

Discussion of
"Monetary Policy Wedges and the
Long-term Liabilities of Households
and Firms"

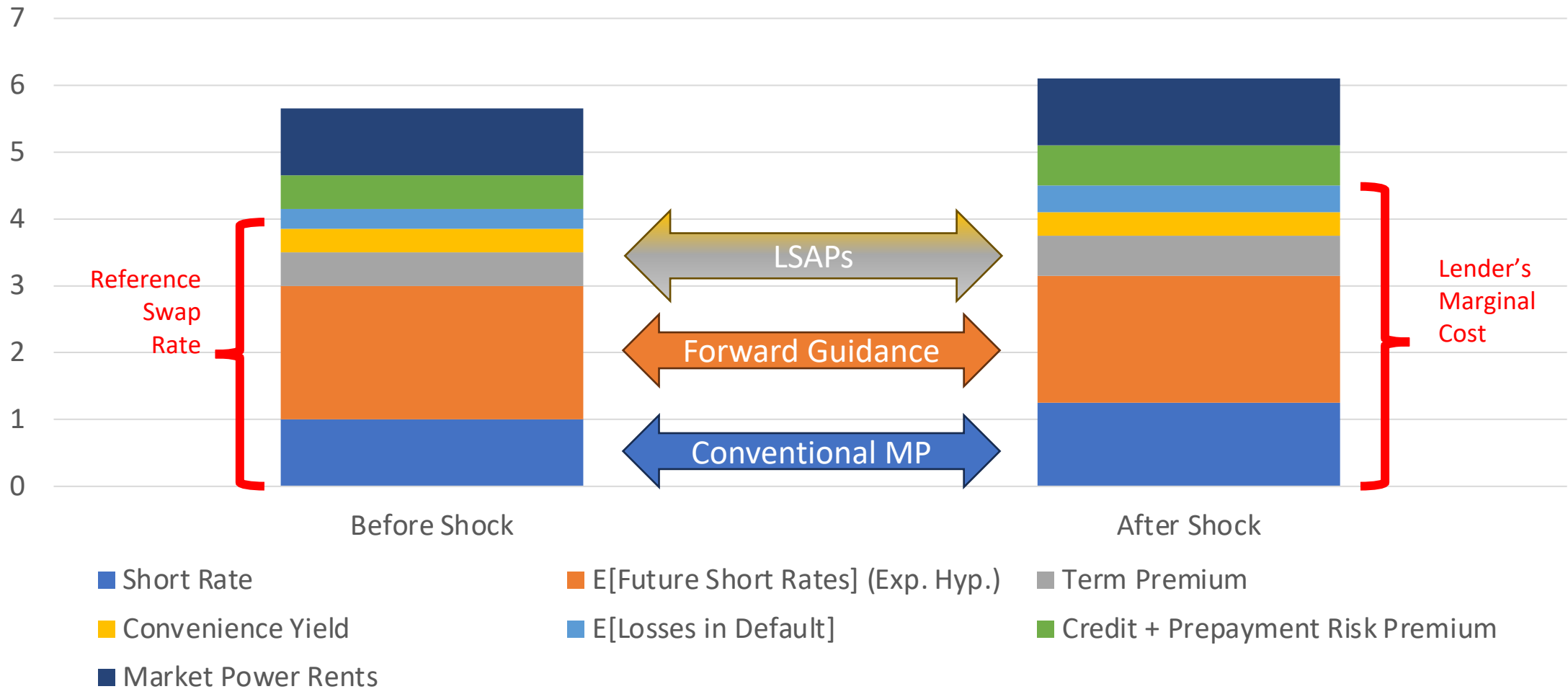
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Duke UNC Asset Pricing Conference | March 2024

Fundamental Challenge of Monetary Policy

- Consumption decision of households and investment decisions of firms depend on long-term risky borrowing rates
 - Mortgage rate
 - Bond yields
 - Credit cards
 - Auto loans
 - C & I loans
- But central banks directly control only short-term safe rates
- Can also influence long-term rates
- Rely on financial markets and financial institutions to “pass through” these rates to HH- and firm-relevant rates

Decomposing Borrowers' Cost of Capital



What should the Fed do besides set Fed Funds rate?

- If there is weakness in MP transmission, is it in
 - Short rates → long safe rates?
 - Solution: **forward guidance**, **Treasury LSAPs**
 - Long safe rates → competitive risky rates?
 - Solution: **MBS QE**, **Corporate Bond QE**
 - Other solution: macroprudential policy? Idea: influence intermediary wealth, key state variable for risk premia on assets priced by intermediaries
 - Competitive risky rates → oligopolistic risky rates?
 - (controversial) solution: use its regulatory authority to promote bank competition
- Understanding where the frictions are is key to formulating optimal MP, especially Unconventional MP
- Has the Fed made the right choices?

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- Solution: MBS QE,

- Corporate Bond QE

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- Understanding where the frictions are is key to formulating optimal MP, especially Unconventional MP
- Has the Fed made the right choices? **This paper: pretty much**

Empirical Specification

- (Now) standard specifications for estimating effects of monetary policy on some outcome variable Y
 - $\Delta ShortRate_t = \gamma + \delta isInFOMCWindow_t + u_t$
 - $\Delta Y_t = \alpha + \beta \widehat{\Delta ShortRate}_t + \epsilon_t$
 - Nakamura Steinsson 18: Short Rate = PC1 of FF and ED futures
- This paper: consider monetary policy passthrough to $Y \in \{\text{new mortgage rates, corporate bond yields}\}$ **taking as given the passthrough to long-term rates**
 - $\Delta LongRate_t = \gamma + \delta isInFOMCWindow_t + u_t$
 - $\Delta Y_t = \alpha + \beta \widehat{\Delta LongRate}_t + \epsilon_t$
 - Long rate: 10-year swap rate

Findings

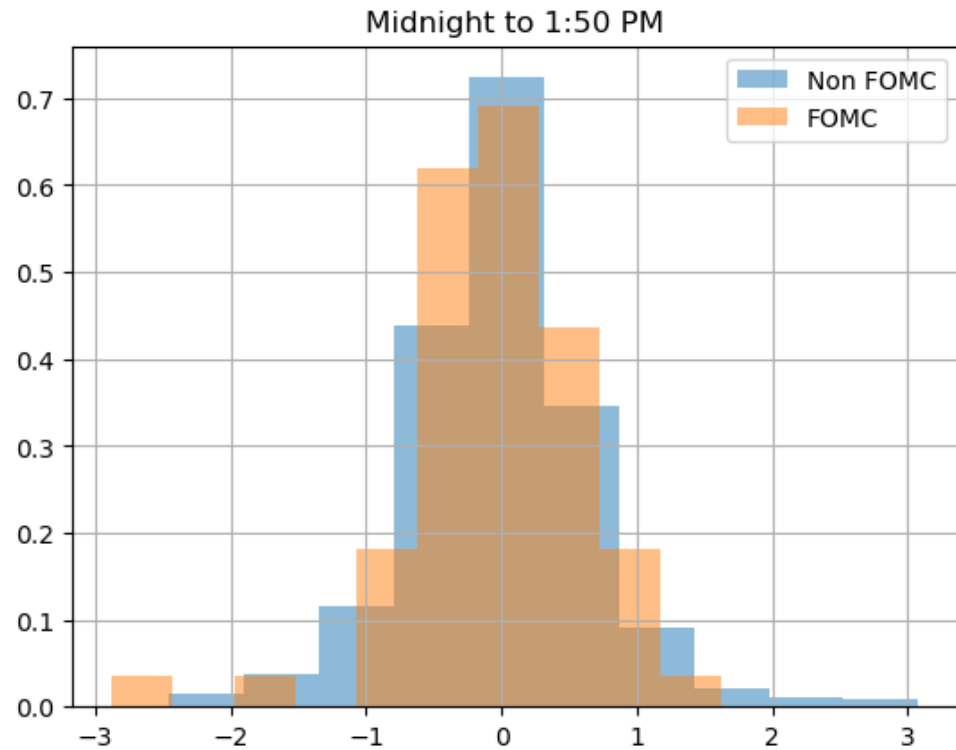
- Corp bond rates and mortgages (eventually) move one for one with swap rates around announcements
- Moreover, for mortgages
 - No evidence that pass-through is affected by market power
 - Pass-through is stronger when FOMC announcements mainly move expected short rates
- For bonds,
 - Pass through is stronger for HY than IG
 - Pass-through is stronger when FOMC announcements mainly move [ACM] term premia
- Bank equity holders price in the resulting changes to bank revenues
 - Banking is the most sensitive (+) industry to swap yield changes around announcements
 - Particularly, banks with more assets repricing within a year → cash flow effect

How strong is the instrument?

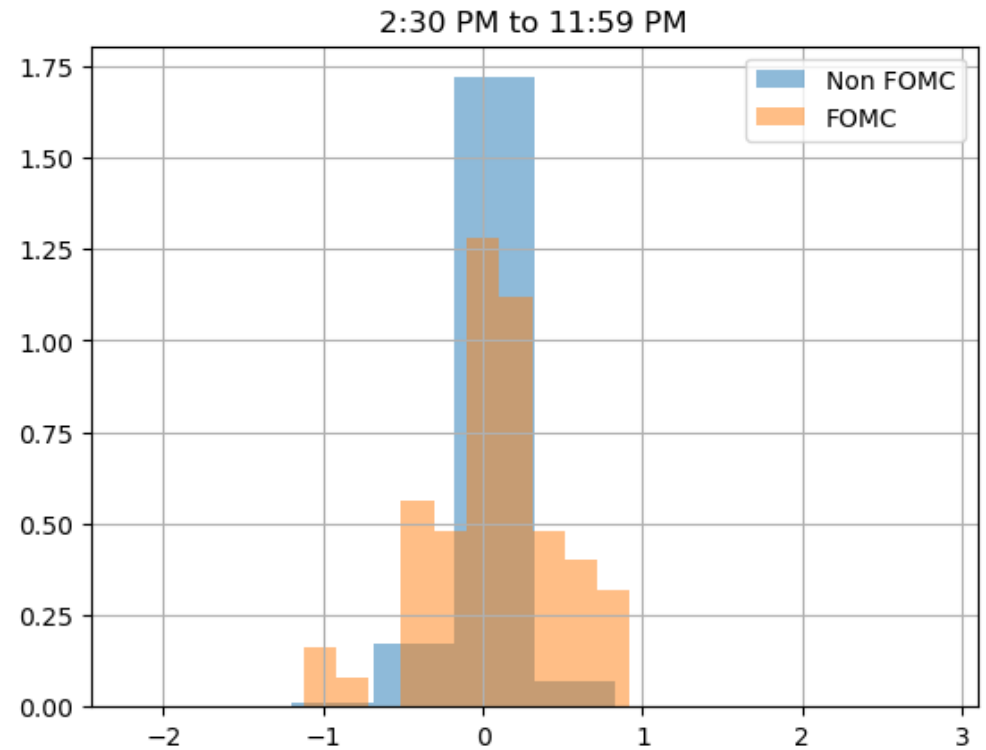
- Do ___-horizon rates respond strongly to FOMC announcements?
 - Seems like obviously yes
 - Almost mechanically true for the effective fed funds rate
- For longer horizons, compare intraday variation of futures prices
 - In the mornings (midnight to 1:49pm), “afternoons” (e.g., 1:50pm to 2:29pm) and evenings (2:30pm to 11:59pm)
 - On FOMC days vs. non-FOMC Tuesdays and Wednesdays
 - Hypothesis: mornings and evenings should look similar on both types of days, afternoons should have more variation on FOMC days

Outside Announcement Times

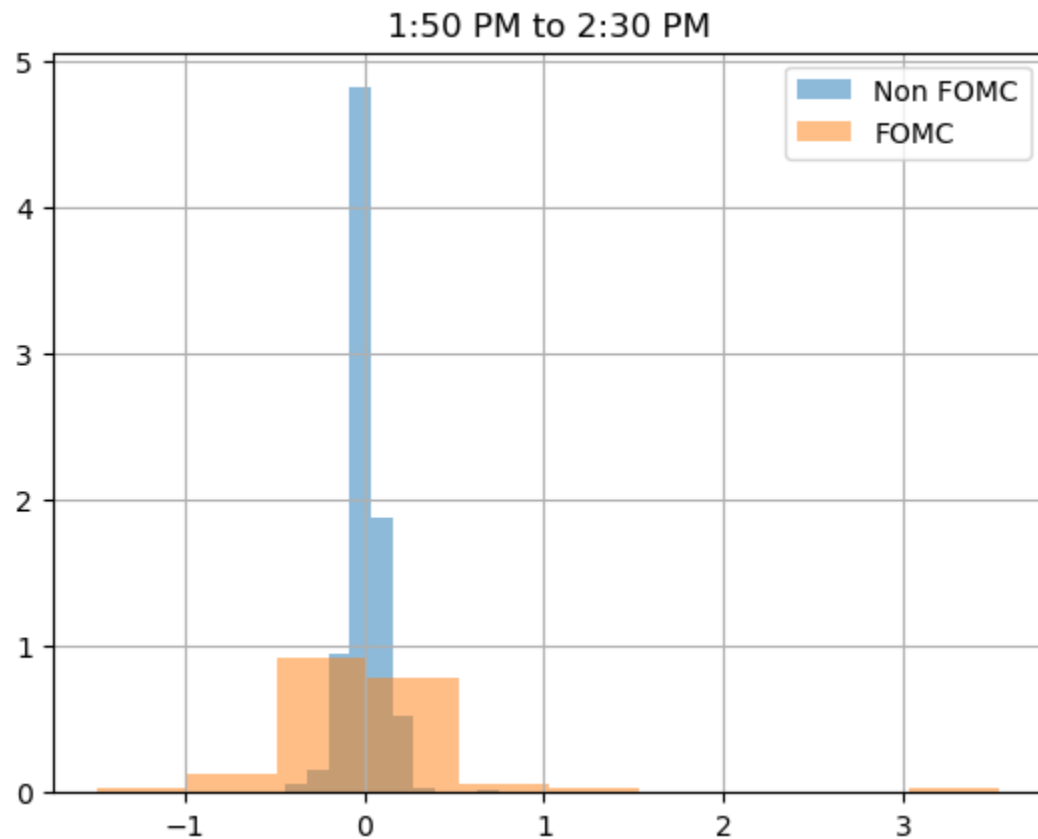
Before (Mornings)



After (Evenings)



During Announcement Times



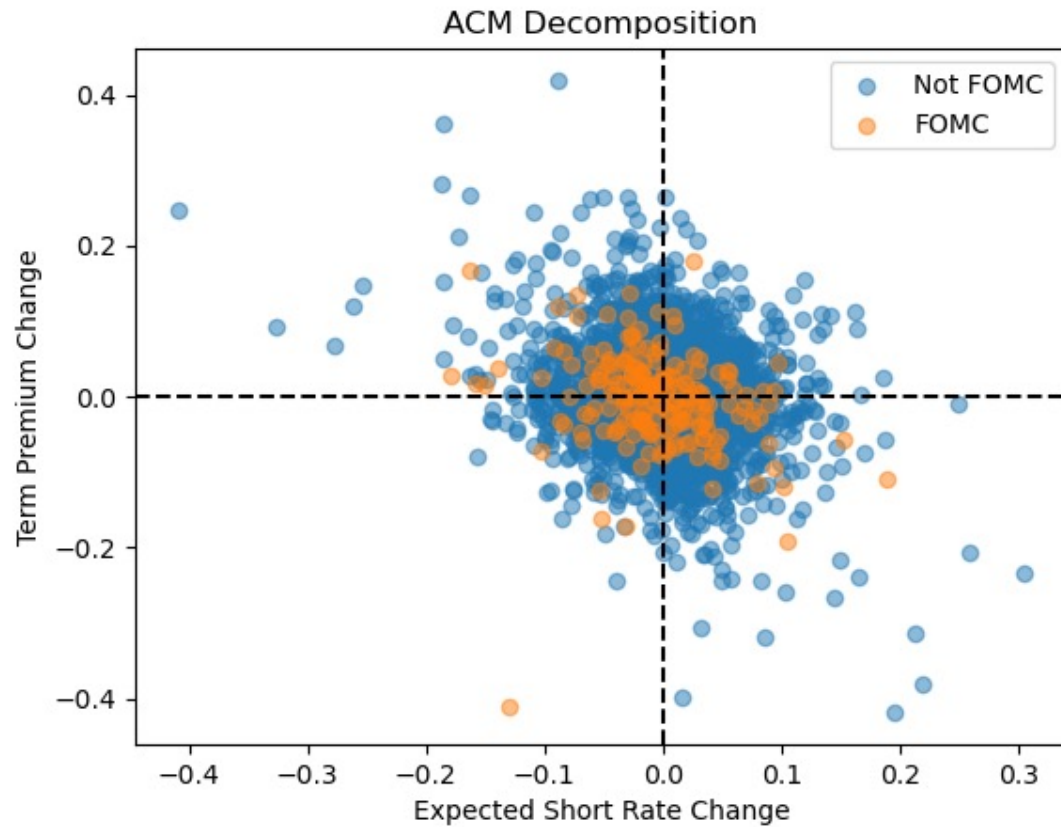
- Yes! Long-term rates move a LOT during announcements
- Effect is even stronger than for short rates (ED futures):

	return		return_12m		return_3m	
is_fomc	False	True	False	True	False	True
fomc_time						
Before	0.667178	0.679969	0.155060	0.130028	0.078146	0.129560
During	0.099283	0.584855	0.016832	0.068788	0.010729	0.037449
After	0.223501	0.408640	0.028289	0.066190	0.017253	0.032902

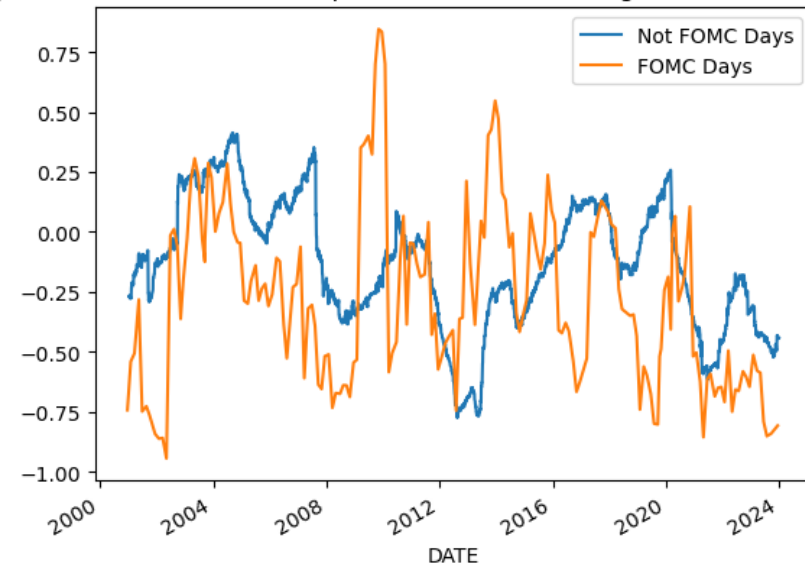
How to interpret decompositions?

- Rates respond differently to expected short rate changes vs. term premium changes around FOMC announcements
- Bank stocks respond differently to fed fund futures vs. 10-year swap changes around FOMC announcements
- Identification comes from imperfect correlation between these components?
 - What is the correlation?
 - When do components co-move? When do they move in opposite directions?
 - Are these measured differential responses a result of whatever economic conditions cause the sign to flip?
 - In other words: high-frequency returns can be interpreted as exogenous shocks, but the decomposition may not necessarily be

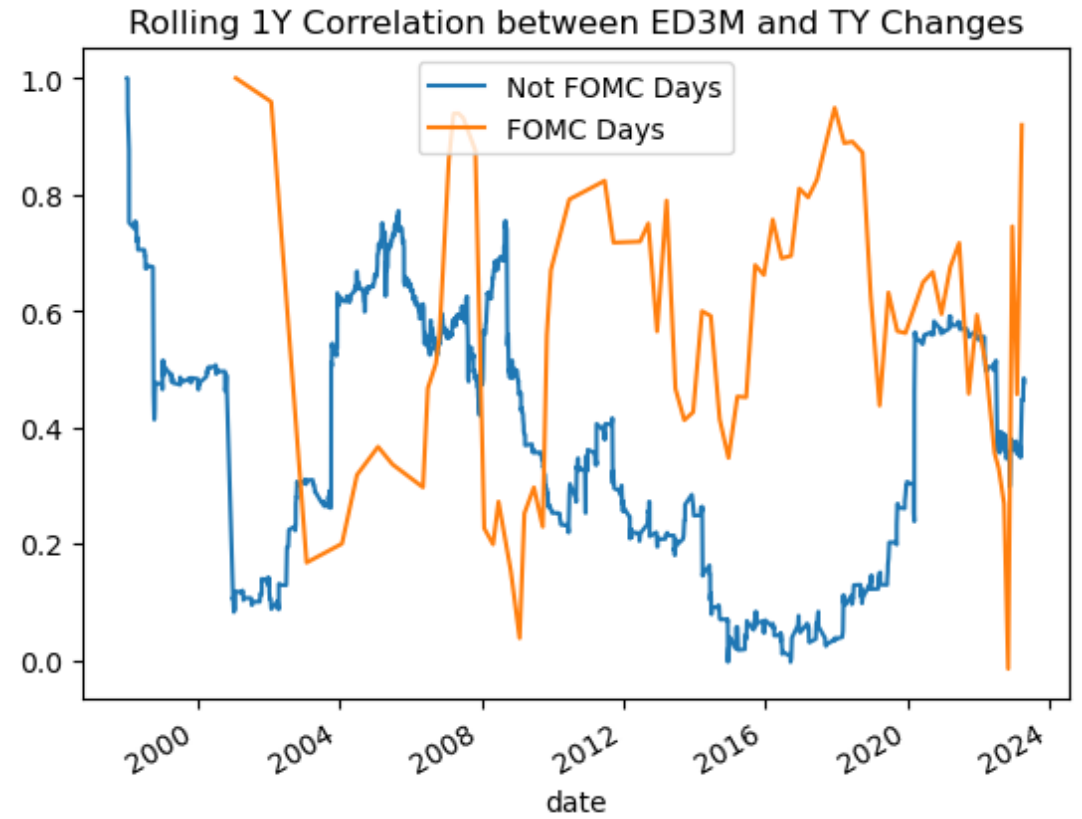
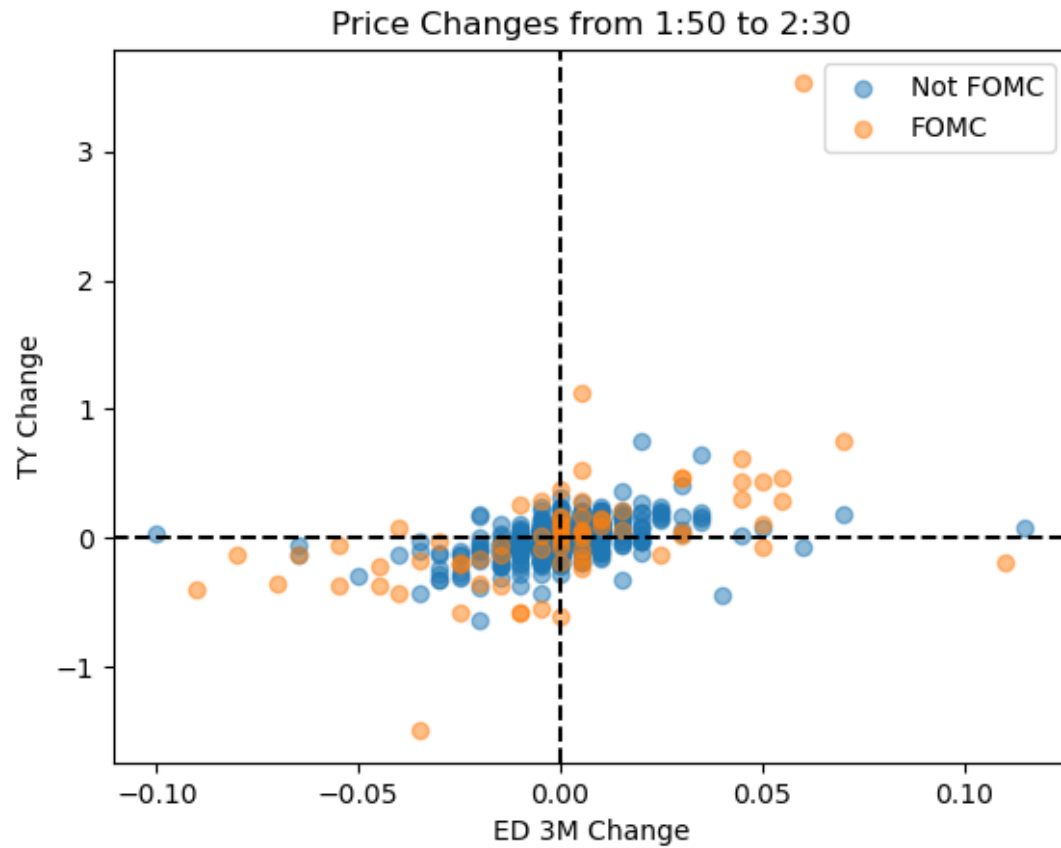
ACM Decomposition



Rolling 1Y Correlation between Expected Short Rate Change and Term Premium Change



Short vs. Long Rates



Role of Banks in Passthrough: Equilibrium

- Finding: bank stocks rise with treasury yields holding short rates constant
- Interpretation: long-dated assets will generate higher interest revenue, funding cost unchanged, expected profits increased (“cash flow effect”)
- In equilibrium, why is there pass-through? Why are banks charging higher loan and mortgage rates if their funding cost hasn’t changed?

Table 4. The relation between individual bank holding company stock returns and the 10-year interest rate swap changes on FOMC days

Dependent variable:	Stock returns					
	(1)	(2)	(3)	(4)	(5)	(6)
Δs	4.749*** (1.790)	5.191*** (1.838)	1.427 (1.302)	1.612 (1.318)	0.070 (1.302)	0.089 (1.252)
ΔFF	-3.127 (3.487)	-3.289 (3.676)	-3.329 (3.094)	-3.487 (3.399)	-3.315 (3.097)	-3.468 (3.405)
Loans repricing in 1 year $\times \Delta s$			5.980** (2.904)	6.417** (2.910)	5.751** (2.846)	6.196** (2.865)
Gov. sec repricing in 1 year $\times \Delta s$			1.879 (1.241)	2.149* (1.232)	1.614 (1.157)	1.907 (1.160)
Equity-ratio $\times \Delta s$					14.468* (7.545)	16.068* (9.073)
Control	No	No	Yes	Yes	Yes	Yes
Permno fixed effects	Yes	Yes	Yes	Yes	Yes	Yes
Weighted by log(Assets)	No	Yes	No	Yes	No	Yes
R ²	0.03	0.03	0.03	0.03	0.03	0.03
Observations	95,720	95,720	88,818	88,818	88,818	88,818

Notes: This table presents the sensitivity of individual bank stock returns to changes in 10-year swap rates on FOMC days excluding the 3 scheduled QE1 dates listed by [Krishnamurthy and Vissing-Jorgensen \(2011\)](#) and [van Binsbergen et al. \(2022\)](#):

$$R_{it} = \beta_{0i} + \beta_{FFi} \times \Delta FF + \beta_x \times X_{it} + \beta_s \times \Delta s + \beta_{sx} \times X_{it} \times \Delta s + \epsilon_{it}.$$

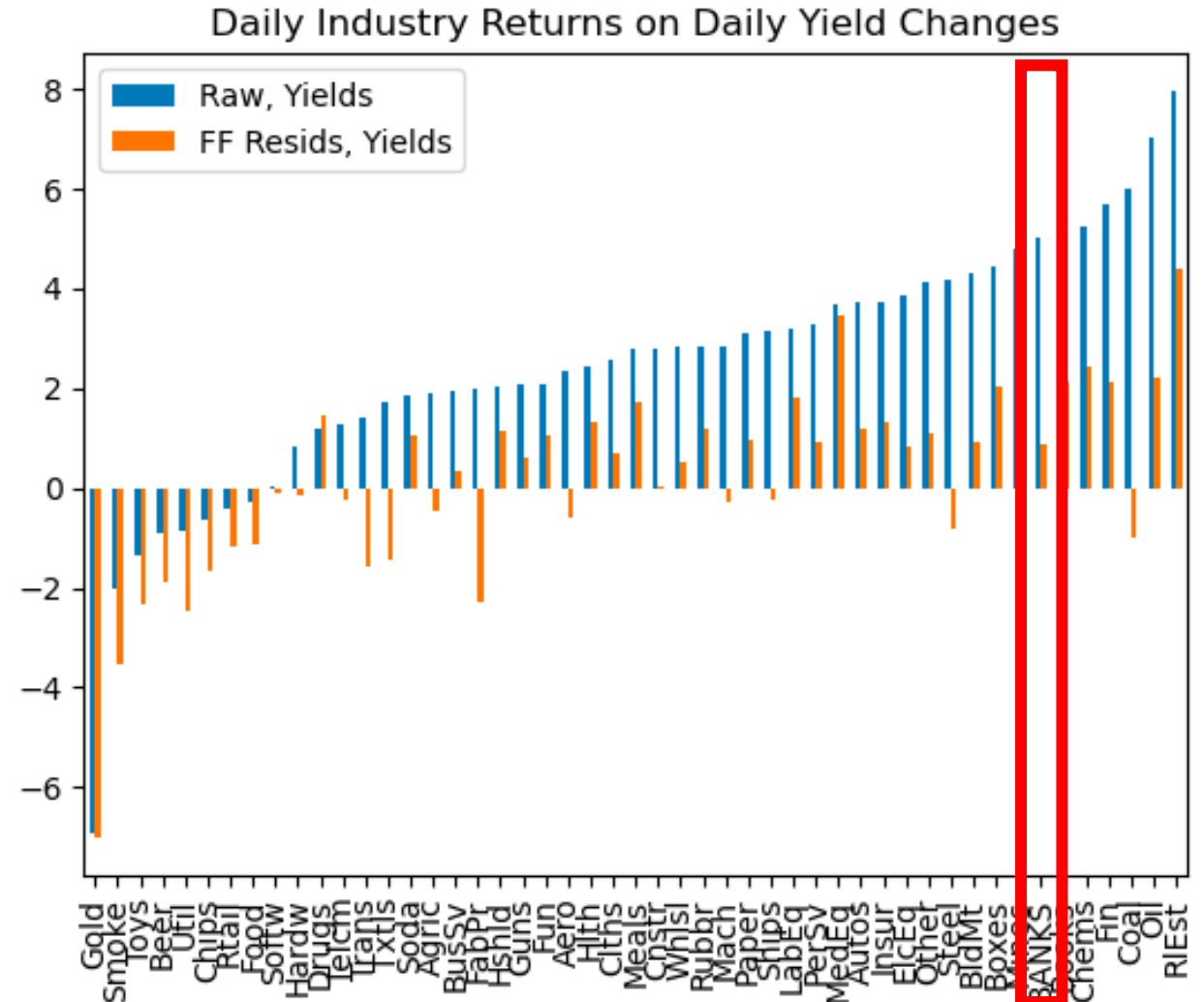
We control for the [Kuttner \(2001\)](#) shocks. For each column we also control for the same variables interacted with Δs . Columns (2), (4), (6) show the results for WLS using market capitalization as weight. All bank characteristics refer to 1 quarter before the FOMC announcement. Standard errors are clustered at the FOMC-day-level and are robust to heteroscedasticity. ***, **, * denote significance at the 1%, 5%, and 10% level, respectively.

Role of Banks in Passthrough: Jumbos

- If bank balance sheets are critical to the pass-through from **long-term** swap yields to borrowing rates, I would expect to see greater sensitivity of Jumbo mortgage rates than conforming
 - Authors have loan-level data to check
- Bank market power in mortgage markets
 - Lack of interaction effect with rate passthrough makes sense since for conforming loans MBS market will ultimately price mortgages
 - Does market power matter more for jumbos?

Bank Stock Return Sensitivity

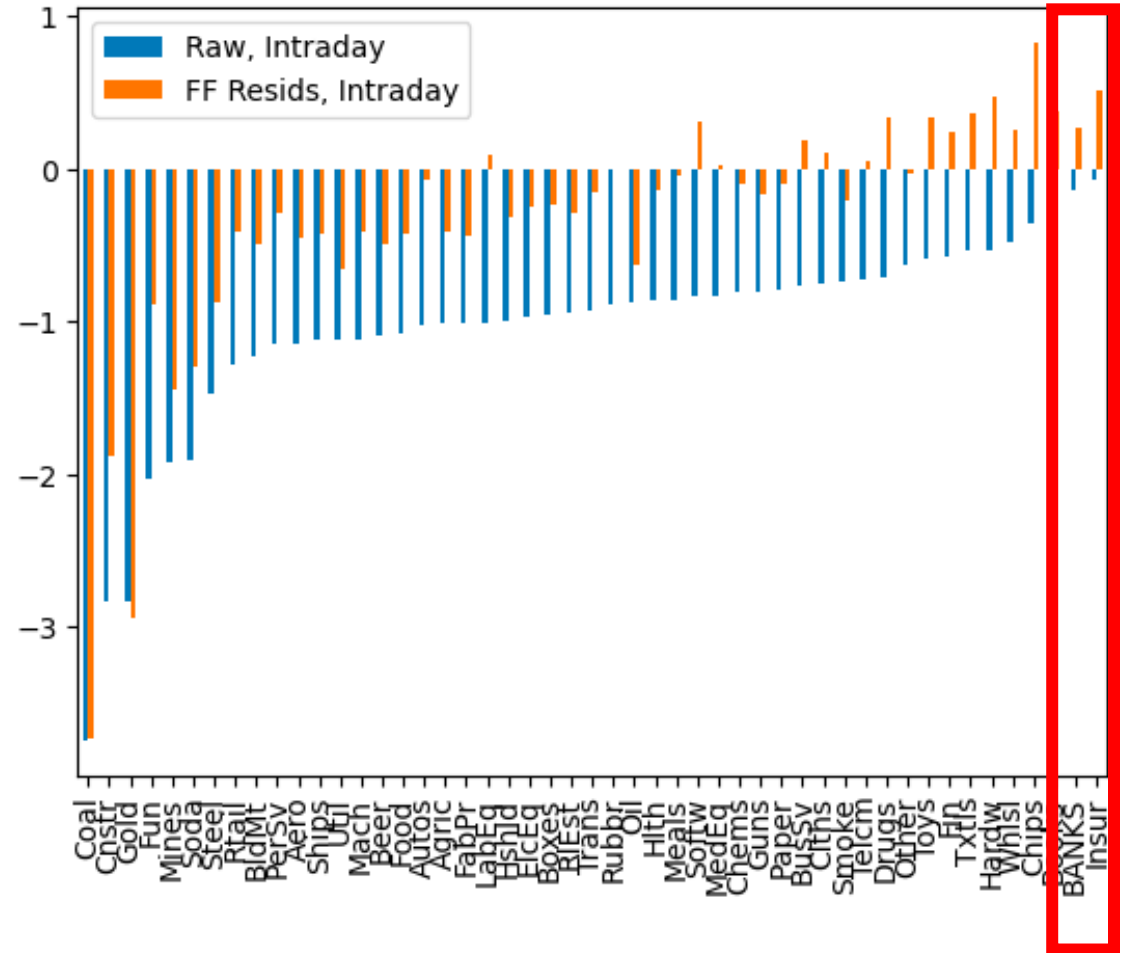
- Banks are the industry most sensitive to instrumented long rates?
- But banks are one the industries most sensitive to most things
 - High leverage \rightarrow high beta
- Are banks' idiosyncratic returns particularly sensitive?
 - Estimate 1-year rolling FF3 betas excluding FOMC dates
 - Calculate residuals on FOMC dates
 - Regress on daily yield changes
 - Answer: unlike what raw bank return suggest, not really



A new hope?

- Re-do the regression using negative of futures price changes (~yield changes) in tight window around FOMC announcement as explanatory variables
- No intraday Fama-French industry portfolio returns, so still using daily returns for that
 - Not great, but hey, it's a discussion
- Almost all stocks drop, but banks and insurance drop less than the rest
 - And residuals increase!

Daily Industry Returns on High-Frequency Futures Price Changes



A Few Other Questions

- Decomposing corporate bond risk premia
 - Is it quantity of risk (more defaults in expectation, more conditionally volatile default rates),
 - Or price of risk?
 - Can CDS basis shed light on this? CDS are priced by intermediaries, who are more likely to experience net worth effects from rate hikes and hence have a changing price of risk
- A risk premium decomposition for MBS
 - Diep, Eisfeldt, and Richardson: prepayment risk premium is time-varying, depends on MBS moneyness
 - Maybe risk premium doesn't matter for mortgages **on average** but does conditionally?
 - Argument: symmetric response → no prepayment effects, but can use Diep et al method to test directly ~ ACM-like decomposition
- Mortgage borrower self-selection
 - Argument: benchmark mortgage rate response same as in panel regression, so no self-selection, but can check borrower characteristics directly?
 - Related: Origination processing constraints: relationship between volume and rates (particularly for refis)
 - Did the huge drop-off in originations from 2022 to today really not get priced in?

Concluding Thoughts

- Paper significantly expands our understanding of monetary policy passthrough
- Wealth of evidence points to strong passthrough from long rates to rates that HHs and firms borrow at
- Everyone working on monetary policy should read this paper!

Online Appendix

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