## One-Sided Representations of Generalized Dynamic Factor Models

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Abstract. 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 prediction purposes. In this talk, we show how to remedy this problem, and how, based on recent results on singular stationary processes with rational spectra, one-sided estimators can be constructed for the parameters and the common shocks in the GDFM. Consistency is obtained, along with rates. An empirical example, based on US macroeconomic time series, compares estimates based on our model with those based on the usual static-representation restriction, and provides convincing evidence that the assumptions underlying the latter are not supported by the data.

JEL subject classification : C0, C01, E0.

Key words and phrases : Generalized dynamic factor models. Vector processes with singular spectral density. One-sided representations for dynamic factor models. consistency and rates for estimators of dynamic factor models.

<sup>\*</sup>Research supported by the Sonderforschungsbereich "Statistical modelling of nonlinear dynamic processes" (SFB 823) of the Deutsche Forschungsgemeinschaft, and by a Discovery Grant of the Australian Research Council.

 $<sup>^\</sup>dagger \mathrm{Research}$  supported by the ESRC Grant RES-000-22-3219.

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