Monetary policy when Market Street begs to differ

Oreste Tristani and David Vestin

Disclaimer: The views expressed do not necessarily correspond to those of the ECB or the Riksbank
Motivation: Inflation targeting central banks

- Emphasizes forecast – typically tries to get inflation back to target before "too long"

- Use a consistent approach, with own assumption about future monetary policy

- But: models rest on perfect information

- But sometimes: "Markets", or the private sector, does not agree.

- Then what? Interpretation, implications for forecast, optimal policy?
Reality check: markets might not agree

• Sometimes large observed differences between central bank forecasts and market interest (forward) rates.

• Markets look at the central bank and the central bank looks at markets, how to resolve discrepancy?

• Research questions we aim to explore in this paper:
  • Q1: Build a model that can account for such discrepancies
  • Q2: What do they imply for the stance of monetary policy?
  • Q3: What do they imply for the optimal conduct of monetary policy?
Example 1: Riksbank July 2009
Example 2: Riksbank december 2013
Data takeaway

- Often relatively large differences (also FED, other countries)

- Many times: agreement about the short-run, but widening differences further out
Need a model that allows differences in views

- In reality, shocks are unobservable – which is why econometricians use Kalman...
- We focus on shock-uncertainty, following Kohlhas (2017)
- RE model must allow for dispersed information – not just imperfect
  - Otherwise all agents use the Kalman-filter identically, arriving at the same conclusion...
- Key references: Lorenzoni (2009), Nimark (2016), Angeletos (various)
Model

• Woodford handbook-chapter (MP). New-Keynesian model with sticky prices, habits, inflation indexation
  • Euler equation
  • Phillips curve
  • Interest rate rule

• Shocks
  • Consumption
  • Labour
  • Technology
  • monetary policy
Information assumptions

• Private sector and cb receive imperfect signals of technology:

\[ \theta_{it} = \theta_t + \varepsilon_{t}^{\theta_i} \]

\[ \theta_{cbt} = \theta_t + \varepsilon_{t}^{\theta_{cb}} \]

• Similar structure for other aggregate shocks

• Central bank reacts to deviations from it’s own expectations of t+1 inflation and output-gaps.

• Private sector only observes current actions of the central bank (does not read the inflation report!)
Solution method

- Aggregation over all private agents gives Euler equation and Phillips’ curve as in standard RE, but with private sector expectations

- Interaction between private sector and central bank expectations leads to infinite state

- Resolve using Nimark: cut off after k rounds, compare with k+1 and if the solution is similar, stop...
More propagation relative to RE benchmark

Example: True technology shock = 0.02, Private sector noise > central bank noise
Kalman filter leads to different interpretation...
... which leads to different forecasts
New shocks: a way to get growing differences?

- Assume instead a technology ”news shock” about t+2

- Shock imperfectly observed, different precision for central bank and private sector
News shocks gives larger differences...

IRFs to $\epsilon_{\delta,t+2}^{\text{shock}}$ shock, order 8

$E_{t+j}[y]\_\text{CB}$

$E_{t+j}[\pi]\_\text{CB}$

$E_{t+j}[\pi]\_p$

$E_{t+j}[\pi]$
Implications for central banks

• Important to try to understand the source of the discrepancy between central bank and private sector forecasts

• Use markets to cross-check, and learn, from, don’t underestimate the information

• Future work:
  • Consider releasing the central bank forecast, but will likely make it harder to explain data
  • Implications for the stance of monetary policy
  • Implications for conduct of monetary policy
Possible sources of differences

• Many possible explanations for differences in views:
  • Nowcast/interpretation of nowcast
  • Beliefs about the structural economic relationships
  • Beliefs about the objectives/rules of monetary policy

• Time-varying neutral rate – possibly different steady state perceptions