

Short-Term Macroeconomic Forecasting and Turning-Point Detection after the Great Recession

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Discussion by G. Chevillon

1. The model

Empirical macro model for real variables y_{it} that combines

- Common I(1) latent factor c_t
 - ▶ with short-run dynamics, enters as distributed lag
 - ▶ innovations have 2 volatility regimes (high/low)
 - ▶ drift has 4 regimes: high/low in each for each volatility level
 - ▶ regimes are Markov-Switching

$$\phi_c(L) \Delta c_t = \mu_{S_t, V_t} + \sqrt{1 + hV_t} \sigma_c \eta_t^c$$

- smooth idiosyncratic I(2) trend in GDP (slowly varying long term growth rate)

$$\begin{aligned} \Delta y_{it} &= a_{it} + \gamma_i(L) \Delta c_t + u_{it} \\ \Delta a_{it} &\sim iid, \quad u_{it} \sim AR \end{aligned}$$

- Novelty is the regimes in μ, V

2. Application

- 5-variables, mixed frequency (4 monthly variables – GDP quarterly but disaggregated)
- Real-time vintages when available (post 1991 for GDP, post 1999 for monthly)
- Bayesian estimation
- Assumptions:
 - ▶ Identification: recession is more severe in high volatility regime (lower μ)
 - ▶ Innovations to u_{it} , Δa_{it} , Δc_t orthogonal
- Assessment:
 - ▶ One Information Criterion
 - ▶ Forecasting Exercise post 2007

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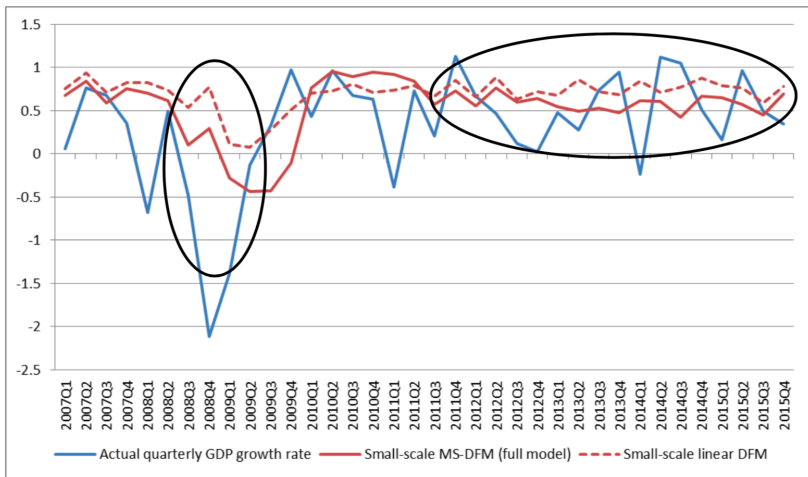
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 - ▶ discount the forecast error for 2008 since it affects comparisons (Figure 5).

Figure 5: Comparison of point forecasts at a 6-month horizon: linear DFM vs. full MS-DFM specification⁶



⁶ One forecast is obtained at each step of the Gibbs Sampler and Figure 5 reports averages over all draws. The first 2000 draws of the Gibbs Sampler are discarded and the computation of the average forecasts is based on the next 5000 draws.

Conclusion

- Simple & adaptive model that captures interesting features of the data
- Estimation also seems quick here
- Needs to be explored more,
 - ▶ in particular since it might be simplified (Dev IC)
 - ▶ extended forecast exercise (more models, more variables?)