Monetary Policy & Anchored Expectations
An Endogenous Gain Learning Model

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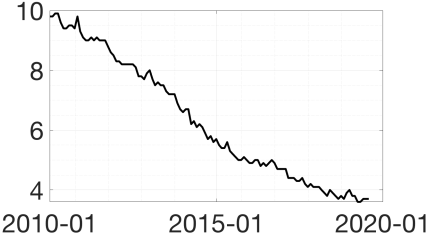
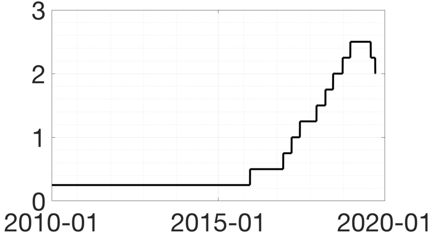
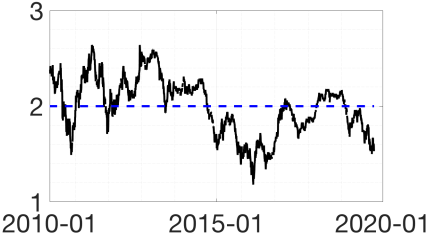
Puzzling US business cycle fall 2019



(a) Unemployment rate



(b) Fed funds rate target, upper limit



(c) Market-based inflation expectations, 10 year, average

This project

Model anchored expectations as an endogenous gain learning scheme

$\rightarrow$ How to conduct optimal monetary policy in interaction with the anchoring expectation formation?

Preview of results

1. intertemporal tradeoff: short-run costs vs. long-run benefits of anchoring expectations

2. optimal monetary policy time-inconsistent

$\rightarrow$ illustrate in special case: target criterion

Related literature

- **Optimal monetary policy in New Keynesian models**
  Clarida, Gali & Gertler (1999), Woodford (2003)

- **Econometric learning**
  Evans & Honkapohja (2001), Preston (2005), Molnár & Santoro (2014)

- **Anchoring / endogenous gain**
  Carvalho et al (2019), Svensson (2015), Hooper et al (2019), Milani (2014)

Structure of talk

1. Model

2. Special case

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1. Model
2. Special case

Thank you!

Derivations

Household FOCs

$$\hat{C}_t^i = \hat{\mathbb{E}}_t^i \hat{C}_{t+1}^i - \sigma(\hat{i}_t - \hat{\mathbb{E}}_t^i \hat{\pi}_{t+1}) \tag{1}$$

$$\hat{\mathbb{E}}_t^i \sum_{s=0}^{\infty} \beta^s \hat{C}_t^i = \omega_t^i + \hat{\mathbb{E}}_t^i \sum_{s=0}^{\infty} \beta^s \hat{Y}_t^i \tag{2}$$

where a hat denotes log-linear approximation and $\omega_t^i \equiv \frac{(1+i_{t-1})B_{t-1}^i}{P_t Y^*}$.

1. Solve (1) backward to some date t, take expectations at t
2. Sub in (2)
3. Aggregate over households i

$\rightarrow$ Obtain (**??**)

◂ Return

Compact notation

$$z_t = A_1 f_{a,t} + A_2 f_{b,t} + A_3 s_t \tag{3}$$

$$s_t = h s_{t-1} + \epsilon_t \tag{4}$$

where

$$z_t \equiv \begin{pmatrix} \pi_t \\ x_t \\ i_t \end{pmatrix} \qquad s_t \equiv \begin{pmatrix} r_t^n \\ \bar{i}_t \\ u_t \end{pmatrix} \tag{5}$$

and

$$f_{a,t} \equiv \hat{\mathbb{E}}_t \sum_{T=t}^{\infty} (\alpha\beta)^{T-t} z_{T+1} \qquad f_{b,t} \equiv \hat{\mathbb{E}}_t \sum_{T=t}^{\infty} (\beta)^{T-t} z_{T+1} \tag{6}$$

◂ Return