# Instruction for Matlab Codes for Estimating the Generalized Dynamic Factor Model

## List of functions

- `gdfm_twosided.m` estimates the Generalized Dynamic Factor Model as in Forni, Hallin, Lippi, and Reichlin (2000);
- `gdfm_onesided.m` estimates and forecasts the Generalized Dynamic Factor Model as in Forni, Hallin, Lippi, and Reichlin (2005);
- `gdfm_unrestricted.m` estimates and forecasts the Generalized Dynamic Factor Model as in Forni, Hallin, Lippi, and Zaffaroni (2017);
- `numfactors.m` estimates the number of factors as in Hallin and Liška (2007);
- `spectral.m` computes the spectral density decomposition used by all other functions;
- `exampleAR.m` and `exampleMA.m` examples with AR or MA factor loadings.

## References


Forni Hallin Lippi Reichlin (2000) "The Generalized Dynamic Factor Model: Identification and Estimation", *The Review of Economics and Statistics*, 82, 540-554.

Forni Hallin Lippi Reichlin (2005) "The Generalized Dynamic Factor Model: One-sided Estimation and Forecasting", *Journal of the American Statistical Association*, 100, 830-840.

Forni Hallin Lippi Zaffaroni (2017) "Dynamic Factor Models with Infinite-Dimensional Factor Space: Asymptotic Analysis", *Journal of Econometrics*, 199, 74-92.

Hallin and Liška (2007) "Determining the Number of Factors in the General Dynamic Factor Model", *Journal of the American Statistical Association*, 102, 603-617.


## Credits

The codes were written by Matteo Barigozzi, Mario Forni, Roman Liška, and Matteo Luciani, were commented and debugged by Matteo Barigozzi and are available from `www.barigozzi.eu/codes.html`.