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.
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

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

- \( \pi_t^* \) is the monetary authority’s current inflation objective.
  - It follows a very persistent AR1.
  - \( \varepsilon_t^r \) 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*).
  - 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 $\pi_t^*$ and $\varepsilon_t^*$ into expectations of future monetary policy in simulations.
- An announced inflation target $\pi^*$ 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 $\sigma$?).
- Simulate. Results may differ from those found here.
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.”
The authors are working on computing welfare.

Presumably the welfare gain is small.

Even with agents initially overestimating $\sigma_*$, the welfare gains are probably small.

Suggestion: Report results for a range of values for $\sigma_*$.

- Countries with large $\sigma_*$ would be the ones to benefit from announcing inflation targets.
- What is the cutoff value for $\sigma_*$?
• 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 $\sigma_*$ country would benefit from announcing a target, perhaps with a smaller $\sigma_*$.
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.