

IWH-DPE/CGDE

**Sascha O. Becker** (University of Warwick)

[www.sobecker.de](http://www.sobecker.de)

**9 to 11 July 2018**

## Short Course on the Econometric Methods to Estimate Causal Effects

### Goal

Familiarize participants with the theory and application of modern econometric evaluation techniques, including guided lab sessions (Stata).

### Format of sessions

Some sessions will review the theoretical background, other sessions will deal with (re-)estimation of published papers and understanding the identification strategy and how it is implemented in Stata code. We will re-estimate some classical papers as well as more recent work, some of which covers less commonly used material (e.g. synthetic control groups, basic machine learning) which turns out to be useful in various contexts.

### Monday 9 July 2018

09:00-16:00

### Tuesday 10 July 2018

09:00-16:00

### Wednesday 11 July 2018

09:00-16:00

### Exam

In the exam, you will be asked to replicate a paper, and write a review for a second paper.

### Venue

Halle Institute for Economic Research (IWH) – Member of the Leibniz Association, Kleine Maerkerstrasse 8, 06108 Halle (Saale), Germany, conference room (ground floor)

### Registration

Please contact Annett Hartung, Phone: +49 345 7753 751, e-mail: [annett.hartung@iwh-halle.de](mailto:annett.hartung@iwh-halle.de), until June 1, 2018.

The course is designed for at most 25 participants.

## Detailed Program

### Monday 9 July 2018

09:00-10:30 Session 1  
10:30-10:45 Coffee break  
10:45-12:00 Session 2  
12:00-13:00 Lunch  
13:00-14:30 Session 3  
14:30-14:45 Coffee break  
14:45-16:00 Session 4

### Tuesday 10 July 2018

09:00-10:30 Session 5  
10:30-10:45 Coffee break  
10:45-12:00 Session 6  
12:00-13:00 Lunch  
13:00-14:30 Session 7  
14:30-14:45 Coffee break  
14:45-16:00 Session 8

### Wednesday 11 July 2018

09:00-10:30 Session 9  
10:30-10:45 Coffee break  
10:45-12:00 Session 10  
12:00-13:00 Lunch  
13:00-14:30 Session 11  
14:30-14:45 Coffee break  
14:45-16:00 Session 12

## Potential list of papers to be covered, sorted by "method":

### Instrumental-variables estimation:

main paper for Stata analysis:

Becker, Sascha O. and Ludger Woessmann (2009) Was Weber Wrong? A Human Capital Theory of Protestant Economic History. *Quarterly Journal of Economics* 124(2), 531–596.

<http://qje.oxfordjournals.org/content/124/2/531.short>

additional reading(s):

Ashenfelter, Orley and Alan Krueger (1994) Estimates of the Economic Return to Schooling from a New Sample of Twins, *American Economic Review*, 84(5), 1157-1173. <http://www.jstor.org/stable/2117766>

Card, David (1995) Using Geographic Variation in College Proximity to Estimate the Return to Schooling, in Louis N. Christofides, E. Kenneth Grant, and Robert Swidinsky, eds., *Aspects of labour market behaviour: Essays in honour of John Vanderkamp*, Toronto, Buffalo and London: University of Toronto Press, 1995, pp. 201–222.

<http://www.nber.org/papers/w4483>

## **Difference-in-differences:**

main paper for Stata analysis:

Redding, Stephen J. and Daniel M. Sturm (2008) The Costs of Remoteness: Evidence from German Division and Reunification, *American Economic Review* 98(5), 1766–1797.

<https://www.aeaweb.org/articles?id=10.1257/aer.98.5.1766>

Card, David and Alan Krueger (1994) Minimum Wages and Employment: A Case Study of the Fast-Food Industry in New Jersey and Pennsylvania, *American Economic Review* 84(4), 772–793. <http://www.jstor.org/stable/2118030>

## **Propensity Score Matching:**

main paper for Stata analysis:

Becker, Sascha O. and Andrea Ichino (2002) Estimation of average treatment effects based on propensity scores. *Stata Journal* 2(4), 358–377. <http://www.stata-journal.com/article.html?article=st0026>

additional reading(s):

Dehejia, Rajeev H. and Sadek Wahba (1999) Causal Effects in Nonexperimental Studies: Reevaluating the Evaluation of Training Programs. *Journal of the American Statistical Association* 94(448), 1053–1062.

<http://www.jstor.org/stable/2669919>

## **Regression-Discontinuity Design:**

main paper for Stata analysis:

Angrist, Joshua and Victor Lavy (1999) Using Maimonides' rule to estimate the effect of class size on scholastic achievement. *Quarterly Journal of Economics* 114(2), 533–575. <http://www.jstor.org/stable/2587016>

additional reading(s):

Becker, Sascha O., Peter H. Egger and Maximilian von Ehrlich (2013) Absorptive Capacity and the Growth Effects of Regional Transfers: A Regression Discontinuity Design with Heterogeneous Treatment Effects. *American Economic Journal: Economic Policy*, 5(4): 29–77. <http://dx.doi.org/10.1257/pol.5.4.29>

Lee and Lemieux (2010) Regression Discontinuity Designs in Economics. *Journal of Economic Literature* 48(2): 281–355.

<http://www.aeaweb.org/articles.php?doi=10.1257/jel.48.2.281>

## **Synthetic Control Groups:**

main paper for Stata analysis:

Billmeier, Andreas and Tommaso Nannicini (2013) Assessing Economic Liberalization Episodes: A Synthetic Control Approach. *Review of Economics and Statistics* 95(3): 983–1001. [http://dx.doi.org/10.1162/REST\\_a\\_00324](http://dx.doi.org/10.1162/REST_a_00324)

additional reading(s):

Abadie, Alberto, Alexis Diamond and Jens Hainmueller (2010) Synthetic Control Methods for Comparative Case Studies: Estimating the Effect of California's Tobacco Control Program. *Journal of the American Statistical Association* 105(490): 493–505.

<http://dx.doi.org/10.1198/jasa.2009.ap08746>

## **Basic machine learning:**

main paper for Stata analysis:

Becker, Sascha O., Thiemo Fetzer, and Dennis Novy (2017) Who Voted for Brexit? A Comprehensive District-Level Analysis, *Economic Policy* 32(92): 601–650. <https://doi.org/10.1093/epolic/eix012>

## **(If time permits) Bounding:**

bounding for matching estimates:

Becker, Sascha O. and Marco Caliendo (2007) Sensitivity Analysis for Average Treatment Effects. *Stata Journal* 7(1), 71–83.

<http://www.stata-journal.com/article.html?article=st0121>