Applied Econometrics for Research

Module Code: ECO00070M  Credits: 10  Term: Autumn and Spring
Contact Hours: 18 Lectures, 6 Practical Lectures
Module Organiser: Dr Laura Coroneo
Module Lecturers: Dr Laura Coroneo, Dr Francesco Bravo, Dr Emma Tominey

Module Overview:
The module provides an advanced treatment of selected topics on Applied Econometrics.

The academic year 2017/18 the module will cover the following three topics

1) Factor Models (Dr Laura Coroneo)
2) GMM for moment conditions models (Dr Francesco Bravo)
3) Policy Evaluation (Dr Emma Tominey)

Aims:
Develop the understanding of Econometric Theory and the implementation of Applied Econometrics.

Objectives:
The topics for the academic year 2017/18 are:

1. Factor Models - Dr Laura Coroneo (6 h lectures/practical lectures)
   Factor models allow analysing 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.

2. GMM for moment conditions models - Dr Francesco Bravo (6 h lectures/practical lectures)
   The Generalized Method of Moments (GMM) has become the standard statistical method to estimate and obtain inferences for econometric models defined by a set of moment conditions. This set of lectures provides an introduction to the basic ideas and concepts of GMM. Topics covered in the lectures include optimal GMM and inference for unconditional moment conditions models, GMM estimation of misspecified models, GMM with conditional moment restrictions and GMM inference with weakly identified moment restrictions models. The lectures will focus mainly on some theoretical aspects of GMM estimation and inference, however, some illustrative examples will be provided and available software will also be discussed.

3. Policy Evaluation - Dr Emma Tominey (6 h lectures/practical lectures)
   This topic will define the econometric problems inherent in policy evaluation, decomposing the bias into the bias from selection, overlapping support and distribution weighting. It will then work through modern and classic methods for estimating causal parameters, including natural experiments, propensity score matching, regression discontinuity and instrumental variables.

Assessment:
By take home assessment to be submitted at the beginning of Term 3 (Summer). Re-sit exam will also be a take home assessment.