<div align="center">

University of Michigan — Department of Economics

Econ679: Advanced Econometrics II

Winter 2017

</div>

Lecture: MW 8:30-10:00am in 171 Lorch

Andreas Hagemann (`hagem@umich.edu`)

Office hours: Tu, 2:00-3:00pm in 351c Lorch

Class web page: Canvas (`umich.instructure.com`)

Course objective: This is the second course of the second-year econometric theory field sequence in the Department of Economics. The first class (Econ678) will be offered again in Fall 2017. The main goal of this sequence is to provide students with the necessary background to: (i) take and pass the field examination in econometric theory, and (ii) carry out innovative research in theoretical and applied econometrics.

Econ679 provides an introduction to (i) resampling methods and asymptotic expansions, (ii) topics in empirical process theory, (iii) quantile regression, and (iv) stationary and nonstationary time series theory. Several results from statistical large-sample theory will also be discussed during the semester when necessary. Some basic references for each portion of the class are provided below.

Prerequisites: Econ671, Econ672. The course is not open to masters students.

Evaluations: Your final grade will be based on four problem sets (20 percent of the course grade) and a take-home final exam (80 percent). The problem sets may involve in-class presentations.

Course outline: The following is a tentative outline of the course readings. I will add or remove topics depending on how the course progresses. I might have to cancel classes on short notice this semester.

Resampling methods and asymptotic expansions:

Andrews, D. W. (2000) Inconsistency of the bootstrap when a parameter is on the boundary of the parameter space. *Econometrica 68*, 399–406.

Davidson, R. and J. G. MacKinnon (2006). Bootstrap methods in econometrics. In *Palgrave Handbooks of Econometrics*, ed. by T. C. Mills and K. D. Patterson. Palgrave Macmillan, Basingstoke, vol. 1, chap. 23.

Horowitz, J. L. (2001). The bootstrap. In *Handbook of Econometrics*, ed. by J. J. Heckman and E. E. Leamer. Amsterdam, North-Holland, vol. 5, chap. 52.

Lehmann, E. L. and J. P. Romano (2005). *Testing Statistical Hypotheses* (3rd ed.). Springer, New York.

Politis, D. N., and J. P. Romano (1994). Large sample confidence regions based on subsamples under minimal sssumptions. *Annals of Statistics 22*, 2031–2050.

van der Vaart, A. W. (1998). *Asymptotic Statistics*. Cambridge University Press.

Topics in empirical process theory:

Andrews, D. W. K. and D. Pollard (1994). An introduction to functional central limit theorems for dependent stochastic processes. *International Statistical Review 62*, 119–132.

van der Vaart, A. W. (1998). *Asymptotic Statistics*. Cambridge University Press.

van der Vaart, A. W. and J. A. Wellner (1996). *Weak Convergence and Empirical Processes: With Applications to Statistics*. Springer Series in Statistics. Springer, New York.

Quantile regression:

Chernozhukov, V. and C. Hansen (2013). Quantile models with endogeneity. *Annual Review of Economics 5*, 57–81.

Hjort, N., and D. Pollard (1993). Asymptotics for minimisers of convex processes. Statistical Research Report, University of Oslo.

Knight, K. (1998). Limiting distributions of l_1 regression estimators under general conditions. *Annals of Statistics 26*, 756–770.

Koenker, R. (2005). Quantile Regression. Cambridge University Press, New York.

Koenker, R. (2004). Quantile regression for longitudinal data. *Journal of Multivariate Analysis 91*, 74–89.

Stationary and nonstationary time series theory:

van der Vaart, A. W. (2013). Time series. Universiteit Leiden.

Andrews, D. W. (1993) Tests for parameter instability and structural change with unknown change point. *Econometrica 61*, 821–856.

Stock, J. H. (1994). Unit Roots, Structural Breaks, and Trends. In *Handbook of Econometrics*, ed. by R. F. Engle and D. L. McFadden. Amsterdam, North-Holland, vol. 4, chap. 46.