

# **Monetary Policy and Fragility in Corporate Bond Mutual Funds**

**by**

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The opinions presented here are solely those of the author and do not necessarily reflect the views of the Federal Reserve Bank of New York or the Federal Reserve System

# Summary 1

- Paper documents that corporate bond funds tend to experience significant outflows (inflows) during periods of monetary tightening (easing) in the past 30 years.
  
- Proposed explanation builds on three hypotheses
  - Hypothesis 1: There is new information about the future Federal Funds Target Rate revealed to the market prior to FOMC meetings
  - Hypothesis 2: NAVs of corporate bond funds are stale because bonds are illiquid
  - Hypothesis 3: As stale NAVs do not fully reflect market information, this triggers strategic withdrawals/investments from/in corporate bond funds

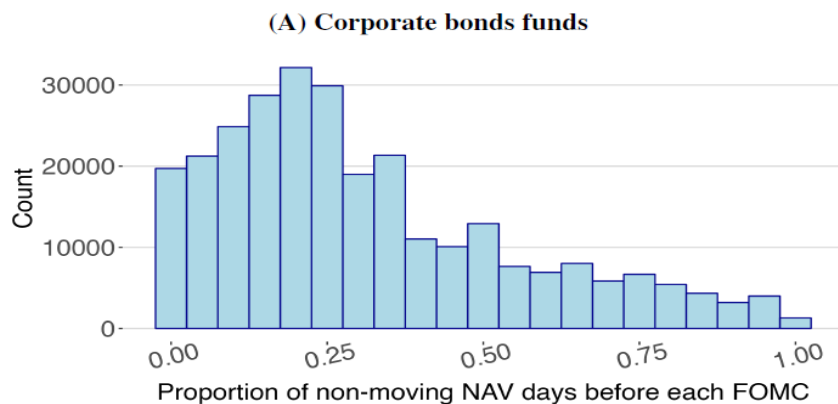
# Summary 2

- Testing Hypothesis 1: Is there market information?

$$\Delta FFTar_{[-1,1]} = \Delta Futures_{(\tau+5,-1]} + \varepsilon_t,$$

	$\Delta FFTar_{[-1,1]}$			
	Year $\geq$ 1992		Year $\geq$ 2009	
	(1)	(2)	(3)	(4)
$\Delta FFuture_{(\tau+5,-1]}$	0.643*** (0.056)		0.501*** (0.065)	
$\Delta EuroDollar_{(\tau+5,-1]}$		0.687*** (0.053)		0.886*** (0.076)
Constant	0.003 (0.011)	-0.003 (0.010)	0.018 (0.015)	0.014 (0.012)

- Testing Hypothesis 2: Are NAVs stale?



# Summary 3

- Testing Hypothesis 3: Are NAVs predictable?

$$\Delta NAV_{i,(t_1,t_2]} = \Delta \text{Eurodollar}_{(\tau+5,t_1]} + \text{Controls}_{i,t-1}^F + \alpha_i + \varepsilon_{i,d}$$

	$\Delta NAV_{i,(\tau+5,-5]}$		$\Delta NAV_{i,(-5,-1]}$		$\Delta NAV_{i,(-1,5]}$		$\Delta NAV_{i,(5,15]}$	
	High-stale (1)	Low-stale (2)	High-stale (3)	Low-stale (4)	High-stale (5)	Low-stale (6)	High-stale (7)	Low-stale (8)
$\Delta \text{Eurodollar}_{(\tau+5,-5]}$	-1.683*** (0.591)	-3.744** (1.490)	-0.687** (0.296)	-0.912 (0.559)				
$\Delta \text{Eurodollar}_{(\tau+5,-1]}$					-0.741*** (0.213)	-0.732 (0.508)		
$\Delta \text{Eurodollar}_{(\tau+5,5]}$							0.137 (0.290)	-0.467 (0.365)

- “These findings suggest that NAVs of high-staleness funds do not fully incorporate the information revealed in the Eurodollar Futures until five days after the meeting.”

# Summary 4

- Do investors exploit NAV's "mispricing"?

Authors use a similar model as the previous one with the cumulative daily flows on the left-hand side

	OutFlows <sub><i>i</i></sub> (-5,-1]			OutFlows <sub><i>i</i></sub> (-1,5]			OutFlows <sub><i>i</i></sub> (5,15]		
	High-stale (1)	Low-stale (2)	All (3)	High-stale (4)	Low-stale (5)	All (6)	High-stale (7)	Low-stale (8)	All (9)
$\Delta\text{Eurodollar}_{(\tau+5,-5]}$	0.862*** (0.135)	0.277*** (0.097)	0.277*** (0.097)						
$\Delta\text{Eurodollar}_{(\tau+5,-5]}$ $\times \mathbb{1}(\text{High-stale})$			0.585*** (0.142)						
$\Delta\text{Eurodollar}_{(\tau+5,-1]}$				1.018*** (0.359)	0.515*** (0.133)	0.515*** (0.133)			
$\Delta\text{Eurodollar}_{(\tau+5,-1]}$ $\times \mathbb{1}(\text{High-stale})$						0.503* (0.289)			
$\Delta\text{Eurodollar}_{(\tau+5,5]}$							0.766*** (0.211)	0.435*** (0.118)	0.435*** (0.118)
$\Delta\text{Eurodollar}_{(\tau+5,5]}$ $\times \mathbb{1}(\text{High-stale})$									0.331 (0.226)

## Summary 5

- Authors then introduce a model to investigate investors' decision to stay or exit mutual funds around monetary policy decisions when:
  - there is staleness in funds' NAVs
  - bond market is illiquid
- Interest rate tomorrow (after the monetary policy decision) is equal to  $r + \sigma \tilde{v}$  ( $r$  and  $\sigma$  are parameters)  $\tilde{v}$  is a random variable (uniform distribution) which will be realized tomorrow.
- Investors receive a signal today about the realization of  $\tilde{v}$
- Authors derive several hypotheses from the model
  - Hypothesis 2: Funds with less liquid assets exhibit stronger sensitivity of outflows to change in Federal Funds Target Rate
  - Hypothesis 3: Funds with higher staleness exhibit stronger sensitivity of outflows to change in the Federal Funds Target rate when liquidity is high.

## Comment 1: Fund investors vs bond investors

1. Bond investors have access to the same information than bond fund investors. Why wouldn't they sell ahead of an expected increase in interest rates?
  - It would be useful to look at bond trading in the days leading up to FOMC meetings
2. Predictive power of the models investigating future interest rate changes is less than 40% (with one exception). Is that enough to drive fund investors' strategic response?
  - It would seem important to investigate separately the predictive power of tightening and easing

## Comment 2: Model

1. Managers are entirely passive players (e.g. do not hold any cash)
2. Monetary policy affects bond values only through an interest rate channel.
  - However, in addition to affecting short-term rates, unexpected changes in monetary policy also convey information on broad economic conditions affecting mutual funds' outflows (Cetorelli, La Spada and Santos 2022)
3. Equilibria
  - If investors observe the interest rate shock perfectly there is multiple equilibria.
  - To rule out this problem, the authors assume investors receive noisy signals about the realized interest rate (where the signal noise is independent across investors)
  - This is handy but what might be the rationale for that noisy signal about the realized rate?



## Comment 3: Fund staleness vs bond illiquidity

1. Authors proxy staleness of bond funds by the “proportion of days in which the NAV does not change in the period leading up to an FOMC meeting”
2. “High-staleness funds have lower average holdings of cash and government bonds, a shorter maturity, and a lower likelihood of being high-yield funds compared to low-staleness funds”
3. “We classify funds whose last year’s percentage of liquid assets (cash and government bonds) is higher (lower) than sample median as liquid (illiquid) funds”

# Comment 3: Fund staleness vs bond illiquidity

	OutFlows <sub><i>i</i></sub> (-5,-1]			OutFlows <sub><i>i</i></sub> (-1,5]		
	High-stale (1)	Low-stale (2)	All (3)	High-stale (4)	Low-stale (5)	All (6)
$\Delta\text{Eurodollar}_{(\tau+5,-5]}$	0.862*** (0.135)	0.277*** (0.097)	0.277*** (0.097)			
$\Delta\text{Eurodollar}_{(\tau+5,-5]}$ $\times \mathbb{1}(\text{High-stale})$			0.585*** (0.142)			
$\Delta\text{Eurodollar}_{(\tau+5,-1]}$				1.018*** (0.359)	0.515*** (0.133)	0.515*** (0.133)
$\Delta\text{Eurodollar}_{(\tau+5,-1]}$ $\times \mathbb{1}(\text{High-stale})$						0.503* (0.289)

	OutFlows <sub><i>i</i></sub> (-5,-1]			OutFlows <sub><i>i</i></sub> (-1,5]		
	Illiquid (1)	Liquid (2)	All (3)	Illiquid (4)	Liquid (5)	All (6)
$\Delta\text{FFTar}_{[-1,1]}$	0.873*** (0.206)	0.533*** (0.109)	0.533*** (0.110)	1.699*** (0.311)	1.073*** (0.279)	1.073*** (0.279)
$\Delta\text{FFTar}_{[-1,1]}$ $\times \mathbb{1}(\text{Illiquid funds})$			0.340 (0.218)			0.626** (0.290)

# Comment 4: “Consistency”

## 1. Time periods

- Test investigates the predictability of Futures market information over the period  $[t+5, -1]$ .
  - Since the time period goes up to date -1, when do you envision fund investors make their investment decisions?
- However, there is no investigating whether Futures over the period  $[t+5, -1]$  have a contemporaneous effect on NAV. Instead authors look at
  - $[t+5, -5]$  vs  $[t+5, -5]$
  - $[t+5, -1]$  vs  $[-5, -1]$
  - $[t+5, 5]$  vs  $[5, 15]$
- Also, no test investigating the link between Futures and outflows over the period  $[t+5, -1]$ . Authors look at outflows over the periods:  
 $(-5, -1]$ ,  $(-1, 5]$  and  $(5, 15]$

## Comment 5: Easing vs tightening

- Likelihood of easing and tightening should trigger a different response by bond fund investors in response to staleness
- In the second part, the authors document that outflows are more prevalent in months with FOMC meetings that increase rates.

	OutFlow <sub>i,m</sub> (%) in Months with FOMC meetings					
	All		$\Delta\text{FFTar}_m \geq 0$		$\Delta\text{FFTar}_m \leq 0$	
	(1)	(2)	(3)	(4)	(5)	(6)
$\Delta\text{FFTar}_m$	1.299***	0.742***	2.114***	1.511***	0.552*	0.212
	(0.258)	(0.246)	(0.305)	(0.421)	(0.311)	(0.377)

- In the first part, the authors do not distinguish easing from tightening.

## Comment 6: Results

1. Do the results support authors' assertions?
  - The outflow- $\Delta\text{FFTar}$  relationship persists well after the FOMC meeting (5, 15], a period when changes in NAVs are longer predicted
  - No strong evidence of inflows in FOMC months when  $\Delta\text{FFTar} < 0$
2. “These stylized facts raise concerns regarding corporate bond funds’ fragility, the potential illiquidity spillovers to financial markets, and the negative impact on credit supply to the broader economy when monetary policy tightens.”
  - No evidence in the paper on the spillover effects
  - Anticipating investors’ strategies why wouldn’t managers adjust their asset holdings?
  - Would these effects be long enough to affect demand for credit?

## Comment 7: Miscellaneous

1. Paper organization: Would suggest authors start with the model and then closely link their tests to the model's predictions.
2. Policy recommendations
  - “These results suggest that policies or regulations that aim to enhance the stability of corporate bond funds should be contingent on the funds’ staleness, market liquidity, and monetary policy environment”
  - Rather generic; it would be useful to add some specificity