MIT 14.387   J. Angrist
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Agenda for First Half

I. Agnostic regression – a great place to start!

   Regression as Best Linear Predictor (BLP) for the Conditional Expectation Function (CEF)
   Quick review of large sample theory for OLS estimates

II. Causal regression (our main occupation); regression vs. matching

   Linking a regression model with a causal model
   The experimentalist view of non-experimental research
   Matching to estimate the effect of treatment on the treated
   Theoretical comparison of regression and matching
   The Angrist (1998) study of the effects of voluntary military service

III. Estimating the effect of training programs (the mother of econometric evaluation problems)

   Why training programs are hard to evaluate
   The Ashenfelter and Card (1985) training evaluation
   The credibility of non-experimental training evaluations; Lalonde (1986)
   Use of the propensity score in evaluation research
   The Dehejia and Wahba (1999) propensity-score study

IV. Instrumental variables (exploiting "nature's stream of experiments")

A. Constant-effects models

   IV and omitted variables bias: estimating a "long regression" without the controls
   Review of large-sample theory for IV
   The Wald estimator and grouped data
   Two-sample IV and related methods
   The Angrist (1990) study of the effects of Vietnam-era military service

B. Instrumental variables with heterogeneous potential outcomes

   Local average treatment effects; internal vs. external validity
   The compliers concept; identification of effects on the treated
   Models with variable treatment intensity; examples
   The Angrist and Krueger (1991) schooling study

V. Statistical problems and special topics

A. Bias in two-stage least squares; solutions
B. Clustering and the Moulton problem
C. IV for limited dependent variables and Quantile Treatment Effects
D. The propensity-score paradox
E. Regression-discontinuity methods