

EKT 816: Econometrics

Semester 1, 2019

Probability and Statistics Review

Distributions, expectations, quantiles. Laws of large numbers and the central limit theorem. Estimation: mean square error vs bias. Sufficient and ancillary statistics. Consistency and precision in estimation. Weighting and sample design. Identification. Hypothesis testing: size vs power.

Causality and Counterfactuals

Potential outcomes notation. Randomization delivers the ATE; brief aside on SUTVA, peer effects and general equilibrium. Examples of causal claims (especially implicit ones). Typical obstacles to estimating counterfactuals: simultaneity, measurement error, self-selection. Internal and external validity, and the value of understanding mechanisms. The importance of a clear research design. Another aside on partial identification and “structural estimation”. Prediction vs causation. Citation to @Manski1995.

Selection on Observables: Regression

Instrumental Variables

Panel Data Strategies

Repeated Cross Sections (Synthetic Panels)

Individual-Level Panel Data

Complications: lagged dependent variables.

Mover Designs

Event Studies

Applications