



Advanced Studies Program

Microeconomic Policy Evaluation Methods for Observational Studies

COURSE INFORMATION

TEACHING STAFF

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SUMMARY OF COURSE CONTENT

The module considers microeconomic policy evaluation methods for observational studies, with binary as well multi-valued treatments. Starting from the potential outcomes framework, and the definition of various causal effects, it provides an in-depth treatment of the theory and practice of two variants of propensity score based estimation methods: matching and inverse probability weighted estimators. The finite sample performance of these estimators, and their sensitivity to the various assumptions underpinning them will be thoroughly investigated via Monte Carlo simulations.

PREREQUISITE

Knowledge of undergraduate level econometric theory, and basic of the Stata software.

CONTACT TIME

Teaching consists of 10 one and a half hours lectures and 5 two-hour computer-based practical sessions.

ASSESSMENT

The course is assessed in the form of **an individual coursework** which consists of replicating and or extending existing piece(s) of Monte Carlo Simulations that investigated the relative performance of some propensity-score based estimation methods of treatment effects estimators. The coursework should be submitted by email to the lecturer no later than **November 30, 2017**. Further guidelines will be given during the course. Late submissions of coursework carry penalties of 5 percentage points per working day late.

RECOMMENDED READINGS

- Angrist, Joshua D, and Jörn-Steffen Pischke. 2008. *Mostly Harmless Econometrics: An Empiricist's Companion* (Princeton University Press). **[Chapters 2; 3]**
- Austin, Peter C. 2013. 'The Performance Of Different Propensity Score Methods For Estimating Marginal Hazard Ratios', *Statistics In Medicine*, 32: 2837-49.
- Austin, Peter C, and Elizabeth A Stuart. 2015. 'Moving Towards Best Practice When Using Inverse Probability Of Treatment Weighting (IPTW) Using The Propensity Score To Estimate Causal Treatment Effects In Observational Studies', *Statistics In Medicine*, 34: 3661-79.
- Busso, Matias, John Dinardo, and Justin Mccrary. 2014. 'New Evidence On The Finite Sample Properties Of Propensity Score Reweighting and Matching Estimators', *The Review Of Economics and Statistics*, 96: 885-97.
- Cameron, A Colin, and Pravin K Trivedi. 2005. *Microeconometrics: Methods and Applications* (Cambridge University Press). **[Chapters 2; 25]**
- Cameron, Adrian Colin, and Pravin K Trivedi. 2010. *Microeconometrics Using Stata* (Stata Press College Station, TX). **[Chapter 4]**
- Cattaneo, Matias D. 2010. 'Efficient Semiparametric Estimation Of Multi-Valued Treatment Effects Under Ignorability', *Journal Of Econometrics*, 155: 138-54.
- Dehejia, Rajeev H. H. 2002. 'Propensity Score-Matching Methods For Nonexperimental Causal Studies', *The Review Of Economics and Statistics*, 84: 151-61.
- Frölich, Markus. 2004. 'Finite-Sample Properties Of Propensity-Score Matching and Weighting Estimators', *Review Of Economics and Statistics*, 86: 77-90.
- Girma, Sourafel, Yundan Gong, Holger Görg, and Sandra Lancheros. 2015. 'Estimating Direct and Indirect Effects Of Foreign Direct Investment On Firm Productivity In The Presence Of Interactions Between Firms', *Journal Of International Economics*, 95: 157-69.
- Huber, Martin, Michael Lechner, and Conny Wunsch. 2013. 'The Performance Of Estimators Based On The Propensity Score', *Journal Of Econometrics*, 175: 1-21.
- Imbens, G. W. 2000. 'The Role Of The Propensity Score In Estimating Dose-Response Functions', *Biometrika*, 87: 706-10.
- Imbens, Guido W, and Donald B Rubin. 2015. *Causal Inference In Statistics, Social, and Biomedical Sciences* (Cambridge University Press). **[Chapters 1-3;12-16;18;21-22]**
- Lee, Myoung-Jae. 2005. *Micro-Econometrics For Policy, Program, and Treatment Effects* (Oxford University Press On Demand). **[Chapters 2-4]**
- Morgan, Stephen L., and Christopher Winship. 2014. *Counterfactuals and Causal Inference: Methods and Principles For Social Research* (Cambridge University Press: Cambridge). **[Chapters 2;4;5;7;13]**

Rodríguez De Gil, Patricia, Aarti P Bellara, Rheta E Lanehart, Reginald S Lee, Eun Sook Kim, and Jeffrey D Kromrey. 2015. 'How Do Propensity Score Methods Measure Up In The Presence Of Measurement Error? A Monte Carlo Study', *Multivariate Behavioral Research*, 50: 520-32.

Sampson, Robert J. 2010. 'Gold Standard Myths: Observations On The Experimental Turn In Quantitative Criminology', *Journal Of Quantitative Criminology*, 26: 489-500.

Wooldridge, Jeffrey M. 2010. *Econometric Analysis Of Cross Section and Panel Data* (MIT Press). **[Chapter 18]**