Econometría Avanzada

Curso Académico: (2022 / 2023) **Fecha de revisión: 21-06-2021**

Departamento asignado a la asignatura: Departamento de Economía

Coordinador/a:

Tipo: Optativa Créditos ECTS : 6.0

Curso : Cuatrimestre :

REQUISITOS (ASIGNATURAS O MATERIAS CUYO CONOCIMIENTO SE PRESUPONE)

This course is designed for students with a strong background in econometrics and statistics acquired in previous courses: Mathematics for Economics I and II, Statistics I and II, Econometrics, Econometric Techniques and Quantitative Economics.

OBJETIVOS

This is an advanced course in econometrics which builds upon previous B.Sc. courses in econometrics (Econometrics, Econometric Techniques and Quantitative Economics.) The focus will be on theoretical foundations of econometrics, including the asymptotic theory behind inferences based on ordinary least squares (OLS), maximum likelihood (ML) and generalized method of moments (GMM). Single and multiple equation models are covered.

DESCRIPCIÓN DE CONTENIDOS: PROGRAMA

1. Finite sample properties of ordinary least squares (OLS): The classical regression model. The algebra of least squares. Finite sample properties of OLS. Hypothesis testing under normality. Relation to maximum likelihood. Generalized least squares.

2. Large sample theory: Review of limit theorems for sequences of random variables. Fundamental concepts in time-series analysis. Large-sample distribution of the OLS estimator. Hypothesis testing. Consistent estimation of the asymptotic variance of OLS estimators. Implications of conditional homoscedasticity. Testing conditional homoscedasticity. Least squares projection. Consistent estimates of projection coefficients. Testing for lack of autocorrelation.

3. Single-equation generalized method of moments (GMM): Endogeneity bias. The general formulation. Generalized method of moments defined. Large sample properties of GMM. Testing overidentified restrictions. Hypothesis testing by likelihood-ratio principle. Implications of conditional homoscedasticity.

4. Multiple-equations GMM: The multiple-equations model. Multiple-equation GMM defined. Large sample theory. Single-equation versus multiple-equations estimation. Special cases of multiple equations GMM: FIVE, 3SLS and SUR. Common coefficients.

ACTIVIDADES FORMATIVAS, METODOLOGÍA A UTILIZAR Y RÉGIMEN DE TUTORÍAS

Assignments are used to guide the study of the subject. Each week the student has to apply results and techniques discussed in the lectures. The course is of a methodological nature and does not require the use of computers.

SISTEMA DE EVALUACIÓN

Students will be assessed using two assignments, two quizzes and a final exam.

Assignments+Quizzes: 65%

Final Exam: 35%

Peso porcentual del Examen Final:	50
Peso porcentual del resto de la evaluación:	50

BIBLIOGRAFÍA BÁSICA

- Hayashi, F. Econometrics, Princeton University Press, Princeton, N.J., 2000
- J.W. Wooldridge Econometric Analysis of Cross-Section and Panel Data, The MIT Press, Cambridge, MA., 2002

BIBLIOGRAFÍA COMPLEMENTARIA

- C. Gourieroux and A. Monfort Statistics and Econometric Models, Vol. 1 and 2, Cambridge University Press, Cambridge, U.K., 1995
- J. Johnson and J. Dinardo Econometric Methods, MacGraw-Hill, New York. N.J., 1997
- J. Shao Mathematical Statistics, Springer, 2003
- P. Ruud An introduction to Classical Econometric Theory, Oxford University Press, Oxford, U.K., 2000
- R.C. Mittelhammer, G.G. Judge and D.J. Miller Econometrics Foundations, Cambridge University Press, Cambridge, U.K., 2000
- T. Amemiya Advanced Econometrics, Harvard University Press, Cambridge, MA., 1985
- T. Amemiya Advanced Econometrics, Harvard University Press, Cambridge, MA., 1985
- W. Greene Econometric Analysis, Pearson -Prentice Hill, Upper Daddle River, N.J., 1997

RECURSOS ELECTRÓNICOS BÁSICOS

- Miguel A. Delgado . Página web de la asignatura: http://www.eco.uc3m.es/docencia/Advan_Econ/