

INSTITUT DE HAUTES ÉTUDES INTERNATIONALES ET DU DÉVELOPPEMENT GRADUATE INSTITUTE OF INTERNATIONAL AND DEVELOPMENT STUDIES

International Economics

Academic year 2018-2019

Econometrics I

El035 - Autumn - 6 ECTS

Course Description

This is an introductory to intermediate econometrics course for first year master students. Its goal is to equip students with solid understanding of the econometric theory that underlies basic econometric models. After a review of the multiple regression model, OLS computation and asymptotic properties, the course will deal with generalizations of the least squares problem, to discuss instrumental variables, panel data and limited dependent variables. The course features weekly review sessions covering theoretical and practical exercises using Stata. After taking this course, students should be able to: (1) choose appropriate models and estimators for given economic applications; (2) interpret regression model estimates; (3) diagnose potential problems with basic models and know how to remedy them ; (4) progress onto the study of advanced topics in econometrics.

> PROFESSOR

Nicolas Berman nicolas.berman@graduateinstitute. ch

Office hours

> ASSISTANT

Hayley Pallan @graduateinstitute.ch

Office hours

Syllabus

Course website

The course website contains the slides of the lectures, lecture notes, data examples and stata applications, and all the up-to-date relevant information about the course. (will be updated early September 2018)

https://sites.google.com/site/bermaniheid/econometrics

Pre-requisite

Basic knowledge of statistics, probabilities and matrix algebra is required. Students can refer to the appendixes A to D (included) of Wooldridge "Introductory econometrics". It is very important to look at this before the beginning of the course. Most econometrics textbooks (for instance Greene, see below) contain appendixes dealing with the most important pre-requisites of the study of econometrics.

Chemin Eugène-Rigot 2 | CP 1672 - CH-1211 Genève 1 | +41 22 908 57 00 | graduateinstitute.ch

References

Most of the topics covered in class are presented at a more introductory level in Jeffrey Wooldridge, *Introductory Econometrics: A Modern Approach*, 4th edition. The material presented in Wooldridge is generally too introductory, so that the lectures will rely on more advanced econometric textbooks for the proofs of theorems and matrix algebra. You can refer to:

- J. Wooldridge, Econometric Analysis of Cross Section and Panel Data, MIT Press, 2002

- William H. Greene, Econometric Analysis, sixth edition, Pearson

Structure of the course and grading

The lectures will mainly focus on econometric theory, associated with practical examples. Weekly review sessions will contain problems solving, and computer applications using Stata software.

Links to introduction to Stata can be found on the website.

The final grade will be based on two problem sets containing both mainly mathematical exercises and computer applications (with a focus on computer applications), on a midterm exam, and on a final exam. Problem sets have to be done in groups of no more than four students (the number can vary depending on the number of registered students). Review sessions will focus more on theoretical exercises.

Grading criteria are the following: 30% problem sets, 35 % midterm, 35% final exam.

Lecture	Required: Wooldridge chapters	Complement: Greene chapters (7th edition)	Complement: Wooldridge II	Topic
1	1-2			Introduction, simple linear model
1 & 2	3	2, 3.1, 3.2, 4.1, 4.2, 4.3, 6.1-6.3		Multiple regression: estimation
2 & 3	4	5.1 to 5.5		Multiple regression: inference
3	5	4.4, 5.6, 5.7		OLS Asymptotics
4	8	9		Heteroscedasticity and GLS
5	13-14		10	Econometrics of Panel Data
6	15		5.1-5.2, 6.2.1-6.2.2	Instrumental variables
7	7,17		15.1-15.6, 17.1-17.3	Limited Dependent Variables models
7	17			Censored variables / sample selection correction
8				Final exam

Outline

Dates of the lectures

Lecture 1: September 21 Lecture 2: October 5 Lecture 3: October 19 Lecture 4: November 2 Lecture 5: November 16 Lecture 6: November 23 Lecture 7: December 7 Final exam : Week of December 17