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Implementing Econometric Estimators in Stata

Writing a Stata command for methods that you use or develop disseminates your research to a huge audience. This short course shows how to write a Stata estimation command. No Stata or Mata programming experience is required, but it does help. After providing an introduction to basic Stata do-file programming, the course covers basic and advanced ado-file programming. Next, it provides an introduction to Mata, the byte-compiled matrix language that is part of Stata. Then the course shows how to implement linear and nonlinear statistical methods in Stata/Mata programs. Finally, the course discusses using Monte Carlo simulations to test the implementation.

Outline

Our goal is to write an estimation command that works with test, predict and margins

A quick introduction to Stata do-file programming

An introduction to Stata ado-file programming and to syntax

A Stata program that implements the ordinary least-squares (OLS) estimator

Writing a certification script

An introduction to Mata programming basics

Making our OLS program use Mata

More Mata programming examples

Mata programming (optimize)

A Stata/Mata program for Poisson regression

Making predict and margins work with our command

Monte Carlo simulations in Stata