Treasury Market Dysfunction and the Role of the Central Bank

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1) Basic Story

2) Supporting Evidence

3) Policy Proposal

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The Theory of the Case: Part 1

- Defined benefit pension funds, life insurance companies, bond mutual funds and ETFs all want to invest in long-term corporate debt to meet their mandates

- They have about *$30 trillion* to manage, but there is less than *$3 trillion* that they can buy. What do they do?

- They buy *shorter-term* corporate debt and supplement that with derivatives tied to US Treasury securities to get the duration they need to align with their liabilities

- This creates a massive imbalance in the futures market

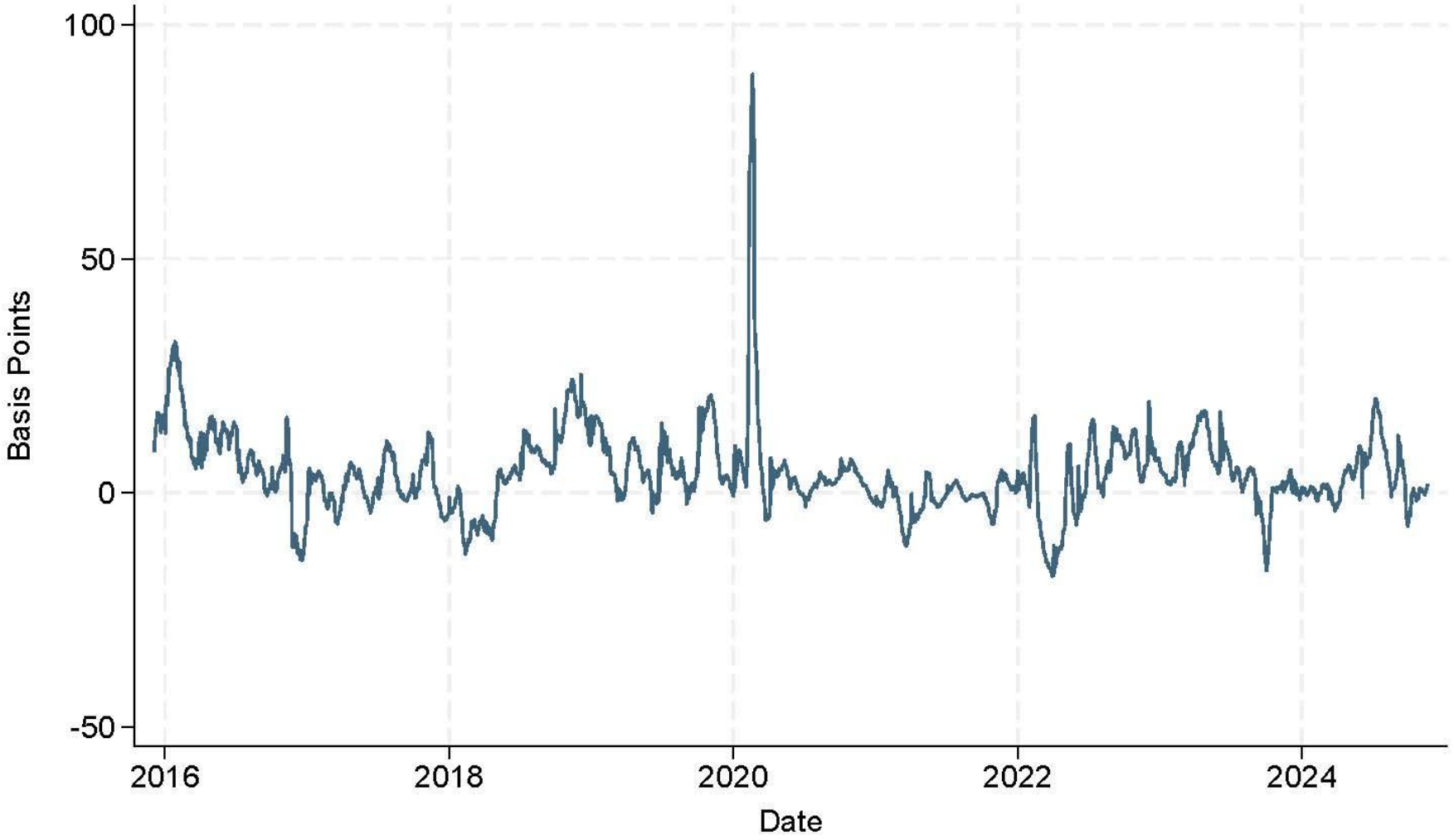
The Theory of the Case: Part 2

- Someone needs to take the other side in the derivatives market, hedge funds do so. So they go *short futures (or take the other side of a swap contract).*

- Hedge funds do not want a naked interest rate bet. So they also buy, i.e. go *long*, *physical treasuries*.

- The profit they make is the spread between the distorted futures price and the treasury price, "*the basis*".

The basis spread



The Theory of the Case: Part 3

- The basis return is not that profitable. But if the hedge funds borrow to buy the Treasuries, it becomes much more lucrative.

- So they borrow using repurchase agreements (*repos*) from their broker-dealers. Roughly, they invest about $2 of their money and borrow $98 for each $100 that they buy.

- So small price movements can wipe out most of that $2.

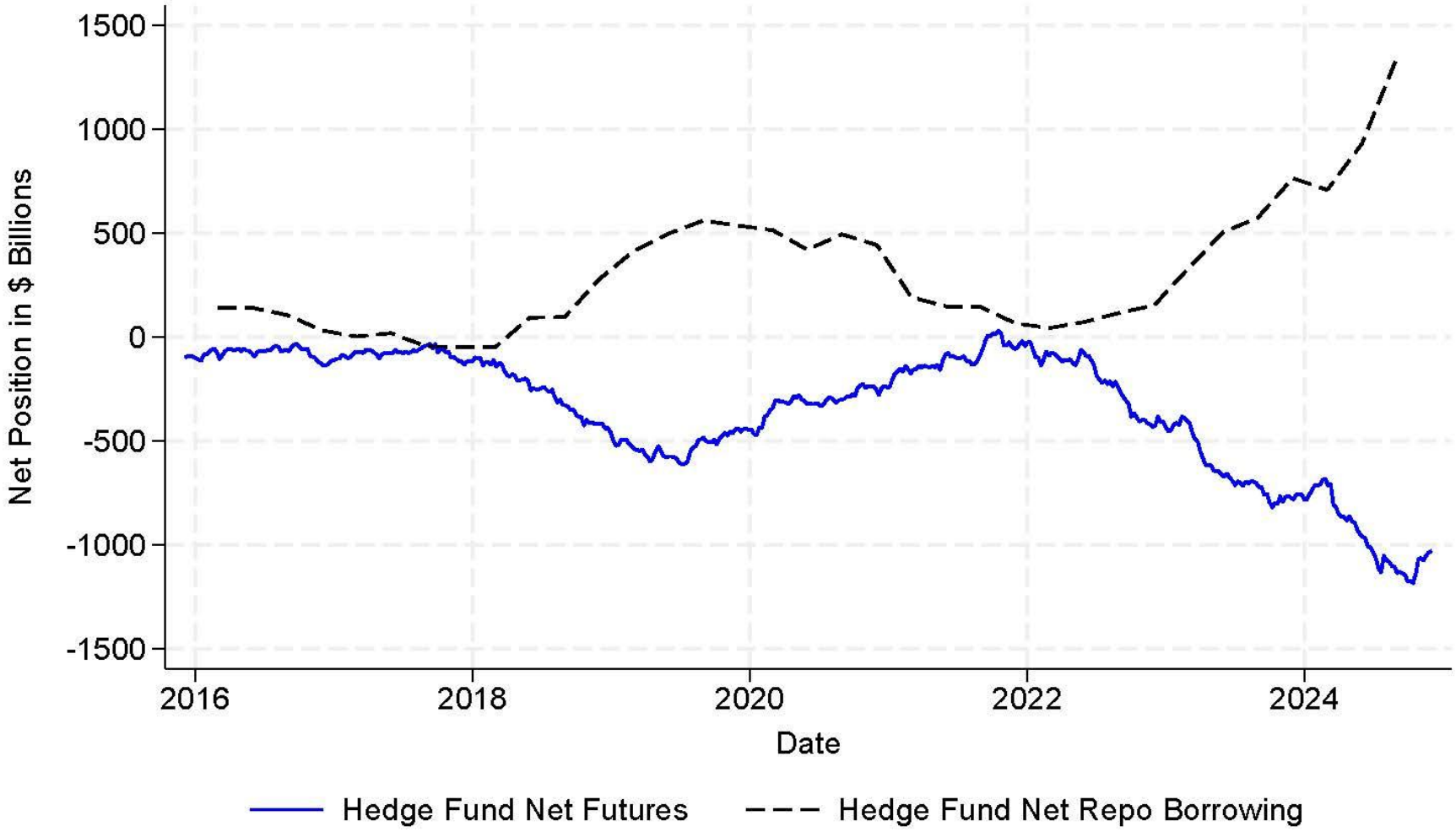
- If they can't replace the losses, or just need the $2 for something else, or become nervous about potential losses they step out of the trade.

The Theory of the Case: Part 4

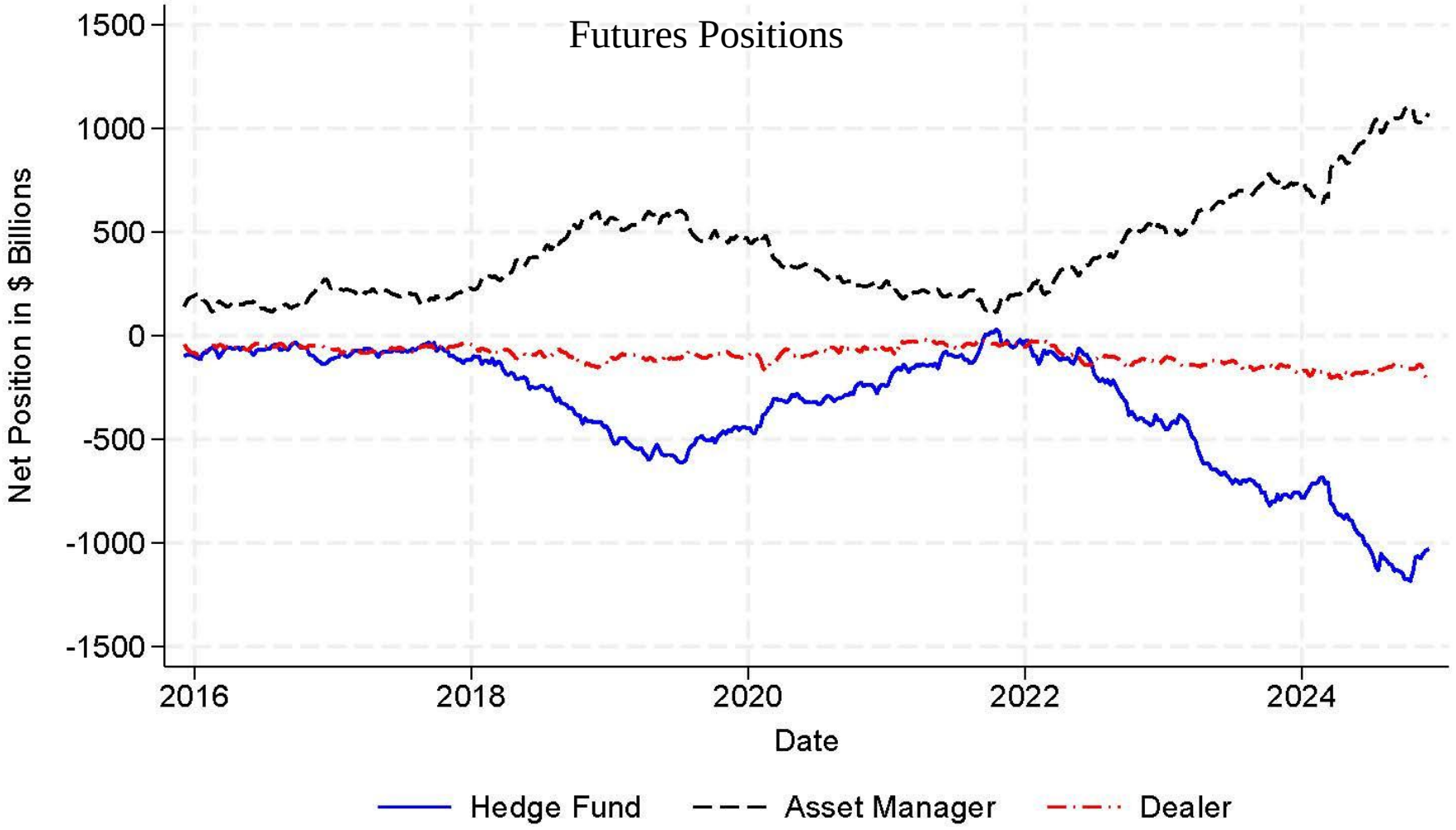
- They have $1 trillion in trade, if they step out ….

- Who is going to buy what they will be selling? In March 2020 it was the Fed.

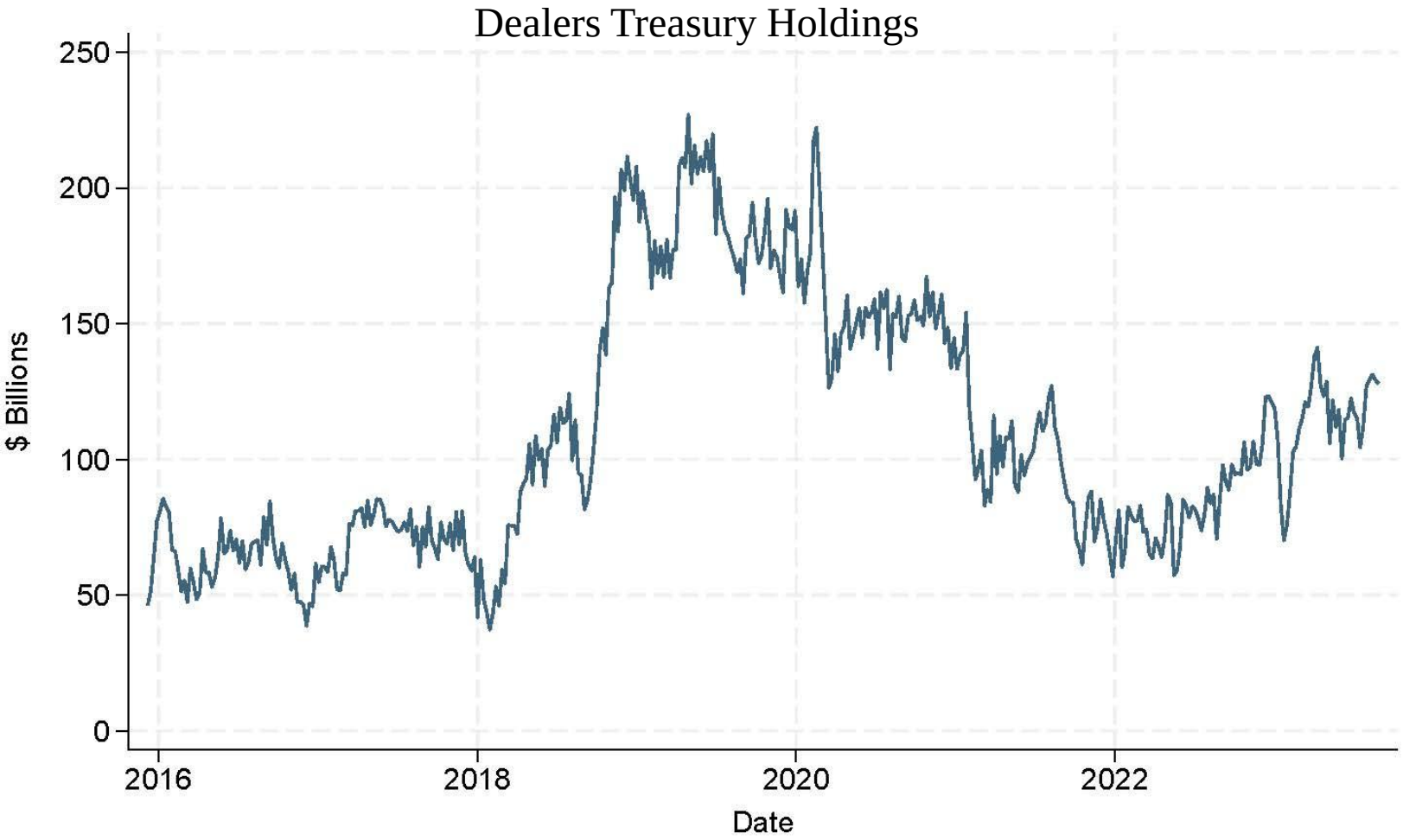
Evidence Part 1: Hedge funds hedge and lever with repo



Evidence Part 2: Asset Managers and Hedge Funds are on opposite sides of the trade

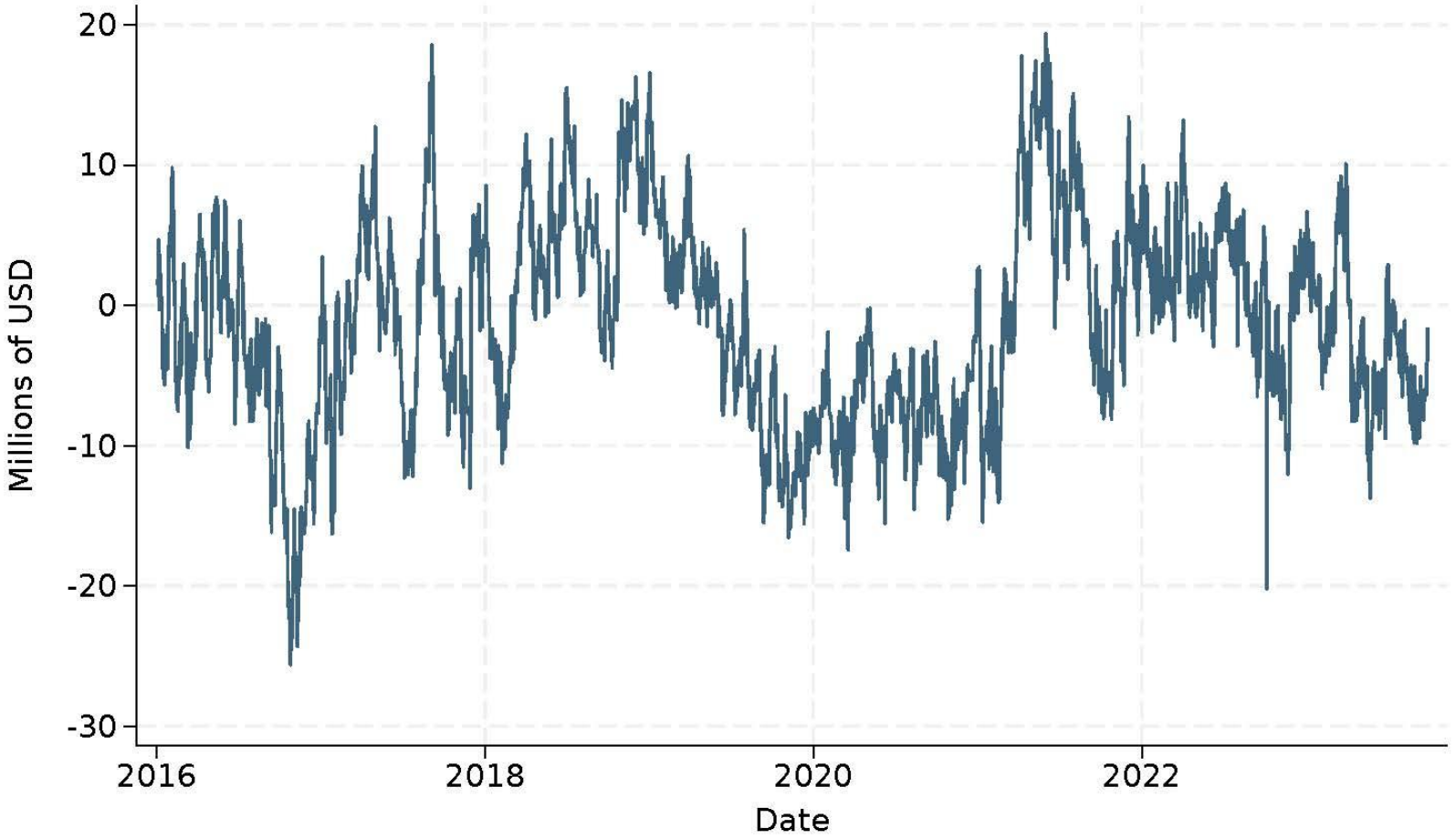


Evidence Part 3a: Dealers do own treasuries



Evidence Part 3b: But dealers hedge their risk

Dealers' interest rate exposure to a 1 basis point change in all rates



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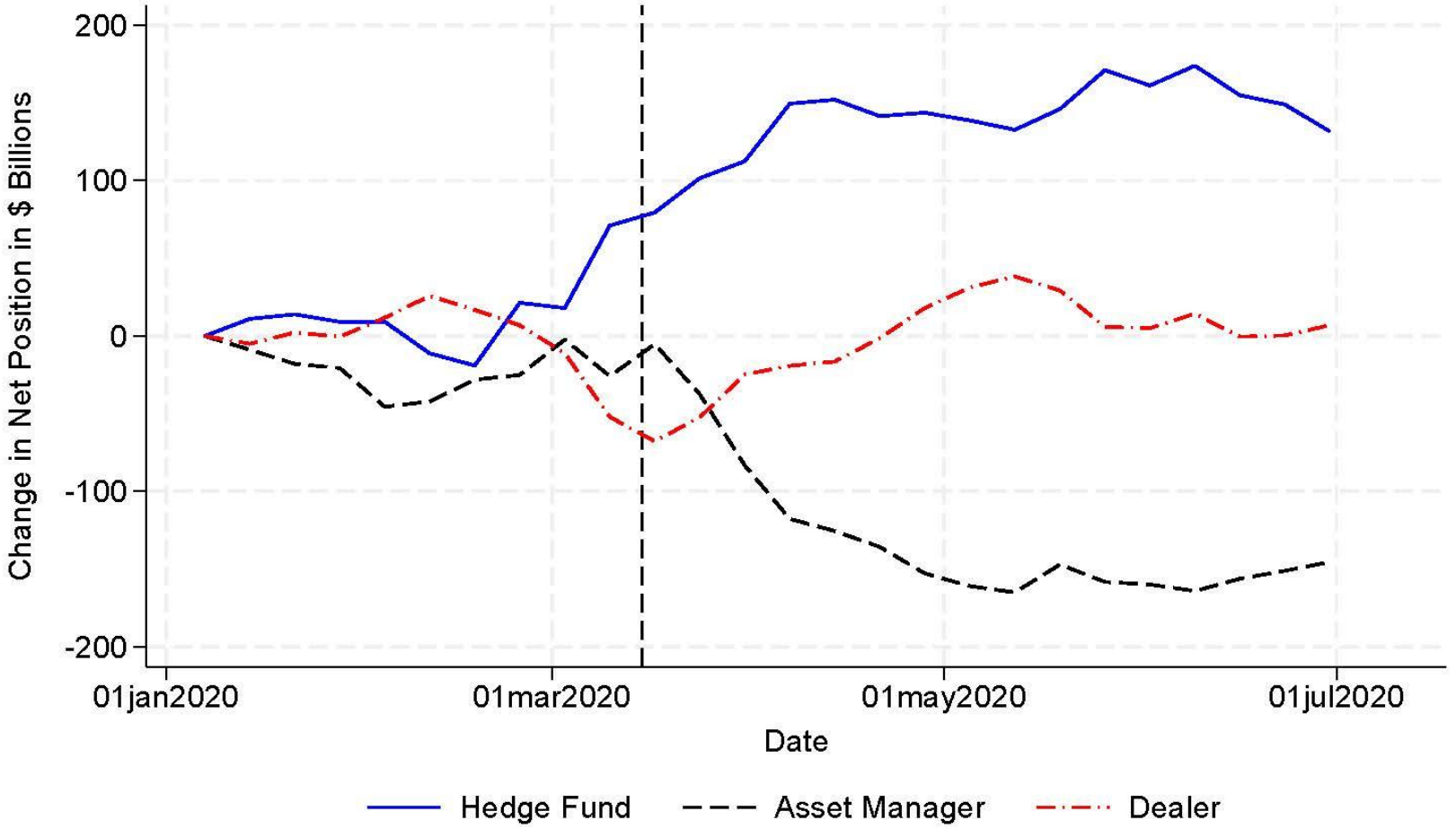
Prediction 1: Treasury issuance expands the basis trade

$$\Delta HF_{i,t} = \alpha_i + \alpha_t + \beta \Delta Q_{i,t} + \epsilon_{i,t},$$

	Δ Hedge Fund Net Futures			
	(1)	(2)	(3)	(4)
Δ Treasury Supply	-0.053***	-0.042***	-0.054***	0.007
	(0.010)	(0.011)	(0.013)	(0.032)
Tenor FE	Y	Y	Y	Y
Time FE	N	Y	Y	Y
Adjusted R^2	2%	8%	8%	10%
N	2,336	2,336	1,904	264

Prediction 2: The March 2020 unwind fits the theory



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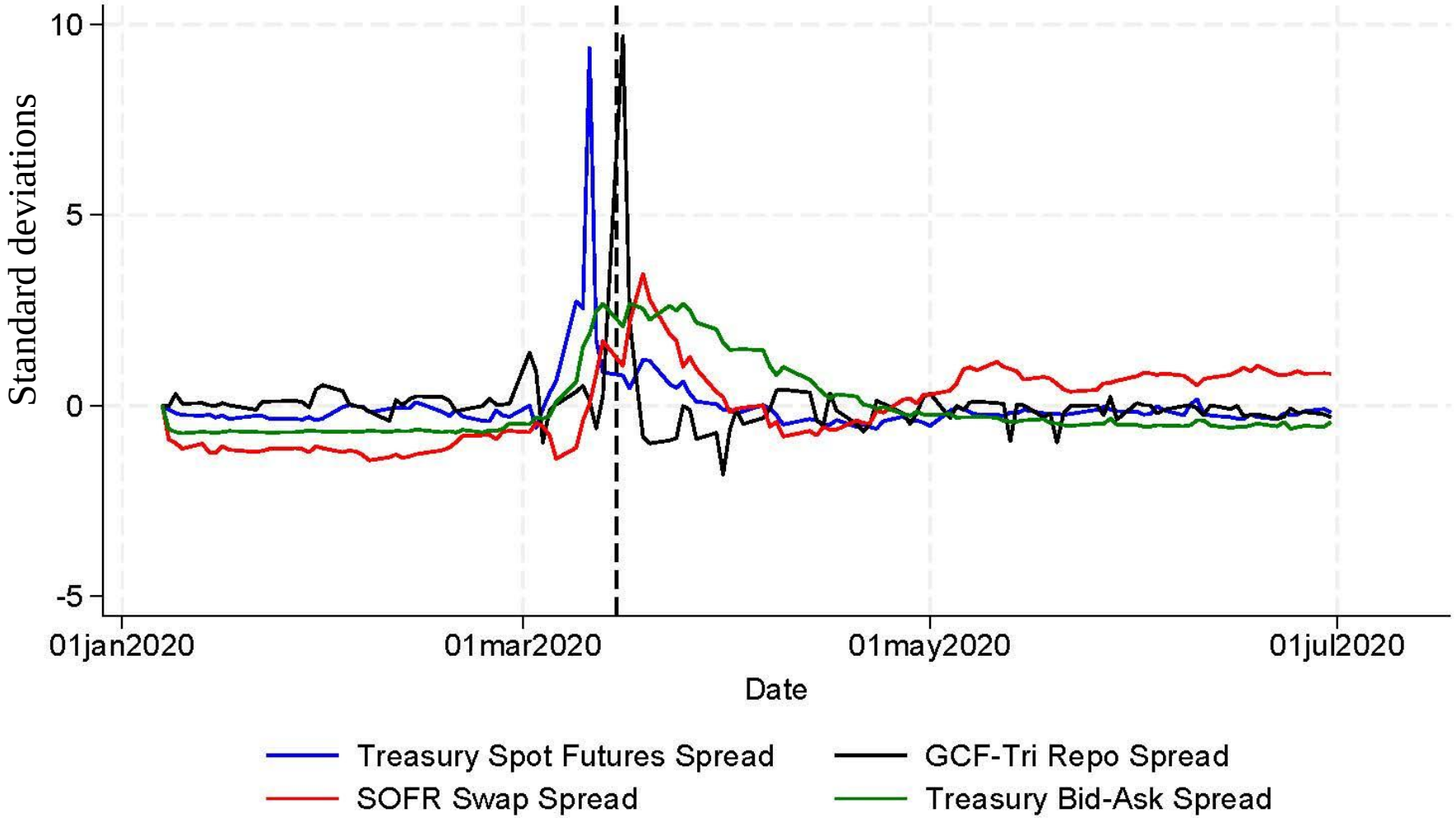
Prediction 3: When the trade unwinds, it spills over



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Summary

- Asset managers financially engineer a security they want to own.
- Hedge funds assist them but use lots of borrowing to do so.
- Various shocks to hedge funds' ability to hold their positions could destabilize the Treasury market, e.g.
  - Needs for cash, say due to margin calls
  - Losses on other trades
  - Decision to reduce risk

What to do the next time?

- Fed purchases will work, but that creates three issues

1. Moral hazard – encourages more risk-taking if a bailout is assured.

2. Buying likely changes the pricing of treasuries (term premia) which looks like monetary policy.

3. How do you exit when the turmoil ends?

Alternative Policy Proposal

- **Hedged Purchases: Buy Treasuries but hedge with futures.**
- This delivers exactly what the hedge funds would be offloading – and could be done via an auction.
- No term premia impact, no monetary policy spillover.
- Builds in an exit strategy.
- Purchases at a "penalty discount" limit moral hazard.
- By product: the hedge limits losses if rates rise later.

Thanks!