Applied Econometrics

Module Code: ECO00014H Credits: 20 Year: 3 Terms: 1-3
Contact Hours: 20 Lectures, 7 Seminars (27 contact hours)
Module Organiser: Dr L Vanessa Smith

Overview:
This third year undergraduate module presupposes intermediate level knowledge of econometric theory, including the use of a range of diagnostic techniques. It is taught by means of a mixture of lectures and seminars. Students are encouraged to use well-known econometric software packages with a variety of datasets.

Aims:
- To develop skills needed to apply econometric techniques related to the following areas: (i) instrumental variable methods when regressors are endogenous; (ii) binary choice models to model probabilities in applied economics; (iii) the estimation and interpretation of models designed for panel data; (iv) stationary autoregressive (AR), moving average (MA) and ARMA models forecasting and evaluation of forecast performance; (v) non-stationary time series models; and (vi) cointegration analysis in the case of a single equation model and associated error correction models.
- To develop skills needed to interpret applied econometric results in the following contexts: (i) the analysis of regression models in the presence of omitted variables or endogenous variables; (ii) the application of linear probability, logit and probit models; (iii) controlling cross-sectional heterogeneity in panel data; (iv) modelling and forecasting stationary time series data; (v) testing for unit roots in economic variables by means of Dickey-Fuller tests; and (vi) empirical analyses based upon either the Engle-Granger two-step method or the Autoregressive Distributed Lag model.

Objectives:
On completing the module a student will be able to:
- Read and understand more of the econometric evidence published in academic journals and books. Understanding is extended beyond the second year Econometrics 2 module by covering new topics such as: instrumental variable methods; binary choice models; panel data models (for the data with both cross-section and time series dimensions); forecasting using stationary dynamic ARMA models and evaluating forecast performance; non-stationary time series variables in regression; and integration and cointegration (which are very important in modern applied macroeconomics).
- Use standard econometric software (seminar work will involve the use of popular econometrics packages with various data sets that are provided via links on the VLE page).
- Formulate economic hypotheses in testable ways and to understand which methods are appropriate for carrying out statistical inference.

Assessment:
There will be a 2-hour unseen examination in the Summer Term (70 percent of the overall mark) and two mini empirical projects (30 percent of the overall mark) one in each of the Autumn and Spring Terms.
Pre-requisites:
ECO00003I Econometrics 2

Main References:

Other important references include: