

Monetary policy when Market Street begs to differ

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Disclaimer: The views expressed do not necessarily correspond to those of the ECB or the Riksbank

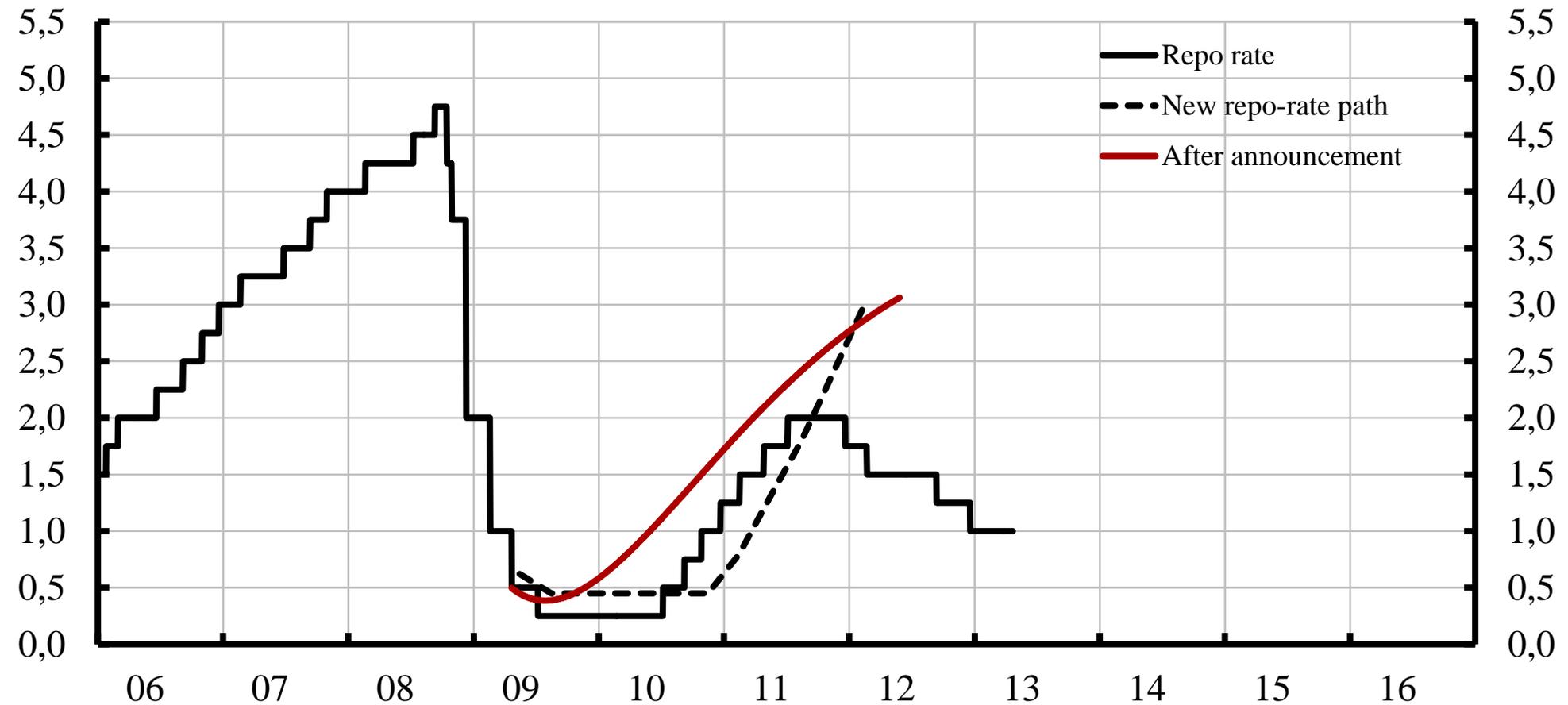
Motivation: Inflation targeting central banks

- 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?

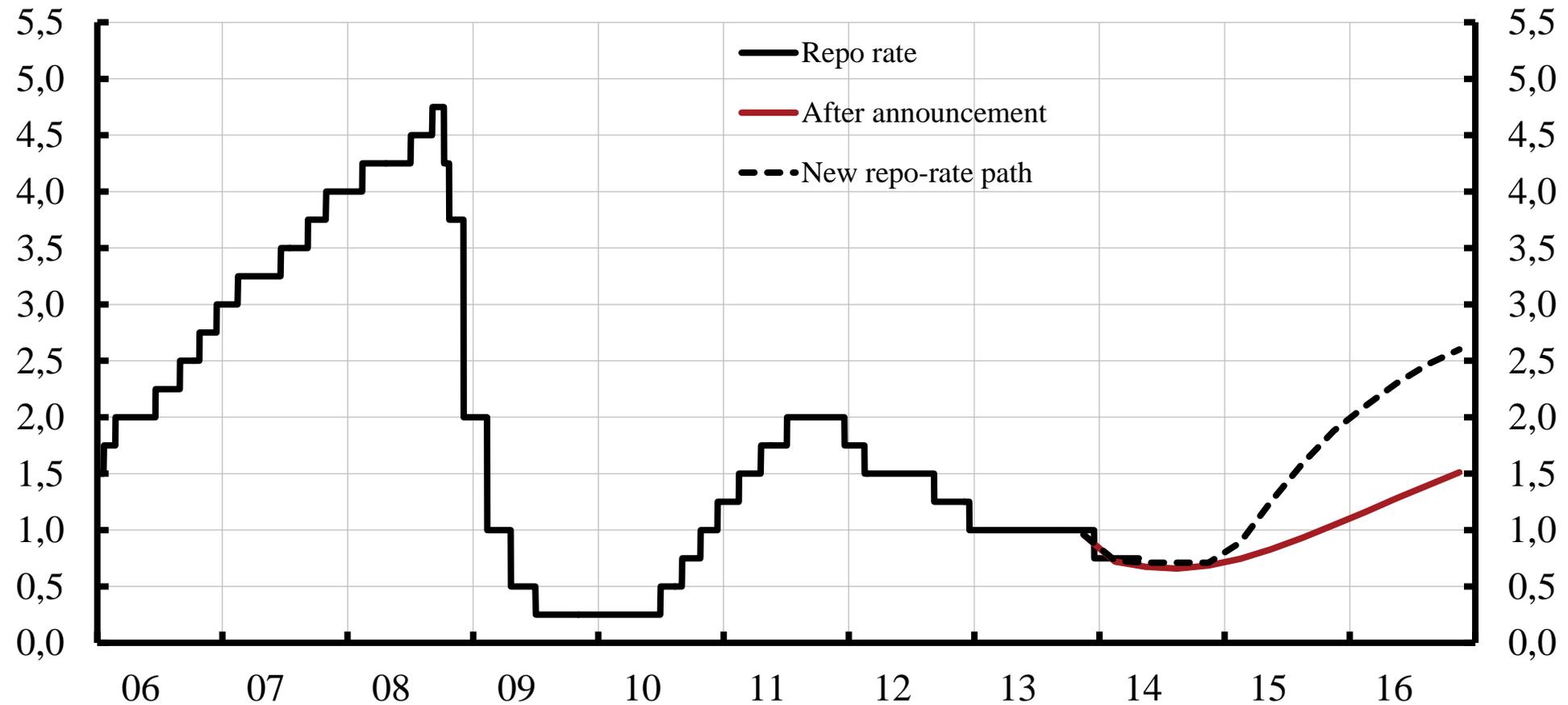
Reality check: markets might not agree

- 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:

$$\theta_{it} = \theta_t + \varepsilon_t^{\theta i}$$

$$\theta_{cbt} = \theta_t + \varepsilon_t^{\theta cb}$$

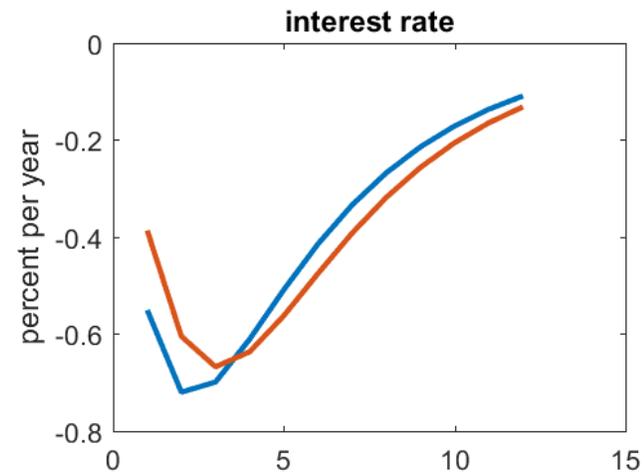
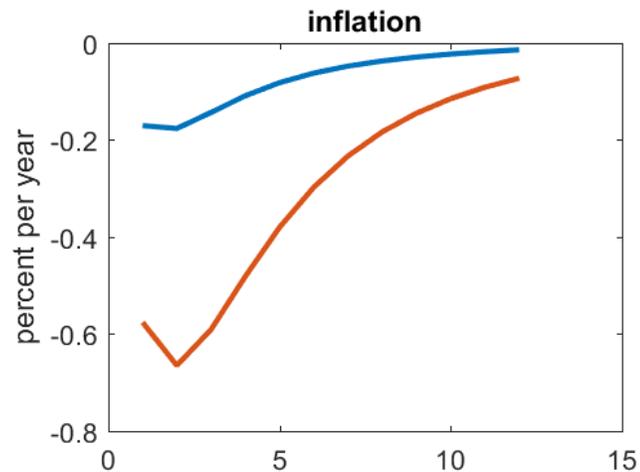
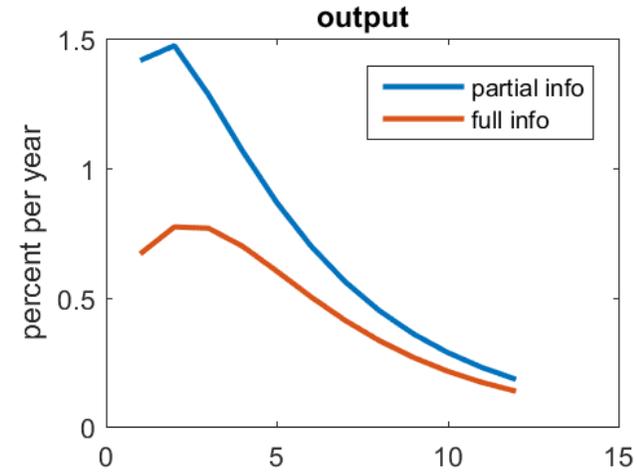
- Similar structure for other aggregate shocks
- Central bank reacts to deviations from its own expectations of t+1 inflation and output-gaps.
- Private sector only observes current actions of the central bank (does not read the inflation report!)

Solution method

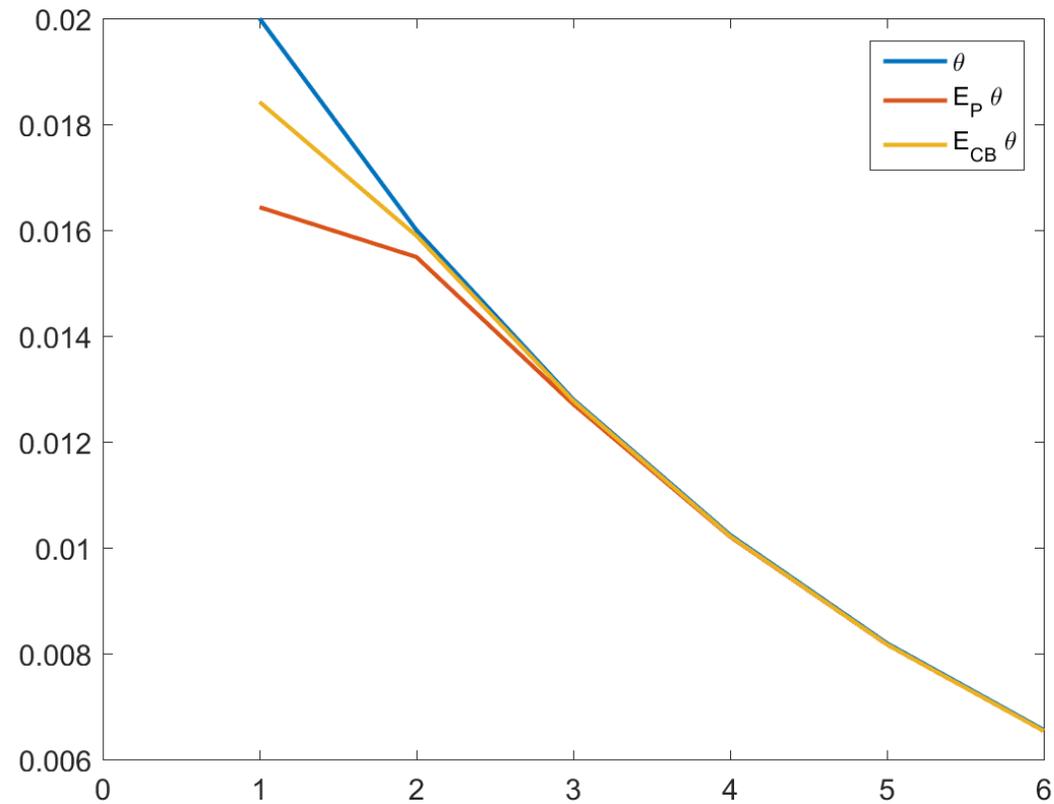
- Aggregation over all private agents gives Euler equation and Phillips' curve as in standard RE, but with private sector expectations
- Interaction between private sector and central bank expectatins leads to infinite state
- Resolve using Nimark: cut off after k rounds, compare with $k+1$ and if the solution is similar, stop...

More propagation relative to RE benchmark

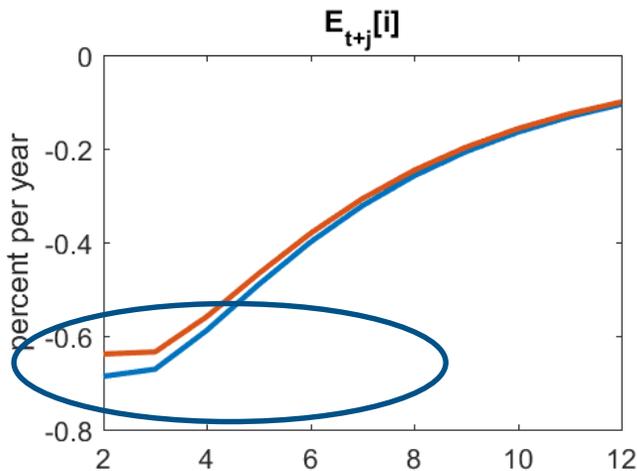
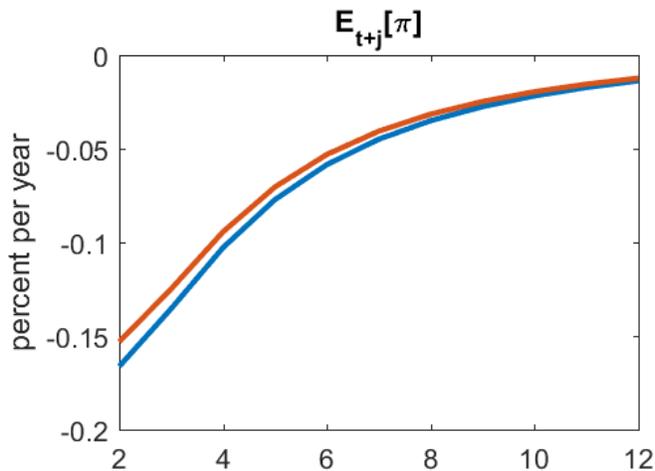
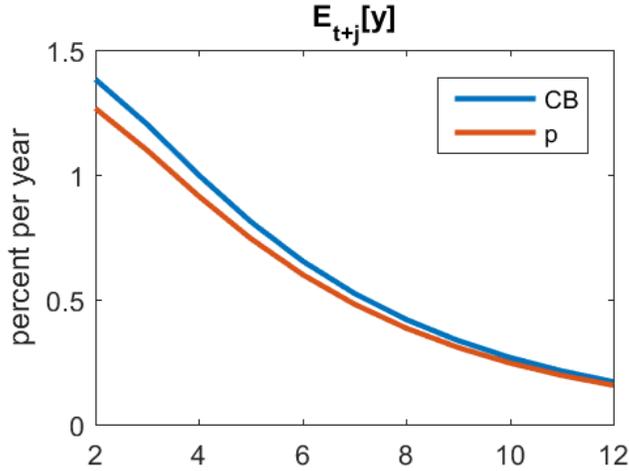
Example: True technology shock = 0.02, Private sector noise > central bank noise



Kalman filter leads to different interpretation...



... which leads to different forecasts

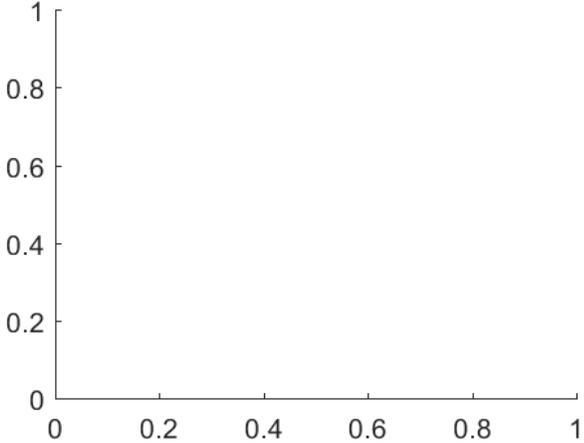


New shocks: a way to get growing differences?

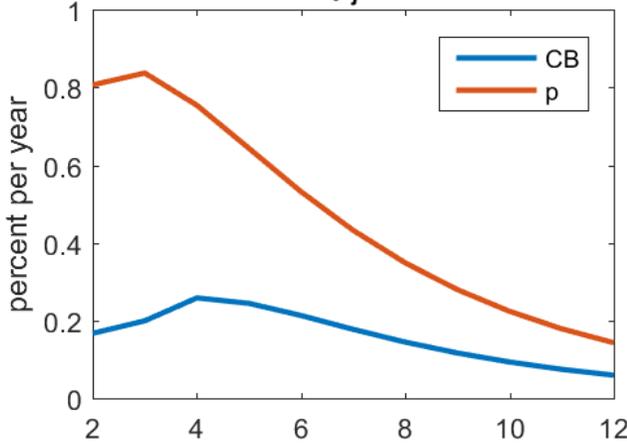
- Assume instead a technology “news shock” about $t+2$
- Shock imperfectly observed, different precision for central bank and private sector

News shocks gives larger differences...

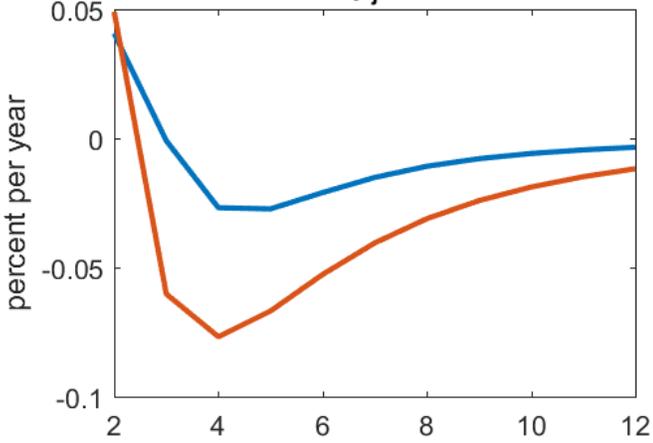
IRFs to $\epsilon_{\theta, t+2}$ shock,
order 8



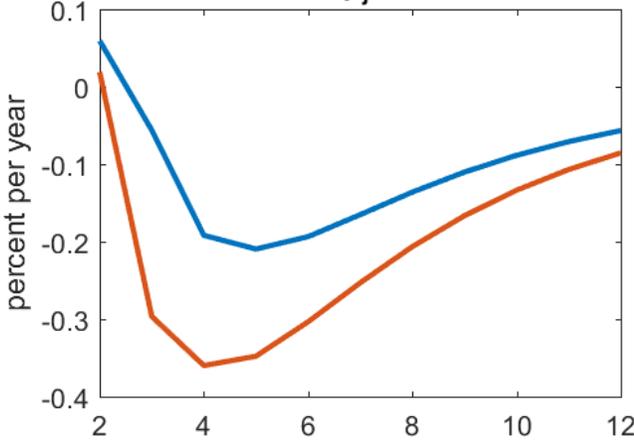
$E_{t+j}[y]$



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



$E_{t+j}[i]$



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