

Identification and Canonical Structures for Nonstationary Systems

D. S. Poskitt

In this paper canonical forms for nonstationary vector time series models are considered. The structure of dynamic simultaneous equations or ARMAX processes that start from a given set of initial conditions and evolve over a fixed finite time horizon is considered. The results are derived by amalgamating ideas from the theory of stochastic difference equations with adaptations of the Kronecker index theory of dynamic systems. The analysis extends the current theory on the identification of vector ARMAX models to nonstationary processes. Examples illustrating the theory are given and the application of the theory to the analysis of unit-root, cointegrated nonstationary time series models is also considered.

Correspondence:

Department of Statistics & Econometrics
The Australian National University
Canberra ACT 0200
AUSTRALIA
Tel.: +61 2 6249 3471
Don.Poskitt@anu.edu.au