Measurement with Minimal Theory
by Ellen McGrattan

ABSTRACT: A central debate in applied macroeconomics is whether statistical tools that use minimal identifying assumptions are useful for isolating promising models within a broad class. In this paper, I extend the analysis of Chari, Kehoe, and McGrattan (2005) to compare four statistical methods—structural VARs, VARMAs, unrestricted state space methods, and restricted state space methods—all applied to data from the same business cycle model. The objective is to determine which, if any, of the methods can successfully uncover moments of the underlying economy. The methods differ in the amount of a priori theory that is imposed, with structural VARs imposing minimal assumptions and restricted state space methods imposing the maximal. The moments that I focus on are those typically reported in the business cycle literature. Preliminary results show that the identifying assumptions of structural VARs, VARMAs, and unrestricted state space methods are too minimal: they cannot robustly uncover many of the moments business cycle researchers are interested in measuring.

Related References:

Chari, V. V, Patrick J. Kehoe, and Ellen R. McGrattan. 2005. A Critique of Structural VARS Using Real Business Cycle Theory, Staff Report #364, Federal Reserve Bank of Minneapolis. (www.minneapolisfed.org/research/sr/sr364.pdf)

McGrattan, Ellen. 2005. Comment on Gali and Rabanal's 'Technology Shocks and Aggregate Fluctuations: How Well Does the RBC Model Fit Postwar U.S. Data', *NBER Macroeconomics Annual 2004*, MIT Press, 19: 289-308. (www.minneapolisfed.org/research/sr/sr338.pdf)

Chari, V. V, Patrick J. Kehoe, and Ellen R. McGrattan. forthcoming. Business Cycle Accounting, *Econometrica*. (www.minneapolisfed.org/research/sr/sr328.pdf)