

Limited Information Econometrics

4th French Econometrics Conference, ENSAI Rennes
November 22-23 2012

Andrew Chesher, CeMMAP and UCL

Abstract

In the limited information models studied at the Cowles Commission in the 1940's the process delivering values of certain endogenous variables were left unspecified except that certain exogenous variables were posited to be instrumental in the process. These constructions were sensitive to the information content of economic theory and focused modeling effort on the structural relationships of primary interest.

The models were incomplete in the sense that they can deliver non-singleton sets of values of endogenous outcomes at particular values of observed and unobserved exogenous variables.

In this respect the limited information Cowles models and classical single equation instrumental variable models are similar to the more recently studied econometric models of strategic interaction which can deliver multiple equilibria but contain no specification of equilibrium selection.

I will set out some recent results which characterize the identifying power of these various types of incomplete model. One by-product is the extension of classical instrumental variable analysis to (i) models with endogenous variables and non-scalar heterogeneity, for example endogenous random coefficient and stochastic factor models, and (ii) models with discrete outcomes and endogenous variables, for example models of multiple discrete choice and fuzzy decisions.

Here are recent papers referred to in the talk.

A. Chesher and A. Rosen, "An instrumental variable random coefficients model for binary outcomes," 2012, CeMMAP Working Paper CWP34/12.
<http://www.cemmap.ac.uk/wps/cwp341212.pdf>

A. Chesher and A. Rosen, "Simultaneous equations for discrete outcomes: coherence, completeness and identification," 2012, CeMMAP Working Paper CWP21/12.
<http://www.cemmap.ac.uk/wps/cwp211212.pdf>

A. Chesher, A. Rosen and K. Smolinski, "An instrumental variable model for multiple discrete choice," 2011, CeMMAP Working Paper CWP39/11, forthcoming in Quantitative Economics.
<http://cemmap.ifs.org.uk/wps/cwp3911.pdf>