Discussion of Melecky, Palenzuela, and Söderström, "Monetary Policy Credibility and the Macroeconomy."

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[1] Any views expressed do not necessarily reflect the views of the FRB-St. Louis or the Board of Governors of the Federal Reserve System.

Main ideas

- Inflation targeting anchors inflation expectations.
- Anchored expectations should lead to less macroeconomic volatility.
- Sometimes this happens ... Canada, Sweden.
- But sometimes non-inflation targeting countries have low volatility ... the U.S.
- Why?
- Is it possible to not announce an inflation target but still obtain most of the low-volatility benefit?

What the authors do

- Estimated DSGE model of Smets and Wouters (2003, *JEEA*).
  - Advantage: Larger, estimated model.
- Private sector agents observe short-term interest rates.
- But the agents cannot distinguish between monetary policy shocks and changes in the inflation target.
  - A strength: Compelling, natural way to view MP uncertainty.
  - Allows comparison of cases where the target is credibly announced versus cases where the private sector must estimate the inflation target in real time.

More on what the authors do

- Agents use the Kalman filter to estimate the inflation objective.
  - Optimal for the linearized system with Normal disturbances.
- Expectations based on these estimates feed back into all decisions in the economy.
  - All variables affected to some degree.

Main findings

- If the private sector correctly understands the stochastic processes governing the MP shocks and the target ...
  - ... then the benefits of announcing the target are small.
  - *Shocking*.
  - Sounds like the U.S. case?
  - Basic logic: MP shocks account for a small fraction of the volatility in the economy.
  - Compelling? Depends how seriously you take the model.
- Remark: Artifact of a model fit to a low inflation economy?
  - Ok when thinking about the U.S.
  - Inflation targeting often adopted to "import credibility" in higher inflation economies.

More on main findings

- If the private sector overestimates the volatility of the inflation target ...
  - ... then the benefits of announcing the target may be large.
  - This is a story about misspecification.
  - Agents would eventually learn the true volatility of the inflation target, even without an announcement.
  - So the gains would be limited even in this case.
- Optimized policy rules under imperfect information tend to respond more aggressively to inflation.
  - But only when agents overestimate the volatility of the inflation target.
  - What is the advantage of this aggressive policy versus announcing the target outright? No advantage.

Log-linearized model

- Habit formation.
- Wage stickiness.
- Capital stock adjustment costs.
- Calvo price stickiness.
- Eight structural shocks. Price and wage markup, equity premium, preferences, investment adjustment cost, technology, labor supply, and government spending. Three WN. Five AR1.
  - We do not know a lot about these shocks.

Monetary policy rule

- The rule is

$$R_t = (1 - g_r)\left\{\pi_t^* + g_\pi\left[\pi_{t-1} - \pi_t^*\right] + g_y\left[Y_{t-1} - Y_{t-1}^n\right]\right\} + g_r R_{t-1} + \varepsilon_t^r.$$

- π_t^* is the monetary authority's current inflation objective.
  - It follows a very persistent AR1.
  - ε_t^r is a not-too-persistent AR1.
- We can write

$$\hat{\varepsilon}_t = (1 - g_r)(1 - g_\pi)\pi_t^* + \varepsilon_t^r.$$

- The agents must decide to what degree observed $\hat{\varepsilon}_t$ is permanent versus transitory.

Parameter values

- Nearly all parameter values from Smets and Wouters (2003, *JEEA*).
- Euro Area data 1980:2 to 1999:4.
  - Could be viewed as pre-Euro estimates.
  - Results would then pertain to the benefit of explicit inflation targeting at the dawn of the Euro.
- $\sigma_r = 0.081$ versus $\sigma_* = 0.017$, so $\sigma_r / \sigma_* = 4.76$.
  - The inflation target is "not too uncertain."
  - Important to the results.

Information and learning

- The authors feed the Kalman estimates of π_t^* and ε_t^r into expectations of future monetary policy in simulations.
- An announced inflation target π^* eliminates the information problem, "perfect information."
  - Announcing the target has to be better, but how much better?
  - Remark: Some in the U.S. have argued that announcing the target may lead to a worse equilibrium.

More on information and learning

- It may be an interesting extension to consider a standard learning exercise using Evans and Honkapohja (2001).
- Write the model as a linear expectational difference equation.
- Endow the private sector with a perceived law of motion corresponding to the MSV solution.
- Calculate the actual law of motion induced.
- Calculate expectational stability (is it affected by σ_*?).
- Simulate. Results may differ from those found here.

Detour

- Kalman filtering has claims to optimality in linear-Normal settings. "Bayesian."
- Why not do something like this in all recursive learning settings?
- Then one could make claims to optimality of the learning process.
- Literature has been plagued with additional issues.
- But formulated correctly, standard expectational stability results go through.
- See my work with Jacek Suda, "Macroeconomic stability of systems with Bayesian learners."

Welfare

- The authors are working on computing welfare.
- Presumably the welfare gain is small.
- Even with agents initially overestimating σ_*, the welfare gains are probably small.
- Suggestion: Report results for a range of values for σ_*.
  - Countries with large σ_* would be the ones to benefit from announcing inflation targets.
  - What is the cutoff value for σ_*?

Summary

- Clean, clear analysis produces an interesting finding which challenges conventional wisdom.
- Supports Greenspan's "no gains from announcing an inflation target" position for the U.S.
- As written, suggests no gains for any country, which is too strong.
  - Not clear in this draft if a large σ_* country would benefit from announcing a target, perhaps with a smaller σ_*.

More summary

- Evans-Honkapohja style analysis may be interesting in this context.
- Complements an analysis by Eusepi and Preston (2007):
  - What does good communication do for us?
  - Answer: Simplifies the learning or inference problem of the private sector.
  - Much better than Morris and Shin as a benchmark model of communication.