Applied Econometrics for Research

Module Code: ECO00070M  Credits: 10  Term: Spring

Contact Hours: 18 (12 Lectures, 6 Practical Lectures)

Module Organiser: Dr Laura Coroneo

Module Lecturers: Dr Laura Coroneo, Dr Francesco Bravo, Dr Thomas Cornelissen

Module Overview

The module provides an advanced treatment of selected topics on Applied Econometrics that can change from year to year, depending on what is considered to be most relevant and up to date.

The academic year 2016/17 the module will cover the following three topics

1) Nonparametrics and Semiparametrics (Dr Francesco Bravo)
2) Factor Models (Dr Laura Coroneo)
3) Instrumental Variables with Heterogeneous Treatment Effects (Dr Thomas Cornelissen)

Aims

A set of specialist lectures specialising in Econometric Theory.

A complementary set of practical classes to teach the implementation of Applied Econometrics.

Objectives

The topics for the academic year 2016/17 are:

1. Nonparametric and Semiparametrics - Dr Francesco Bravo (4h Lectures + 2h Practical Lectures)

   Nonparametric and semiparametric models have become increasingly popular in Econometrics. This set of lectures provides an introduction to the basic ideas and concepts of nonparametric and semiparametric estimation focusing in particular on kernel methods. Topics covered in the lectures include nonparametric density and regression estimation, partially linear models, conditional moment restrictions models and single index models. The lectures will emphasize some theoretical aspects of non and semiparametric estimation, whereas the practical lectures will introduce and discuss available software that can be used to compute some of the proposed estimators

2. Factor Models - Dr Laura Coroneo (4h Lectures + 2h Practical Lectures)

   Factor models allow to analyze high dimensional time series, which are becoming increasingly more available in the era of “big data”. The topics on factor models covered in this module include: principal components, dynamic factor models, identification, maximum likelihood estimation and
the Kalman filter. The module overviews the main applications of factor models: forecasting, missing observations, structural identification and counterfactual analysis. Real data applications in macroeconomics and finance will be presented.

3. Instrumental Variables and Marginal Treatment Effects - Dr Thomas Cornelissen (6h Lectures/Practical Lectures)

The objective is for students to gain a thorough understanding of Instrumental Variable (IV) estimation, which is one of the most important tools economists use to estimate causal effects. This part of the Module will set out the fundamental econometric challenge of estimating causal effects and discuss how IV estimation addresses this challenge. After briefly reviewing the basics of IV estimation with a constant causal effect, the module will focus on IV estimation with effect heterogeneity (i.e., when the causal effect of interest varies across individuals). Modern extensions in this area, such as the Marginal Treatment Effects (MTE) framework will be discussed. This topic combines a formal presentation of the methodology with providing an intuitive understanding, drawing on examples from important empirical applications in the economics literature.

Assessment

By take home assessment(s) to be submitted at the beginning of Term 3 (Summer).

Should a reassessment be needed, you will be issued with another take home assessment, to be submitted by Monday 14th August 2017.