Selective Inattention to Interest Rates

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Motivation

- Households' macro expectations suggest they are very uninformed on **average**
  - Level of expectations is often systematically biased Weber et al. 22
  - Substantial dispersion in expectations across people Mankiw et al. 04
  - Errors in their expectations are predictable ex-ante Bordalo et al. 20

- Motivated macro models with info. frictions Auclert et al. 20, McKay-Wieland 21, Beraja-Wolf 22

  $\Rightarrow$ **Average** expectation is slow-moving and under-reacts Coibion-Gorodnichenko 12, 15

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- Introspection: macro expectations much more important for "**big**" decisions
  - These **big** decisions also tend to occur less frequently
  - Example: interest rates important when **buying a house**, but less so for groceries

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- **Question**: Do HHs **select** into paying attention based on **types** of decisions?

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- Introspection: macro expectations much more important for "**big**" decisions
- **Question**: Do HHs **select** into paying attention based on **types** of decisions?
- **If yes**, how does this **selection** affect the aggregate responses to shocks?
  - Belief heterogeneity $\Rightarrow$ **average** may not be the relevant object Miller 77, Afrouzi et al. 24

This Paper

Is there selective inattention to interest rates based on **durables purchases**?

"decision-making" (DM)

1. Use existing surveys to study how interest rate expectations differ based on DM
   - Benefit: high-quality data on expectations
   - Cost: hard to identify **DM status** + hard to isolate attention

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Is there selective inattention to interest rates based on **durables purchases**?

"decision-making" (DM)

1. Use existing surveys to study how interest rate expectations differ based on DM
2. Conduct a new survey to identify how macro attention changes based on DM
   - Benefit: better identify **DM status** + elicit information acquisition directly
   - Cost: hard to study accuracy in expectations given one cross-section

This Paper

~~Is there selective inattention to interest rates based on durables purchases?~~ ✓

How does selective inattention affect **aggregate responses** to rate changes?

1. Use existing surveys to study how interest rate expectations differ based on DM
2. Conduct a new survey to identify how macro attention changes based on DM
3. Develop a PE incomplete markets model with $\overbrace{\text{durables}}^{\text{DM in model}}$ + dynamic IA about rates
   - Use patterns in IA from survey to discipline information cost parameter(s)
   - Compare **model IRFs** to level and volatility of rates with $\underbrace{\text{exogenous inattention}}_{\text{DM} \perp \text{beliefs} \Rightarrow \text{no selection}}$

Summary of Results

Is there selective inattention to interest rates based on durables purchases?

1. Interest rate expectations of decision-makers are **more accurate**
   - Nowcast and forecast errors of interest rates are 50% lower
   - Dispersion of beliefs is 70% lower and subjective uncertainty decreases

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   - Dispersion of beliefs is 70% lower and subjective uncertainty decreases
2. Information acquisition is **concentrated** prior to purchases
   - Purchase in $\leq$ 6 months $\Rightarrow$ twice as likely to acquire information
   - Information acquisition focuses on current values of decision-relevant rates

Summary of Results

How does selective inattention affect **aggregate responses** to rate changes?

3. Like exogenous inattention, selection dampens some responses
   - Aggregate beliefs are slow-moving and **under-react**
   - Consumption responds sluggishly to rate changes

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$\Downarrow$

Micro-level patterns in attention can distinguish between models with same **macro-level** inattention, but different counterfactual predictions

Related Literature

- Household expectation formation $\rightarrow$ *Tie belief formation to durables purchases*
  - Coibion & Gorodnichenko (2015), Bordalo et al. (2020), D'Acunto et al. (2023), ...

Related Literature

- Household expectation formation $\rightarrow$ *Tie belief formation to durables purchases*
- Information acquisition in the field $\rightarrow$ *Focus on differences based on DM status*
  - Coibion et al. (2018), Capozza et al. (2021), Link et al. (2023), Roth et al. (2022)

Related Literature

- Household expectation formation $\rightarrow$ *Tie belief formation to durables purchases*
- Information acquisition in the field $\rightarrow$ *Focus on differences based on DM status*
- Models of durable adjustments $\rightarrow$ *First model with dynamic info. acquisition*
  - Caballero (1990), Barsky et al. (2007), Berger & Vavra (2015), McKay & Wieland (2021), Gavazza & Lanteri (2021), Beraja & Wolf (2022), Beraja & Zorzi (2024)

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- Rational inattention $\rightarrow$ *Nest in a rich (non-quadratic) HH model with 2 actions*
  - Sims (2003), Mackowiak & Wiederholt (2009), Alvarez et al. (2011, 2013), Zhong (2022), Hebert & Woodford (2023), Mackowiak et al. (2023), Afrouzi et al. (2024), Ahn et al. (2024)

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- Exogenous inattention as a source of macro sluggishness $\rightarrow$ *When inattention is endogenous, whether dampening occurs is decision-specific*
  - Lucas (1972), Gabaix & Laibson (2001), Mankiw & Reis (2002), Angeletos & Lian (2016), Carroll et al. (2018), Auclert et al. (2020), McKay & Wieland (2021), Beraja & Wolf (2022), Cochrane (2025), ...

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- Effects of (interest rate) uncertainty $\rightarrow$ *effects are mediated by info. acquisition*
  - Sandmo (1974), Bloom (2014), Bloom et al. (2020), Ilut et al. (2024)

Outline

1. Motivating Evidence: Expectations and Decision-Making in the SCE
2. New Survey: Information Acquisition around Decision-Making
3. Incomplete Markets Model with Selective Inattention
4. Aggregate Implications of Selective Inattention
5. Conclusion

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- **Sample**: $\sim$ 8K respondents between 2014 and 2022 from annual housing module
- Variables of interest:
  1. **Nowcasts** of current average 30-year fixed mortgage rate
  2. **Forecasts** of one-year ahead average 30-year fixed mortgage rate
  3. **DM status** based on distance from past or (expected) future home purchase
- Construct errors using average 30-year fixed rate in Freddie Mac PMMS
- Run the following regression:

$$|\text{Error}_{it}| = \sum_s \beta_s \cdot \mathbf{1}\left(\text{DM Status}_{it} = s\right) + \text{Controls}_{it} + \delta_t + \epsilon_{it}$$

NY Fed Survey of Consumer Expectations

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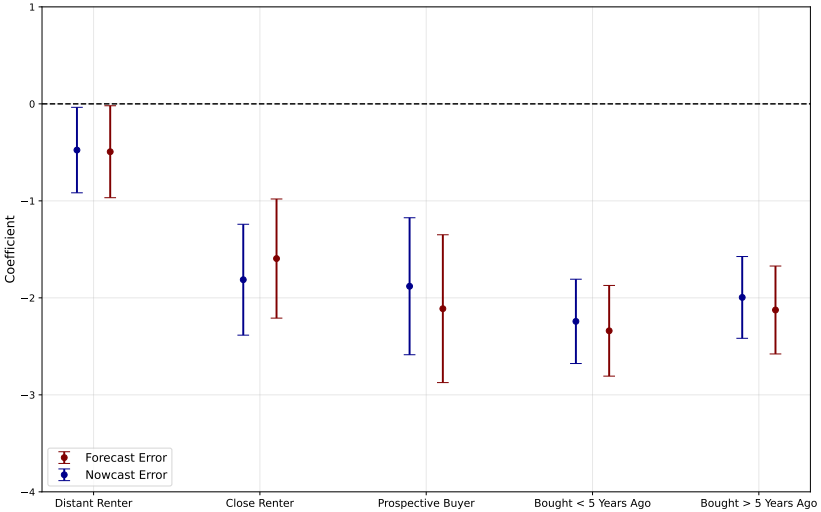
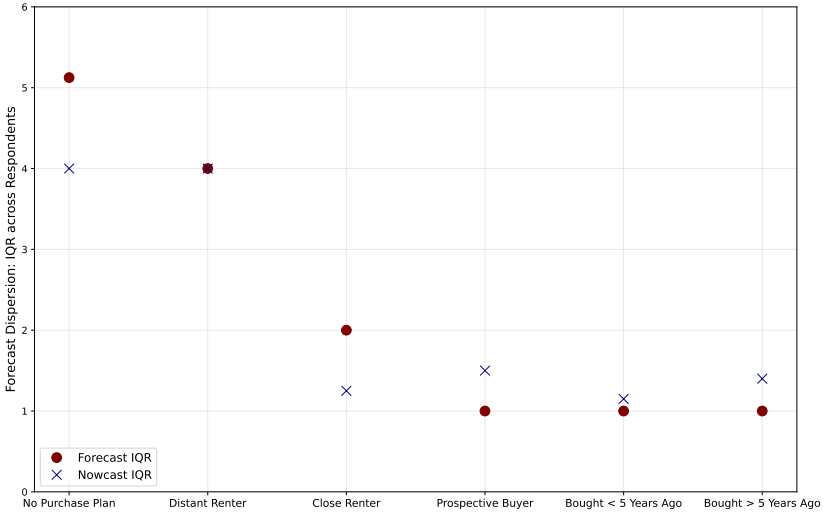
- Not shown today: quantitatively similar results from ECB household survey

Decision-Makers Have More Accurate Beliefs



Errors of prospective buyers $\approx$ **50% lower** than those with no purchase plan

Less Dispersion among Decision-Makers' Beliefs



Disagreement of prospective buyers $\approx$ **70% lower** than those with no purchase plan

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We design and conduct a cross-sectional survey of U.S. households via Prolific

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- Direct measure of distance from durable adjustments
  - Primary home purchase
  - Car purchases
- Measures of information acquisition other than forecasting performance
  - Last active search for information about key variables

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Main Blocks

1. Home decision-making: distance from primary home purchase

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Main Blocks

1. Home decision-making
2. Other decisions: distance from car purchase + other major financial decisions

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2. Other decisions
3. Information acquisition: time since last search + type/source of info searched

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1. Home decision-making
2. Other decisions
3. Information acquisition
4. Macro expectations: beliefs about mortgage rates, T-Bill rates, and inflation

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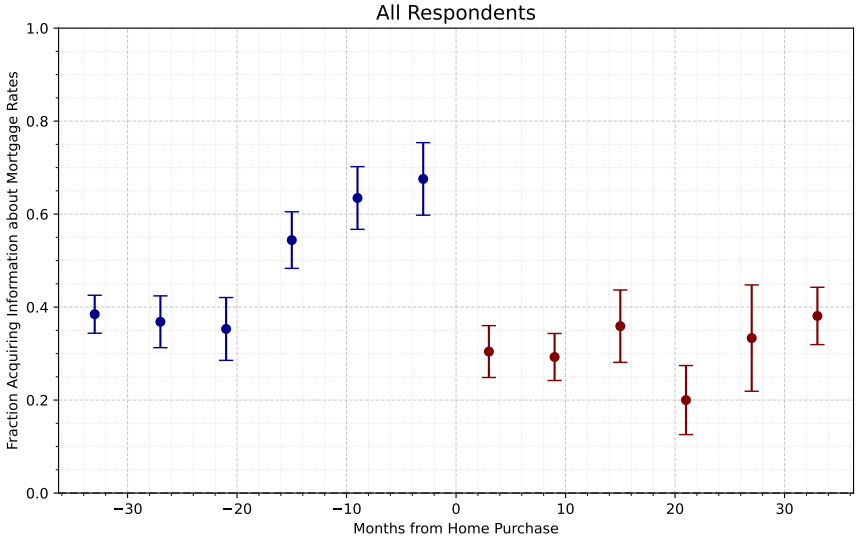
Main Blocks

1. Home decision-making
2. Other decisions
3. Information acquisition
4. Macro expectations
5. Background & financial situation: info on household's balance-sheet using SCF format, demographics, job relocations

▸ Questions

Information Acquisition is Concentrated Pre-Decision



▸ Sources ▸ Heterogeneity ▸ Owners

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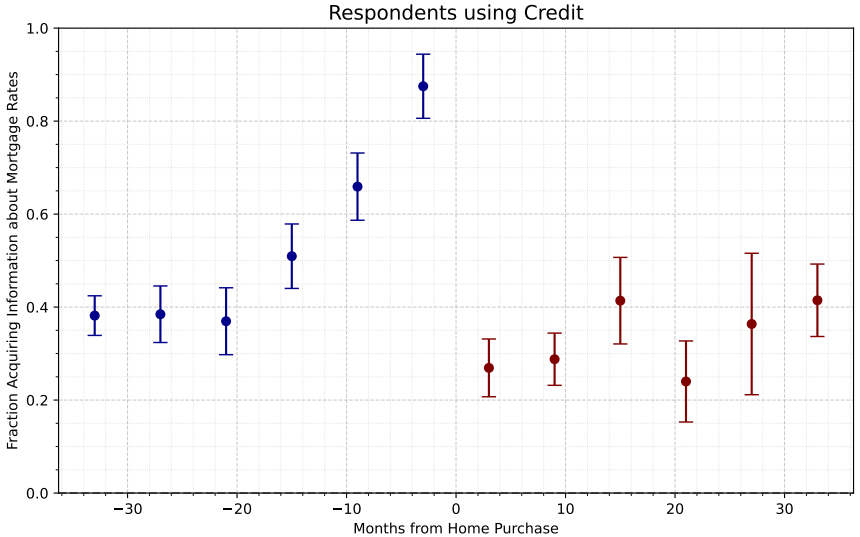

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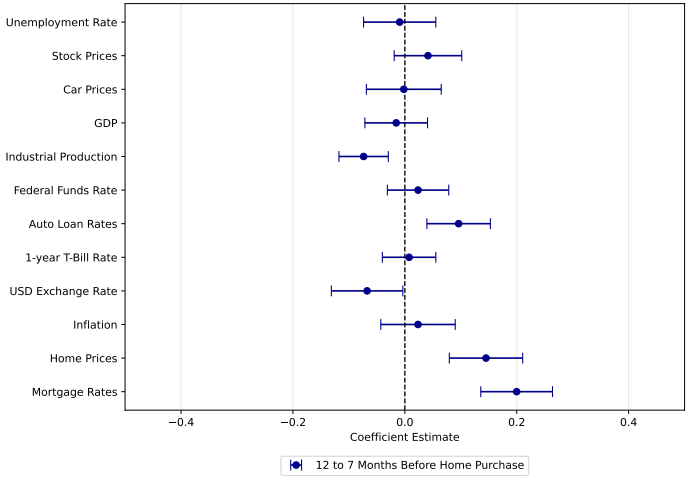
IA is Concentrated on Decision-Relevant Variables

$$\text{Info. Acquisition}_i = \sum_d \beta_d \cdot \mathbf{1}\left(\text{Home Distance}_i = d\right) + \text{Controls}_i + \text{Other Distances}_i + \epsilon_i$$



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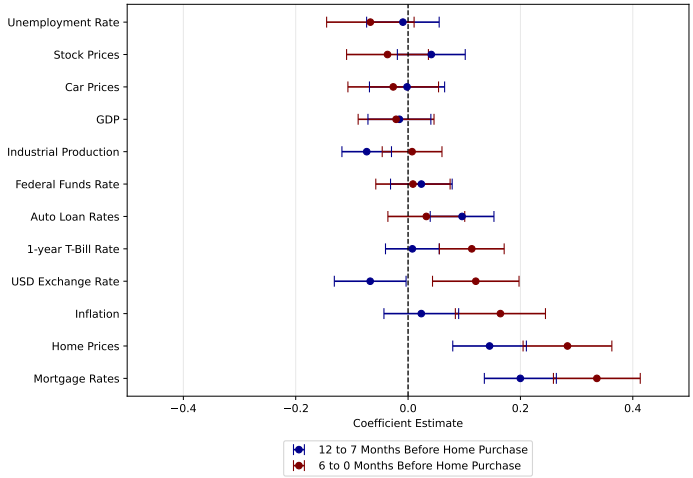
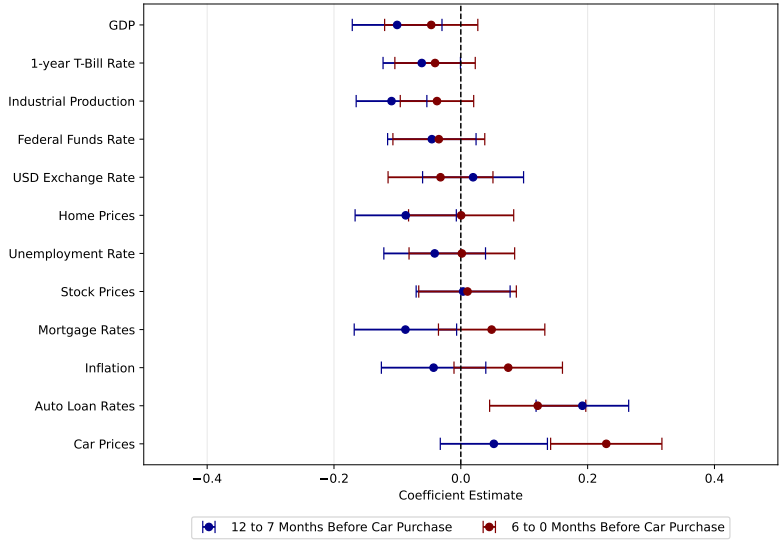


Patterns in Information Acquisition are Decision-Specific



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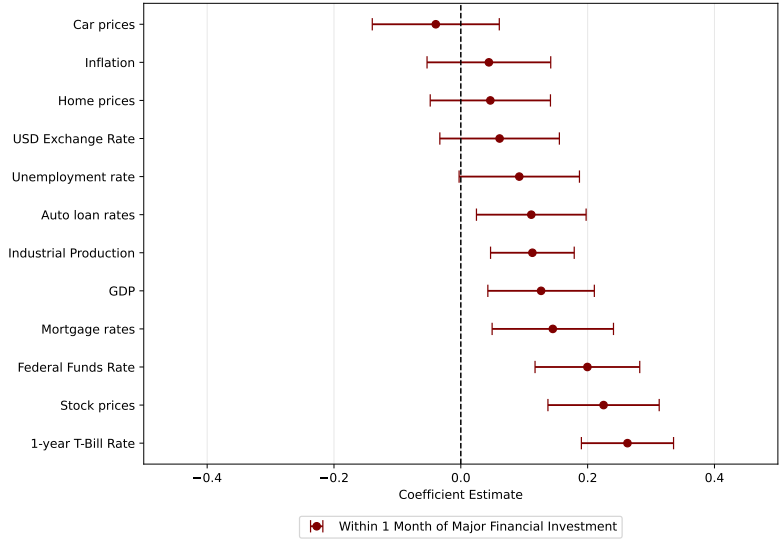
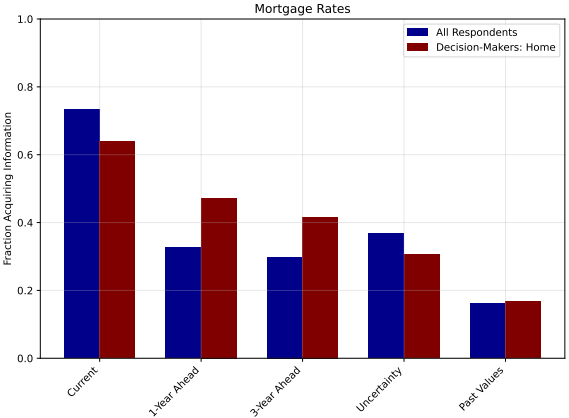
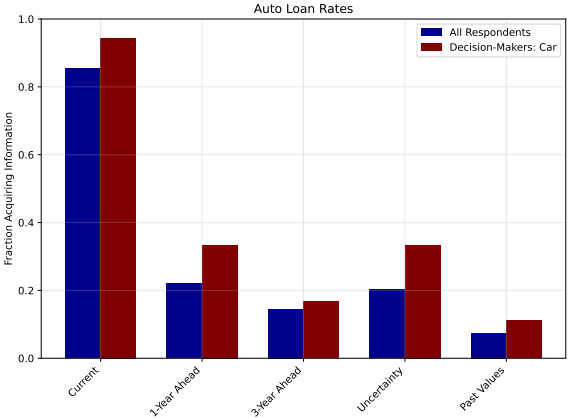


IA is Primarily about Current Values of Variables





▸ Investment Decisions ▸ Sources ▸ Heterogeneity ▸ Owners

Endogeneity of Decision-Making

- Concern: decision-making is **endogenous** to information acquisition and beliefs
- (Current) Solution: **IV** = anticipated moves due to job relocations

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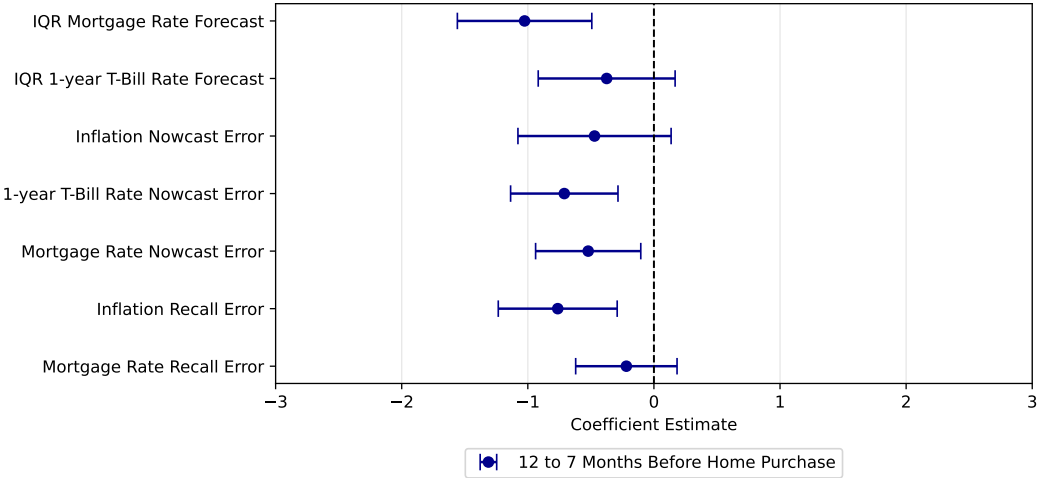
Dependent Variable: Information Acquisition

Variable	OLS	First Stage	IV	OLS	First Stage	IV
Home Decision-Maker	0.33***		0.83***	0.32***		0.88***
	(0.07)		(0.29)	(0.07)		(0.29)
Job Relocation		0.28***			0.28***	
		(0.08)			(0.08)	
N	749	749	749	749	749	749
Controls				✓	✓	✓
F-stat		12.14			4.43	

Decision-Makers Beliefs Appear (Weakly) More Informed



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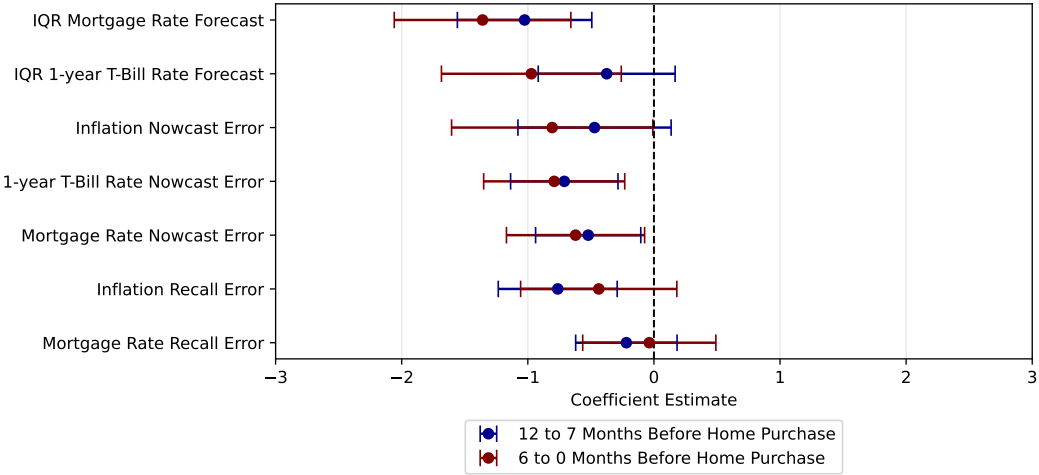

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$\Downarrow$

Information is acquired more frequently...

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$$\underbrace{\text{Partial equilibrium incomplete markets model} + \text{durables}}_{\text{McKay-Wieland 2021}} + \underbrace{\text{dynamic info. acquisition}}_{\approx \text{ rational inattention}}$$

Partial equilibrium incomplete markets model + durables + dynamic info. acquisition

Decision-Making

Given beliefs, HHs choose non-durables $\mathbf{c}$
and durables $\mathbf{d}'$ subject to:

- Income risk + collaterized borrowing
- Stochastic interest rate r
- Depreciation of durables stock
- Durables adjustment costs
- Operating + maintenance costs
- Match-quality shocks (e.g. job change)

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Rich model of how beliefs about $r \longrightarrow \mathbf{c}, \mathbf{d}'$

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Information Acquisition

HHs receive signals of endogenous precision about current r

- Cost of signal = $\omega \times$ mutual info.
- Benefit of signal = better choice of $\mathbf{c}, \mathbf{d}'$
- Interest rate is persistent $\Rightarrow$ prior beliefs are state variables

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Endogenous beliefs about r that come from dynamic information acquisition

- Define belief wedges about next period states:

$$\Delta_r = \rho \left[\widehat{\mathbf{E}}(r) - r \right], \quad \Delta_b = b \left[\exp \widehat{\mathbf{E}}(r) - \exp(r) \right]$$

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$$\mathbf{c}(\mathbf{s}), \mathbf{d}'(\mathbf{s}) = \arg\max_{c, d'} U(c, m(d')) + \beta \cdot \mathbf{E} V \left(b' + \Delta_b, d', r' + \Delta_r, y', \xi', \text{beliefs}' \right)$$

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$$c + b' + d' = y + [\exp(r) + \tau_b \mathbf{1}_{b<0}]\, b + (1-\delta)\, d - \textbf{A(d, d')}, \quad b' \geq -\lambda d'$$

$$\textbf{A(d, d')} = \begin{cases} \underbrace{\nu \cdot d}_{\text{op. costs}} & \text{if } d' = \underbrace{(1-\delta)d}_{\text{depreciation}} + \underbrace{\delta \cdot \chi \cdot d}_{\text{maint. costs}} \\ \underbrace{\nu \cdot d}_{\text{op. costs}} + \underbrace{f \cdot (1-\delta)d}_{\text{fixed adj. cost}} & \text{else} \end{cases}$$

- Define belief wedges about next period states: Δ_r, Δ_b
- Given beliefs, households solve at state $\mathbf{s} = (b, d, r, y, \xi, \text{beliefs})$:

$$\mathbf{c}(\mathbf{s}), \mathbf{d}'(\mathbf{s}) = \arg\max_{c,d'} U(c, \mathbf{m}(d')) + \beta \cdot \mathbf{E}\, V\left(b' + \Delta_b, d', r' + \Delta_r, y', \xi', \text{beliefs}'\right)$$

$$c + b' + d' = y + [\exp(r) + \tau_b \mathbf{1}_{b<0}]\, b + (1 - \delta)\, d - A(d, d'), \quad b' \geq -\lambda d'$$

$$\mathbf{m}(d') = d' \times \max\left\{\xi, \mathbf{1}_{d' \neq (1-\delta+\delta\cdot\chi)d}\right\}, \quad \xi \sim \text{Bern}(\bar{\xi}) = \text{match-quality shock}$$

$\xi = 0 \Rightarrow$ have to adjust for **exogenous** reasons (e.g. job relocation)

Decision-Making Problem, Given Beliefs

- Define belief wedges about next period states: Δ_r, Δ_b
- Given beliefs, households solve at state $\mathbf{s} = (b, d, r, y, \xi, \text{beliefs})$:

$$\mathbf{c}(\mathbf{s}), \mathbf{d}'(\mathbf{s}) = \arg\max_{c,d'} U(c, m(d')) + \beta \cdot \mathbf{E}V\left(b' + \Delta_b, d', r' + \Delta_r, y', \xi', \text{beliefs}'\right)$$

$$c + b' + d' = y + [\exp(r) + \tau_b \mathbf{1}_{b<0}]\, b + (1 - \delta)\, d - A(d, d'), \quad b' \geq -\lambda d'$$

- $\log y$ follows AR1 $+$ observed by households
- r follows an AR1 $+$ HHs know DGP, but observe noisy signal of **current rate**

Information Acquisition Problem to Determine Beliefs

- Simplifying assumption: HHs can only acquire **Gaussian** signals about **current** r
  - $\Rightarrow$ Prior beliefs in each period can be summarized by: $r \sim N(\mu, \Sigma)$

Information Acquisition Problem to Determine Beliefs

- Simplifying assumption: HHs can only acquire **Gaussian** signals about **current** r
- Households choose signal variance Σ_s, anticipating choices of $\mathbf{c}$ and $\mathbf{d}'$:

$$V(\mathbf{s}) = \max_{\Sigma_s} \mathbf{E}\Big[U(\mathbf{c}, m(\mathbf{d}')) + \beta V\left(\mathbf{s}'\right) \Big]$$

Information Acquisition Problem to Determine Beliefs

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$$G = \frac{\Sigma}{\Sigma + \Sigma_s}$$

Information Acquisition Problem to Determine Beliefs

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$$G = \frac{\Sigma}{\Sigma + \Sigma_s}$$

$$\widehat{\mathbf{E}}(r) = (1 - G)\mu + G\left(r + s\right), \quad s \sim N(0, \Sigma_s)$$

Information Acquisition Problem to Determine Beliefs

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$$\mu' = (1 - \rho)\overline{r} + \rho\widehat{\mathbf{E}}(r), \quad \Sigma' = \rho^2\Sigma(1 - G) + \sigma^2$$

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$$\mu' = (1 - \rho)\overline{r} + \rho\widehat{\mathbf{E}}(r), \quad \Sigma' = \rho^2\Sigma(1 - G) + \sigma^2$$

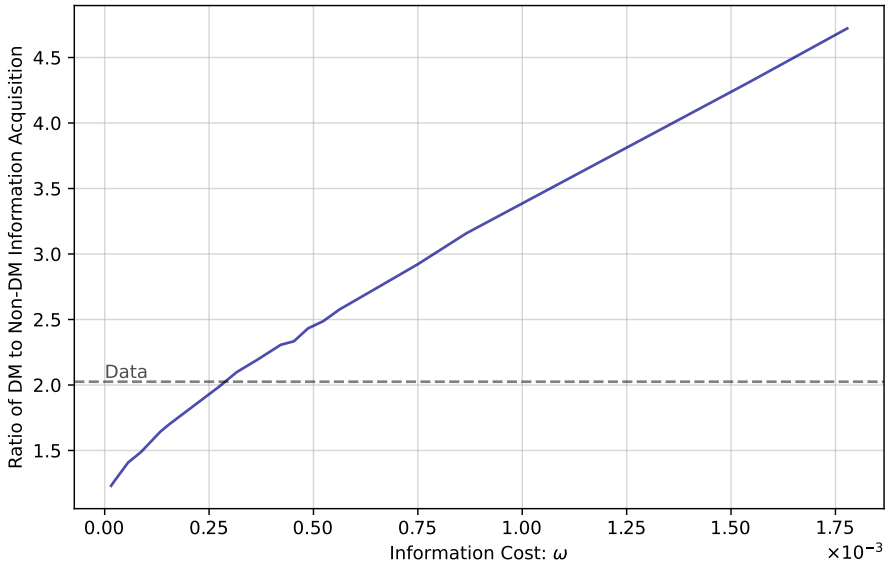
- $\mathbf{c}, \mathbf{d}'$ maximize objective with **belief wedges** which depend on $\widehat{\mathbf{E}}(r)$
  - Lower $\Sigma_s \Rightarrow$ **wedges** $\longrightarrow 0 \Rightarrow \widehat{\mathbf{E}}(r) \longrightarrow r \Rightarrow$ smaller utility loss from $\mathbf{c}, \mathbf{d}'$

Calibrated Parameters

Parameter	Description	Value	Source
Internally-Calibrated			
β	Discount factor	0.9829	Net Assets/GDP = 0.87
ψ	Non-durables exponent	0.627	d/c ratio = 2.64
f	Fixed cost	0.11	Quarterly adjustment probability = 0.0475
$1-\overline{\xi}$	Match-quality shock probability	0.034	$P(\xi = 0 \mid \text{adjust durables}) = 0.75$
ω	Information cost	$10^{-3.541}$	Ratio of DM to non-DM information acquisition = 2.03*
Externally-Calibrated			
γ	RRA (and inverse EIS)	2	Standard value
ε	Durables elasticity of substitution	0.5	McKay & Wieland (2021)
$1-\lambda$	Required downpayment	0.2	Standard value
δ	Depreciation rate	0.017	McKay & Wieland (2021)
χ	Maintenance share	0.35	McKay & Wieland (2021)
ν	Operating cost	0.012	McKay & Wieland (2021)
ρ_y	Income persistence	0.977	Floden and Lindé (2001)
σ_ϵ	Income shock std. dev.	0.058	Floden and Lindé (2001)
$\overline{r}$	Real rate mean	0.0143	10-Year Treasury Rate: 1961-2024
ρ	Real rate persistence	0.979	10-Year Treasury Rate: 1961-2024
σ	Real rate shock std. dev.	0.0014	10-Year Treasury Rate: 1961-2024
τ_b	Borrowing spread	0.004156	Average 30-Year Fixed Rate Mortgage Rate: 1971-2024

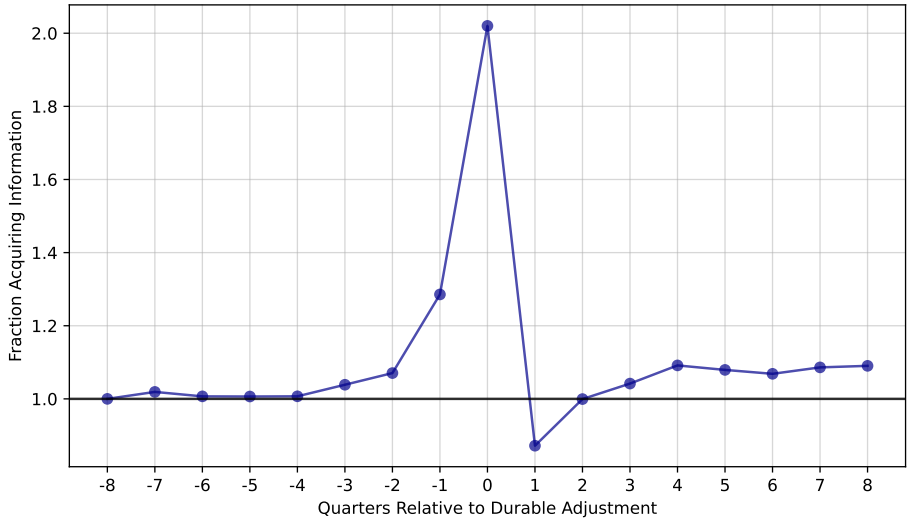
▸ Durables Adjustment Hazard

Effect of Information Cost on Information Acquisition

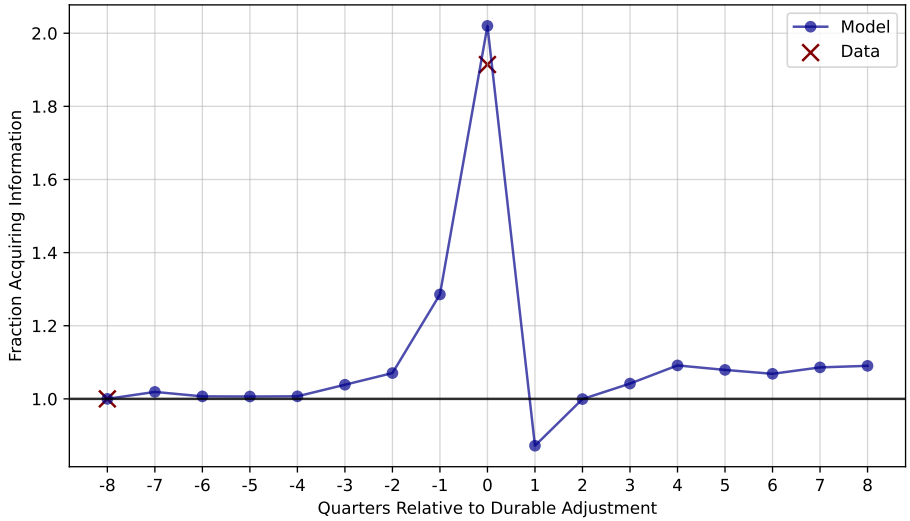


Beliefs and Information Acquisition at the Micro-Level

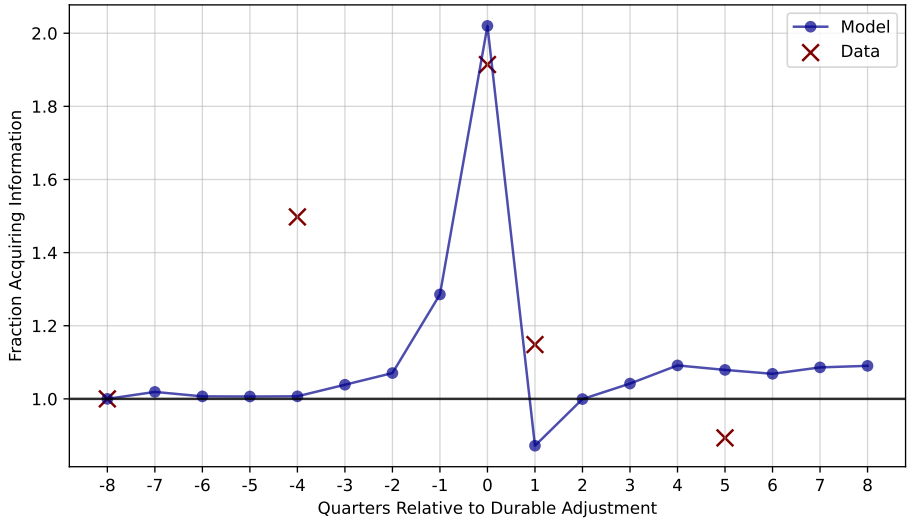
Extensive Margin of Info. Acquisition in Event-Time



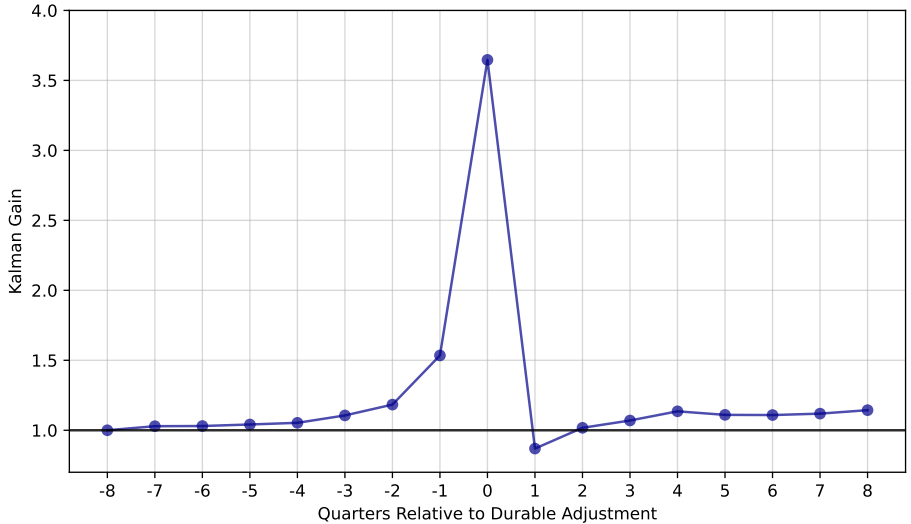
Extensive Margin of Info. Acquisition in Event-Time



Extensive Margin of Info. Acquisition in Event-Time

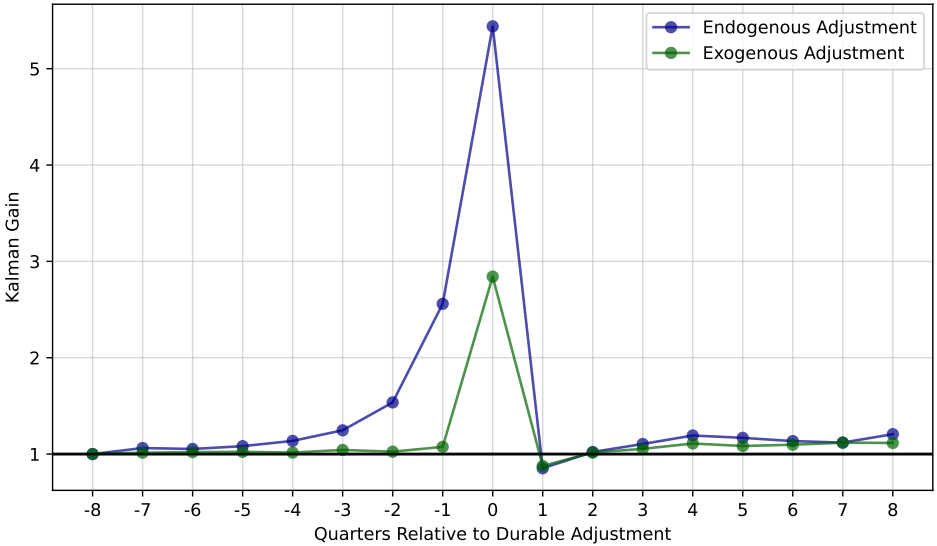


Intensive Margin of Info. Acquisition in Event-Time

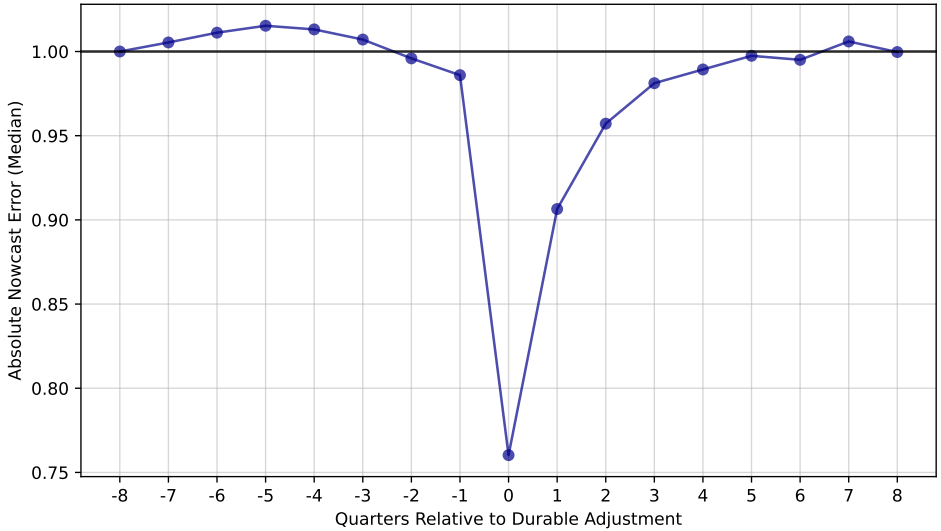


Durables Share | Information Acquisition sS

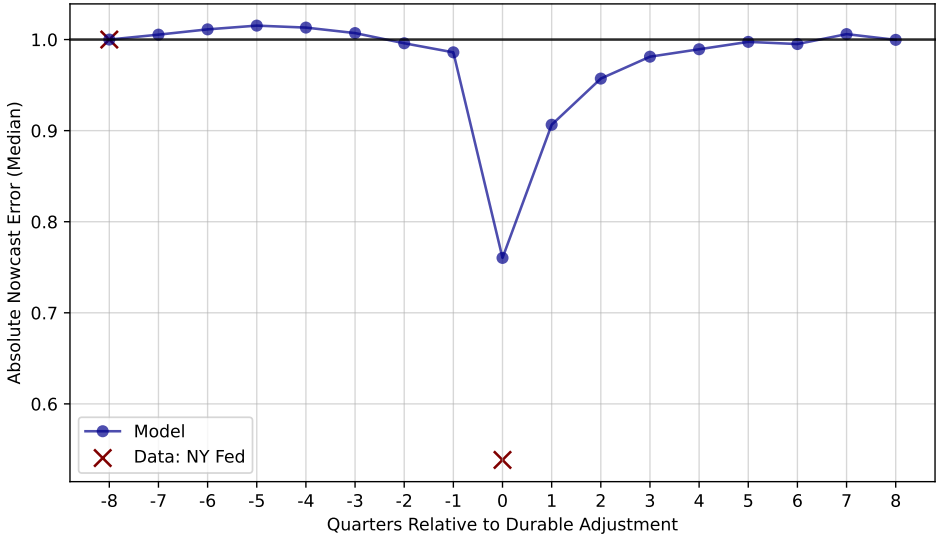
Endogenous Adjustments ⇒ Info. Acquisition Pre-Choice



Nowcast Errors in Event-Time



Nowcast Errors in Event-Time



BELIEFS AT THE MACRO-LEVEL

AGGREGATE BELIEFS ARE SLUGGISH, LIKE IN THE DATA...

- Direct evidence of information-rigidity = CG (2015) regression

$$\underbrace{r_{t+3} - \overline{F}_t r_{t+3}}_{\text{forecast error}} = \alpha + \beta_{CG} \underbrace{\left(\overline{F}_t r_{t+3} - \overline{F}_{t-1} r_{t+3}\right)}_{\text{forecast revision}} + \epsilon_t$$

- Common finding: $\beta_{CG} > 0 \Rightarrow$ aggregate expectations are **sluggish**

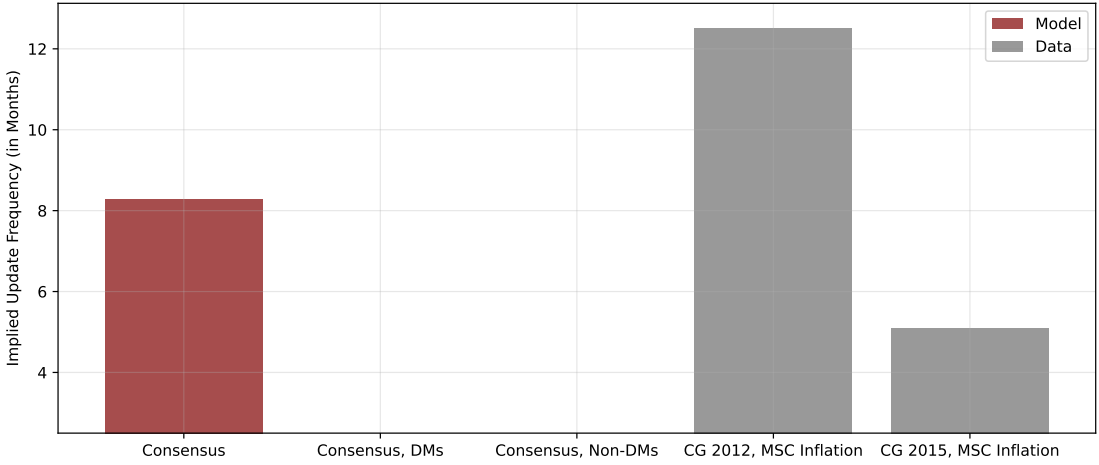
- In a sticky-information model (constant probability of updating expectations),

$$\text{Implied Update Frequency} = \frac{3}{1 - \frac{\beta_{CG}}{1+\beta_{CG}}} \text{ Months}$$

$\Rightarrow$ Common target for calibrating sticky information models (e.g. McKay-Wieland 2021)

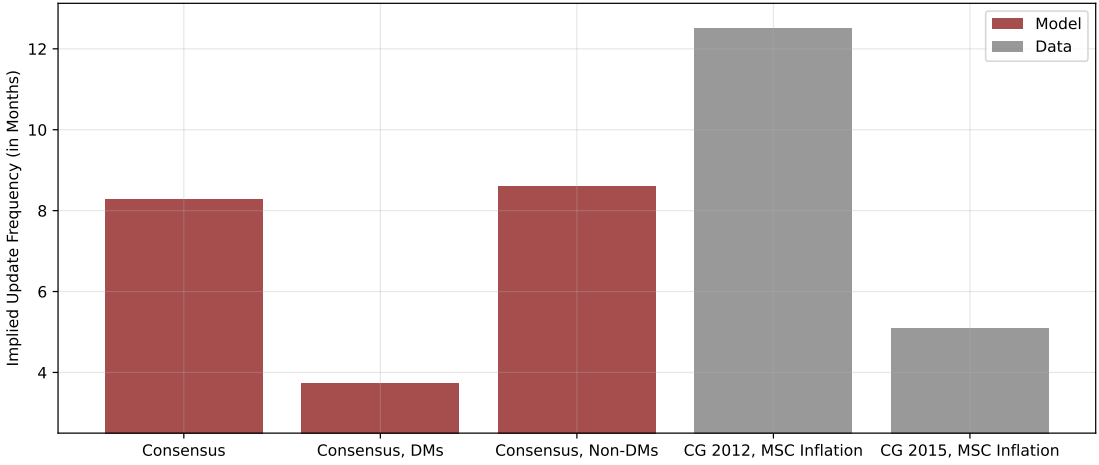
Aggregate Beliefs are Sluggish, Like in the Data...

$$\text{Implied Update Frequency} = \frac{3}{1 - \frac{\beta_{CG}}{1+\beta_{CG}}} \text{ Months}$$



... But This Masks Substantial Selection into Attention!

$$\text{Implied Update Frequency} = \frac{3}{1 - \frac{\beta_{CG}}{1+\beta_{CG}}} \text{ Months}$$



Outline

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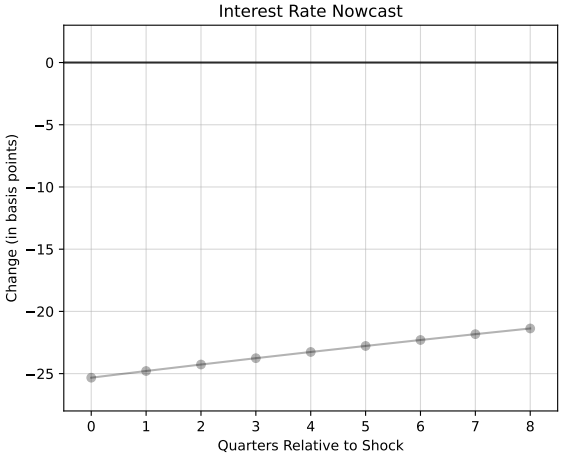
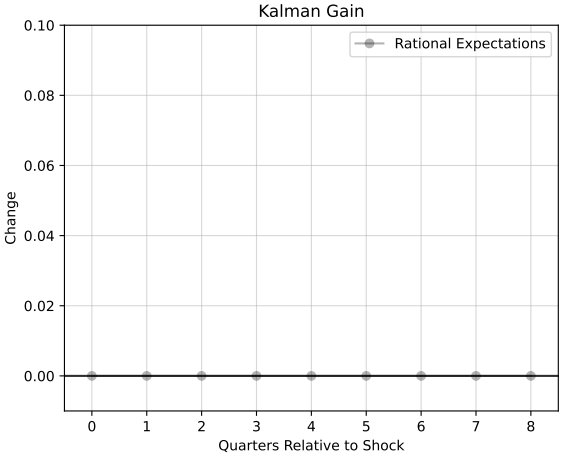
5. Conclusion

Responses to Interest Rate Changes

Impulse Response of Beliefs to Rate Cut

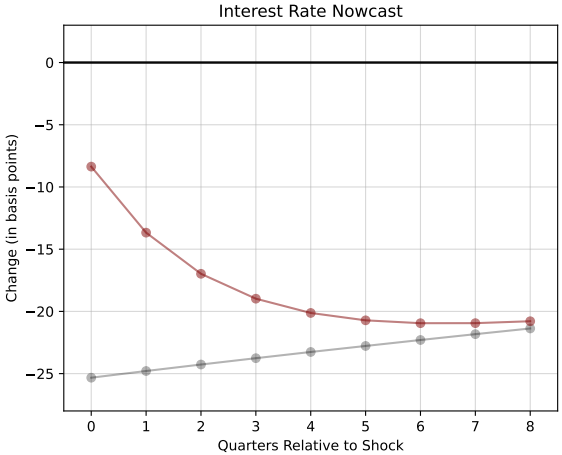


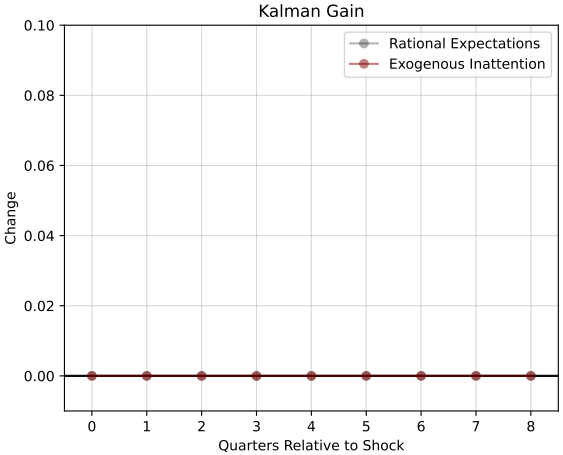


Rational Expectations: $\omega = 0 \Rightarrow$ rational expectations

▸ Decomposition

Impulse Response of Beliefs to Rate Cut

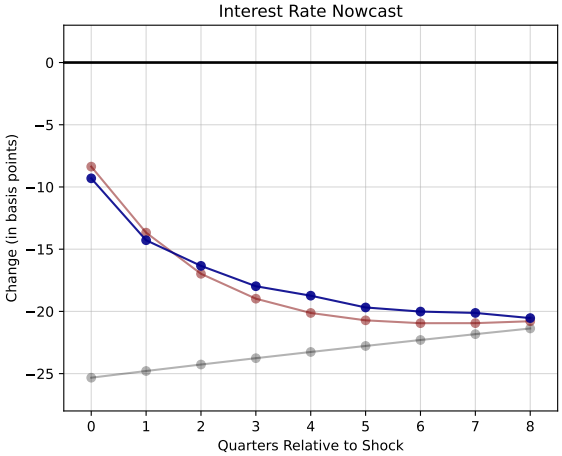


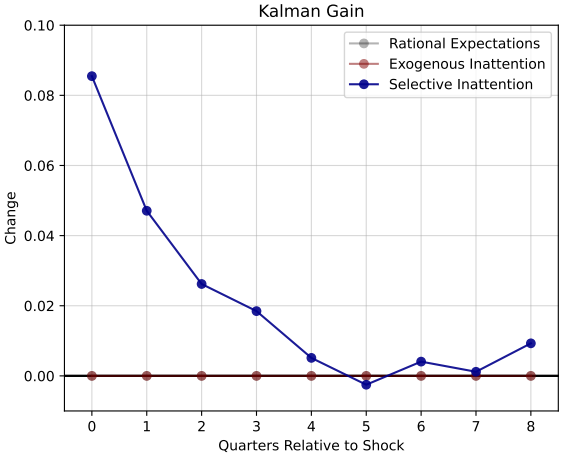


Exogenous Inattention: G set to a constant to match β_{CG} in baseline model

▸ Decomposition

Impulse Response of Beliefs to Rate Cut

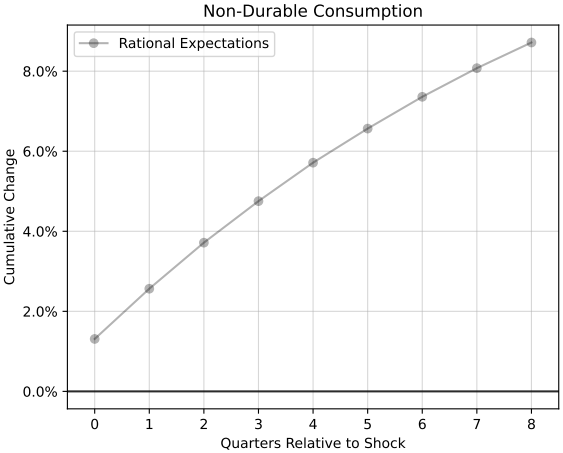


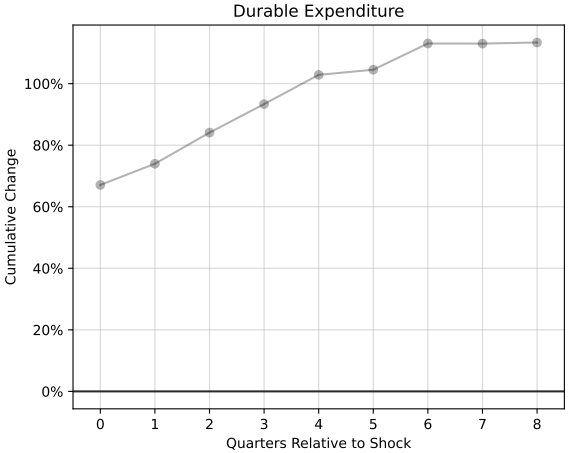


Selective Inattention: baseline model with endogenous information acquisition

▸ Decomposition

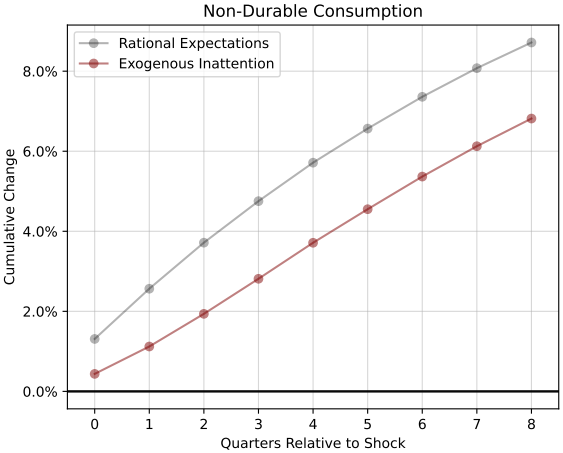
Impulse Response of Spending to Rate Cut

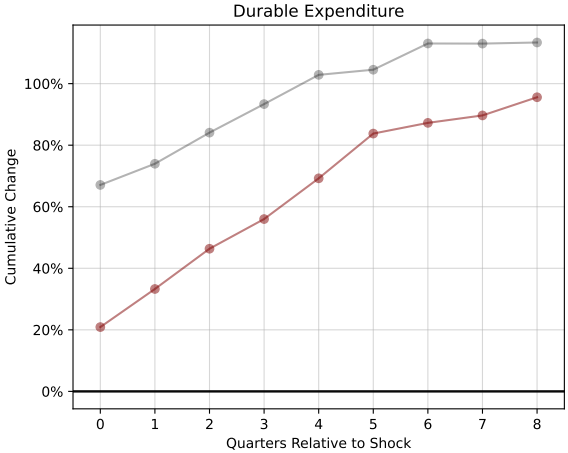




▸ Incorporating GE Effects ▸ Aggregate Expenditure

Impulse Response of Spending to Rate Cut





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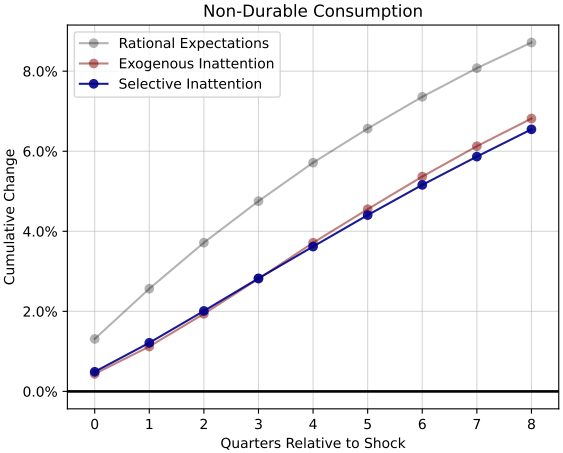
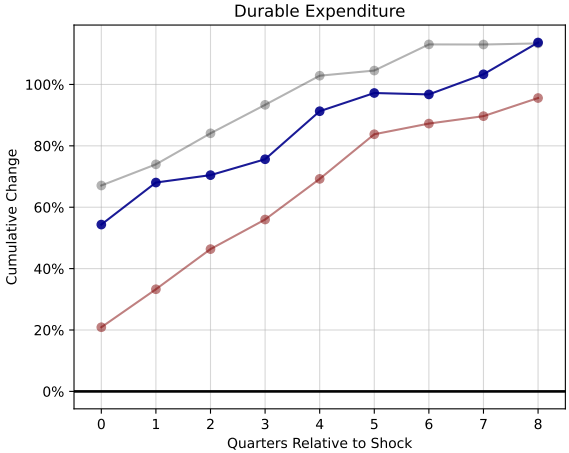
Impulse Response of Spending to Rate Cut

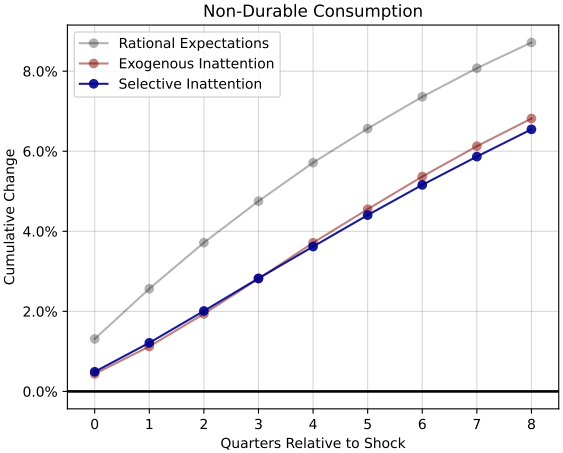


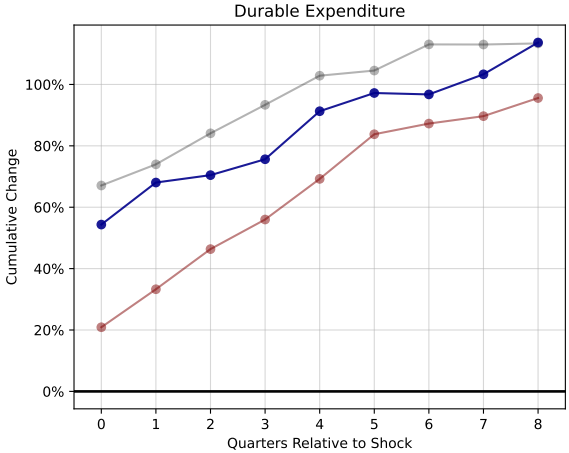


Non-durable consumption response ≈ **exogenous inattention**...

▸ Incorporating GE Effects ▸ Aggregate Expenditure

Impulse Response of Spending to Rate Cut



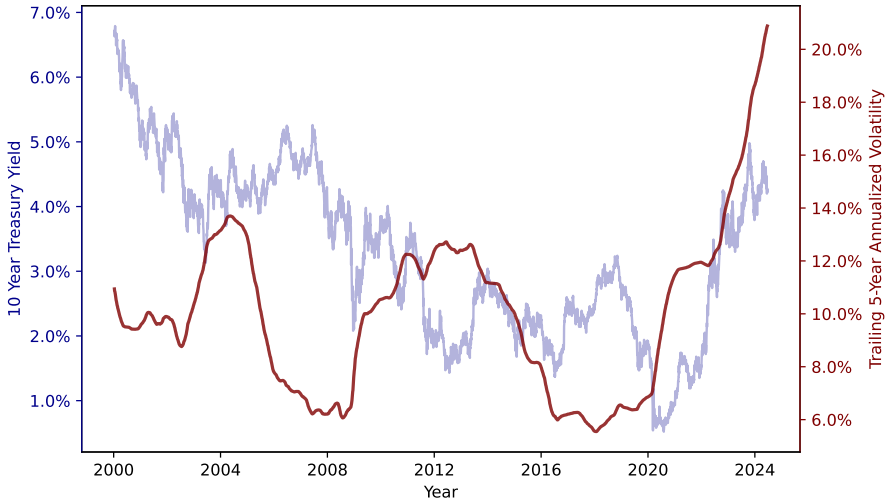


... but **durable** expenditure response ≈ **rational expectations**!

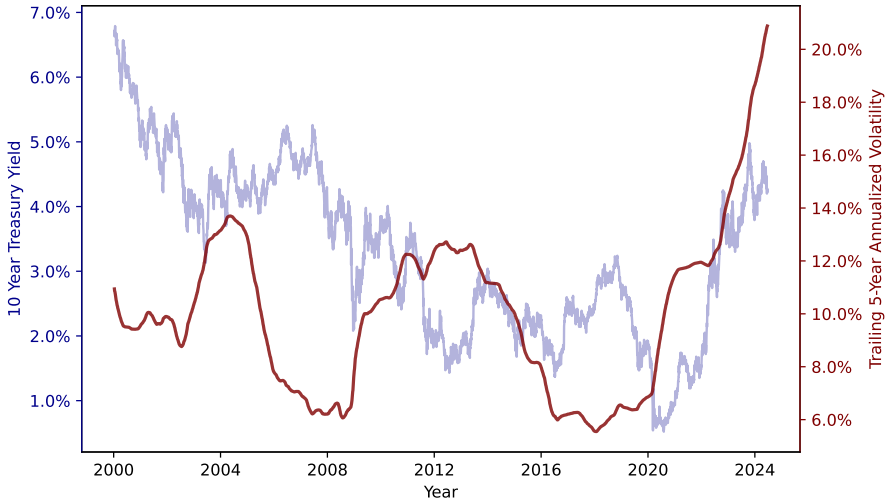
▸ Incorporating GE Effects ▸ Aggregate Expenditure

Effects of Changes in Interest Rate Volatility

Motivation: Recent Rise in Rate Volatility

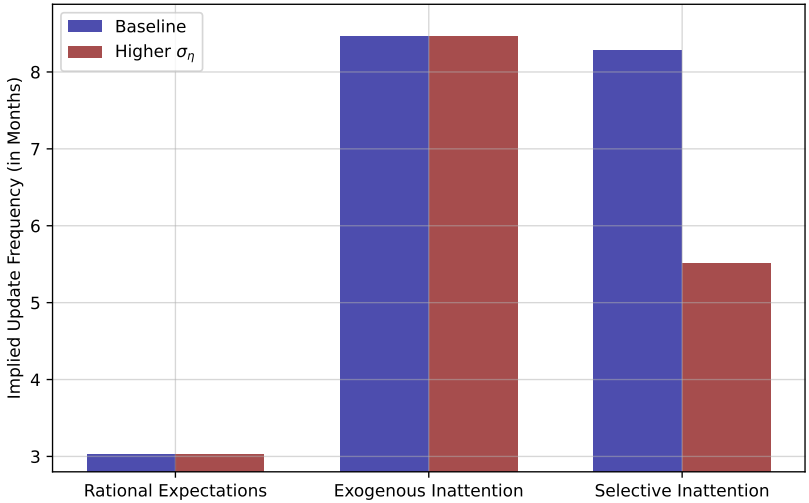


Motivation: Recent Rise in Rate Volatility



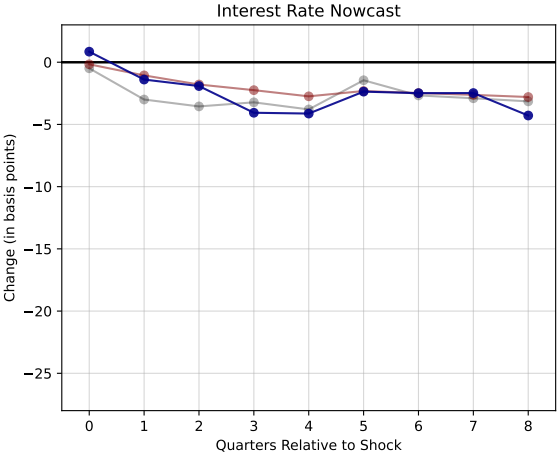
$\Rightarrow$ Use model to ask what happens if interest rate volatility **doubles**?

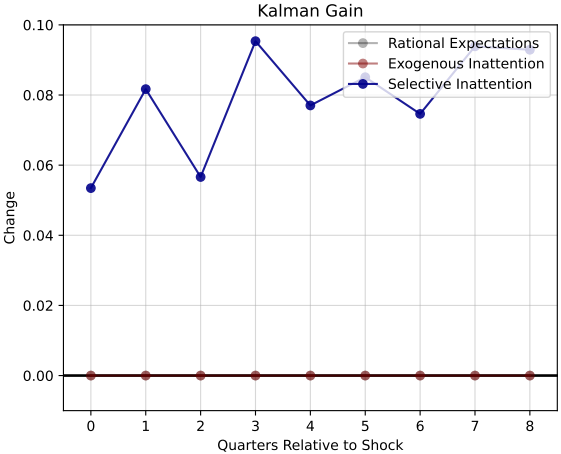
Effects of Increased Volatility on Beliefs



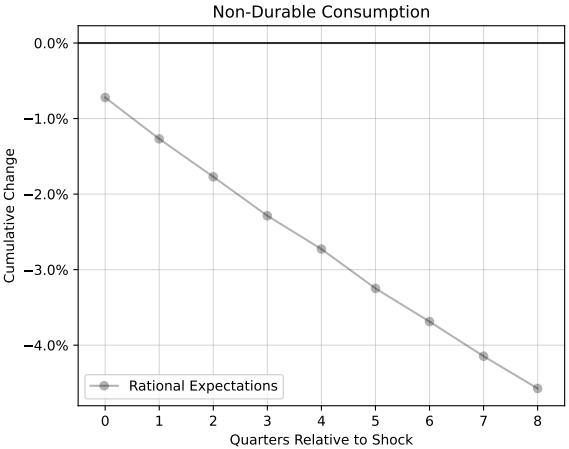
$\uparrow$ volatility $\Rightarrow \uparrow$ info. acquisition $\Rightarrow \downarrow$ belief rigidity

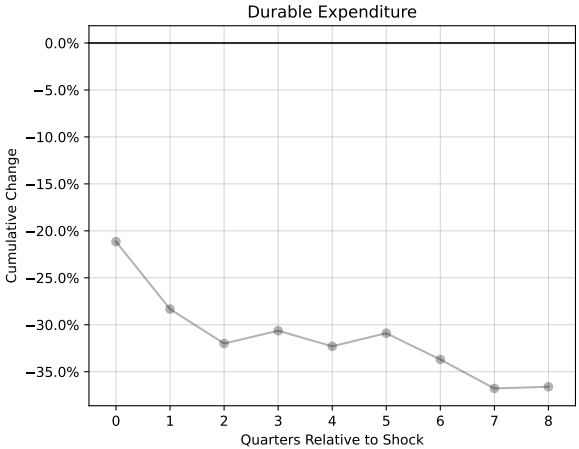
Impulse Response of Beliefs to Increase in Volatility





Impulse Response of Spending to Increase in Volatility

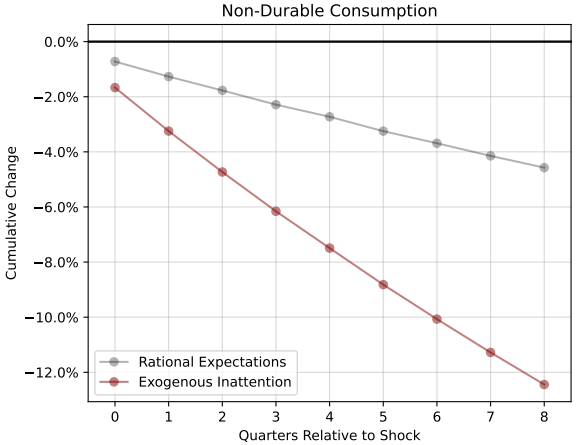


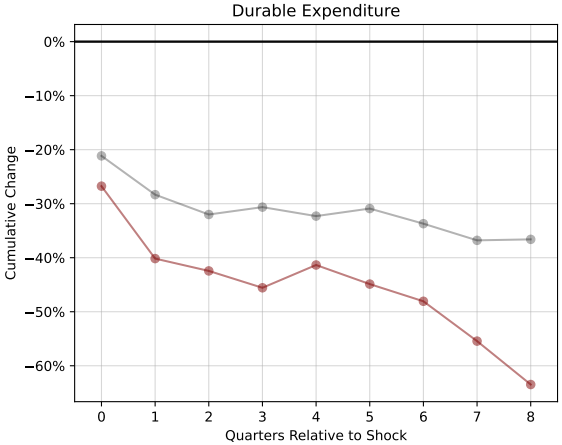


↑ volatility ⇒ spending falls due to precautionary motives... Sandmo 74

▸ Aggregate Expenditure

Impulse Response of Spending to Increase in Volatility

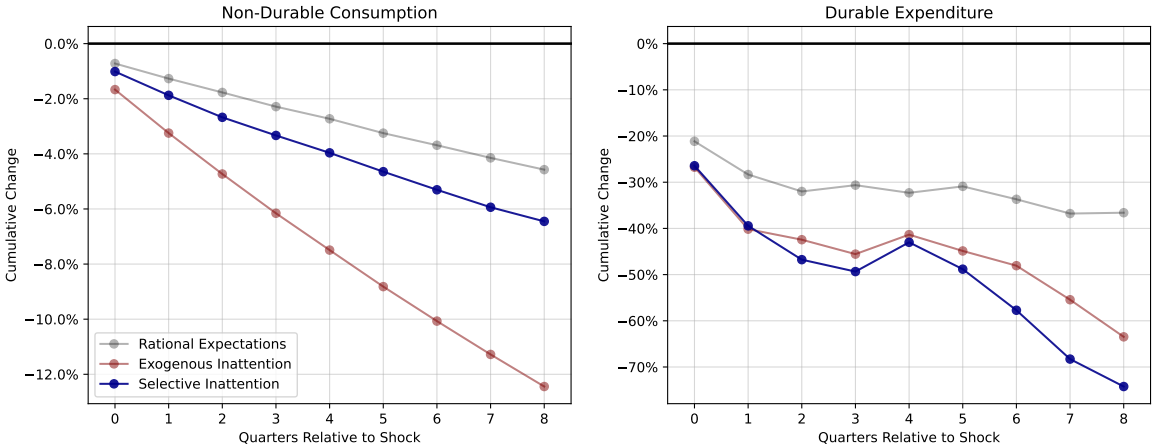




... which is stronger with **exogenous inattention** because of more uncertainty...

▸ Aggregate Expenditure

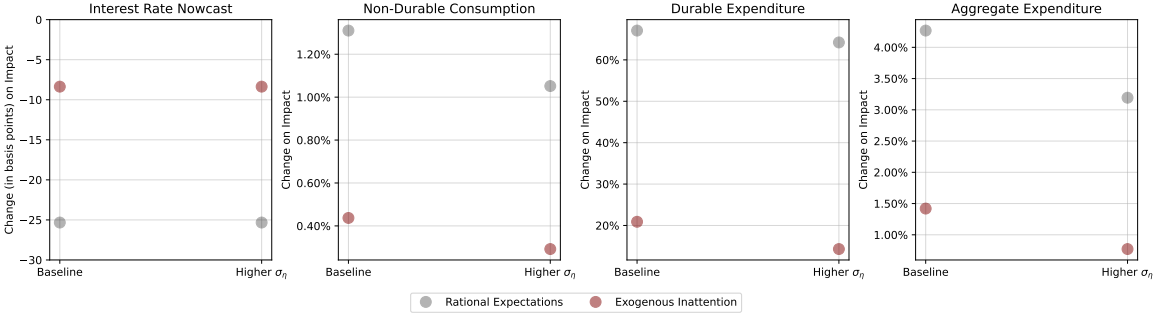
Impulse Response of Spending to Increase in Volatility



... but **selective inattention** undoes over 50% of this fall due to ↑ info. acquisition!

▸ Aggregate Expenditure

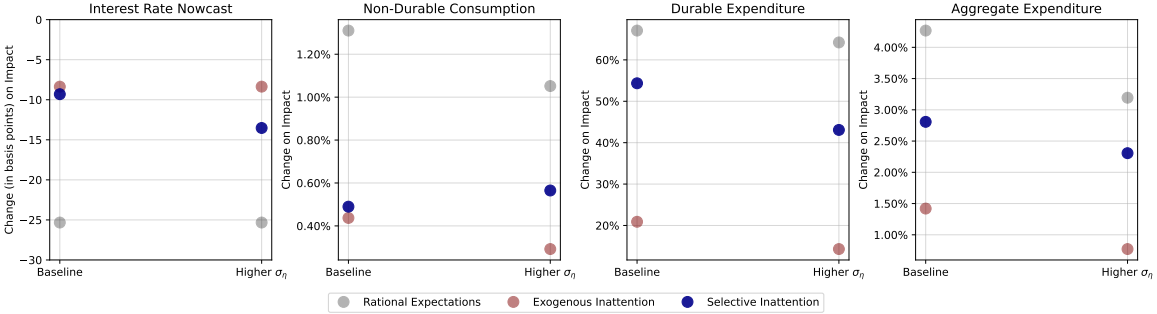
Effects of Increased Volatilty on 25 bps Rate Cut Response



$\uparrow$ volatility $\Rightarrow$ consumption is less response to interest rates

▸ Change After 8 Quarters

Effects of Increased Volatilty on 25 bps Rate Cut Response



... but not with **selective inattention** because of increased info. acquisition!

▸ Change After 8 Quarters

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Conclusion

- Households are selectively inattentive to interest rates
  - IA is concentrated around durables purchases, where beliefs are more accurate
- Both exogenous and selective inattention $\Rightarrow$ slow-moving aggregate beliefs

Conclusion

- Households are selectively inattentive to interest rates
  - IA is concentrated around durables purchases, where beliefs are more accurate
- Both exogenous and selective inattention $\Rightarrow$ slow-moving aggregate beliefs
- But **unlike** exogenous inattention, selective inattention implies
  - Durables spending behaves close to rational expectations case
  - Changes in volatility have different effects because of changes in info. acquisition

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- **Takeaways**:
  - **Micro-level** patterns in attention are useful identifying moments
  - Beliefs of **decision-makers** matter, not just cross-sectional averages

THANK YOU!

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Main Survey Questions

- Eliciting our main measure of information acquisition

  Step 1: *In the last 3 years, did you actively search for information about any of the following economic variables in the U.S.?*
  By "active search" we mean a deliberate effort to find information which could include searching online, reading news articles or reports, talking to a financial advisor or broker, or any other intentional effort to gather information.
  Step 2: *How many months ago did you last actively search for information about mortgage rates?*

- Eliciting households' distance from the primary home purchase

  Owners: *How many months ago did you finalize the purchase of your current primary residence?*
  Renters: *How many months from now do you expect the closing on your primary residence purchase?*
  By "closing", we mean signing the final documents to officialize the purchase.

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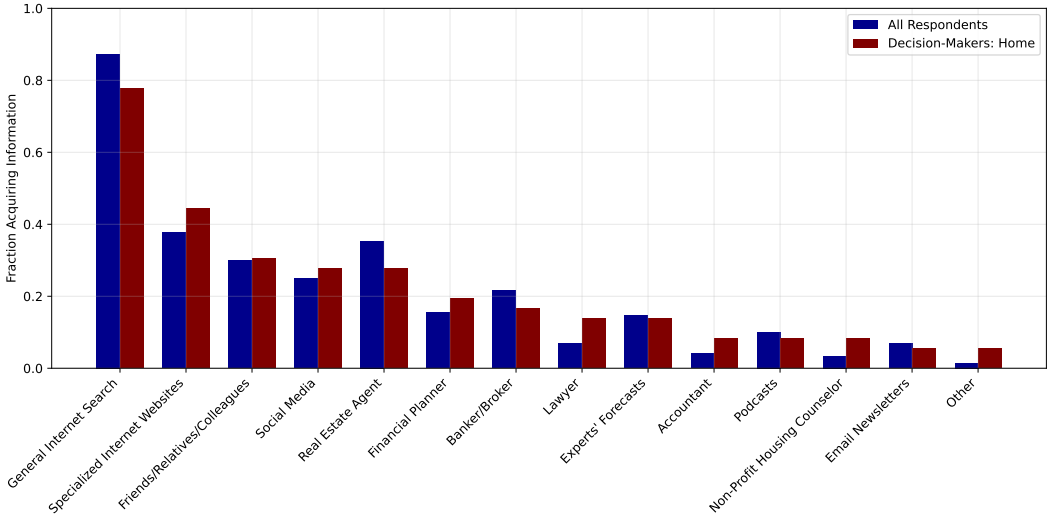
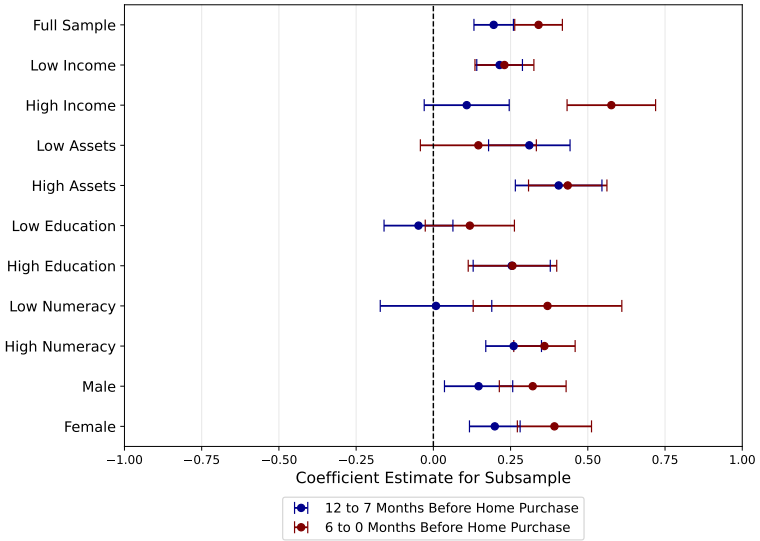
Sources of Information Acquisition



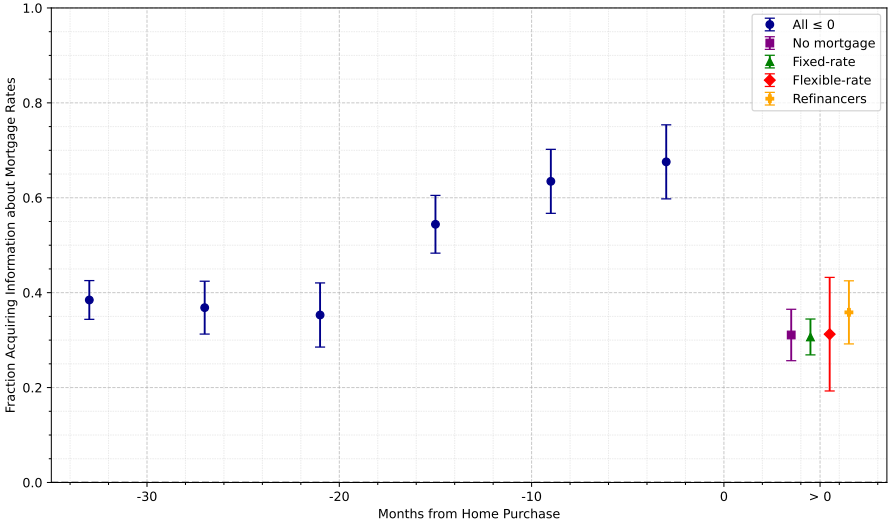
Back: IA Back: Current

Heterogeneity in Information Acquisition



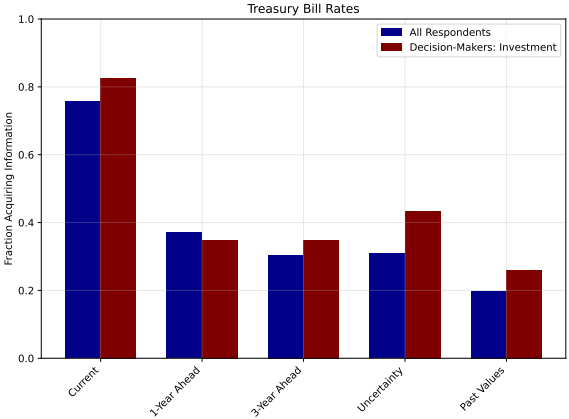
Back: IA Back: Current

Heterogeneity in Information Acquisition of Owners



Back: IA Back: Current

IA is Primarily about Current Values of Variables



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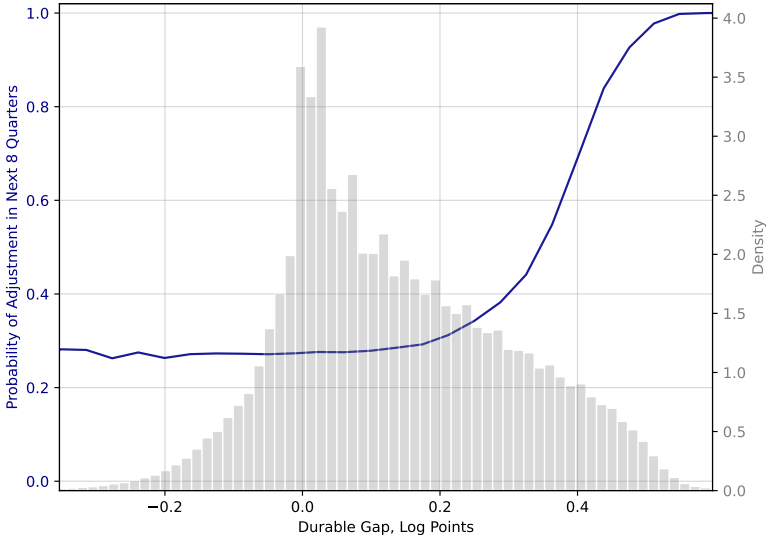
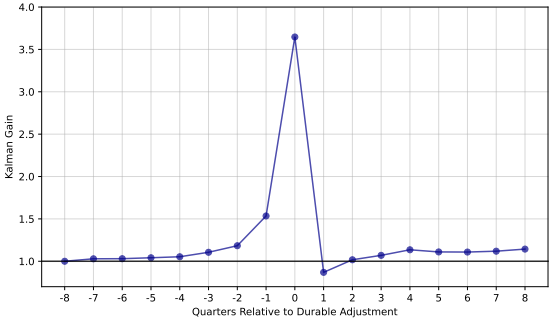
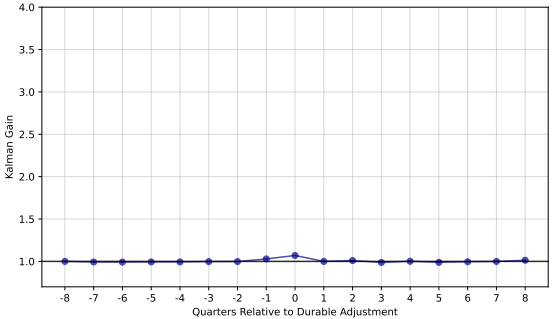
Adjustment Probability as a Function of Durables Gap



Baseline: $\psi = 0.63$



Low Durables Share: $\psi = 0.99$



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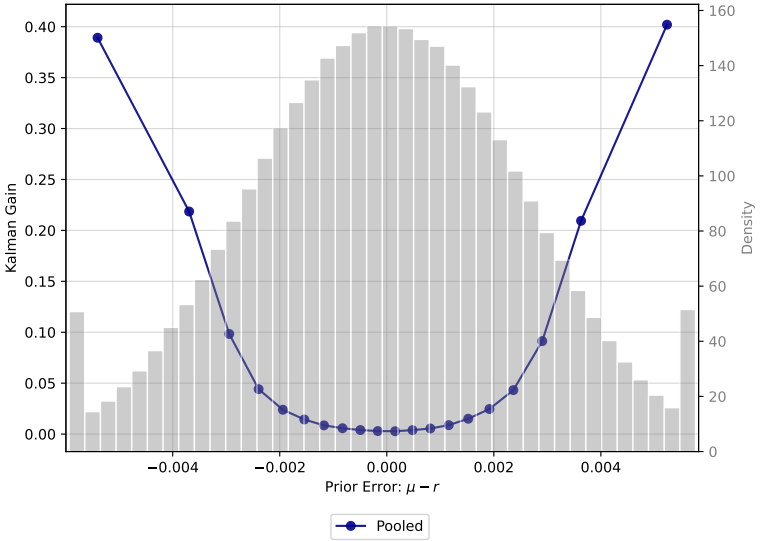
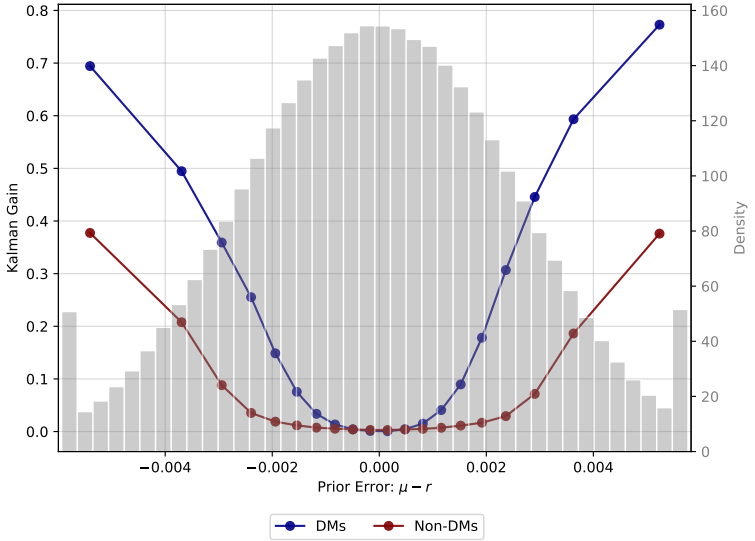
Durables Adjustment Shift sS Bands of Info. Acqusition



Durables Adjustment Shift sS Bands of Info. Acqusition



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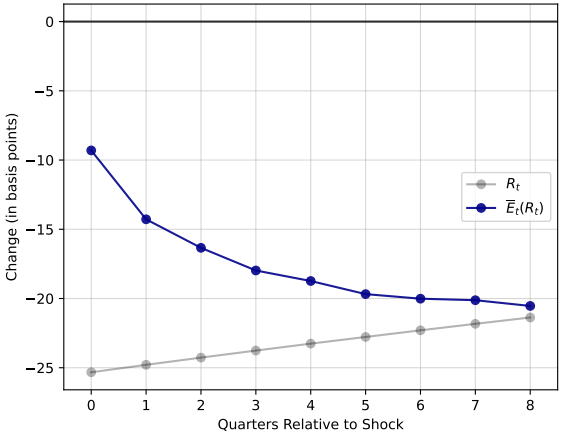
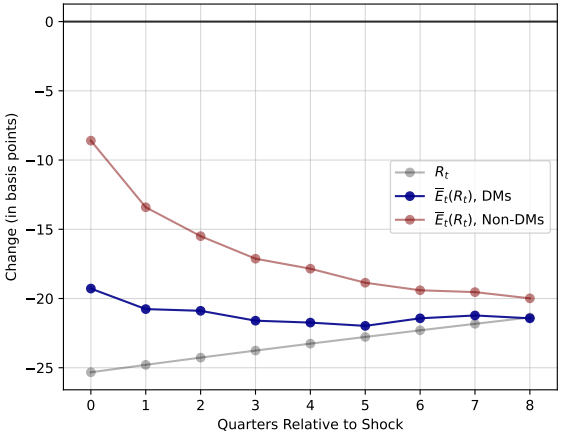
Decomposition of Aggregate Belief Response





Beliefs of **decision-makers** respond $\geq$ 2 times as fast

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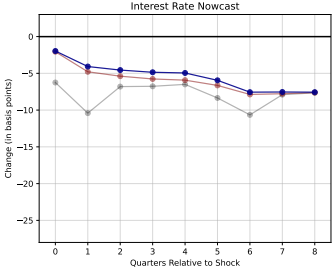
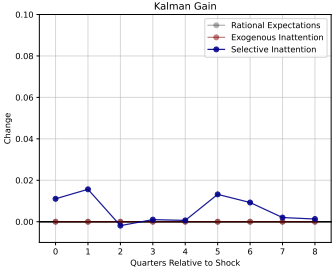
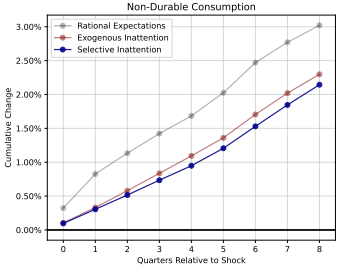
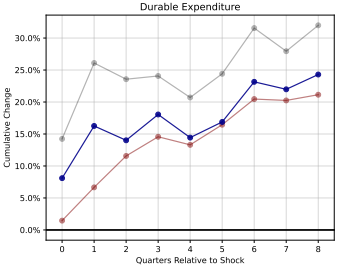
IRFs to Romer-Romer Rate Cut with Agg. Y and P Response









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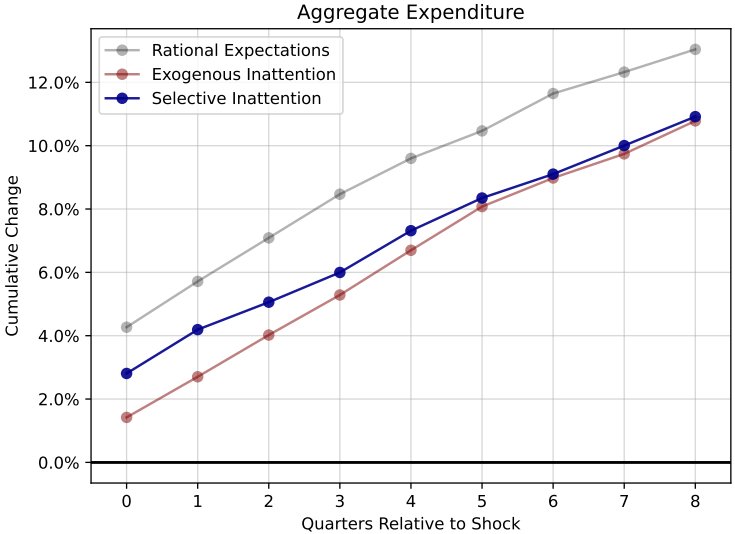
Impulse Response of Agg. Spending to Rate Cut



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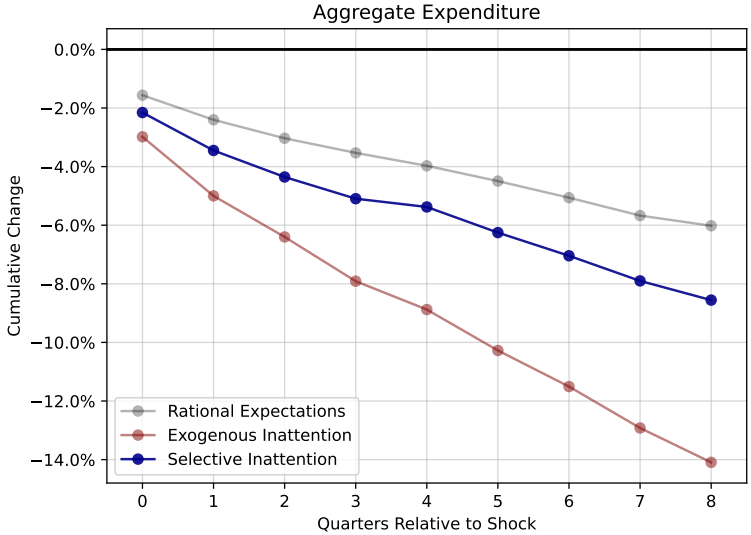
Impulse Response of Agg. Spending to Increase in Volatility



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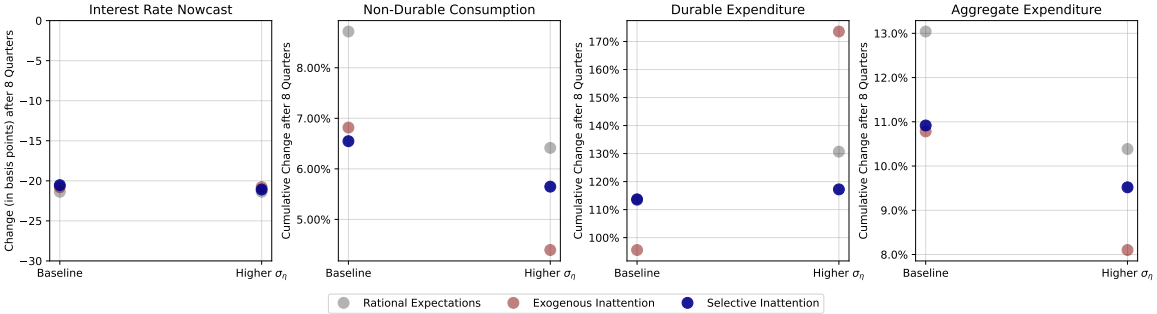
Effects of Increased Volatilty on 25 bps Rate Cut Response



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