Dynamic Factors in the Presence of Blocks
with an Application to Market Liquidity

Marc Hallin∗†
Université Libre de Bruxelles
Brussels, Belgium
March 24, 2010

Abstract
Macroeconometric data often come under the form of large panels of time series, themselves
decomposing into smaller but still quite large subpanels or blocks. We show how the dy-
namic factor analysis method proposed in Forni et al. (Review of Economics and Statistics
2000), combined with the identification method of Hallin and Liška (JASA 2007), allows
for identifying and estimating joint and block-specific common factors. This leads to a
more sophisticated analysis of the structures of dynamic interrelations within and between
the blocks in such datasets, along with an informative decomposition of explained variances.
The method is illustrated with an analysis of the Industrial Production Index data for France,
Germany, and Italy, and an application to market liquidity.

Key Words: Panel data; Time series; High dimensional data; Dynamic factor model; Business
cycle; Block specific factors; Dynamic principal components; Information criterion.

References
of Econometrics, special issue on Factor Models, to appear.

∗Currently visiting ORFE, Princeton University.
†ECARES, ECORE, CentER, and Académie Royale de Belgique.