage Learning

Advanced textbooks (Microeconometrics)

- Cameron, A. Colin and Pravin K. Trivedi (2005) *Microeconometrics: Methods and Applications*
  Cambridge University Press
- Wooldridge, Jeffrey M. (2002) *Econometric Analysis of Cross Section and Panel Data*
  MIT Press
**Companion textbooks**

- Angrist, Joshua D. and Jörn-Steffen Pischke (2009)  
  Mostly Harmless Econometrics: An Empiricist’s Companion  
  Princeton University Press
- Kennedy, Peter (2008)  
  Blackwell Publishing

**Handouts**

There are handouts for all topics of the course. These handouts are ...

- ... very brief
- ... not self-contained
- ... intended to be a useful companion for your life after this course
  ⇒ You will absolutely need to work with one or more textbooks
- ... some handouts will come in two versions: with use of matrices and light on use of matrices

**Statistical Software**

- I will use **STATA 11**
- I assume you are familiar with Stata
- Stata 10 is available in the LEEX computer lab
- Older versions are available in the other computer labs

Two alternatives:

- Use another statistical package. Please check with me if it covers all methods we use. For example, *R* yes, *SPSS* no
- Program all econometric methods in a matrix algebra language. We will support you using *Matlab* or *Stata Mata*.

**Problem Sets**

There will be 7 or 8 problem sets.

- They will be graded
- They will be discussed in the "práctica" class
- They count for 25% of the final grade

Some rules:

- You may work in groups
- Hand-in individually
- Hand-in printed, do not send by email
- Not more than than 4 pages A4!
  Deciding what is important is part of the exercise
Exam

There will be a written final exam in December

- Counts for 75% of final grade
- Some theoretical questions
- Many applied questions: interpretation of Stata output