

One-sided Representations of Generalized Dynamic Factor Models

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Factor model methods recently have become extremely popular in the theory and practice of large panels of time series data. Those methods rely on various models which all are particular cases of the Generalized Dynamic Factor Model (GDFM) introduced in Forni, Hallin, Lippi and Reichlin (2000). In that paper, however, estimation relies on Brillinger's concept of dynamic principal components, which produces filters that are in general two-sided and therefore yield poor performances at the end of the observation period and hardly can be used for forecasting purposes. The lecture is based on a paper by M. Forni, M. Hallin, M. Lippi and P. Zaffaroni, which provides a solution to this problem. The paper shows how, based on recent results on singular stationary processes with rational spectra, one-sided estimators are possible for the parameters and the common shocks in the GDFM. Consistency is obtained, along with rates. An empirical section, based on US macroeconomic time series, compares estimates based on our model with those based on the usual static-representation restriction, and provide convincing evidence that the assumptions underlying the latter are not supported by the data.