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HeiKaMEtrics-Seminar

Joint Heidelberg, Karlsruhe and Mannheim research seminar in Econometrics

Bootstrapping for Vector Autoregression Estimates in Generalized Dynamic Factor Models

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16:20 – 17:00
Room S 031, L7, 3-5
University of Mannheim

Abstract:

We consider bootstrap methods for the parameters of vector autoregressive models for a static factor process, which is an unobserved part of a generalized dynamic factor model as proposed in Forni et al. (2000), Forni and Lippi (2001). In such models the panel of wide-sense stationary time series can be large. The idiosyncratic components are weakly dependent in their cross-sectional and time dimensions. The static factors, which are modelled by a vector autoregressive system, need to be estimated before estimating the autoregressive parameters.

We derive the asymptotic distribution of the autoregressive parameter estimates and analyse under which circumstances the autoregressive parameter estimates are asymptotically biased and what influences this bias. This is an extension of the univariate case presented in Shintani and Guo (2016). Bootstrap methods are discussed which account for that asymptotic bias. Their asymptotic validity is shown using the asymptotic framework of Bai (2003), Goncalves and Perron (2014) and results from Goncalves and Perron (2016).