2023 SFBTA
Pick Up the Sword or Pick Up the Shield?

Tools for the Mortgage Trader's War Room

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Previously on…(2022 recap)

- “Its transitory! … Ok, so maybe its not transitory.”
- No new LIBOR
- Adoption of new risk free rates (SOFR, ESTR, SONIA, TONA, SARON)
- SFA I-curve guidance announcement…huh?
- Where’d the liquidity go?
- Get me some vol!
- Bear markets & spreads blowout

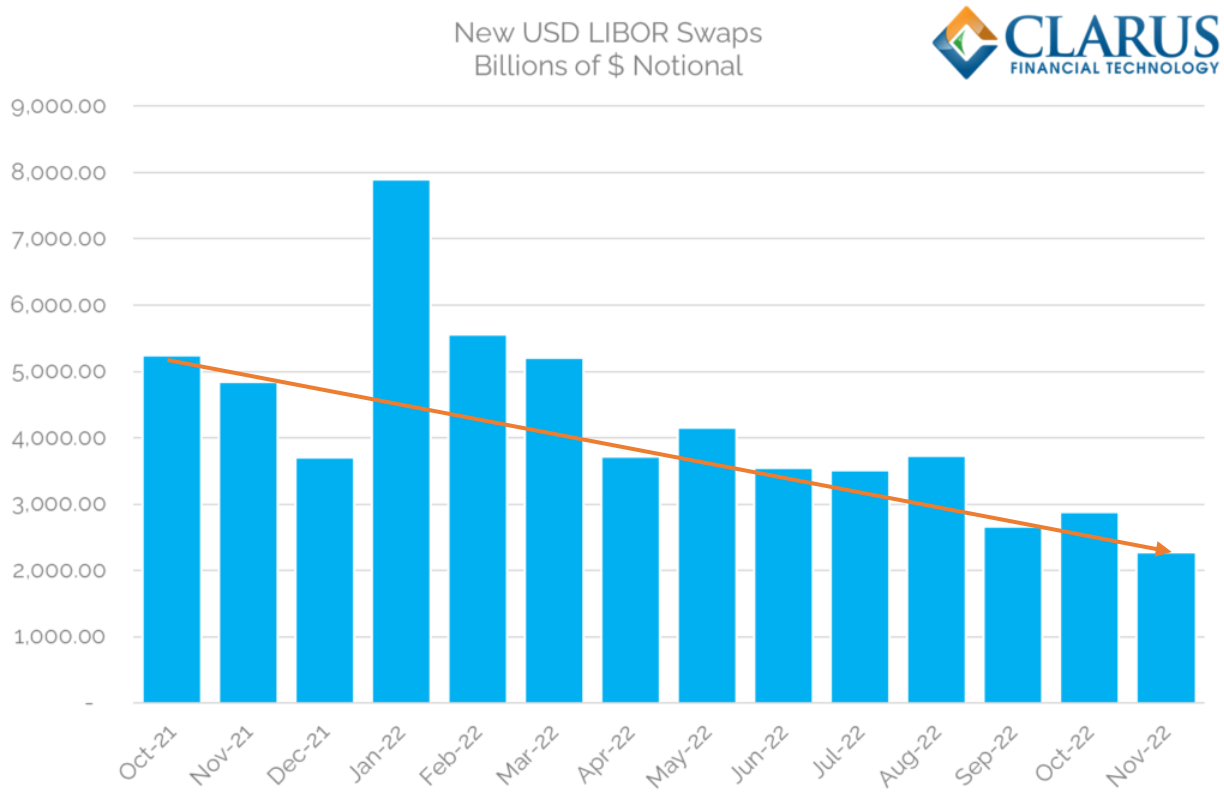
“It’s transitory” didn’t age so well…

- Global policy makers forced into hyper damage control
- Fed hiked at eight consecutive meetings (6 jumbo hikes ’22)
- Strong US labor market and healthy consumer
- How long? Recession or soft landing?
- Intersection 12-month T-bill, Effective Fed Funds rate, & Implied Terminal FF Rate
- China reopening, escalation in Ukraine, End of US COVID-19 Emergency Declaration, Debt Ceiling, or disputes over Taiwan

12m T-bill, EFFR, and Implied Terminal EFFR

Inflation fight overshadows IBOR transition

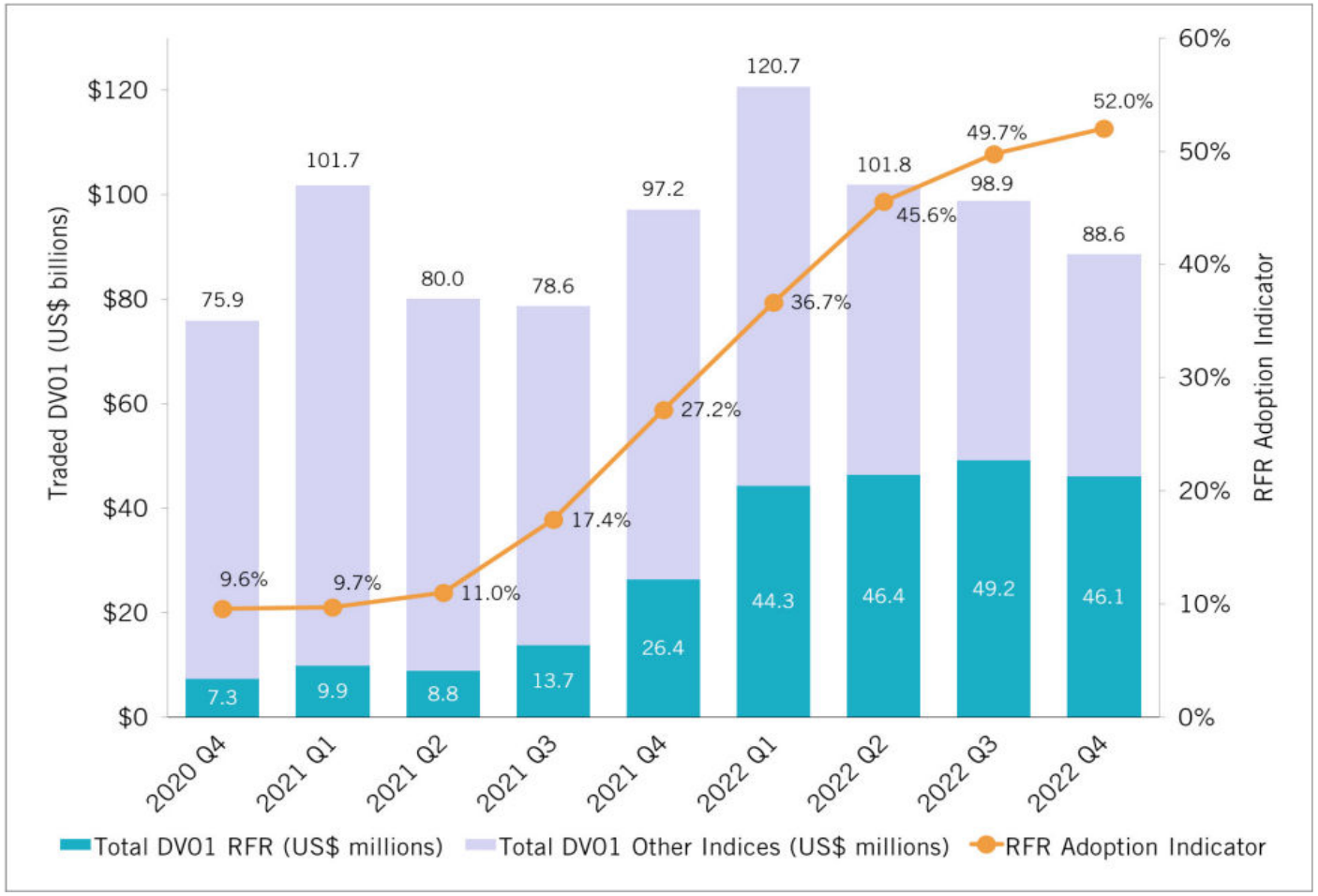
- Is No new LIBOR working?
- Still over $2.5T USD LIBOR per month in 2H22
- 88-90% of this volume is related to short-dated Single Period Swaps (SPS)
- Trending in right direction



Source: Clarus Financial Technology

Adoption of RFR (full year review)

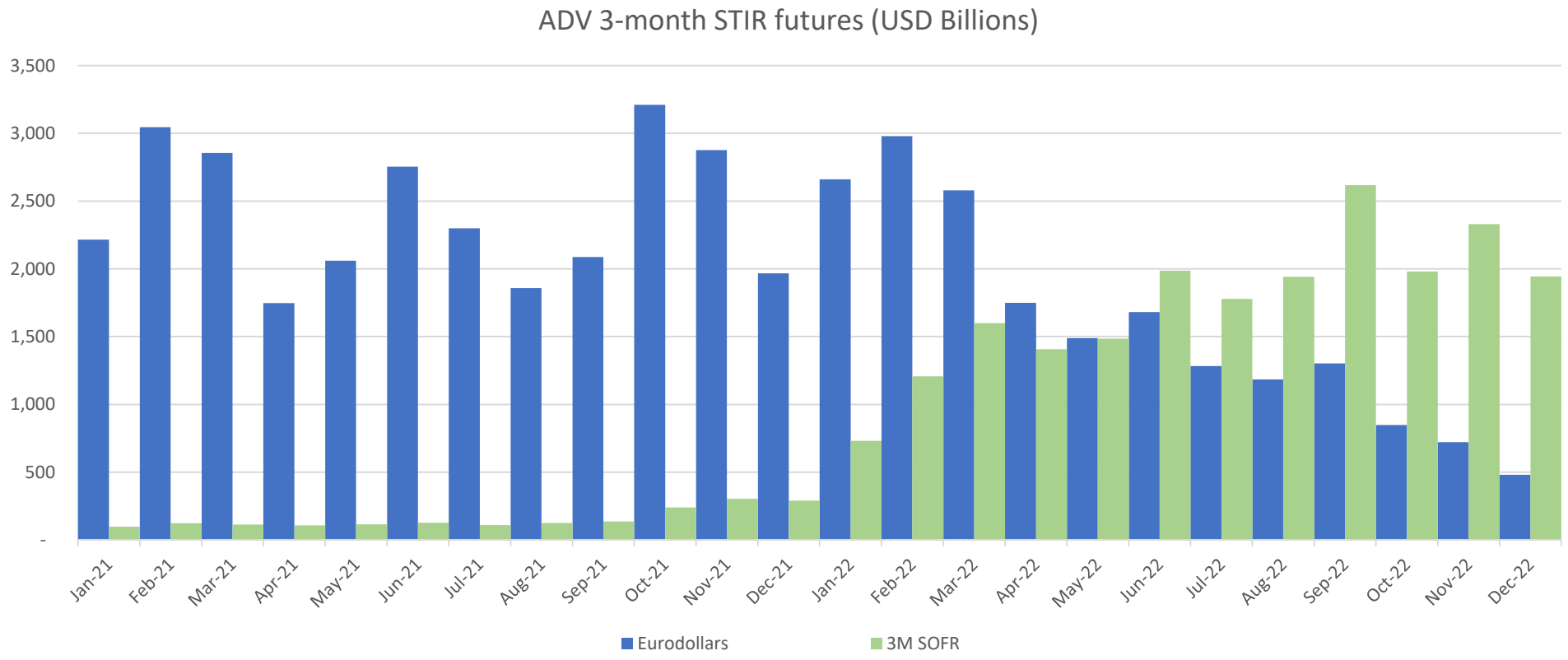
- ISDA-Clarus RFR Adoption Indicator rose to a monthly average of 45.3% in 2022 compared to 16.4% in 2021



Source: ISDA-Clarus RFR Adoption Indicator

Adoption of RFR (continued)

- Another indicator: Short-term Interest Rate (STIR) futures



Source: CME Group

Adoption of RFR (continued)

2022 SOFR highlights by the numbers:

		2022	YOY
FUTURES	Participants	3,300	4x
	ADV *(Q4)*	2,085,000	8x
	Peak OI *(Dec. 21)*	9,451,000	5x
	Large OI Holders	727	3x
OPTIONS	ADV *(Q4)*	900,000	225,000x
	Peak OI *(Dec. 15)*	25,400,000	9,000x

Source: CME Group

Adoption of RFR (summarized)

- No new LIBOR…was it successful??
- RFR are here to stay
- Term SOFR marketplace developing
- Improvements are needed
- Introducing systemic risks via untradeable basis
- No viable credit sensitive rate (CSR) replacement…yet
- CSR heir TBD: Ameribor, BSBY, ICE Bank Yield Index

New Benchmark for Structured Products

- April 5th, 2022: SFA announces new benchmark advice
- "Industry consensus"
- Virtually untradeable without infinite access UST repo
- Easier solution: Use STIR & UST futures to hedge i-curve
- Effectively target points on the UST curve
- Passthrough with multiple eligible CUSIPs for delivery
- Avoid risk of individual CUSIPs going on special

Eligible CUSIPs for Delivery (5Y Note Fut.)

FVH3 Comdty | Export | Settings | Cheapest-to-Deliver

US 5YR NOTE (CBT) Mar23 Price 109-28 Trade 02/01/23 Delivery 04/05/23

Sort By Settle 02/02/23 Cheapest IRP 3.484

Net Basis Increasing Prices in Decimals Days 62 Act / 360

Cash Security	Price	Source	Conven Yield	Conver Factor	Gro/Bas (32nds)	Implied Repo%	Actual Repo%	Net/Bas↑ (32nds)
Adjust Value								
1) T 2 5/8 05/31/27	96-07 5/8	BBT3	3.5709	0.8771	-4.259	3.484	4.598	5.938
2) T 3 1/4 06/30/27	98-22 3/4	BBT3	3.5680	0.8981	1.030	3.076	4.598	8.307
3) T 2 3/4 07/31/27	96-22	BBT3	3.5539	0.8775	8.710	1.194	4.598	18.143
4) T 4 1/8 09/30/27	102-15 1/4	BBT3	3.5425	0.9270	19.918	0.447	4.598	23.729
5) T 3 1/8 08/31/27	98-09 1/4	BBT3	3.5332	0.8899	16.362	0.111	4.598	24.412
6) T 4 1/8 10/31/27	102-17 3/8	BBT3	3.5366	0.9258	26.262	-0.640	4.598	29.910
7) T 3 7/8 11/30/27	101-20	BBT3	3.5051	0.9145	36.618	-2.749	4.598	41.422
8) T 3 7/8 12/31/27	101-19 7/8	BBT3	3.5120	0.9132	41.064	-3.528	4.598	45.667
9) T 3 1/2 01/31/28	100-00 3/4	BBT3	3.4948	0.8964	49.008	-5.410	4.598	55.176

Manage I-Curve Risk: SOFR + UST Futures

- First 12-18 months from using SOFR STIR futures
- UST Futures on the rest of the curve
- Improve curve precision using Eris SOFR swap futures
- Every trader weighs the need for hedge granularity.
- Match Maturity/Curve Risk. Match desired % DV'01. Match Index.
- Example: GN AC3667

Manage I-Curve Risk: SOFR + UST Futures

Orig Bal 35,359,912 USD Your Orig Bal 35,359,912
Prev Bal 10,283,703 Your Prev Bal 10,283,703
Accrued 0.1153 for 25 days, Start 01/01/23, Delay 14, WAL 1.824
Show precise amount Qtrly

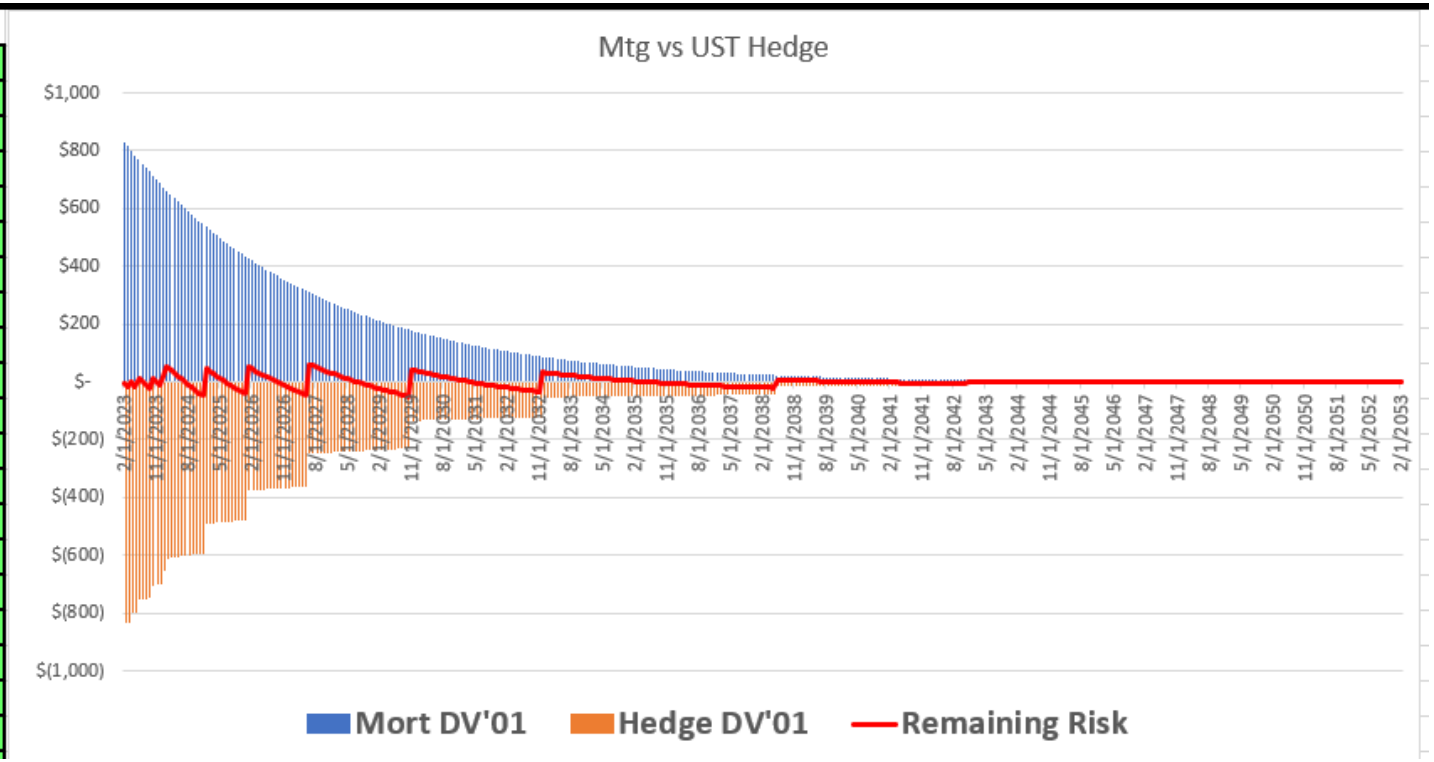
Source: Bloomberg

	Dates	Balance	Sched	Unsched	Interest	Penalty	Cashflow	Coupon
	Totals		10,283,703	0	316,633	0	10,600,336	
1.	04/15/2023	9,590,001	693,702	0	41,719	0	735,421	1.660
2.	07/15/2023	8,892,807	697,194	0	38,835	0	736,029	1.660
3.	10/15/2023	8,192,104	700,703	0	35,937	0	736,640	1.660
4.	01/15/2024	7,487,874	704,230	0	33,024	0	737,254	1.660
5.	04/15/2024	6,780,099	707,775	0	30,097	0	737,871	1.660
6.	07/15/2024	6,068,761	711,337	0	27,154	0	738,492	1.660
7.	10/15/2024	5,353,844	714,918	0	24,197	0	739,115	1.660
8.	01/15/2025	4,635,327	718,516	0	21,226	0	739,742	1.660
9.	04/15/2025	3,913,195	722,133	0	18,239	0	740,372	1.660
10.	07/15/2025	3,187,427	725,768	0	15,237	0	741,005	1.660
11.	10/15/2025	2,458,006	729,421	0	12,220	0	741,641	1.660
12.	01/15/2026	1,724,914	733,092	0	9,188	0	742,280	1.660
13.	04/15/2026	988,132	736,782	0	6,140	0	742,923	1.660
14.	07/15/2026	247,641	740,491	0	3,078	0	743,568	1.660
15.	08/15/2026	0	247,641	0	343	0	247,983	1.660

Manage I-Curve Risk: SOFR + UST Futures

- Matched amortizing duration hedge illustration

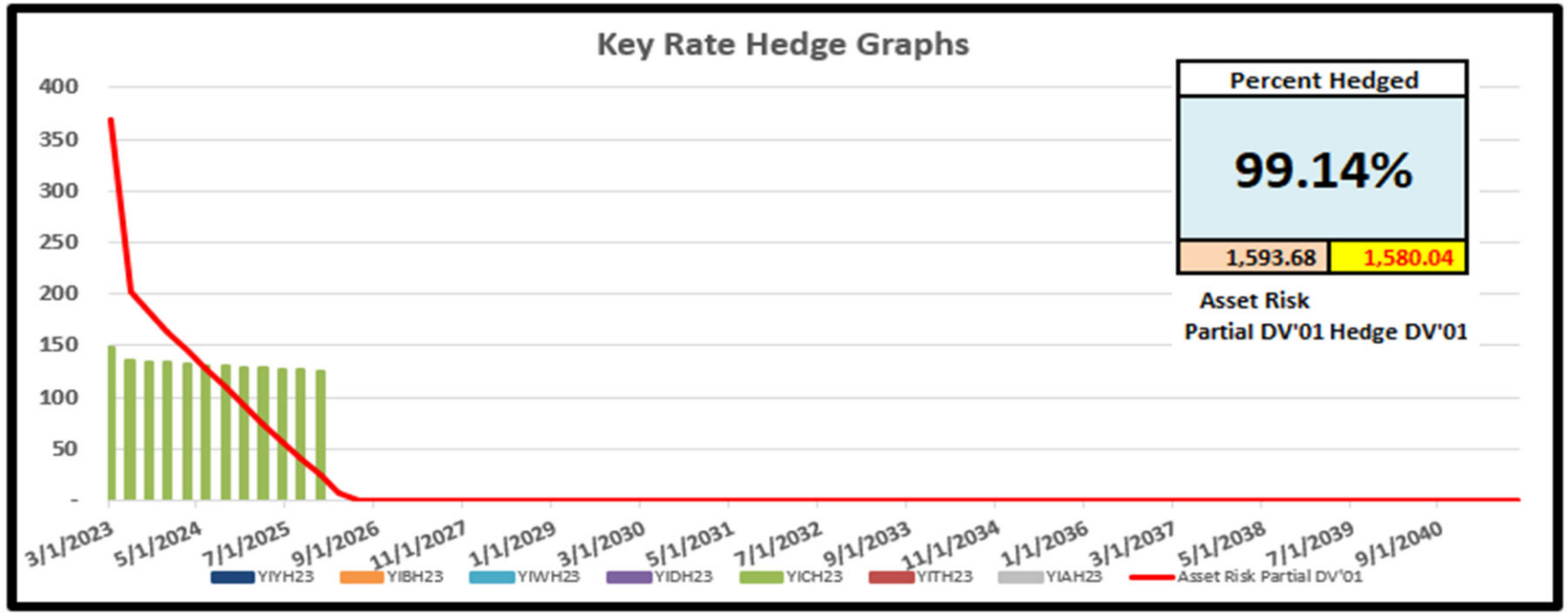
iCurve KRD Hedges	
SERG3 comdty	(20)
SERH3 comdty	(20)
SERJ3 comdty	(4)
SERK3 comdty	(4)
SERM3 comdty	(3)
SERN3 comdty	(3)
SERQ3 comdty	(3)
SERU3 comdty	(3)
SERV3 comdty	(2)
SERX3 comdty	(2)
SERZ3 comdty	(2)
SERF4 comdty	(1)
TUH3	(58)
3YH3	(60)
FVH3	(134)
TYH3	(122)
UXYH3	(94)
USH3	(45)
TWEH3	(16)
WNH3	(7)



Screenshot of risk graph from RJO FIG's proprietary HedgeBuilder software

Manage I-Curve Risk: SOFR + UST Futures

- "I'm in the business of moving, not parking!"
  Eris SOFR swap futures: bullet hedge



Screenshot of risk graph from RJO FIG's proprietary HedgeBuilder software

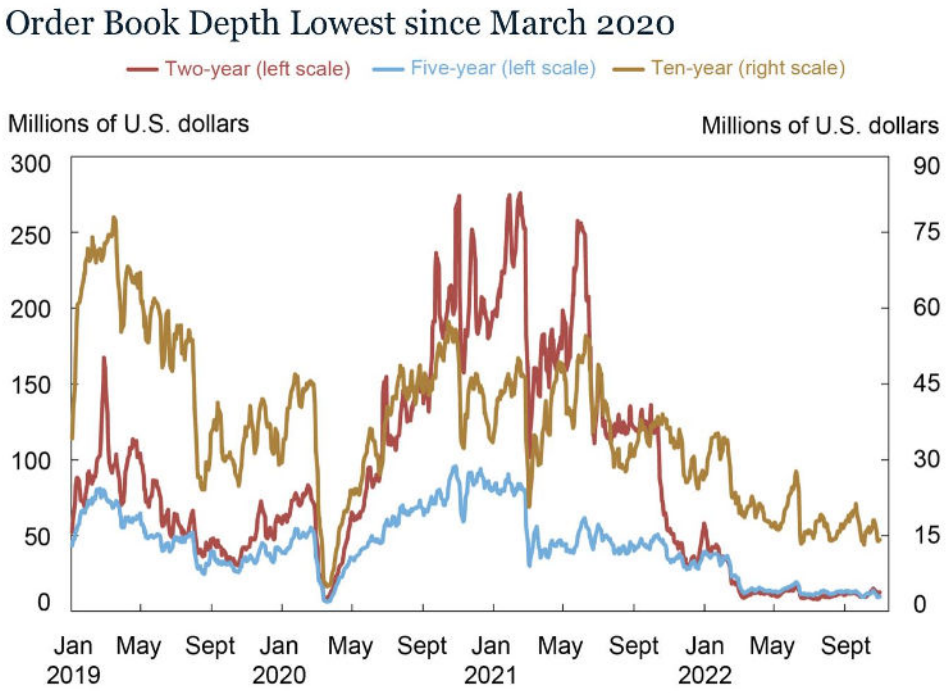
Where'd all the liquidity go?

- Market participants reported poor liquidity for most of 2022
- Bid/Ask spreads widened but only modestly*
- Real frustration was with the depth of market in orderbook
- Price impact to aggress on $100mm averaged 0.5, 1.0, and 1.5 32nds of a point on OTR 2yrs, 5yrs, and 10yrs respectively
- Biggest buyer exited mid-year

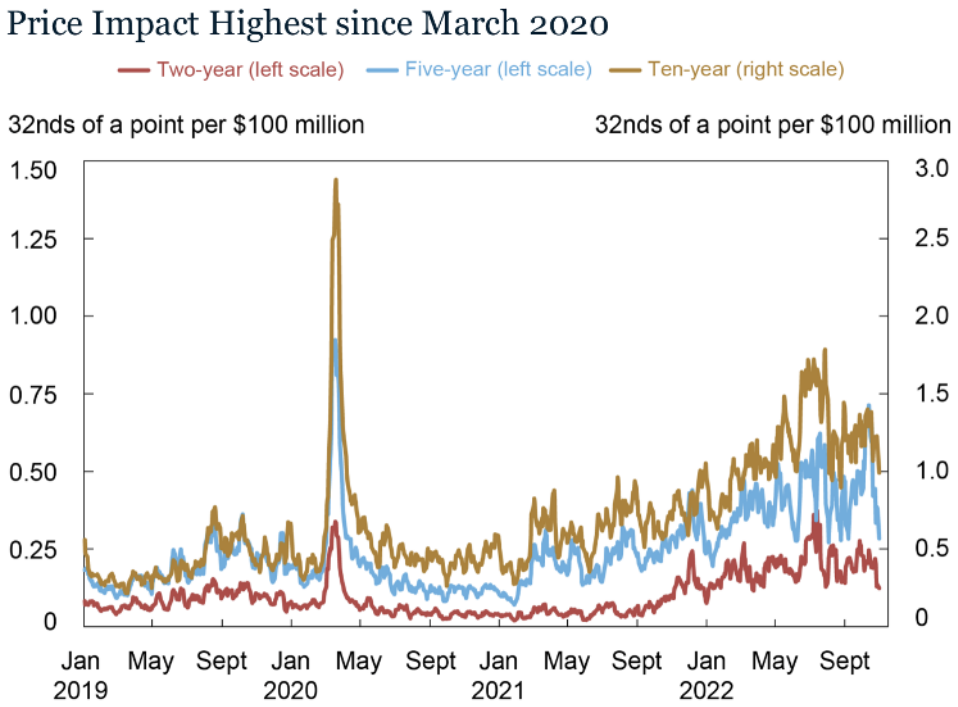
* When compared to 2019-2021 markets but excluding March 2020

Source: "How Liquid Has the Treasury Market Been in 2022?" –Liberty Street Economics and NY Fed

Where'd all the liquidity go? (continued)

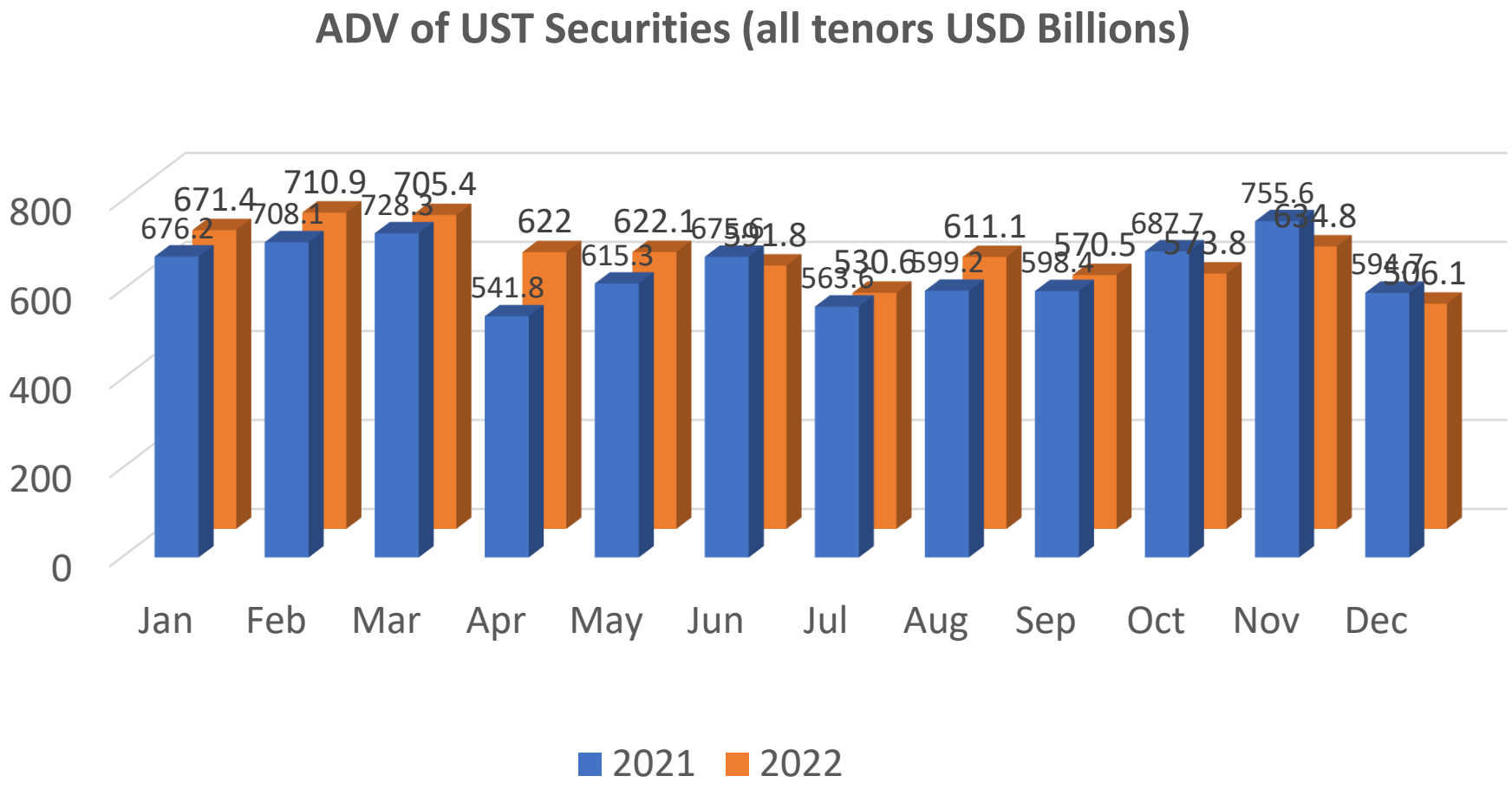


Source: Authors' calculations, based on data from BrokerTec.
Notes: The chart plots five-day moving averages of average daily depth for the on-the-run two-, five-, and ten-year notes in the interdealer market from January 2, 2019, to October 31, 2022. Data are for order book depth at the inside tier, averaged across the bid and offer sides. Depth is measured in millions of U.S. dollars par.



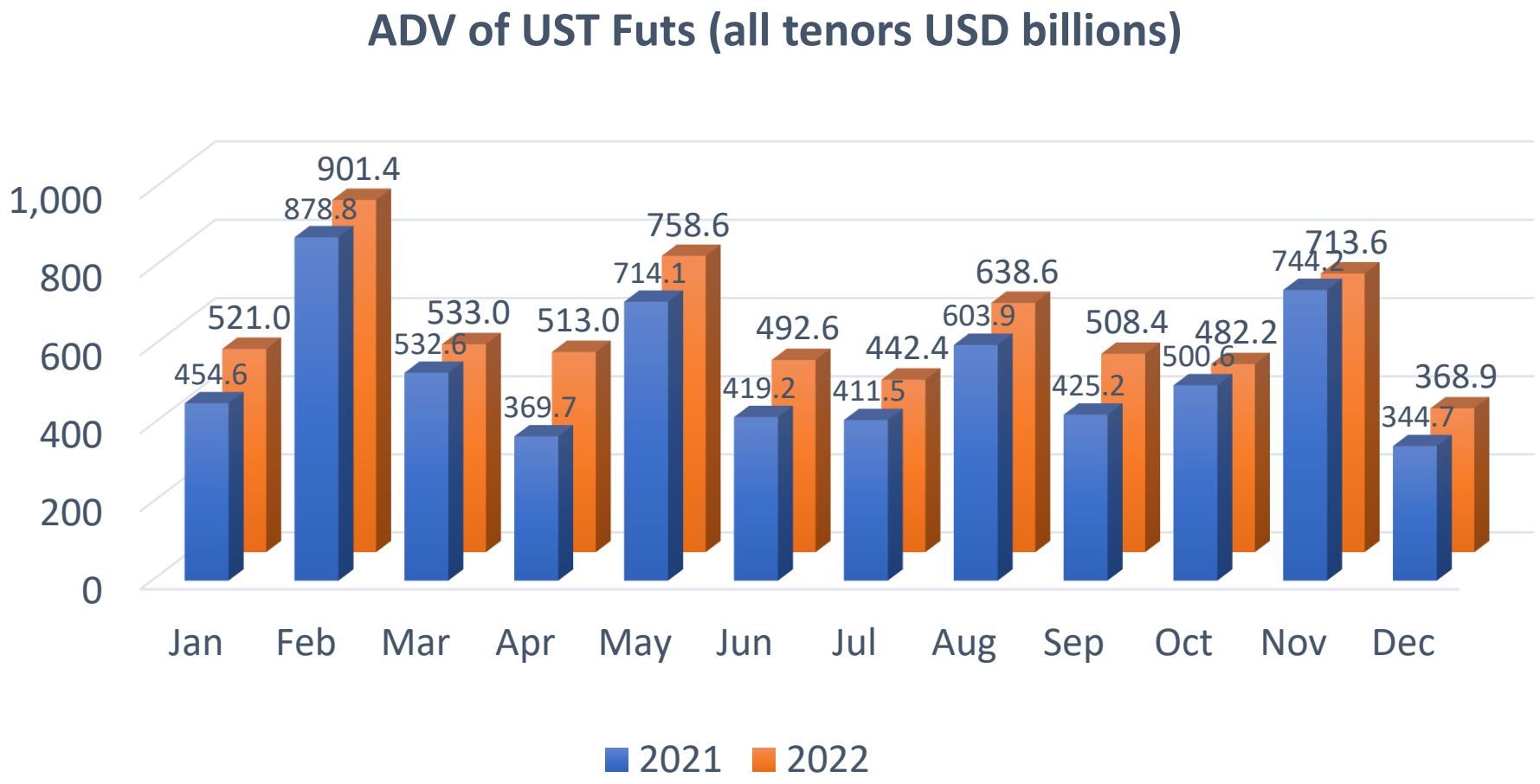
Source: Authors' calculations, based on data from BrokerTec.
Notes: The chart plots five-day moving averages of slope coefficients from daily regressions of one-minute price changes on one-minute net order flow (buyer-initiated trading volume less seller-initiated trading volume) for the on-the-run two-, five-, and ten-year notes in the interdealer market from January 2, 2019, to October 31, 2022. Price impact is measured in 32nds of a point per $100 million, where a point equals one percent of par.

Where'd all the liquidity go? (continued)



Source: SIFMA

Where'd all the liquidity go? (continued)

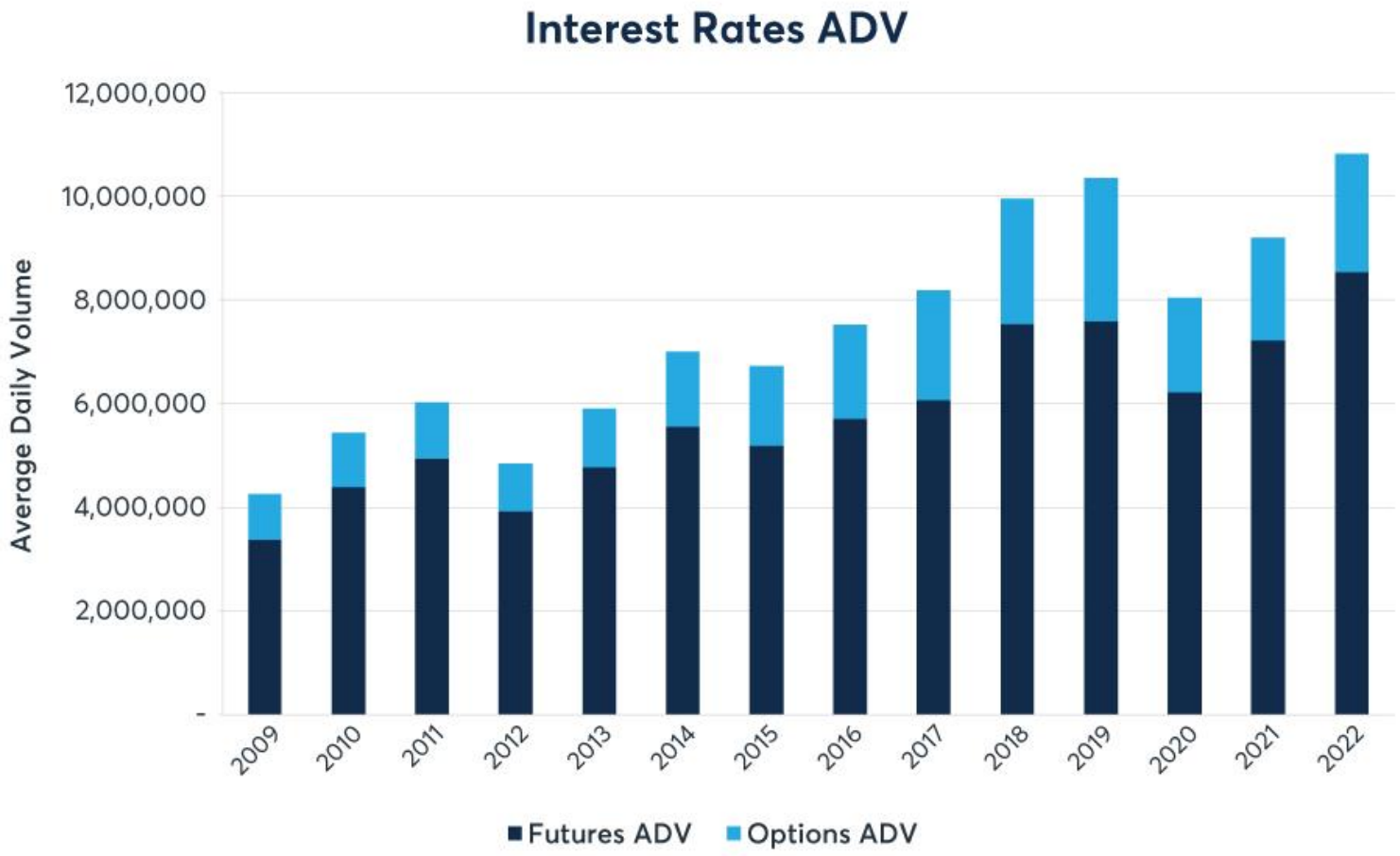


Source: CME Group

Where'd all the liquidity go? (continued)

- UST Sec ADV -2% vs UST Futs ADV +7% YoY
- UST futures liquidity suffered but less so. Why?
- Advantages of futures contracts for improved liquidity
  - Commoditization concentrates liquidity
  - Better leverage for outright risk (credit buy up)
  - Democratize all-to-all marketplace
  - Basis trading
  - Offsetting risk against other listed and OTC cleared positions at CME Group

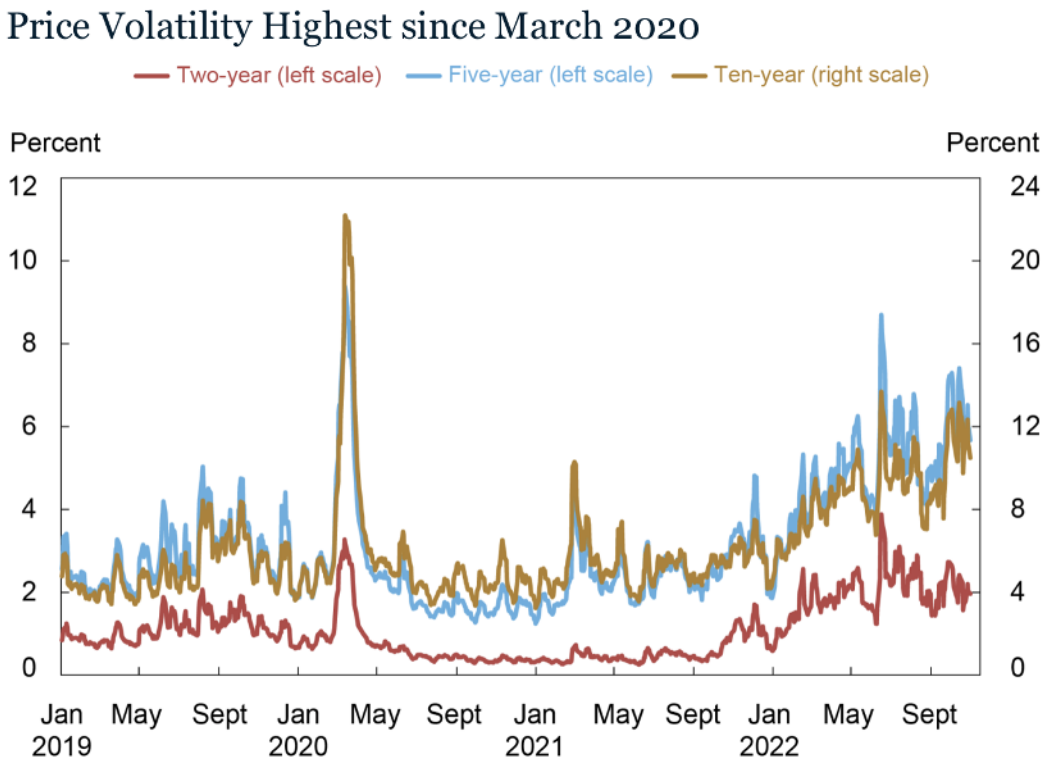
Where'd all the liquidity go? (continued)



Source: CME Group

Get me some vol!

- Sustained elevated volatility in 2022
- Back to the future(s)
- Trade rate vol using options on UST futures
- Hedge OAS and spreads



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Notes: The chart plots five-day moving averages of price volatility for the on-the-run two-, five-, and ten-year notes in the interdealer market from January 2, 2019, to October 31, 2022. Price volatility is calculated for each day by summing squared one-minute returns (log changes in midpoint prices) from 7 a.m. to 5 p.m., annualizing by multiplying by 252, and then taking the square root. It is reported in percent.

Get me some vol! (continued)

- Agency CMBS OAS vs 3m ATM TY Implied Vol
- *** *iVol Lead Spreads* ***

  (hint: trade options)

Bear markets & spreads blowout

- iBoxx iShares Corp Bond Index Futures
- One-stop shop: duration and spread
- Same underlying index as LQD and HYG
- Similar leverage as TRS but no ISDA required

Next on…(what's new in 2023)

- CME 30Y UMBS futures aka TBA futures
- ICE APR Confirming and Jumbo futures aka Rate Lock futures
- CME launching portfolio margining for Eris SOFR swap futures
- RJO opens cash broker/dealer, RJO Securities

CME 30Y UMBS futures

- CME expects same benefits of the UST (futures) passthrough market for TBA market
- Over 2,200 contracts ($220M) have traded in first month, with participation from dealers, hedge funds, asset managers, mortgage firms, and prop trading firms
- Offsetting risk margin (non-bank levered finance firms)
- Is FINRA rule 4210 exemption expiring?

Rate Lock Futures: Primary Rate Instrument

- Monthly, 6-months forward
- $50/future constant DV'01 (non-convex)
- Longs Hedge:
  - Resi IO, MSR
  - High Coupon Refi Risk
- Shorts Hedge:
  - Low coupon, positively convex spec pools
  - Cheat TBA drop
- Spreads for Mort:Treas basis exposure

Rate Lock Futures: Primary Rate Instrument

CME Clearing: Eris SOFR Portfolio Margining

- Unlocks much needed liquidity on longer maturities
- Access to large balance sheet
- More participants entering the market
- Capital efficiency for basis trading vs cash

Futures use at the Institutional Level

- If you're in this room, futures are likely useable
- Most primaries use for own risk management
- Any institution with visible, audited financials can typically access the futures markets via a 'futures dealer' (FCM) like RJ O'Brien
- Get Derivative leverage with lower capital ("Init Margin") at the cost of 'truing up' wins/losses at next business day (like repo lines)
- No ISDA or intensive credit review
- Exchanges set risk thresholds
- Most futures trades can be executed through Bloomberg (if desired) and tickets and positions passed directly into TOMS for risk offset

What's in the Arsenal? (Let's recap)

- Risk Free / Core Rate Hedge Instruments
- Treasury Futures: 2y, 3y, 5y, 7y, 10y, 15y, 20y, 30y
- SOFR Swap Futures: 1y-5y, 7y, 10y, 30y
- SOFR 1mo & 3mo STIR Futures
  - 1mo: 1-13mos fwd, monthly
  - 3mo: 3mo-7y fwd, quarterly
- Fed Funds Futures, monthly for 24 months
- Spread & "Spread + Duration" Instruments
- Options on Treasury and SOFR STIR Futures
- ICE Primary Rate Resi Mort Futs
- CME TBA Futures (2ndary Resi Rate)
- VIX Futures
- CBOE CFE IBOXX Futures
  - IG and HY

RJO Securities

- Adding UST team
- Trading to commence soon
- RJO felt a need to better serve our existing customers
- Give them a warm welcome
- Trade OTC swaps

Any Questions?

Thank you!

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