The Market for Sharing Interest Rate Risk

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Motivation and research questions

- Interest rate risk significantly affects the entire economy (e.g., SVB, UK gilt crisis).
- We want to understand the role of derivatives in sharing these risks and how that links to asset pricing puzzles (e.g., negative swap spreads). Specifically -

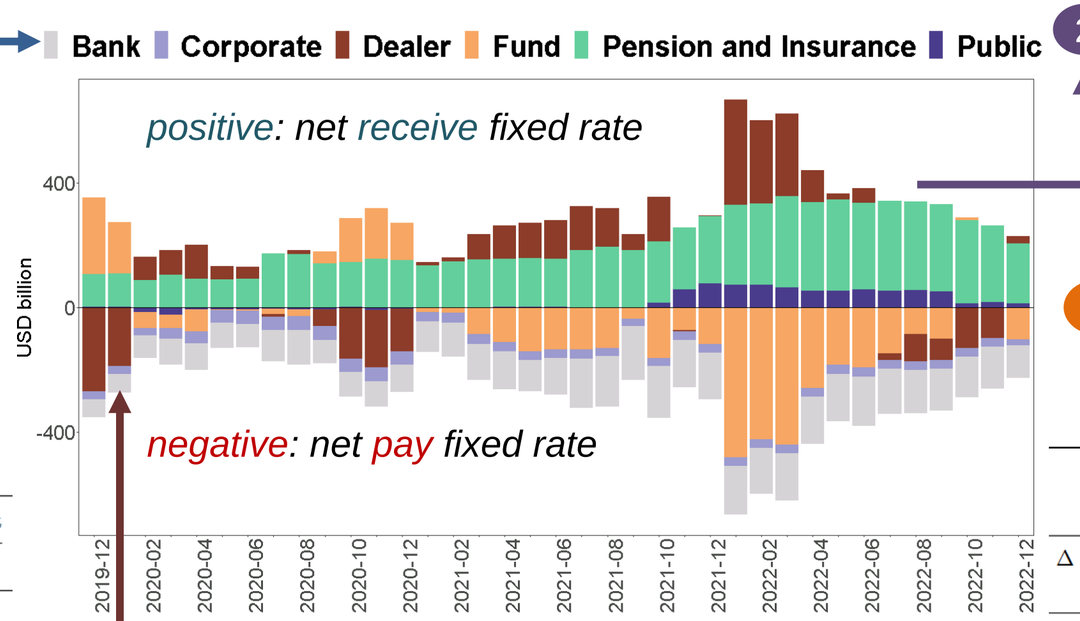
1. What is the extent of interest rate risk transfers?
2. Who bears demand imbalances and why?
3. How do demand shocks transmit across sectors?

Our contribution

- We study interest rate risk sharing **across the financial system** using granular transactions data in the $600 trillion interest rate swaps market (data coverage: >60% of global turnover).
- We uncover large demand imbalances: **Banks** exchange risk with **Pension Funds and Insurance**, but ***across different maturities***.
- We fit a preferred-habitat model and show that demand imbalances determine equilibrium prices (swap spreads). We conduct **counterfactuals** to inform policy debate on optimal hedging.

Five facts on the interest rate swap market

1 Main users: **Funds** hold largest exposure, followed by **pensions/insurers (PF&I)** & non-dealer **banks**.



2 Net Positions: **Banks** and **corporations** pay fixed rate; **PF&I** receive. **Funds** flip direction, acting as ***arbitrageurs***.

3 Strong maturity segmentation (preferred-habitat behavior):

	Fraction of investors trading in one maturity bucket	
	(equally-weighted)	(notional-weighted)
Bank	0.94	0.91
Fund	0.93	0.97
PF&I	0.88	0.70
Corporate	0.96	0.95

4 Reaction to interest rates: **PF&I** are pro-cyclical investors, while **banks** are counter-cyclical.

	Δ Quantity ($ billion)			
	Bank	Fund	PF&I	Corporate
Δ Bond Yield (PC1, t-1)	55.5**	-112.3*	-14.9***	4.15
	(25.4)	(58.2)	(5.21)	(2.65)
Observations	6,200	9,520	28,400	12,600
Adj. R^2	0.02	0.00	0.01	0.01
Dominant product	3M-5Y	Below 3M	Above 10Y	3M-5Y
Investor FE	Yes	Yes	Yes	Yes

5 Dealers absorb demand imbalances: trade along the curve and **receive** fixed rate in short tenor, **pay** fixed at long tenor.

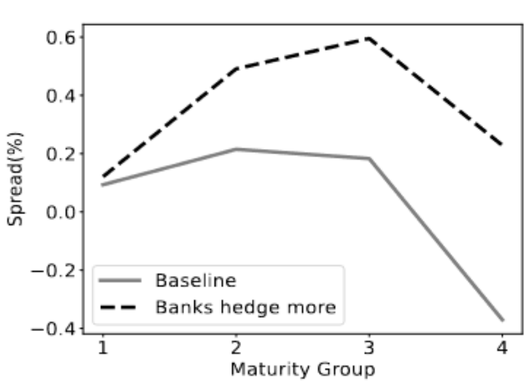
Asset pricing implications

We calibrate a **preferred-habitat model** where risk-averse arbitrageurs face both *funding cost shocks* and *demand side fluctuations*. We find that -

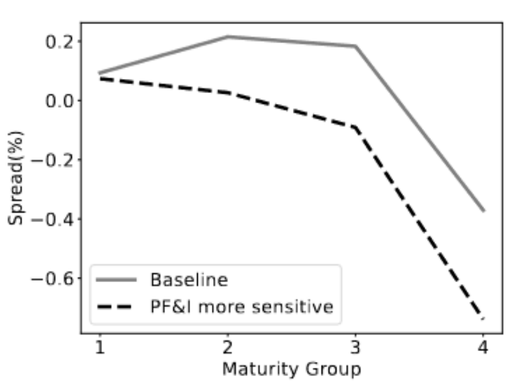
- **PF&I** are more ***price inelastic*** than other, short-tenor investors.
- Demand imbalances play a bigger role than arbitrageurs' funding cost in determining equilibrium swap spreads.

Counterfactual analysis: What if…

Banks hedge more?
Swap spreads shift **upwards**



PF&I demand more elastic?
Swap spreads shift **downwards**



Dealers more risk averse?
Swap spreads turn **steeper**