

MASTER Economics Econometrics I: linear model

Contacts	Description	Information
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CONTENT

Provide students with :

- the basics of panel data econometrics (fixed effects models, error components model)
- the identification of endogeneity problems in econometric models and their treatment (instrumental variables, GMM, tests)

Course outline :

1. Introduction to panel data and panel data models
2. The fixed effects model
 - Specification of the model
 - Estimation of the model : the Within / LSDV estimator.
 - Testing the absence of unobserved heterogeneity.
3. The error components model
 - Specification of the model
 - Estimation of the model : the GLS / FGLS estimators.
 - Testing the absence of unobserved heterogeneity.
 - Testing the absence of correlation of the effects : the Hausman test
4. Endogeneity issues
 - Causes of endogeneity in econometric models : measurement errors, dynamic models, unobserved heterogeneity, etc.
 - The instrumental variables estimator
 - The GMM estimator
 - Looking for instruments (the time-series case, the cross-section case, the panel data case).
 - Testing the validity of instruments
 - Testing the exogeneity of regressors

PROFESSIONAL SKILLS

- Ability to choose the relevant estimation method for a given model.
- Ability to determine the right specification of a model using the relevant testing procedures.

BIBLIOGRAPHY

- Microeconometrics, A.C. Cameron and P.K. Trivedi, Cambridge University Press, 2005
- Econometric Analysis of Cross Section and Panel Data, J. Wooldridge, the MIT Press, 2002.
- R. Carter-Hill, W.E. Griffiths, G.C. Lim, Principles of Econometrics, Wiley, 2011.

ORGANISATION

- 12 sessions of 2 hours each including small exercises.
- The evaluation for this course is partly based on an econometric essay on a topic chosen by the student, in association with the Software for Economists1 course.

FUNDAMENTAL PREREQUISITES

- Basics of linear econometrics : OLS, GLS, FGLS and associated tests for serial correlation and heteroscedasticity.

VOLUME OF TEACHINGS

- Lectures: 24 hours

TRAININGS

Master's degree: Economics

- Empirical and theoretical economics
- Economic policy analysis
- Econometrics, big data, statistics
- Quantitative finance and insurance

