The Inflation Attention Threshold and Inflation Surges

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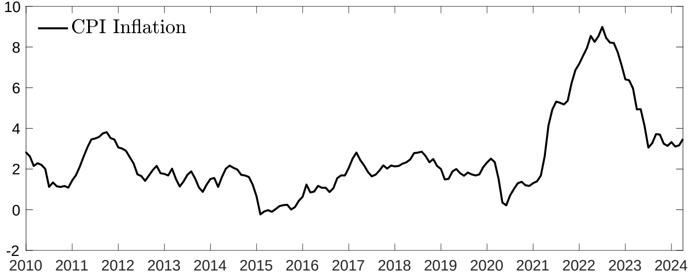
- Inflation surged in many advanced economies during recovery phase of the pandemic
- Inflation higher and more persistent than many expected (e.g., Powell (2021))



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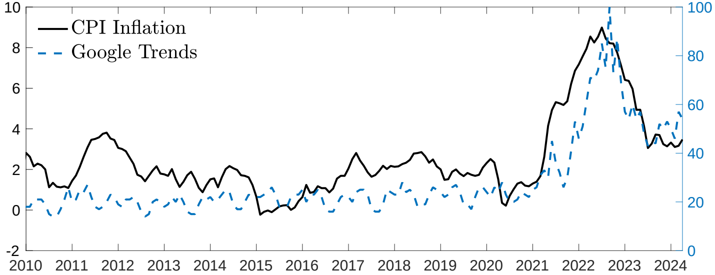

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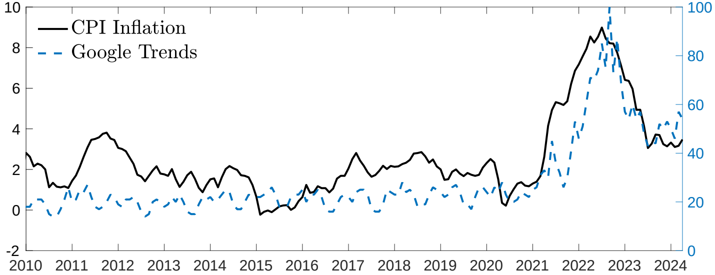

Q: Is higher attention just a side product or a driver of high and persistent inflation?

Preview

- Estimate attention to inflation and threshold when attention changes:

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  - AS and AD curves steeper in high-attention regime
  - exceeding threshold affects inflation dynamics (resembling recent inflation surge)
  - threshold leads to inflation asymmetry and can induce large welfare losses

Contribution to the literature

- Drivers of recent inflation surge: Shapiro (2023), Gagliardone/Gertler (2023), Bernanke/Blanchard (2023), Benigno/Eggertsson (2023), Amiti et al. (2023), Bianchi/Melosi (2022) & Bianchi et al. (2023), Reis (2022)...

  ⇒ Contribution: attention increase played an important role in inflation surge

- Measuring attention to inflation: Cavallo et al. (2017), Pfäuti (2021), Korenok et al. (2022), Bracha/Tang (2023), Weber et al. (2023), Kroner (2023)

  ⇒ Contribution: estimate attention threshold and attention levels in a way that directly maps into otherwise standard macro models

- State dependency of shocks: Auerbach/Gorodnichenko (2012a,b), Caggiano et al. (2014), Ramey/Zubairy (2018), Jo/Zubairy (2023), Tenreyro/Thwaites (2016), Ascari/Haber (2022) Joussier et al. (2023)

  ⇒ Contribution: role of attention regime for inflation response

- Theory: Mackowiak/Wiederholt (2009), Paciello/Wiederholt (2014), Reis (2006a,b) Pfäuti (2021), Carvalho et al. (2022), Afrouzi/Yang (2022), Gati (2022)

  ⇒ Contribution: general equilibrium model with attention threshold, role for inflation surges

Outline

1. **Quantify Attention and Attention Threshold**
2. Role of Attention for Inflation
3. Model + Model Results

Quantifying attention to inflation

- Perceived law of motion:
$$\pi_t = (1-\rho_\pi)\underline{\pi} + \rho_\pi \pi_{t-1} + \nu_t, \text{ with } \nu_t \sim N(0, \sigma_\nu^2)$$
- current inflation is unobservable
- noisy signal: $s_t = \pi_t + \varepsilon_t$, with $\varepsilon_t \sim N(0, \sigma_\varepsilon^2)$, where precision $\frac{1}{\sigma_\varepsilon^2}$ reflects attention

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$$\tilde{E}_t \pi_{t+1} = (1-\rho_\pi)\underline{\pi} + \rho_\pi \tilde{E}_{t-1}\pi_t + \rho_\pi \gamma_\pi \left(\pi_t - \tilde{E}_{t-1}\pi_t\right) + u_t$$

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(Vellekoop/Wiederholt 2019, Pfäuti 2021)

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- $\gamma_\pi = \frac{\beta_2}{\beta_1}$

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Rational inattention microfoundation: γ_π depends negatively on information cost Details

Attention threshold

- Test for different attention levels and attention threshold $\bar{\pi}$:

$$
\begin{aligned}
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& + \left(1 - \mathbb{1}_{\pi_{t-1} \leqslant \bar{\pi}} \right) \left(\beta_{0,H} + \beta_{1,H} \tilde{E}_{t-1} \pi_t + \beta_{2,H} \left(\pi_t - \tilde{E}_{t-1} \pi_t \right) \right) + \tilde{\epsilon}_t
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- Data:
  - monthly average expectations Michigan Survey of Consumers, 1978-2023
  - actual inflation: U.S. CPI inflation Time series

Empirical results: attention twice as high when inflation is above 4%

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s.e.		(0.013)	(0.037)	

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  - similar results when using regional data ▸ Details
  - median expectations, NY Fed SCE (HH panel), SPF
  - using current inflation or average of last three months as threshold-defining variable

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- results overall consistent with Weber et al. (2024), Korenok et al. (2022), Reis (2022)

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Attention regimes and the propagation of supply shocks

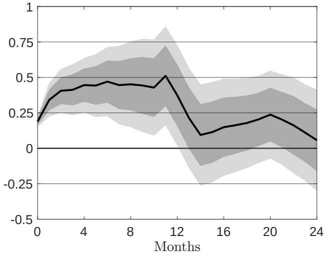
Estimate local projection:

$$y_{t+j} - y_{t-1} = \mathbb{1}_H \left(\alpha_j^H + \beta_j^H \varepsilon_t \right) + (1 - \mathbb{1}_H) \left(\alpha_j^L + \beta_j^L \varepsilon_t \right) + \Gamma' X_t + u_{t+j}$$

- y_{t+j} : y-o-y CPI inflation in period $t + j$
- $\mathbb{1}_H = 1$ if in high-attention regime (inflation $\geqslant 4\%$ or based on Google Trends)
- ε_t : oil supply news shock, 1975M1-2022M12 (Känzig, AER 2021)
- β_j^r : effect of supply shock on inflation at horizon j in regime $r \in \{L, H\}$
- X_t: controls

Supply shocks

(a) High-Attention Regime



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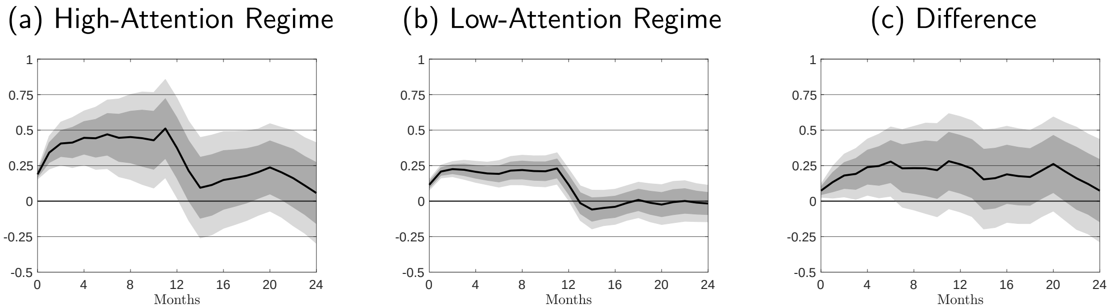

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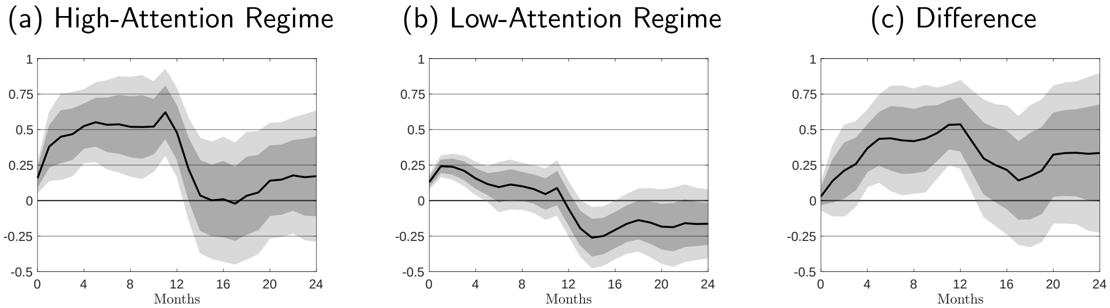

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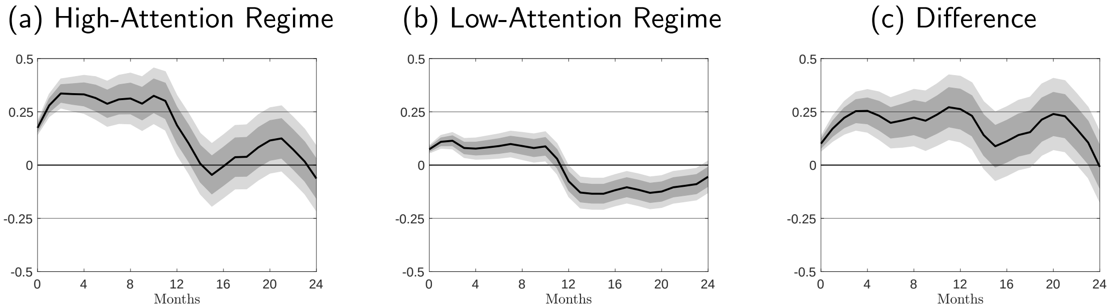

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- Regional data yields similar conclusions

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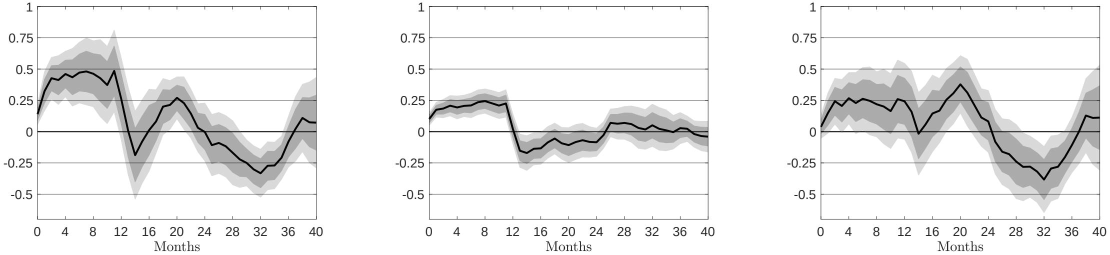
(a) High-Attention Regime (b) Low-Attention Regime (c) Difference



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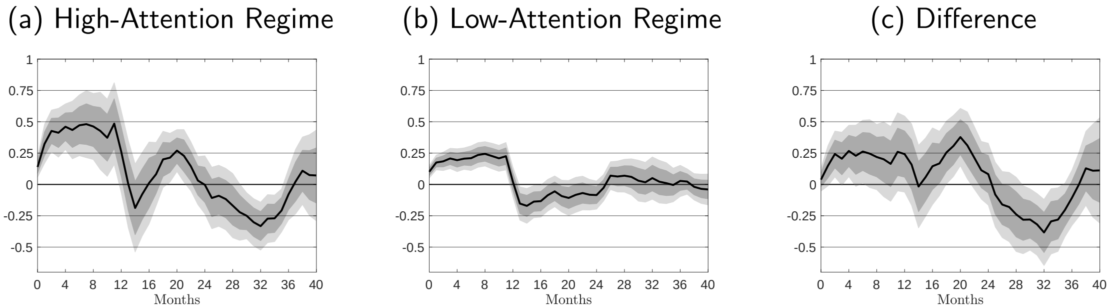

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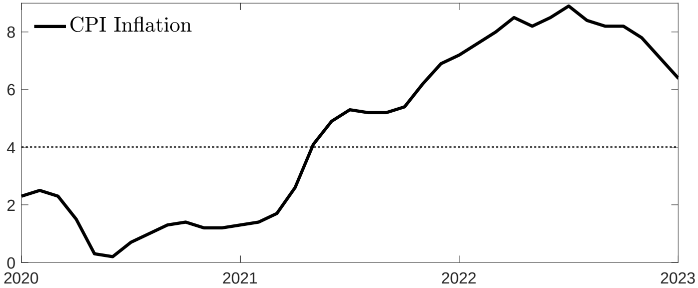
- Google Trends as regime-defining variable: effects even larger and more persistent
- forecast errors: delayed overshooting, especially persistent in high-attention regime
- results robust: other shocks, controls, Covid, price level, shock size across regimes, ...

The recent inflation surge



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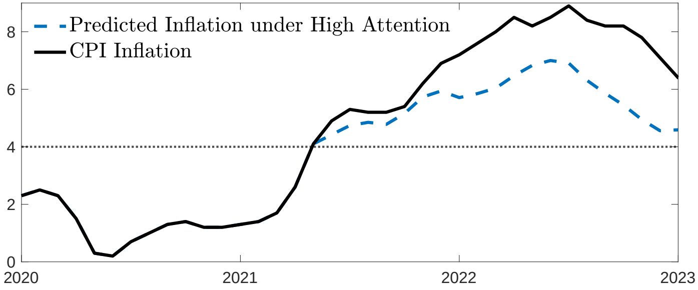

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  $\Rightarrow$ role of attention?

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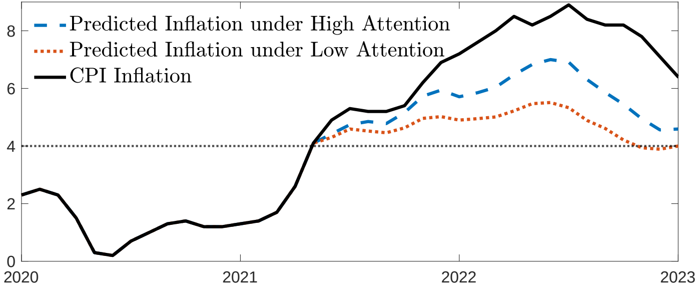

- U.S. entered high regime recently in April 2021
- What was the role of oil supply shocks for subsequent inflation dynamics?
  - $\Rightarrow$ feed in oil supply shocks starting in April 2021 using IRF results

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- $\Rightarrow$ attention increase doubled inflationary effects of supply shocks

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- Government:
  - Fiscal authority: subsidy to firms, lump-sum taxes, issues bonds (zero supply) ▸ Details
  - Monetary authority: sets nominal interest rate, following Taylor rule (for now)

$$\tilde{i}_t = \rho_i \tilde{i}_{t-1} + (1 - \rho_i)\left(\phi_\pi \pi_t + \phi_x \widehat{x}_t\right)$$

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  - assume same initial conditions and signals are public (e.g., coming from news media) $\Rightarrow \tilde{E}_t^j \pi_{t+1}^j = \tilde{E}_t^j \pi_{t+1} = \tilde{E}_t \pi_{t+1}$, which leads to equilibrium with $\pi_t = \pi_t^j$ for all j

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  - assume same initial conditions and signals are public (e.g., coming from news media) $\Rightarrow \tilde{E}_t^j \pi_{t+1}^j = \tilde{E}_t^j \pi_{t+1} = \tilde{E}_t \pi_{t+1}$, which leads to equilibrium with $\pi_t = \pi_t^j$ for all j
- get New Keynesian Phillips Curve with subjective expectations:

$$\pi_t = \beta \tilde{E}_t \pi_{t+1} + \kappa \widehat{x}_t + u_t$$

Subjective expectations of households

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- signals are public, but here abstract from noise shocks
- similar for consumption (and output gap) but constant attention: ▸ Different specification

$$\tilde{E}_t \widehat{c}_{t+1} = \tilde{E}_{t-1}\widehat{c}_t + \gamma_c \left(\widehat{c}_t - \tilde{E}_{t-1}\widehat{c}_t\right)$$

- in equilibrium: $\widehat{c}_t = \widehat{x}_t$ and $\tilde{E}_t \widehat{c}_{t+1} = \tilde{E}_t \widehat{x}_{t+1}$ if we assume $\tilde{E}_{-1}\widehat{c}_0 = \tilde{E}_{-1}\widehat{x}_0$

Equilibrium

- Aggregate supply:

$$\pi_t = \beta \tilde{E}_t \pi_{t+1} + \kappa \widehat{x}_t + u_t$$

- Aggregate demand:

$$\widehat{x}_t = \tilde{E}_t \widehat{x}_{t+1} - \varphi \left(\tilde{i}_t - \tilde{E}_t \pi_{t+1} - r_t^* \right)$$
$$\tilde{i}_t = \rho_i \tilde{i}_{t-1} + (1 - \rho_i) \left(\phi_\pi \pi_t + \phi_x \widehat{x}_t \right)$$

\+ shocks and expectation formation ▸ Analytical Example

Cost-push shock: attention shift alters inflation dynamics

- What are the effects of cost-push shocks u_t on inflation? ▸ Calibration ▸ Analytical Example
- Consider two shocks:
  1. a large shock that pushes inflation above the threshold
  2. a small one that does not push inflation above the threshold

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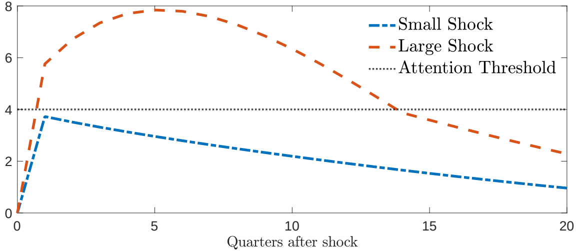

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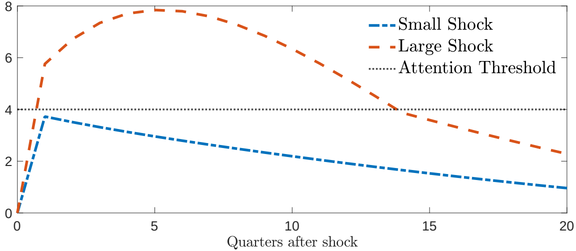

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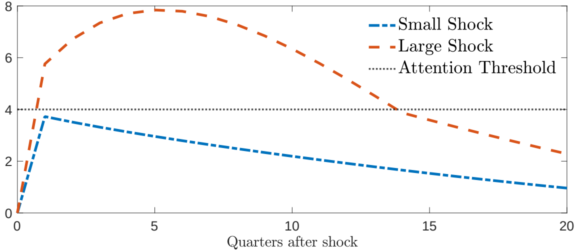

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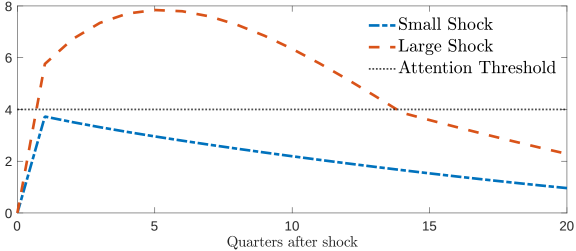

- Three phases:
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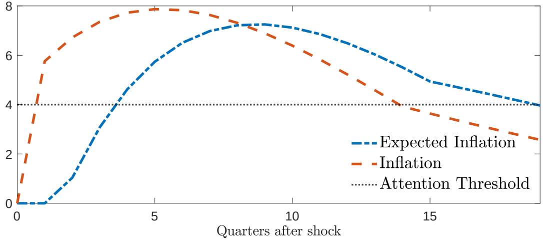
  3. disinflation slows down once inflation falls back below threshold

Inflation and inflation expectation dynamics: Model vs. Data



- **Model**: inflation shows hump-shaped pattern and inflation expectations initially undershoot, followed by delayed overshooting

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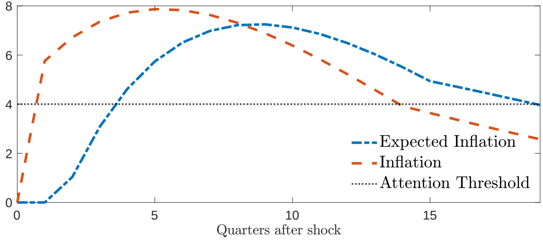
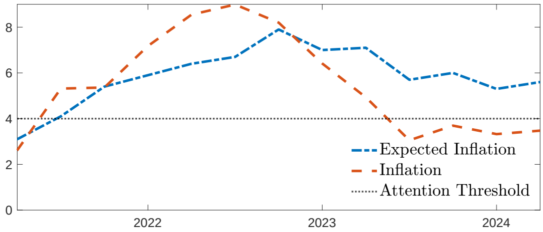




- **Model**: inflation shows hump-shaped pattern and inflation expectations initially undershoot, followed by delayed overshooting

- **Data:** shows similar patterns

Additional Results

- Role of $\tilde{E}_t \widehat{c}_{t+1}$ ▸ Details
- Similar results for demand shocks ▸ IRFs
- Attention threshold induces asymmetry in inflation dynamics: thicker right tail
  ▸ Asymmetry
- Dovish monetary policy rules lead to welfare losses due to... ▸ Welfare analysis

  ... higher inflation volatility

  ... positive average inflation due to asymmetry

Conclusion

- Recent inflation surge brought inflation back on people's minds
- I find that...

  ... attention doubles once inflation exceeds 4%

  ... attention amplifies supply shocks and played important role in recent inflation surge

  ... changes in attention affect inflation dynamics

  ... dovish monetary policy may lead to substantial welfare losses

Thank you for your attention!

Appendix

Limited-Attention Model

Model of optimal attention choice:

- Agent (household or firm) needs to form an expectation about future inflation
- Acquiring information is costly (cognitive abilities, time, etc.)
- Making mistakes leads to utility losses

  $\Rightarrow$ optimal level of attention depends on how costly information acquisition is, how high your stakes are and the properties of inflation itself

Setup

Agent believes that inflation follows an AR(1) process:

$$\pi' = \rho_\pi \pi + \nu,$$

with $\rho_\pi \in [0, 1]$ and $\nu \sim i.i.N(0, \sigma_\nu^2)$.
The full-information forecast is given by

$$\pi^{e*} = \rho_\pi \pi$$

Problem: current inflation is unobservable and acquiring information is costly.

Information Acquisition Problem

The agent's problem:

- Choose the form of the signal s
- to minimize the loss that arises from making mistakes, $U(s, \pi)$
- facing the cost of information $C(f) = \lambda I(\pi; s)$, with $I(\pi; s)$ being the expected reduction in entropy of π due to observing s

Information Acquisition Problem Continued

Quadratic loss function

$$U(\pi^e, \pi) = r(\underbrace{\rho_\pi \pi}_{\text{full-info}} - \pi^e)^2$$

r: stakes

Optimal signal has the form (Matejka/McKay (2015))

$$s = \pi + \varepsilon$$

where $\varepsilon \sim i.i.N(0, \sigma_\varepsilon^2)$ captures noise

σ_ε^2 is chosen optimally

Optimal Level of Attention

The optimal forecast is given by

$$\pi^e = \rho_\pi \hat{\pi} + \rho_\pi \gamma \left(s - \hat{\pi} \right),$$

where $\hat{\pi}$ is the prior belief of the agent and γ is the optimal level of attention:

$$\gamma = max \left(0, 1 - \frac{\lambda}{2r\rho_\pi \sigma_\pi^2} \right)$$

Attention is higher when:

- the cost of information λ is low
- the stakes r are high
- inflation is very volatile (high σ_π^2) or persistent (high ρ_π) Back

Attention changes within regime

Rolling-window approach to estimate time series of $\widehat{\gamma}_{\pi,t}$ and compute the window-specific average of the monthly q-o-q inflation rate, $\bar{\pi}_t$. Then:

$$\widehat{\gamma}_{\pi,t} = \delta_0 + \delta_1 \mathbf{1}_{\bar{\pi}_t \geqslant 4} + \delta_2 \bar{\pi}_t + \delta_3 \mathbf{1}_{\bar{\pi}_t \geqslant 4} \bar{\pi}_t + \varepsilon_t \tag{1}$$

Robustness:

$$\widehat{\gamma}_{\pi,t} = \delta_0 + \delta_1 \mathbf{1}_{\bar{\pi}_t \geqslant 4} + \delta_2 \pi_{t-1} + \delta_3 \mathbf{1}_{\pi_{t-1} \geqslant 4} \pi_{t-1} + \varepsilon_t, \tag{2}$$

	$\widehat{\delta}_1$	$\widehat{\delta}_2$	$\widehat{\delta}_3$
Regression (1)	0.393**	0.053	-0.079
s.e.	(0.192)	(0.047)	(0.051)
Regression (2)	0.119*	-0.010	0.010
s.e.	(0.0641)	(0.0141)	(0.0141)

back

Regional Data

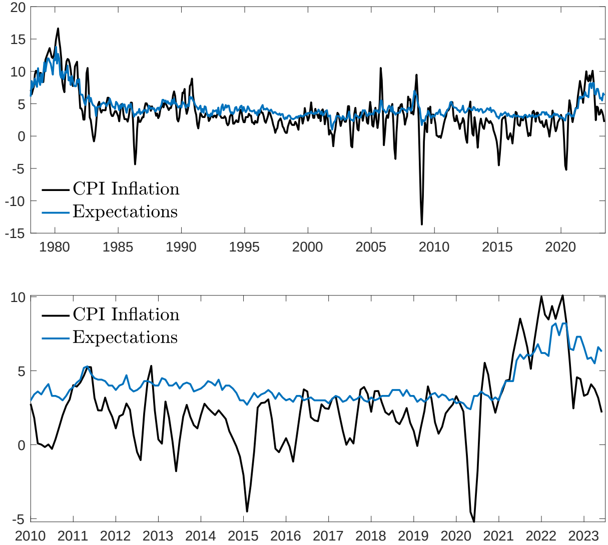
Use FRED CPI data on four US regions and link to Michigan Survey. Use regional-specific inflation rate as threshold-defining variable and in LHS of regression

Region	Threshold $\bar{\pi}$	Low Att. $\widehat{\gamma}_{\pi,L}$	High Att. $\widehat{\gamma}_{\pi,H}$
Northeast	5.30	0.17	0.27
Midwest	3.86	0.14	0.30
South	4.42	0.15	0.29
West	6.84	0.20	0.5

Enforcing threshold at 4% US CPI: $\widehat{\gamma}_{\pi,L} = 0.22$ and $\widehat{\gamma}_{\pi,H} = 0.42$ back

Inflation and Inflation Expectations

▸ back



Robustness

	Threshold $\bar{\pi}$	$\widehat{\gamma}_{\pi,L}$	$\widehat{\gamma}_{\pi,H}$	p-val. $\gamma_{\pi,L} = \gamma_{\pi,H}$
Baseline	3.98%	0.18	0.36	0.000
s.e.		(0.013)	(0.037)	
Median exp.	4.41%	0.16	0.23	0.000
s.e.		(0.013)	(0.028)	
Quarterly freq.	3.21%	0.14	0.38	0.000
s.e.		(0.033)	(0.076)	

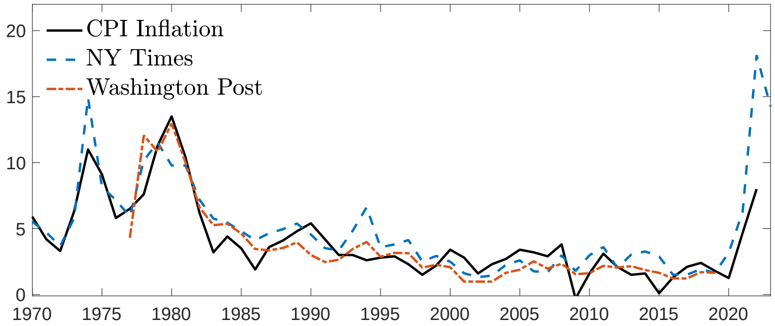
Current inflation rate rather than lagged inflation rate as the threshold-defining variable: $\widehat{\gamma}_{\pi,L} = 0.18$ and $\widehat{\gamma}_{\pi,H} = 0.36$ (p-val. 0.000)

Using individual consumer inflation expectations from the Survey of Consumer Expectations (NY Fed): $\widehat{\gamma}_{\pi,L} = 0.21$ and $\widehat{\gamma}_{\pi,H} = 0.40$ (p-val. 0.000)

SPF: threshold at 3.92%, $\widehat{\gamma}_{\pi,L} = 0.07$ and $\widehat{\gamma}_{\pi,H} = 0.17$ (p-val. 0.008)

back

Potential driver: news coverage of inflation higher when inflation is high



- frequency of word *inflation*: 2-3 times higher when inflation $> 4\%$
- monthly frequency (NYT, 1990-2023): news coverage slightly lags inflation

back

Households

Representative household, lifetime utility:

$$\tilde{E}_0 \sum_{t=0}^{\infty} \beta^t Z_t \left[\frac{C_t^{1-\sigma}}{1-\sigma} - \Xi \frac{H_t^{1+\nu}}{1+\nu} \right]$$

Households maximize their lifetime utility subject to the flow budget constraints

$$C_t + B_t = w_t H_t + \frac{1+i_{t-1}}{1+\pi_t} B_{t-1} + \frac{T_t}{P_t}, \qquad \text{for all } t$$

Yields Euler equation

$$Z_t C_t^{-\sigma} = \beta(1+i_t) \tilde{E}_t \left[Z_{t+1} C_{t+1}^{-\sigma} \frac{1}{1+\pi_{t+1}} \right]$$

and the labor-leisure condition

$$w_t C_t^{-\sigma} = \Xi H_t^{\nu}$$

back

Final goods producer

There is a representative final good producer that aggregates the intermediate goods $Y_t(j)$ to a final good Y_t, according to

$$Y_t = \left(\int_0^1 Y_t(j)^{\frac{\epsilon-1}{\epsilon}} dj \right)^{\frac{\epsilon}{\epsilon-1}}, \tag{3}$$

with $\epsilon > 1$. Nominal profits are given by $P_t \left(\int_0^1 Y_t(j)^{\frac{\epsilon-1}{\epsilon}} dj \right)^{\frac{\epsilon}{\epsilon-1}} - \int_0^1 P_t(j) Y_t(j) dj$, and profit maximization gives rise to the demand for each variety j:

$$Y_t(j) = \left(\frac{P_t(j)}{P_t} \right)^{-\epsilon} Y_t. \tag{4}$$

Thus, demand for variety j is a function of its relative price, the price elasticity of demand ϵ and aggregate output Y_t. The aggregate price level is given by

$$P_t = \left(\int_0^1 P_t(j)^{1-\epsilon} dj \right)^{\frac{1}{1-\epsilon}}. \tag{5}$$

▸ back

Intermediate producers

Intermediate producer of variety j produces output $Y_t(j)$ using labor $H_t(j)$

$$Y_t(j) = H_t(j).$$

When adjusting the price, the firm is subject to a Rotemberg price-adjustment friction.

Per-period profits (in real terms) are given by

$$(1-\tau_t)P_t(j)\left(\frac{P_t(j)}{P_t}\right)^{-\epsilon}\frac{Y_t}{P_t} - w_t H_t(j) - \frac{\psi}{2}\left(\frac{P_t(j)}{P_{t-1}(j)}-1\right)^2 Y_t + t_t^F(j)$$

Defining $T_t \equiv 1-\tau_t$, it follows that after a linearization of the FOC around the zero-inflation steady state, firm j sets its price according to

$$\widehat{p}_t(j) = \frac{1}{\psi+\epsilon}\left[\psi\widehat{p}_{t-1} + \epsilon\left(\widehat{mc}_t - \widehat{T}_t + \widehat{p}_t\right) + \beta\psi\tilde{E}_t^j\pi_{t+1}^j\right]$$

▸ back

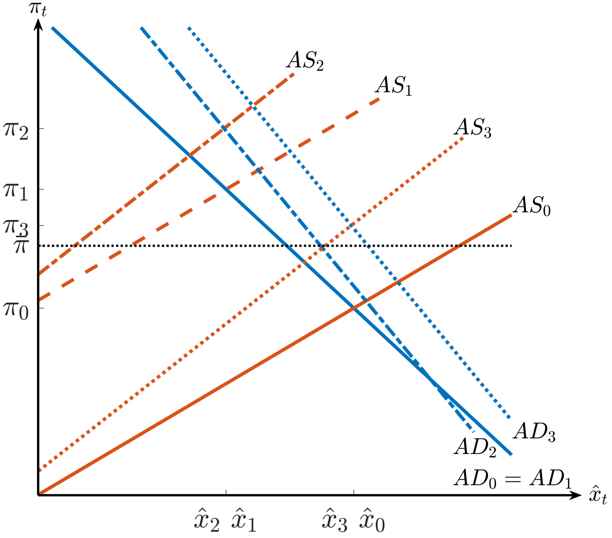
Fiscal policy

The government imposes a sales tax τ_t on sales of intermediate goods, issues nominal bonds, and pays lump-sum taxes and transfers T_t to households and $t_t^F(j)$ to firms. The real government budget constraint is given by

$$B_t = B_{t-1}\frac{1 + i_{t-1}}{\Pi_t} + \frac{T_t}{P_t} - \tau Y_t + t_t^f.$$

Lump-sum taxes and transfers are set such that they keep real government debt constant at the initial level B_{-1}/P_{-1}, which I set to zero. ▸ back

Illustrative example: Period 3



$$AS_3: \quad \pi_3 = \frac{\kappa}{1-\beta\gamma_{\pi,H}}\widehat{x}_3 + \frac{\beta(1-\gamma_{\pi,H})}{1-\beta\gamma_{\pi,H}}\tilde{E}_2\pi_3$$

$$AD_3: \quad \pi_3 = -\frac{1}{\phi_\pi-\gamma_{\pi,H}}\widehat{x}_3 + \frac{1-\gamma_{\pi,H}}{\phi_\pi-\gamma_{\pi,H}}\tilde{E}_2\pi_3$$

back

Numerical insights: calibration

back

Parameter	Description	Value
β	Discount factor	$\frac{1}{1+1/400}$
φ	Interest rate elasticity	1
κ	Slope of NKPC	0.057
ρ_i	Interest rate smoothing	0.7
ϕ_π	Inflation response coefficient	2
ϕ_x	Output gap response coefficient	0.125
ρ_u	Shock persistence	0.8
σ_u	Shock volatility	0.3%
Attention parameters		
$\bar{\pi}$	Attention threshold	4% (annualized)
$\gamma_{\pi,L}$	Low inflation attention	0.18
$\gamma_{\pi,H}$	High inflation attention	0.36
γ_x	Output gap attention	0.25

An (hopefully) illustrative example

Consider a stylized version of the model: set $\tilde{i}_t = \phi_\pi \pi_t$, $\gamma_x = 0$ and $\tilde{E}_{-1}\hat{x}_0 = 0$

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0: Steady State

1: Cost-push shock hits: $u_1 > 0$

2: Shock persists: $u_2 = u_1 > 0$

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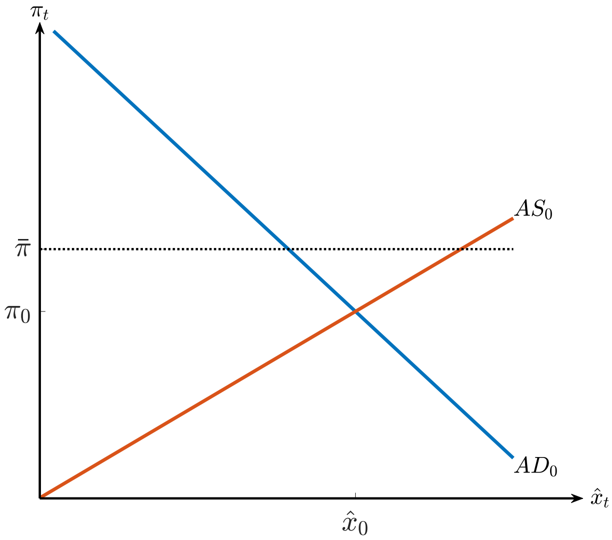
Q: What happens to inflation?

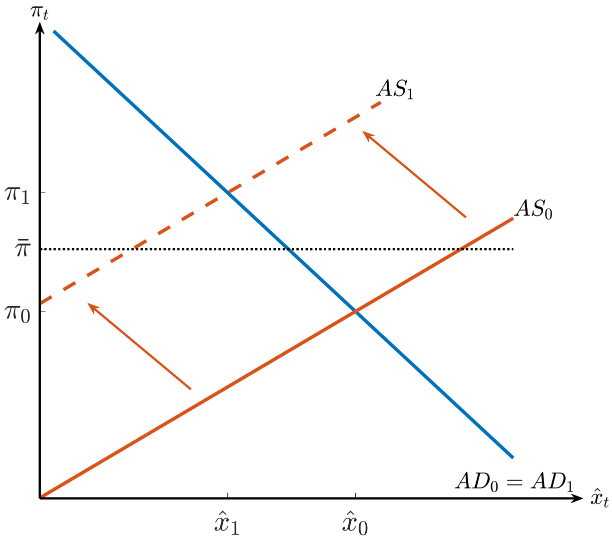
Period 0: economy in steady state



$$AS_0 : \quad \pi_0 = \frac{\kappa}{1 - \beta\gamma_{\pi,L}} \widehat{x}_0$$

$$AD_0 : \quad \pi_0 = -\frac{1}{\phi_\pi - \gamma_{\pi,L}} \widehat{x}_0$$

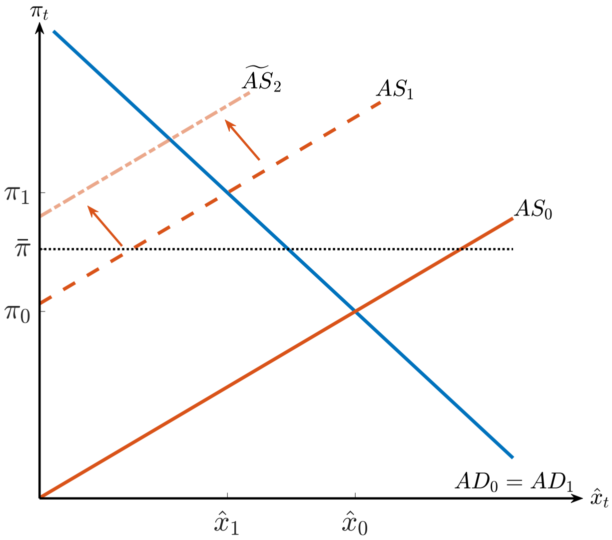
Period 1: Cost-push shock hits



$$AS_1: \quad \pi_1 = \frac{\kappa}{1-\beta\gamma_{\pi,L}}\hat{x}_1 + \frac{1}{1-\beta\gamma_{\pi,L}}u_1$$

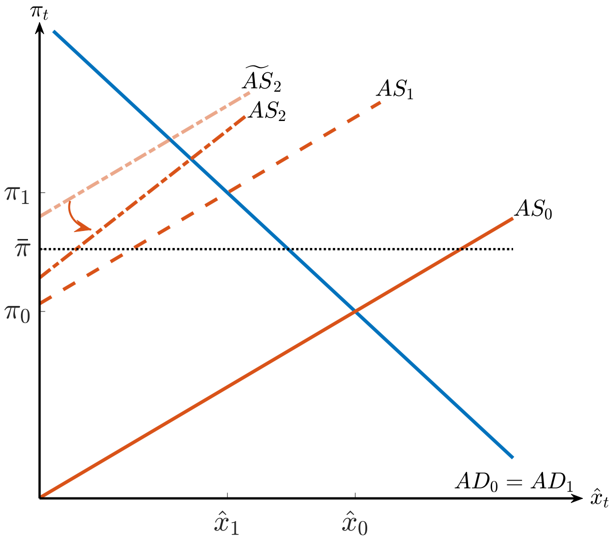
$$AD_1: \quad \pi_1 = -\frac{1}{\phi_\pi - \gamma_{\pi,L}}\hat{x}_1$$

Period 2: AS further up due to ongoing shock & prior expectations



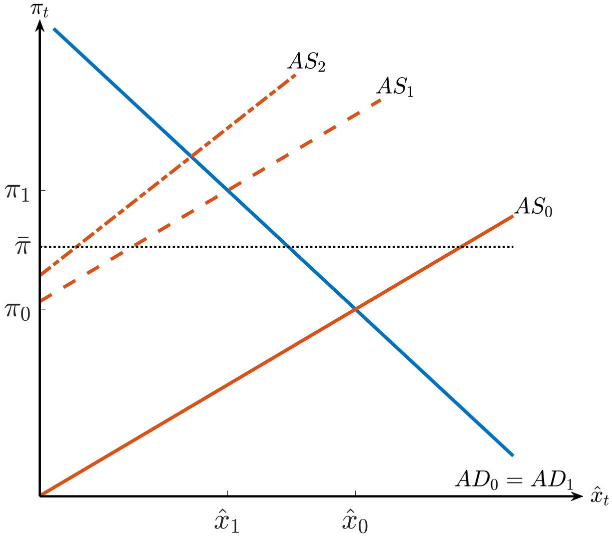
$$\widetilde{AS}_2: \quad \pi_2 = \frac{\kappa}{1-\beta\gamma_{\pi,L}}\hat{x}_2 + \frac{1}{1-\beta\gamma_{\pi,H}}u_2 + \frac{\beta(1-\gamma_{\pi,H})\gamma_{\pi,L}}{1-\beta\gamma_{\pi,H}}\pi_1$$

Period 2: AS becomes steeper due to higher attention

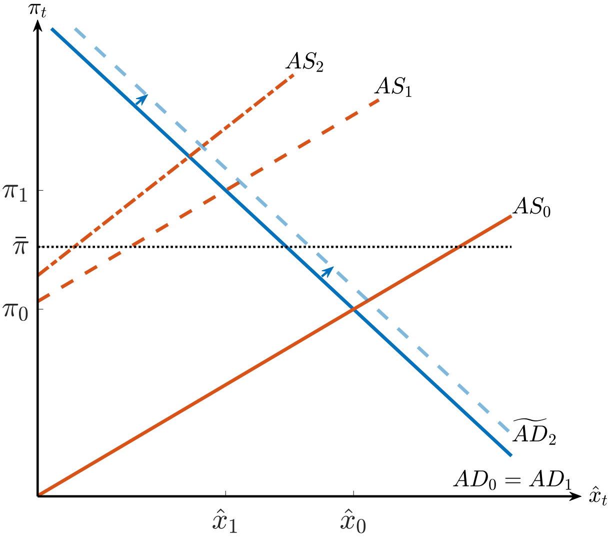


$$AS_2: \quad \pi_2 = \frac{\kappa}{1-\beta\gamma_{\pi,H}}\hat{x}_2 + \frac{1}{1-\beta\gamma_{\pi,H}}u_2 + \frac{\beta(1-\gamma_{\pi,H})\gamma_{\pi,L}}{1-\beta\gamma_{\pi,H}}\pi_1$$

Period 2: What about aggregate demand?



Period 2: AD shifts out due to positive prior expectations



$$\widetilde{AD}_2: \quad \pi_2 = -\frac{1}{\phi_\pi - \gamma_{\pi,L}}\hat{x}_2 + \frac{(1-\gamma_{\pi,H})\gamma_{\pi,L}}{\phi_\pi - \gamma_{\pi,H}}\pi_1$$

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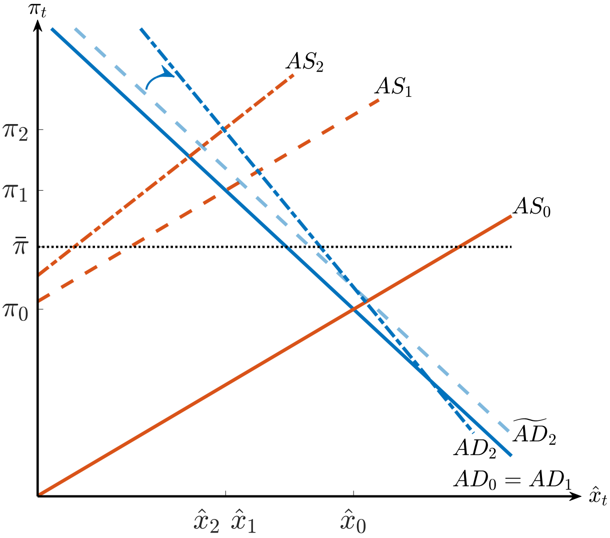

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Period 3 back

Role of $\tilde{E}_t \widehat{c}_{t+1}$ ‣ back to model ‣ back to additional results

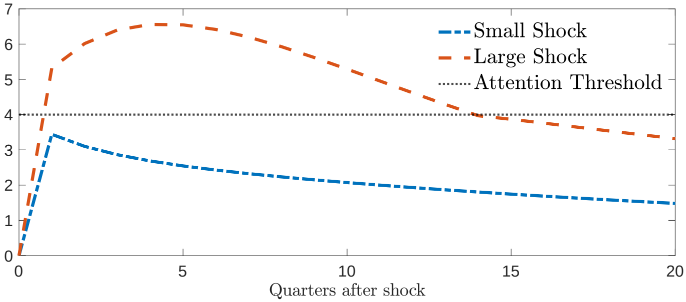
In model under FIRE, we have

$$\widehat{c}_t = \rho_u \widehat{c}_{t-1}.$$

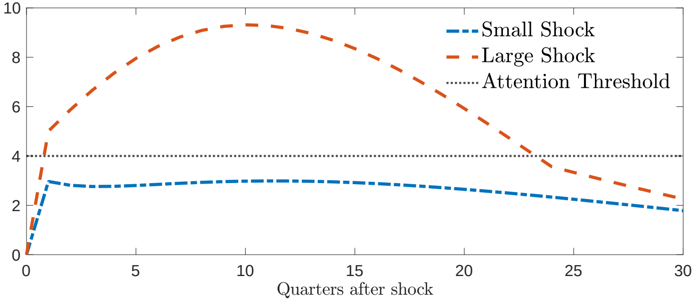
With that perceived law of motion (i.e., ignoring that limited attention to inflation affects the equilibrium), and full attention to consumption, it follows:

$$\tilde{E}_t \widehat{c}_{t+1} = \rho_u \widehat{c}_t.$$

Inflation dynamics are similar:



Demand shocks



back

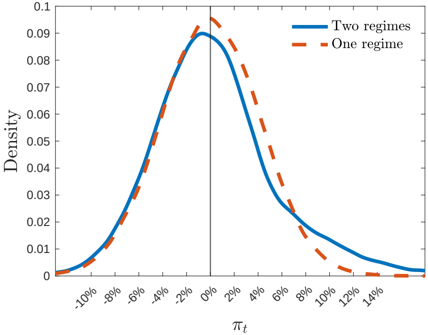
Asymmetry in Inflation Dynamics

- The attention threshold leads to an asymmetry in inflation dynamics

Asymmetry in Inflation Dynamics

- The attention threshold leads to an asymmetry in inflation dynamics

  $\Rightarrow$ heightened risk of high-inflation periods



- Frequency of inflation above 8%: **11% in the data**
  9% with 2 regimes vs. 3% with 1 regime
- Both models yield similar predictions for median inflation and deflation probabilities
- average inflation $>$ 0 with 2 regimes
  $=$ 0 with one regime Outlook
- absolute forecast errors in model similar to data: mean 2.1 vs. **1.84** and standard dev. 1.60 vs. **1.86**

back

Welfare implications of different monetary policy rules

$$\text{Welfare} \equiv -\frac{1}{2} E_0 \sum_{t=0}^{\infty} \beta^t \left[\pi_t^2 + \Lambda \widehat{x}_t^2\right], \text{ with } \Lambda = 0.007$$

Welfare implications of different monetary policy rules

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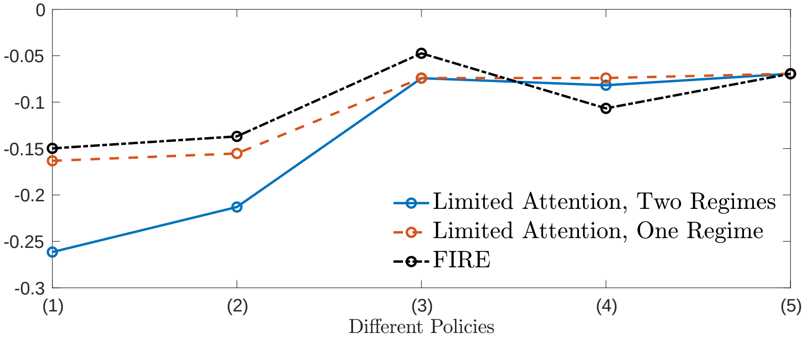
Compare welfare implications of different policy rules:

Nr.	Name	Equation
(1)	Taylor rule with smoothing	$\tilde{i}_t = \rho_i \tilde{i}_{t-1} + (1 - \rho_i)(\phi_\pi \pi_t + \phi_x \widehat{x}_t)$
(2)	Taylor rule without smoothing	$\tilde{i}_t = \phi_\pi \pi_t$
(3)	Optimal RE commitment policy	$\pi_t + \frac{\Lambda}{\kappa}(\widehat{x}_t - \widehat{x}_{t-1}) = 0$
(4)	Optimal RE discretionary policy	$\pi_t + \frac{\Lambda}{\kappa}\widehat{x}_t = 0$
(5)	Strict inflation targeting	$\pi_t = 0$

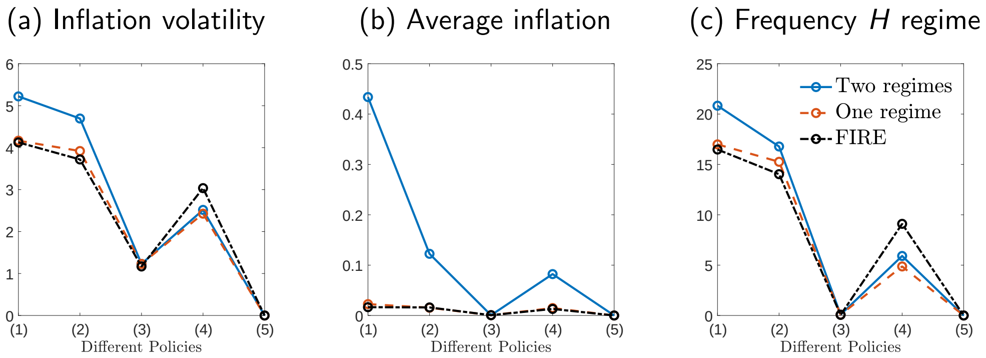
Welfare



- Taylor rules more welfare deteriorating than in other models
  - especially with interest-rate smoothing

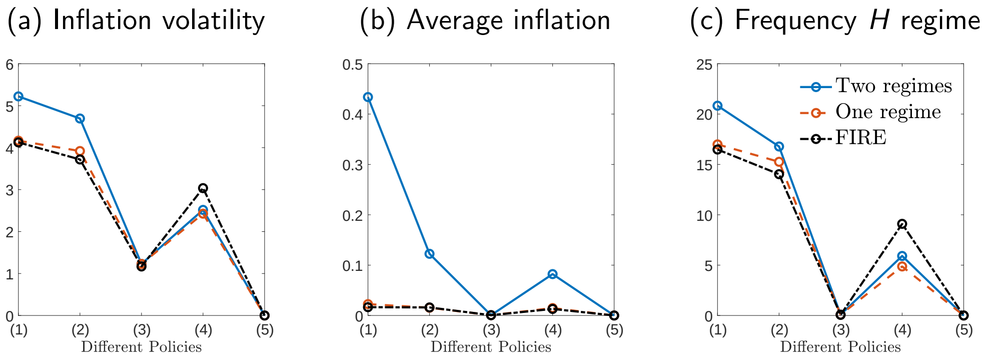
▸ back

Asymmetry of attention threshold increases average level of inflation



- Asymmetry $\Rightarrow$ average level > 0

Asymmetry of attention threshold increases average level of inflation



- Asymmetry $\Rightarrow$ average level > 0 $\Rightarrow$ welfare losses

Asymmetry in Inflation Dynamics

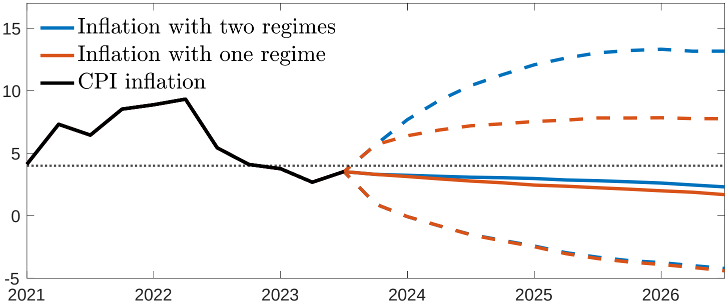
- The asymmetry also affects the inflation outlook

$\Rightarrow$ exercise: initialize economy at 2023Q3 inflation rate & feed in random supply shocks

Asymmetry in Inflation Dynamics

- The asymmetry also affects the inflation outlook

⇒ exercise: initialize economy at 2023Q3 inflation rate & feed in random supply shocks



- solid lines: median dynamics
- dotted lines: 5^{th} and 95^{th} percentiles back