Discussion of
"News, technology adoption and economic fluctuations" by Diego Comin, Mark Gertler, Ana Maria Santacreu

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Summary of main results

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- ▶ Calibrated version generates plausible degree of comovement of stock prices and stock market volatility.

- ▶ Embedding this mechanism in a model with additional frictions leads to persistent responses of output, components, labor and productivity.

- ▶ In an estimated version, news about technologies available in the future is the dominant source of business cycle fluctuations.

Focus of my comments

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- Level vs. growth shocks

- Empirical evaluation: Is the VARMA representation invertible?

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- ▶ Comin-Gertler-Santacreu: Standard preferences, but endogenous adoption of new technologies in producing capital goods.

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▶ But in CGS, there are no disappointed expectations: Technologies may disappear, but only after they existed.

▶ Could the CGS framework generate self-fulfilling expectational cycles? Technology adoption decision is endogenous.

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- ▶ What do responses look like when the expectations are about highly serially correlated increases in future technology?

Level vs. growth shocks

▶ Example (Edge-Laubach-Williams JME 2007): Standard RBC
(or two-sector) model, agents face signal extraction problem:

$$\ln A_t = \ln A_{t-1} + g_t + \epsilon_t$$
$$g_t = g_{t-1} + \eta_t$$

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▶ Three informational assumptions:

   ▶ Full information (ϵ, η are observed)
   ▶ Kalman gain estimated based on published estimates of trend productivity growth ($\lambda = 0.11$)
   ▶ Higher Kalman gain (faster updating, $\lambda = 0.18$.)

Responses to a level shock: Alternative information assumptions
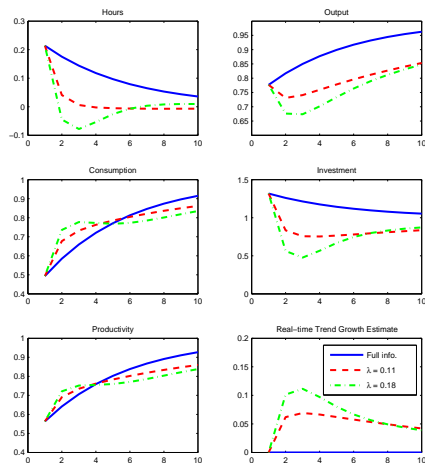
Responses to a growth shock: Alternative information assumptions
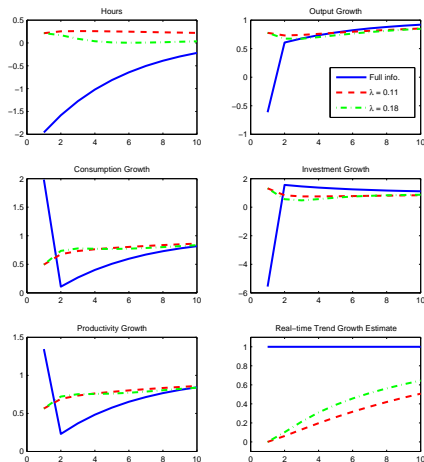
Can we trust the empirical results?

▶ Jaimovich-Rebelo and Christiano et al. are only analyzing properties of calibrated models with news shocks. Beaudry-Portier estimate a few parameters by SMM, but don't assess importance of news shocks. CGS estimate fully specified model using Bayesian methods: much more ambitious.

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- ▶ How are "news shocks" identified?

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▶ In general, news shock models suffer from the problem that information set of agents in the models is larger than information set of econometrician. Leads to noninvertible VARMA representation of the model, statistical inference based on VARs is invalid (Hansen-Sargent 1981, 1991, Fernandez-Villaverde et al "ABCD" paper, Leeper 2008).

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▶ Questions:

  ▶ Is this particular "news" model subject to noninvertibility problem? (Other "news" models presumably are)

  ▶ Is this problem also an issue in Bayesian estimation? Likelihood function is based on theoretical VAR implied by the linearized model, so presumably "yes."