

Partial Identification and Moment Inequality Methods

Course title - Intitulé du cours	Partial Identification and Moment Inequality Methods
Level / Semester - Niveau /semestre	Mres/S1
School - Composante	Ecole d'Economie de Toulouse
Teacher - Enseignant responsable	Christian BONTEMPS
Other teacher(s) - Autre(s) enseignant(s)	
Other teacher(s) - Autre(s) enseignant(s)	
Other teacher(s) - Autre(s) enseignant(s)	
Other teacher(s) - Autre(s) enseignant(s)	
Lecture Hours - Volume Horaire CM	15h
TA Hours - Volume horaire TD	
TP Hours - Volume horaire TP	
Course Language - Langue du cours	
TA and/or TP Language - Langue des TD et/ou TP	English

Teaching staff contacts - Coordonnées de l'équipe pédagogique :

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Office Number: T.518

Office Hours: TBA

Preferred means of interaction: by email / prior appointment.

Course's Objectives - Objectifs du cours :

The purpose of this course is to introduce students to the literature on *partial identification*, a concept that has been developed over the past two decades as a relaxation of the traditional paradigm of *point identification*. Rather than delivering exact estimates, partial identification provides bounds for parameters or quantities of interest.

The course will begin by presenting the foundational concepts in the literature, along with the statistical particularities that distinguish this framework. We will then turn to more recent advances that seek to make these nonstandard econometric methods more practical and widely applicable. Special attention will be given to models featuring multiple equilibria and two-stage structures commonly used in empirical industrial organization, particularly following the influential work of Pakes.

The course will conclude with a discussion of recent methodological developments and a survey of open questions and promising directions for future research.

Prerequisites - Pré requis :

M2 Econometrics course, or equivalent.

Students must be comfortable with:

- Statistics that includes hypothesis testing
- General Method of Moments

Grading system - Modalités d'évaluation :

The final exam consists in a project discussed with the professor individually.

Bibliography/references - Bibliographie/références :

Andrews, D.W.K., and X. Shi, 2013, "Inference Based on Conditional Moment Inequalities", *Econometrica*, 81:609-666.

Andrews, D.W.K., and G. Soares, 2010, "Inference for Parameters Defined by Moment Inequalities Using Generalized Moment Selection", *Econometrica*, 78:119-157.

Andrews, D.W.K., and P. Jia Barwick, 2012, "Inference for Parameters Defined by Moment Inequalities: A Recommended Moment Selection Procedure", *Econometrica*, 80:2805-2826.

Beresteanu, A., and F. Molinari, 2008, "Asymptotic Properties for a Class of Partially Identified Models", *Econometrica*, 76:763-814.

Beresteanu, A., Molchanov O. and F. Molinari, 2011, "Sharp Identification Regions in Models with Convex Moment Predictions", *Econometrica*, 79:1785-1821.

Beresteanu, A., Molchanov O. and F. Molinari, 2012, "Partial Identification Using Random Set Theory", *Journal of Econometrics*, 166:17-32.

Bontemps, C., T. Magnac and E. Maurin, 2012, "Set Identified Linear Models", *Econometrica*, 138:2786-2807.

Bugni, F, I. Canay and X. Shi, 2015, "Inference for subvectors and other functions of partially identified parameters in moment inequality models", *Quantitative Economics*, 8:1-38.

Chernozhukov, V., H. Hong and E. Tamer, 2007, "Estimation and Confidence Regions for Parameter Sets in Econometric Models", *Econometrica*, 75:1243-1284.

Chernozhukov, V., D. Chetverikov and K. Kato, 2018, "Inference on Causal and Structural Parameters using many moment inequalities", *The Review of Economic Studies*, 86:1867-1900.

Manski, C.F., and E. Tamer, 2002, "Inference on Regressions with Interval Data on a Regressor or Outcome", *Econometrica*, 70:519-546.

Romano, J.P., and A.M. Shaikh, 2012, "Inference for the Identified Set in Partially Identified Econometric Models", *Econometrica*, 78:169-211.

Romano, J.P., A.M. Shaikh and M. Wolff, 2014, "A Practical Two-Step Method for Testing Moment Inequalities" *Econometrica*, 82:1979-2001.