

Course: Econometrics I (3rd year)

Course Instructor: Prof. Elias Tzavalis

Aims & Objectives (course contents):

This course presents the multiple linear regression model and systems of linear equations, estimated simultaneously. The course gives a thorough presentation of the above models based on linear algebra techniques. It presents the estimation methods and inference procedures, as well as a set of diagnostic–m misspecification tests.

In particular, the first part of the course presents the multiple linear econometric model under its classical assumptions and teaches the estimation and inference methods of its coefficients based on the least squares (LS) and maximum likelihood (ML) estimators. It also shows how to use the estimates of the model to produce out-of-sample predictions and carry out joint-hypotheses tests.

In its second part, the course studies the consequences of the econometric problems of heteroscedasticity and autocorrelation on the LS, or ML, estimators and suggests a number of diagnostic tests for these problems. Next, it presents the generalized least squares (GLS) estimator and its Feasible (FGLS) version for linear econometric models under heteroscedasticity and autocorrelation of the error terms and discuss their properties.

In the third part, the course presents the method of moments estimator and the instrumental variables estimator which corrects for the problem of endogeneity of regressors. Next, it presents linear systems of equations and discuss problems of identification of their structural parameters and estimation of them, with the method of two stages least squares.

The course provides tutorials to help the students to solve a set of exercises. A number of tutorials are also given in the lab on how to implement the taught econometric methods of the course on actual data based on the Eviews or R.

Textbooks/Materials:

Greek (in Greek): ΟΙΚΟΝΟΜΕΤΡΙΑ, Ηλιας Τζαβαλής, Αθήνα, 2010

In English: Econometric Methods, Johnston J. and J. Dinardo, McGraw-Hill

Econometric Analysis, Greene, W. Prentice Hall (for more advanced reading)

Computer packages: Eviews, R