

Lecture Plan

ECON4136 – Applied statistical analysis for the social sciences

Edwin Leuven

Literature

- Angrist, Joshua D., and Jörn-Steffen Pischke. Mostly harmless econometrics: An empiricist's companion. Princeton University Press, 2008.
- Symposia: Con out of Economics, Journal of Economic Perspectives: Vol. 24 No. 2 (Spring 2010)

Background reading is indicated by (B) such as this textbook

- Bruce Hansen. Econometrics. <http://www.ssc.wisc.edu/~bhansen/econometrics/>

Prerequisites

Econ 4150 or equivalent. Statistics 2 or equivalent recommended.

Topics

1 Causality

- MHE, Ch.1
- Holland, P. (1986), "Statistics and Causal Influence," Journal of the American Statistical Association, 81, 945-960

2 Ordinary Least Squares

- MHE, Ch.2
- Freedman, David A. "Statistical models and shoe leather." *Sociological methodology* 21 (1991): 291-313. [link](#)
- Solon, Gary, Steven J. Haider and Jeffrey Wooldridge. (2013) What Are We Weighting For? NBER Working Paper No. 18859

3 Ordinary Least Squares – Applications

- Persico, N., A. Postwaite and D. Silverman. (2004). The Effect of Adolescent Experience on Labor Market Outcomes: The Case of Height. *Journal of Political Economy* 112(5). pp. 1019-1053

4 Bootstrap, Clustering, Robust SEs

- MHE, Ch. 8
- Stock, James H. 2010. "The Other Transformation in Econometric Practice: Robust Tools for Inference." *Journal of Economic Perspectives*, 24(2): 83-94.
- (B) Davidson, R. (2009), "Bootstrapping Econometric Methods," [GREQAM Document de Travail n°2009-33](#).
- (B) Hansen, Ch.10

5 Non-parametric density estimation and regression

- Hansen, Ch. 21, 11
- DiNardo, John, and Justin L. Tobias. 2001. "Nonparametric Density and Regression Estimation." *Journal of Economic Perspectives*, 15(4): 11-28.

6 Binary & Ordered Response Models

- Horowitz, Joel L., and N. E. Savin. "Binary response models: logits, probits and semi-parametrics." *The Journal of Economic Perspectives* 15.4 (2001): 43-56.

7 Instrumental Variables

- Hansen, Ch.16
- MHE, Ch.3,4
- Sovey, A.J. and D.P. Green (2011). Instrumental Variables Estimation in Political Science: A Readers' Guide. *American Journal of Political Science* 55(1). pp. 188–200
- Murray, Michael P. "Avoiding invalid instruments and coping with weak instruments." *The journal of economic perspectives* 20.4 (2006): 111-132.

8 Instrumental Variables – Heterogeneity

- MHE, Ch.3,4
- Angrist, Joshua D. "Lifetime earnings and the Vietnam era draft lottery: evidence from social security administrative records." *The American Economic Review* (1990): 313-336.
- Angrist, J.D. and A.B. Krueger (2001) Instrumental Variables and the Search for Identification: From Supply and Demand to Natural Experiments *Journal of Economic Perspectives* 15(4). pp 69–85.
- Angrist, Joshua D., Guido W. Imbens, and Donald B. Rubin. "Identification of causal effects using instrumental variables." *Journal of the American statistical Association* 91.434 (1996): 444-455.

9 Basic Panel Data Models

- Mundlak, Yair. "Empirical production function free of management bias." *Journal of Farm Economics* 43.1 (1961): 44-56.
- Wolfers, Justin. "Did Unilateral Divorce Laws Raise Divorce Rates? A Reconciliation and New Results." *American Economic Review* 96.5 (2006): 1802-1820.

10 Difference-in-Differences

- MHE, Ch. 5
- Bertrand, M., E. Duflo, and S. Mullainathan, (2004), "How Much Should We Trust Difference in Differences Estimates?" *Quarterly Journal of Economics*, 119, 249-275

11 Matching Methods

- Morgan, S.L. and D.J. Harding (2006), “Matching Estimators of Causal Effects: Prospects and Pitfalls in Theory and Practice,” *Sociological Methods & Research*, 35, 3-60
- Smith, J.A. and P.E. Todd (2005), “Does Matching Overcome LaLonde’s Critique of Nonexperimental Estimators,” *Journal of Econometrics*, 125, 305-353

12 Regression Discontinuity Design

- MHE, Ch. 6
- Imbens, G. and T. Lemieux (2008), “Regression Discontinuity Designs: A Guide to Practice,” *Journal of Econometrics*, 142, 615-635
- Lee, D.S. and T. Lemieux (2010), "Regression Discontinuity Designs in Economics," *Journal of Economic Literature*, 48, 28-355