

Evaluation of Labour Market Programmes

Theory and Practical Applications

Lecturer: Dr. Marco Caliendo

Wednesday, 13-19

Thursday, 9-18

Friday, 9-18

The aim of this course is to provide participants with a deeper understanding of econometric programme evaluation. We will use the potential outcome approach as a general principle to examine identification and estimation of treatment effects under various types of assumptions. The focus will be on matching estimators and specifically on propensity score matching.

The course will be split in six theoretical and five practical sessions. During the latter we are going to implement the discussed estimators with STATA. Hence, a basic knowledge of STATA (data handling, running do-files, etc.) is a pre-requisite for the course. The required ado-files (especially PSMATCH2) will be explained during the course.

Course outline:

Wednesday	
13.00 – 14.30	Introduction in Programme Evaluation Evaluation Framework Parameters of Interest Social Experiments Effect Heterogeneity Selection Bias on (Un)Observables
15.00– 16.30	Non-Experimental Evaluation Estimators Basics: BAE, CSE, DID Selection Models Instrumental Variables Regression Discontinuity
17.00 – 19.00	Practical Work I

Thursday	
9.00 – 10.30	The Principle of Unconfoundedness Justifying the CIA, Data Requirements Dimensionality Problem Covariate Matching vs. Propensity Score Matching Differences between Matching and Regression Choosing Among Alternative Non-Experimental Methods

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Thursday	
11.00 – 12.30	Practical Work II
14.00 – 15.30	Practical Guidance for the Implementation of Matching – Part I Propensity Score Estimation Matching Algorithms Overlap and Common Support
16.00 – 18.00	Practical Work III

Friday	
9.00 – 10.30	Practical Guidance for the Implementation of Matching – Part II Matching Quality Effect Estimation and Inference Sensitivity Analysis Combined Methods
11.00 – 12.30	Practical Work IV
14.00 – 15.30	Practical Work V
16.00 – 18.00	Further Issues and Final Discussion Programme Heterogeneity Dynamic Treatment Assignment Sequential Matching

Reading List – Short:

You will find attached a basic reading list. Even though the course will not presume knowledge of the reading list, it may be helpful for a better understanding to have read some of the papers. The papers which will be heavily discussed during the course are indicated with (*). For those of you who want to explore the topics in more detail, a more extensive reading list is available on request.

General Overviews

Heckman, J., R. LaLonde, and J. Smith (1999): „The Economics and Econometrics of Active Labor Market Programs,” in *Handbook of Labor Economics Vol.III*, ed. by O. Ashenfelter, and D. Card, pp. 1865-2097. Elsevier, Amsterdam.

(*) Blundell, R. and Costa Dias, M. (2002): „Alternative Approaches to Evaluation in Empirical Microeconomics,” *Portuguese Economic Journal* 1, pp. 91-115.

Potential Outcome Approach and Social Experiments

Burtless, G. (1995): „The Case for Randomized Field Trials in Economic and Policy Research,” *Journal of Economic Perspectives*, 9(2), pp. 63-84.

Holland, P. (1986): „Statistics and Causal Inference,” *Journal of the American Statistical Association*, 81(396), pp. 945-960.

(*) LaLonde, R. (1986): „Evaluating the Econometric Evaluations of Training Programs with Experimental Data,” *American Economic Review*, 76(4), pp. 604-620.

IV and Regression-Discontinuity

Angrist, J. D., G. W. Imbens, and D. B. Rubin (1996): „Identification of Causal Effects Using Instrumental Variables,” *Journal of the American Statistical Association*, 91(434), pp. 444-472.

Hahn, J., P. Todd, and W. Van der Klaauw (2001): „Identification and Estimation of Treatment Effects with a Regression-Discontinuity Design,” *Econometrica*, 69(1), pp. 201-209.

Matching

(*) Caliendo, M. and S. Kopeinig (2008): „Some Practical Guidance for the Implementation of Propensity Score Matching,” *Journal of Economic Surveys*, 22(1), 31-72..

(*) Dehejia, R. H., and S. Wahba (1999): „Causal Effects in Nonexperimental Studies: Reevaluating the Evaluation of Training Programs,” *Journal of the American Statistical Association*, 94(448), pp.1053-1062.

Dehejia, R. H., and S. Wahba (2002): „Propensity Score Matching Methods for Nonexperimental Causal Studies,” *The Review of Economics and Statistics*, 84(1), pp. 151-161.

Heckman, J., H. Ichimura, and P. Todd (1997): „Matching as an Econometric Evaluation Estimator: Evidence from Evaluating a Job Training Programme,” *Review of Economic Studies*, 64(4), pp. 605-654.

Heckman, J., H. Ichimura, J. Smith, and P. Todd (1998): „Characterizing Selection Bias Using Experimental Data,” *Econometrica*, 66(5), pp. 1017-1098.

Imbens, G. (2004): „Nonparametric Estimation of Average Treatment Effects under Exogeneity: A Review,” *The Review of Economics and Statistics* 86(1), pp. 4-29.

Lechner, M. (2002): „Some practical issues in the evaluation of heterogenous labour market programmes by matching methods,” *Journal of the Royal Statistical Society, A*, 165, pp. 59-82.

Rosenbaum, P., and D. Rubin (1983): „The Central Role of the Propensity Score in Observational Studies for Causal Effects,” *Biometrika*, 70(1), pp. 41-50.

Rubin, D. (1979): „Using Multivariate Matched Sampling and Regression Adjustment to Control Bias in Observational Studies,” *Journal of the American Statistical Association*, 74(366), pp. 318-328.

(*) Smith, J., and P. Todd (2005): „Does Matching Overcome LaLonde's Critique of Nonexperimental Estimators?,” *Journal of Econometrics*, 125(1-2), pp. 305-353. (and all the following replies and rejoinders)

STATA

Yaffee, R.A. (2002): „Getting Started with Stata for MS Windows: A Brief Introduction“, NYU, http://www.nyu.edu/its/socsci/Docs/Intro_stata5.pdf

Leuven, E., and B. Sianesi (2003): „PSMATCH2: Stata Module to Perform Full Mahalanobis and Propensity Score Matching, Common Support Graphing, and Covariate Imbalance Testing“, <http://ideas.repec.org/c/boc/bocode/s432001.html>

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