Discussion of Juillard and Maih
"Estimating DSGE Models with Observed Real-Time Expectation Data"

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- Builds on Maih (2010) "Conditional Forecasts in DSGE Models", who shows how to compute forecasts in DSGE models conditional on a multivariate density for a subset of observables

Summary of paper
This interesting paper...

- Builds on Maih (2010) "Conditional Forecasts in DSGE Models", who shows how to compute forecasts in DSGE models conditional on a multivariate density for a subset of observables
  - Key contribution is to show how to condition on a density and not just the mean in a DSGE framework. Andersson, Palmqvist and Waggoner (2008) show how to do this in a VAR framework

- Uses these techniques to exploit real-time expectations (SPF) when estimating a DSGE model

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    - Assess to what extent the fit (LML, RMSFEs) of the SW model is improved by taking SPF into account
    - Estimate how far into the future agents would like to make use of SPF forecasts for current decisions

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  - Provide hints if model misspecification likely to be important

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  - Improvement in RMSFEs remarkable for hours worked per capita, inflation and FFR. Given my work with Adolfson and Villani (Econometric Reviews, 2007) on the forecasting performance of DSGE models, I found the combination of sharp reductions in RMSFEs and modest increases in LML surprising

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- Posterior mode of parameters substantially affected when conditioning information is used

Discussion outline

- Data issue
- The predictive content of SPF forecasts
- Role of conditioning information in model
- Expected shocks (news) in NK DSGE models
- Concluding remarks

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  - Alternative: Allow the SPF forecasts in model to be based on observables measured with errors

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- Specifically, you could use two-sided filtered shocks $\hat{\varepsilon}$ to run regressions

$$\hat{\varepsilon}_{t,t} = \alpha + \beta \hat{\varepsilon}_{t,t-j} + u_t$$

for $j = 1, ..., s$ where s is number of quarters ahead that you exploit SPF forecasts

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  - I would be concerned if the R^2 is low for $\alpha = 0$ and $\beta = 1$

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  - Would your model match unconditional moments in the data if you simulated it under the assumption that agents in the model did not take SPF expectations into account, i.e. should we think about the news that gets added by the real-time data as a source of fluctuations or as genuine useful conditioning information

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- Examplify this in the simple trinity New Keynesian model:

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\begin{aligned}
x_t &= \beta_f E_t x_{t+1} + (1 - \beta_f) x_{t-1} - \beta_r (R_t - E_t \pi_{t+1}) + \varepsilon_{x,t} \\
\pi_t &= \omega_f E_t \pi_{t+1} + (1 - \omega_f) \pi_{t-1} + \omega_x x_t \\
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- Parameterization adopted from Lindé (2005, JME)

Impact of negative demand shocks in baseline Trinity NK Model

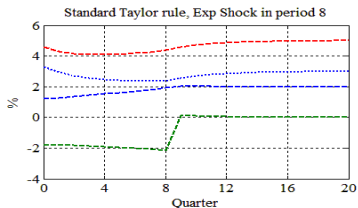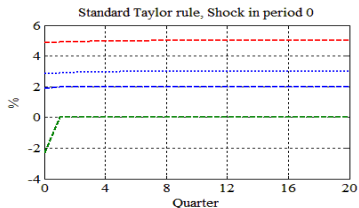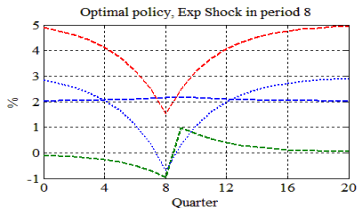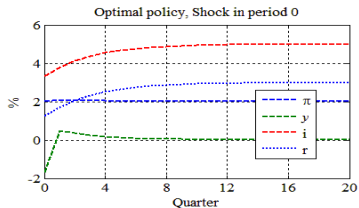Simulating the effects of -2.3 shock in period 0 and expected shock in period 8

Responses to Actual (left panels) and Expected (right panels) Demand Shocks in NK Model
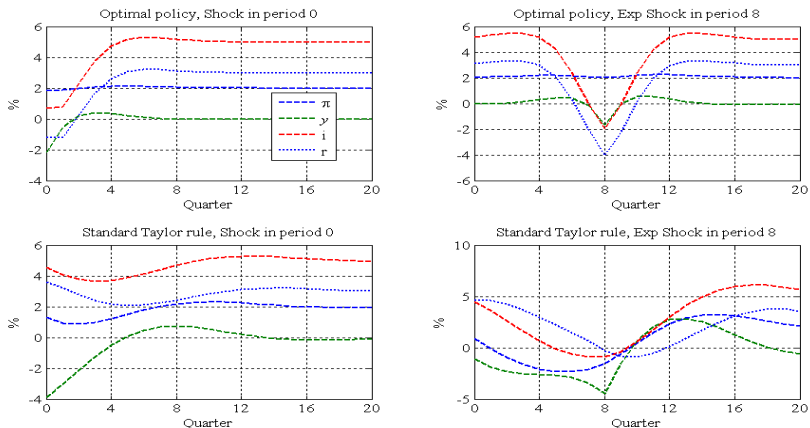
Redoing exercise in completely forward-looking Trinity NK Model

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- Potentially very useful method for central banks in the business of inflation forecast targeting