

## Implementing tests with correct size in the simultaneous equations model

Marcelo J. Moreira  
Department of Economics  
Harvard University

Brian P. Poi  
Stata Corporation

**Abstract.** In this paper, we propose a fix to the size distortions of tests for structural parameters in the simultaneous equations model by computing critical value functions based on the conditional distribution of test statistics. The conditional tests can then be used to construct informative confidence regions for the structural parameter with correct coverage probability. Commands to implement these tests in Stata are also introduced.

**Keywords:** instrumental variables, weak instruments, similar tests, score test, Wald test, likelihood-ratio test, confidence regions, 2SLS estimator, LIML estimator