Discussion of
"Indeterminacy and Learning"
by Thomas Lubik and Christian Matthes

Ryan Chahrour

Boston College

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Summary

- Old debate about **bad luck** vs **bad policy** during great inflation.

- Give the Fed some *some* credit...no ad-hoc policy rule.

- But Fed has mis-measured data and structural uncertainty.

- Conclude: bad luck $\rightarrow$ bad policy.

Approach

1. CB estimates a VAR in $[\pi_t, \Delta y_t, i_t]$ in period τ using noisy data.

2. Compute optimal policy based on "VAR economy."

3. Import the decision rule

$$i_\tau^{CB} = \alpha_\tau(L)\pi_t + \beta_\tau(L)\Delta y_t + \gamma_\tau(L)i_t$$

into the RE economy.

4. Use RE economy with i_τ^{CB} as DGP for one period. ("Myopic" private sector)

5. Repeat.

Main Comment I

Rule i_τ^{CB} is not a complete description of policy.

Main Comment I

Some extreme promise is needed to rule out explosive paths. (Cochrane 2011)

In the VAR economy, the CB doesn't know it needs to make such a promise.

If agents' believe policy generated from a backwards-looking view of economy, can we immediately conclude there is indeterminacy?

Main Comment II

Central bank does not know expectations matter.

- VAR says that π_t and Δy_t depend on their lags, policy, and shocks.

- But this VAR represents neither the structural equations, nor the MSV.

- Alternative: CB knows the structural equations but not the parameters.

Main Comment II: Exercise

CB estimates:

$$\pi_t = \hat{c}_\pi + \hat{a}_1 E_t[\pi_{t+1}] + \hat{a}_2 \pi_{t-1} + \hat{a}_3 y_t + \hat{a}_4 z_t + \mu_{1,t}$$

$$y_t = \hat{c}_y + \hat{b}_1 i_t + \hat{b}_2 E_t[\pi_{t+1}] + \hat{b}_3 E_t[y_{t+1}] + \hat{b}_4 g_t + \mu_{2,t}$$

where all variables (including expectations) are measured with error.

Main Comment II: Exercise

CB solves optimal policy under commitment and implements the optimal policy rule in the economy.

Some details

- Introduces lagged lagrange multipliers...I assume CB respects their value under new policy.
- Description of optimal policy is not a simple "extended taylor" rule; involves expectations. I take those expectations according to the CB's own model.
- Giannoni, Woodford "Target Criteria" an alternative (equivalent?) formulation.

Main Comment II: Simulation

Simulate from model with parameters as estimated in paper. Consider two alternative specifications of policy; both have learning and noisy data.

- Backwards looking policy $\rightarrow$
  Unconditionally, 36% in indeterminate region

- Forwards looking policy $\rightarrow$
  In 600,000 simulations, zero periods spend in indeterminacy.

Main Comment II: Intuition

Taylor principle doesn't depend on specific parameters of model.

Conclusions

- Very interesting and creative idea, with clean empirical implementation.

- Bad luck + **backwards looking rule** $\rightarrow$ bad policy.