

US Rates Watch

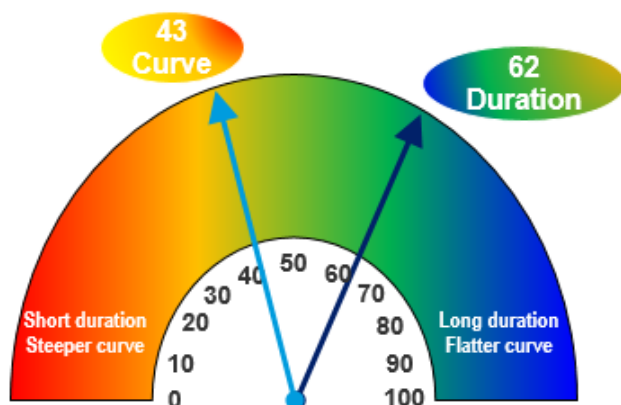
UST inflows moderate as fund auction bid retreats

Tall tail

Flows data showed better buying from foreign officials and performance suggests that domestic FI funds have moderated their underweight positions. However, fund flows into USTs cooled this past week and auction allocations show investment funds have been moderating their bid. While October stripping activity was historically large, the 30y auction suggests that investors were skeptical of the meaningful rate retracement over the past two weeks. CTAs continue to cover shorts at the back end of the curve and our models suggest there can be more covering to come if momentum points longer. While we see room for an improved demand backdrop, it hinges on greater conviction in the end of the Fed hiking cycle. This can be confirmed or rejected by this week's data.

Exhibit 1: Curve-o-meter

CTAs and hedge funds remain more in steepeners, speculators excluding leveraged funds are long but futures positioning proxy shows more mixed bias



Source: BofA Global Research. Note: dials show 5y percentiles for the average non-commercial ex leverage funds & proxy of futures positioning for duration and the average of CTA betas and our proxy for futures positioning for the curve.

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Bias for bull steepening

Our futures positioning proxy (for construction details see: Gauging positioning in Treasury Futures.) shows a bias for the curve to bull steepen (Exhibit 12). The greatest concentration of OTM shorts sit at the front end, while OTM longs remain more prominent further out the curve (Exhibit 11). On the week through Thursday, open interest (OI) declined with both short and long positions closed. TY saw a meaningful decline in OI, largely longs destroyed. New shorts were created mostly in the front end and longs were created to the greatest extent in FV and TU.

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UST= Treasury security

CTA= Commodity trading advisor

OTM= out of the money

ITM=in the money

ED= Eurodollars

TIC=Treasury International Capital

QT= quantitative tightening

MoF= ministry of finance

RRP = reverse repo program

SFR = SOFR futures contract

TU = Treasury 2Y futures contract

FV = Treasury 5Y contract

TY = Treasury 10Y contract

UXY = Treasury ultra 10Y contract

US = Treasury 20Y contract

WN = Treasury 30Y contract

TGA= Treasury General Account

TR FI funds = Total return fixed income funds

PPTS = percentage points

JGB = Japanese government bonds

FoF = flow of funds

CTAs continue to cover shorts & stay in steepeners

Our models show that CTAs are continuing to cover shorts at the back end of the curve (see: [CTA impact on the rates market](#)). While they remain net short at the back end, our model suggests that they are long the front end and are positioned for a steeper curve. Please note: CFTC data will be available on Monday Nov 13th, prior week's data is included in charts below.

Official sector adds USTs alongside USD depreciation

NY Fed custodial holdings showed that the foreign official sector bought \$11bn USTs the week ending Nov 8th (Exhibit 28). This is consistent with what we had flagged last week, that USD depreciation should curb selling and incentivize a stronger bid.

On the other hand, Japanese investors were net sellers of foreign bonds (Exhibit 27). We continue to think that their bid will remain muted alongside prohibitive hedging costs (Exhibit 21). We see the potential for other foreign private investors to continue buying as pickup is priced to improve in coming months (Exhibit 20). As shown in Exhibit 32, Canada, UK, and European investors have been the largest foreign buyers of USTs YTD.

Inflows slow; performance suggests underweight covering

US fixed income funds saw elevated inflows the week ending November 8th (Exhibit 35). Much of this flow represents a risk-on rotation- with HY credit funds seeing the strongest inflows while UST funds saw outflows to only modest inflows. After several months of strong inflows, short term UST funds saw the largest outflow since April. We continue to monitor these fund flows closely as investment funds comprise an important source of US Treasury demand.

Alongside the rally in rates last week, all 28 of the total return funds we track outperformed their benchmark (Exhibit 40). This suggests that funds may be repositioning vs the underweight duration allocations evident in prior performance and Q3 reports (Exhibit 42 and Exhibit 43). Correlation between fund performance and 10y UST yield has also dropped meaningfully in recent weeks, suggesting some repositioning (Exhibit 44). This implied uptick in duration allocation also consistent with our FX and Rates Sentiment survey which suggests that global benchmark funds added to duration longs and moderated USD overweights (see: [USD positioning unwind has begun](#)).

Pension stripping activity pickup but 12mo flows flat

October saw the largest increase in stripping activity we have seen since March 2021, >2 z-score move in the series history (Exhibit 60). While this is a sign of decent P&I demand over the month of October, the rolling 12mo of stripping activity holds steady at around \$65bn (Exhibit 59). October was likely a catchup from prior months and only modestly above levels observed last October. For context the \$65bn in 12mo stripping activity compares with \$401bn of long end nominal supply (20y-30y) in 2023 and an expected \$443bn in 2024.

Moderating auction bid from investment funds

While investment funds remain strong participants at auctions, most recent allotment data shows some moderation in bid alongside a pickup in primary dealer participation (Exhibit 53 and Exhibit 54). We anticipate that these dynamics were similar at the most recent 30y auction which showed the largest tail since the 2011 S&P downgrade. While UST has shown sensitivity to demand dynamics, we believe it is too soon to say that this will have direct consequences for the next refunding decision. Over the past two weeks, long-end rates have retraced about half of the selloff observed from August – October.

Exhibit 2: On deck next week

Calendar of upcoming events

	US Data			Fed Speaker / Event	Treasury Auction			Treasury Settlements	
	Series	BofA	BB Consensus		Security	Amount (\$bn)	Prior Δ	Security	Amount
M, Nov 13	Monthly Budget Statement	\$-75.0bn	-\$65.0bn	No major data	13-week bills	75	0		
					26-week bills	68	0		
Tu, Nov 14	NFIB Small Business Optimism	-	-	12:45 Fed's Goolsbee (voter) Speaks on Economy and Monetary Policy	42-day bills	75	0	Bills	25
	Consumer Price Index (yoy)	3.40%	3.30%						
	CPI Ex Food & Energy (yoy)	4.20%	4.10%	(All day) Fed's Philip Jefferson (voter) and SNB's Thomas Jordan Speak in Zurich					
	Consumer Price Index (mom)	0.20%	0.10%						
	CPI Ex Food & Energy (mom)	0.30%	0.30%						
W, Nov 15	MBA Mortgage Applications	-	-	No major data	17-week bills			Coupons	10
	Empire Manufacturing	-2.5	-2.1						
	Advance Retail Sales	0.10%	-0.30%						
	Retail Sales Less Autos	0.10%	-0.20%						
	Retail Sales Less Autos and Gas	0.30%	0.20%						
	Core Control	0.30%	0.20%						
	Producer Price Index (mom)	0.10%	0.10%						
	PPI Ex Food & Energy (mom)	0.30%	0.30%						
	PPI Ex Food, Energy, Trade (mom)	0.20%	-						
	Business Inventories	-	0.40%						
Th, Nov 16	Initial Jobless Claims	222k	-	8:30 Fed's Mester Delivers Opening Remarks	4-week bills			Bills	33
	Import Price Index (mom)	-0.30%	-0.30%	9:25 Fed's Williams (voter) Speaks at US Treasury Market Conference	8-week bills				
	Import Price Index ex Petroleum (mom)	-0.20%	-						
	Industrial Production	-0.20%	-0.40%	10:35 Fed's Barr (voter) Speaks at US Treasury Market Conference					
	Manufacturing Production	-0.50%	-	11:45 Fed's Mester Delivers Introductory Remarks					
	Capacity Utilization	79.60%	79.40%						
	NAHB Housing Market Index	42	40						
	Net Long-term TIC Flows	-	-						
F, Nov 17	Housing Starts	1340k	1350k	8:45 Fed's Collins Delivers Welcoming Remarks					
	Building Permits	1450k	1450k	9:45 Fed's Goolsbee (voter) Speaks on Economy					
				10:00 Fed's Daly Speaks in Frankfurt					

Source: BofA Global Research, Bloomberg, US Treasury

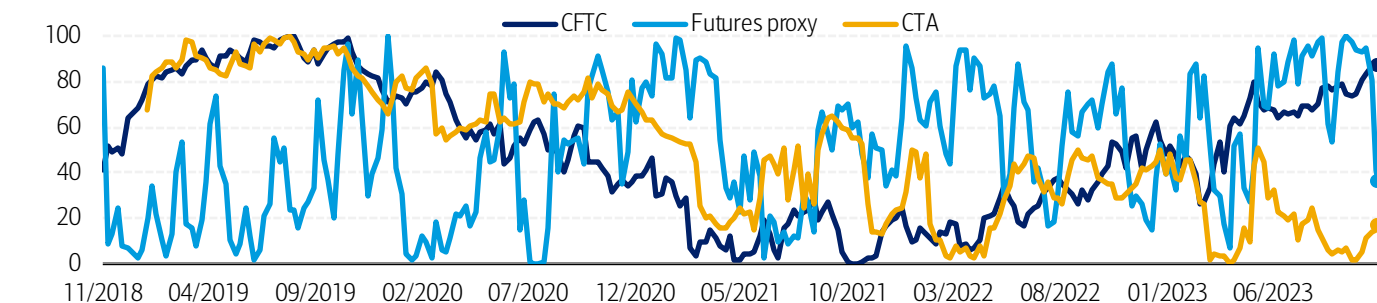
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Positioning indicators

Exhibit 3: 5y percentile of 10 equivalent duration positioning (percentile: higher = longer)

Futures positioning proxy shows bias for rates to sell off, CFTC data adjusted for LFs is long, top down CTA model shows positioning is historically short

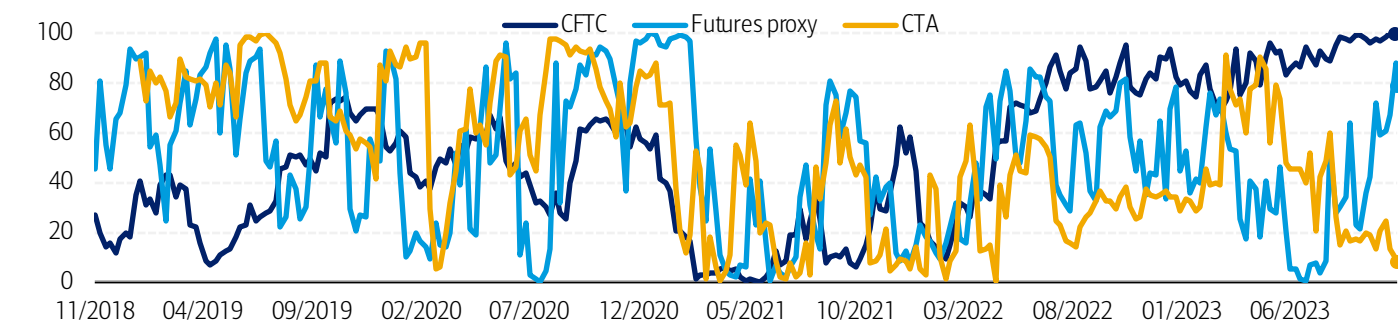


Source: BofA Global Research

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Exhibit 4: 5y percentile of curve positioning (percentile: higher = longer back-end relative to front end)

CTAs are in steeper but futures positioning proxy shows bias for back-end to sell off more, CFTC AMs have longs further out curve

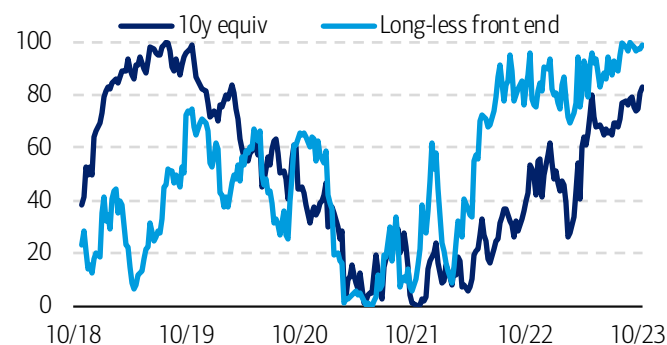


Source: BofA Global Research

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Exhibit 5: 5y percentile of non-commercial ex LF positioning

Positioning is historically long and largely concentrated at the back-end

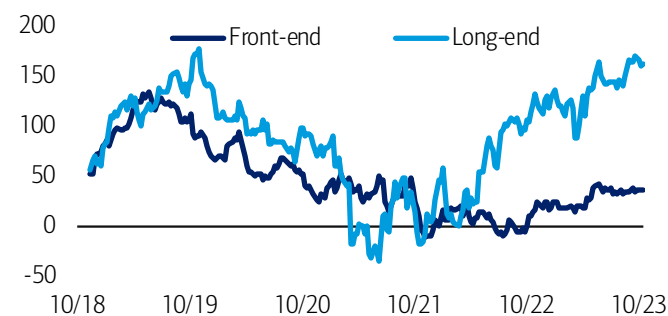


Source: BofA Global Research, Bloomberg

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Exhibit 6: Non-commercial ex leveraged fund positioning (\$bn, 10y equivalent)

Longs are more concentrated in the back-end

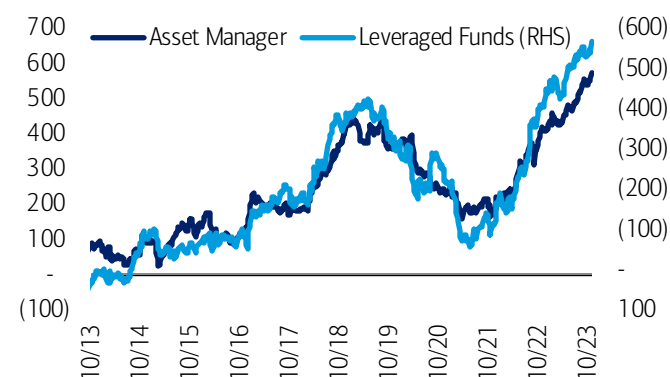


Source: BofA Global Research, Bloomberg

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Exhibit 7: Asset manager and leveraged fund positioning (10y equivalent, \$bn)

Asset manager longs correspond with leveraged fund shorts

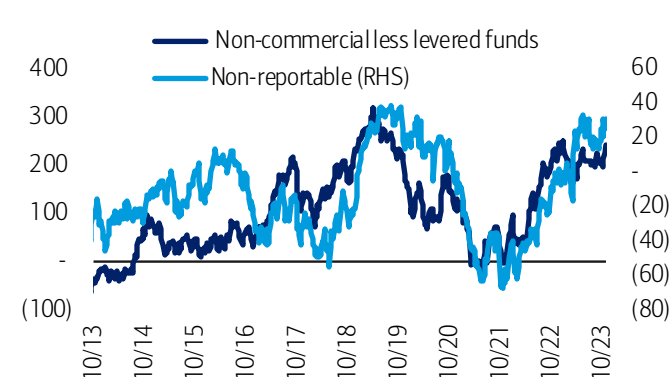


Source: BofA Global Research, Bloomberg

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Exhibit 8: Non-commercial ex LFs and non-reportable positioning (10y equivalent, \$bn)

Directional positions trend together



Source: BofA Global Research, Bloomberg

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Exhibit 9: 10y rate change for given percentile of non-commercial ex-Leveraged fund positioning (higher percentile = longer)

Positioning is a momentum signal: longer positioning is usually followed by stronger 10y performance

	0	1w	4w	8w	12w	16w
0 to 10	10	2	1	1	2	3
10 to 20	20	1	3	3	3	4
20 to 30	30	5	2	2	2	4
30 to 40	40	2	4	4	4	4
40 to 50	50	1	0	0	0	1
50 to 60	60	0	0	0	0	0
60 to 70	70	-1	0	1	1	0
70 to 80	80	-2	-1	-1	-2	-2
80 to 90	90	1	0	-1	-2	-4
90 to 100	100	-2	-2	-2	-2	-2

Source: BofA Global Research, Bloomberg, average performance calculated over last 5y

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Exhibit 10: 10y rate change for given percentile of leveraged fund positioning (higher percentile = longer)

Positioning is contrarian signal: shorter positioning is usually followed by stronger 10y performance

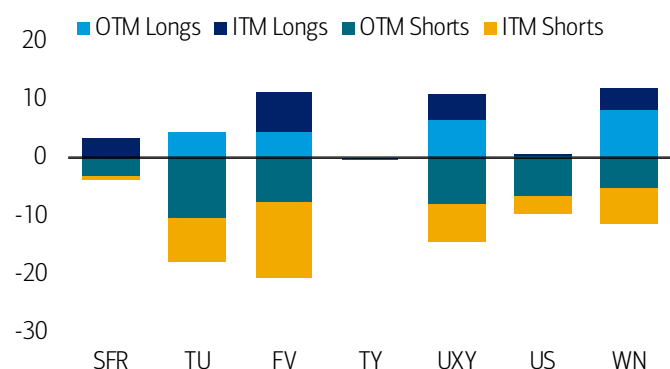
	0	1w	4w	8w	12w	16w
0 to 10	10	6	5	5	6	7
10 to 20	20	-2	-2	-1	0	1
20 to 30	30	1	-3	-2	-3	-4
30 to 40	40	-6	-2	-4	-3	-5
40 to 50	50	-2	-2	-2	-2	-2
50 to 60	60	3	3	3	2	2
60 to 70	70	3	2	2	3	4
70 to 80	80	3	4	4	4	5
80 to 90	90	2	4	4	4	5
90 to 100	100	-1	-2	-1	0	0

Source: BofA Global Research, Bloomberg, average performance calculated over last 5y

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Exhibit 11: Proxies for futures positioning

On the week, moneyness in both longs & shorts are mixed across contracts, positioning in TY is minimal

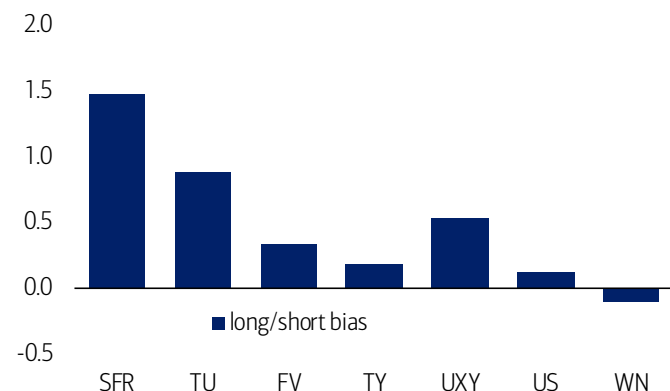


Source: BofA Global Research, Bloomberg

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Exhibit 12: Analysis of proxies for futures positioning

Bias for rates to rally in the front-end

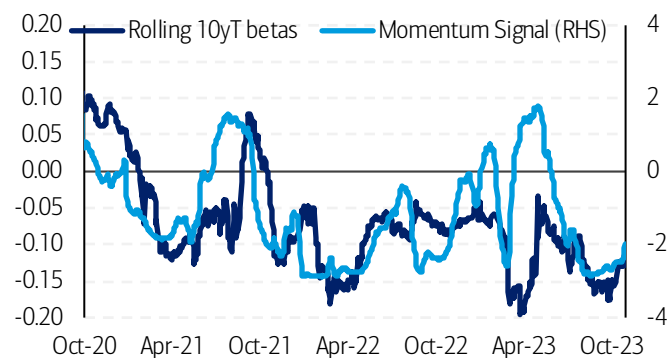


Source: BofA Global Research, Bloomberg, Note: reflects average positioning of futures stack over last 5 days

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Exhibit 13: CTA positioning in 10yT

On the week, CTAs covered shorts as momentum signal continued to pick up

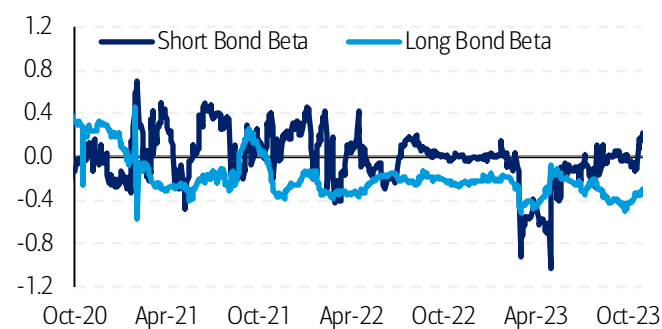


Source: BofA Global Research

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Exhibit 14: CTA positioning in longer duration and shorter duration bonds

Top-down model suggests CTAs positioning turned long at the front-end

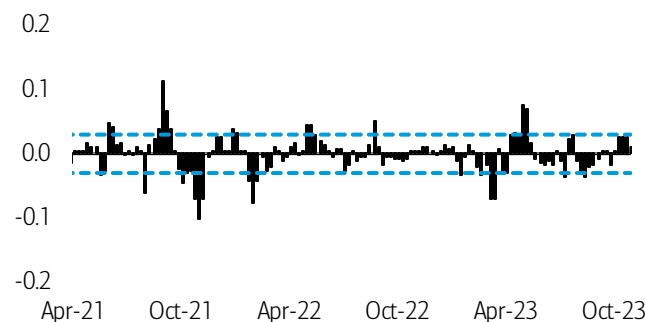


Source: BofA Global Research

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Exhibit 15: Changes in CTA 10yT beta

Change in 10y beta is positive on the week

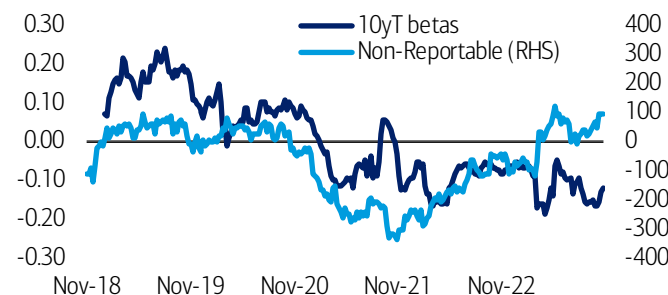


Source: BofA Global Research

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Exhibit 16: CTA 10y TSY beta and non-reportable positions

Strong divergence between non-reportable position and top-down model, which tends to be lagged



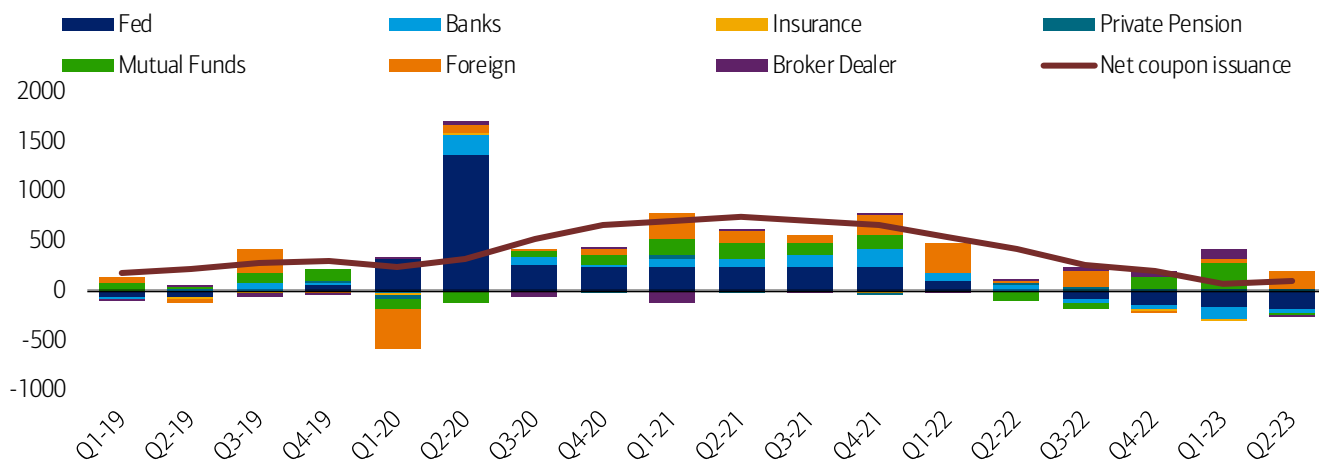
Source: BofA Global Research, Bloomberg

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Flow of funds

Exhibit 17: Changes in large holders of UST securities (\$bn)

In Q2 foreign investors were largest buyers while Fed and banks reduced UST holdings the most

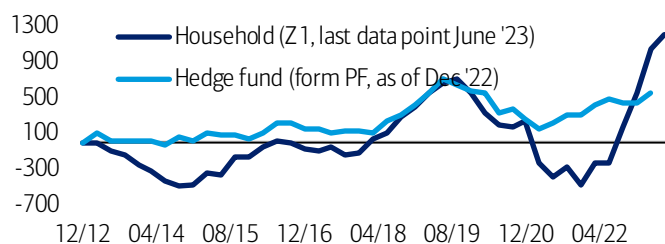


Source: BofA Global Research, Bloomberg. Note: change in levels adjusted for change in rates over the quarter

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Exhibit 18: Change in UST holdings (\$bn)

Hedge funds UST holdings increased last year based on Flow of Funds data and form PF

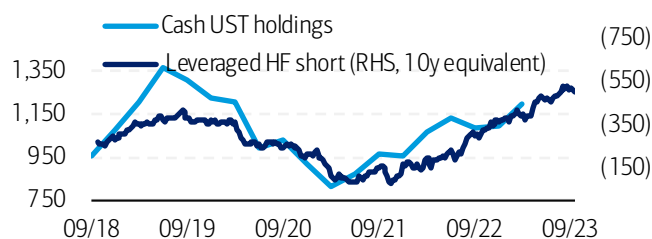


Source: BofA Global Research, Federal Reserve

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Exhibit 19: Hedge fund cash UST holdings vs leveraged fund shorts (\$bn)

Form PF confirms that cash long has grown alongside futures short



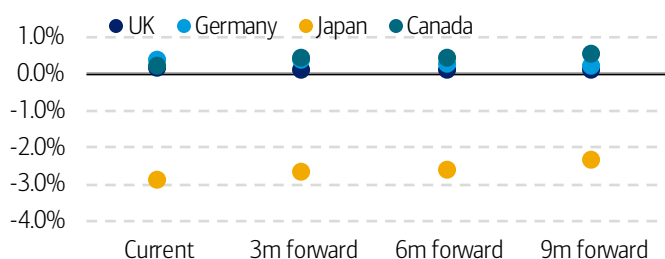
Source: BofA Global Research, Federal Reserve, Bloomberg

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FX hedged pickup and foreign flows

Exhibit 20: FX hedged pickup of TSYs vs local alternatives implied by forwards

Market pricing does not reflect attractive environment for FX hedged carry trades in TSYs currently but forwards suggest improvement

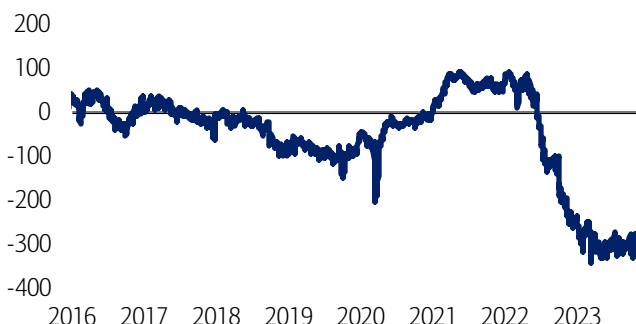


Source: BofA Global Research, Bloomberg. Note: pickup vs 10y local alternative except Japan which is relative to 20y JGB using 3m forward FX hedge

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Exhibit 21: 10Y UST pickup to 20Y JGB, with 3m fx hedge (bps)

10y TSY now offer very negative hedged pickup vs 20yJGBs

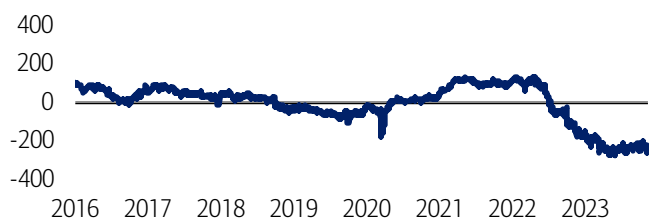


Source: BofA Global Research, Bloomberg

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Exhibit 22: 10Y UST pickup to 10Y JGB, with 3m fx hedge (bps)

10y TSY now offer very negative hedged pickup vs 10yJGBs

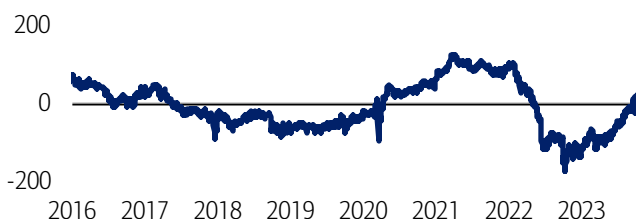


Source: BofA Global Research, Bloomberg

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Exhibit 23: 10Y UST pickup to 10Y Bund, with 3m fx hedge (bps)

10y TSY offers near zero pickup vs 10y Bund

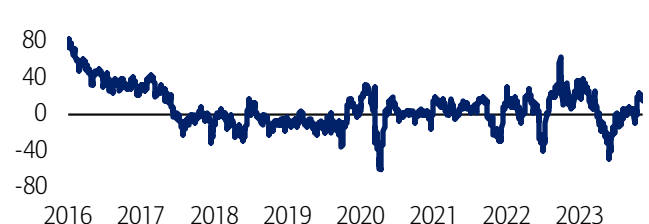


Source: BofA Global Research, Bloomberg

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Exhibit 24: 10Y UST pickup to 10Y CAD govie, with 3m fx hedge (bps)

10y TSY erased previous modest hedged pickup to 10y CAD gov bond

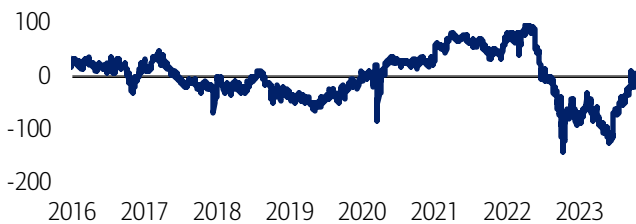


Source: BofA Global Research, Bloomberg

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Exhibit 25: 10Y UST pickup to 10Y Gilt, with 3m fx hedge (bps)

10y TSY offers flat pickup vs gilts



Source: BofA Global Research, Bloomberg

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Exhibit 26: 3m rolling JPY currency hedge

From the perspective of Japanese investor, pickup is negative across all regions

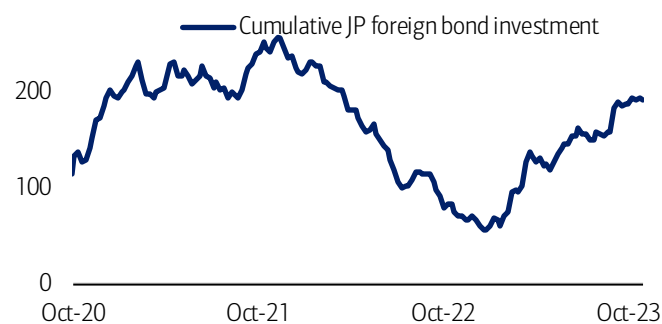
	11/9/2023		As of 1 wk ago		As of 1 mo ago		As of 1 yr ago	
	Pickup to 10y JGB	Pickup to 20Y JGB	Pickup to 10y JGB	Pickup to 20Y JGB	Pickup to 10y JGB	Pickup to 20Y JGB	Pickup to 10y JGB	Pickup to 20Y JGB
10y UST	-2.23%	-2.93%	-2.39%	-3.16%	-2.28%	-3.05%	-1.26%	-2.13%
10y GER	-2.54%	-3.24%	-2.63%	-3.40%	-2.37%	-3.13%	-0.13%	-1.01%
10y FRA	-1.96%	-2.66%	-2.05%	-2.82%	-1.75%	-2.51%	0.38%	-0.49%
10y BEL	-1.92%	-2.62%	-2.01%	-2.78%	-1.69%	-2.46%	0.46%	-0.42%
10y ITA	-0.69%	-1.39%	-0.78%	-1.56%	-0.35%	-1.12%	1.97%	1.10%
10y SPA	-1.50%	-2.20%	-1.60%	-2.38%	-1.24%	-2.00%	0.91%	0.03%
10y UK	-2.32%	-3.02%	-2.42%	-3.20%	-2.22%	-2.98%	-0.58%	-1.46%
10y CAN	-2.39%	-3.09%	-2.60%	-3.37%	-2.33%	-3.09%	-1.38%	-2.26%

Source: BofA Global Research, Bloomberg

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Exhibit 27: Japan investment in foreign bonds, cumulative weekly (\$bn)

Long & medium term bonds (\$bn) holdings modestly dropped on the week

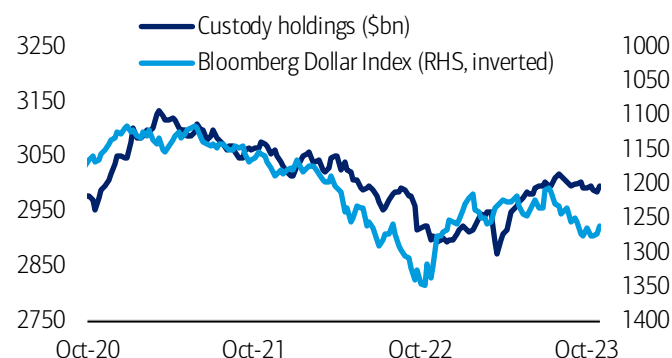


Source: BofA Global Research, Bloomberg

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Exhibit 28: Weekly UST custody holdings, foreign official (\$bn)

Custody holdings increased on the week

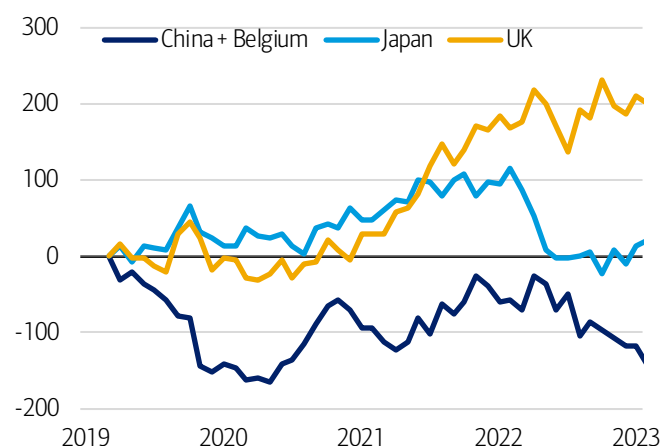


Source: BofA Global Research, NY Fed

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Exhibit 29: Cumulative UST flows from foreign investors (\$bn)

China + Belgium have turned to net sellers since end of '22, Japan roughly flat after selling last year

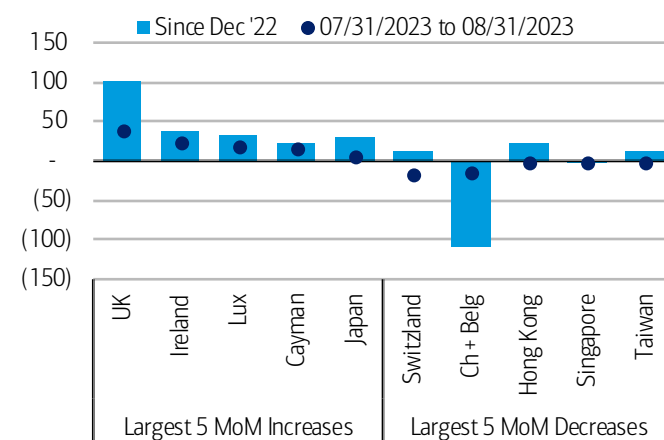


Source: BofA Global Research, Bloomberg, TIC, note: references the valuation-adjusted flow

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Exhibit 30: Largest MoM changes in foreign TSY holdings (\$bn)

UK was largest buyer, Switzerland largest seller in August

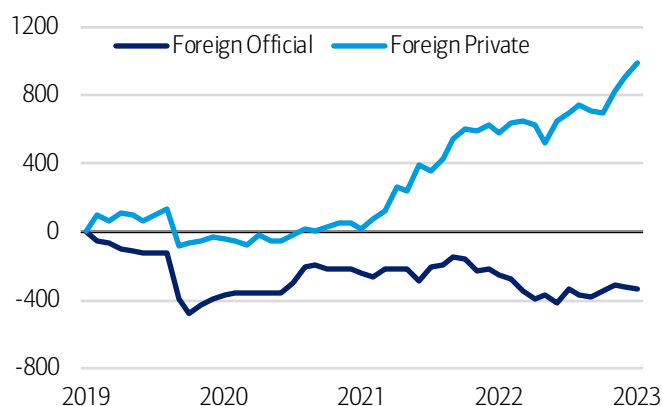


Source: BofA Global Research, TIC, Note: adjusted for level of rates

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Exhibit 31: Cumulative UST flows from foreign investors (\$bn)

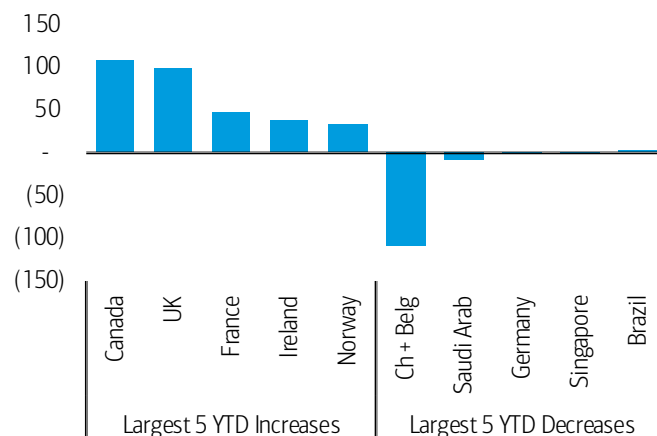
While official UST holdings have declined in recent years, foreign private investors have more than offset



Source: BofA Global Research, Bloomberg, TIC, note: references the valuation-adjusted flow
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Exhibit 32: Largest YTD changes in foreign TSY holdings (\$bn)

Canada, UK were largest buyers, while China was largest seller

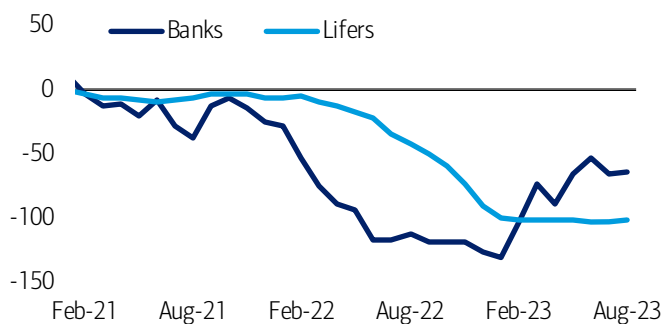


Source: BofA Global Research, TIC, Note: adjusted for level of rates

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Exhibit 33: Cumulative change in Japanese investor foreign bond holdings (\$bn)

While banks and lifers have reduced foreign bond holdings in the last year, banks have recently turned modest buyers while lifer demand has been flat

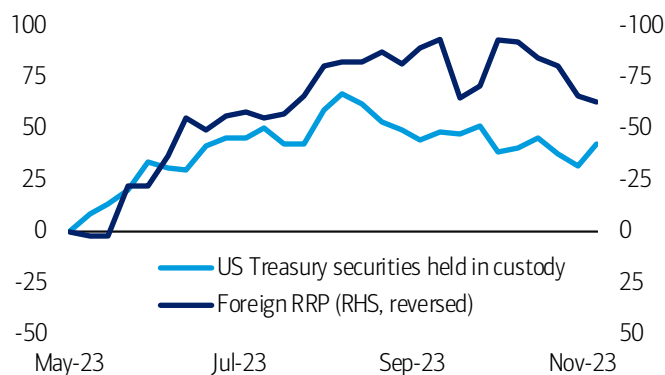


Source: BofA Global Research, Bloomberg, Note: JPY flow converted to USD using end of month FX level, last data point is June '23

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Exhibit 34: Cumulative change in custody holdings and foreign RRP since May 2023 (\$bn)

Custody holdings held flat while foreign RRP declined



Source: BofA Global Research, Federal Reserve, Bloomberg

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Fund flows and returns

Exhibit 35: US fixed income fund flows (\$million)

US FI funds saw notable inflows on the week primarily in govt long, corp HY & IG funds, modest outflows in govt short funds

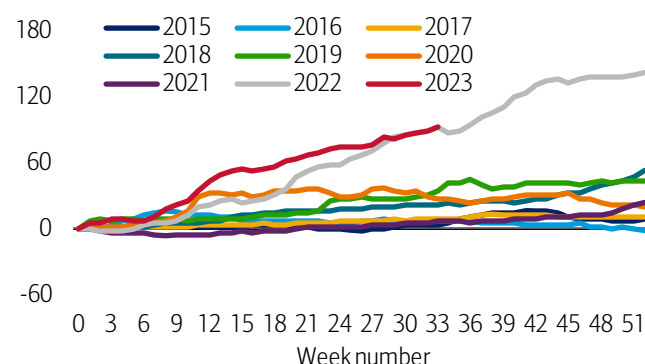
	11/8/2023	Rolling 4w average	Rolling 8w average	Rolling 12w average	Rolling 52w average
Gov: short	(861)	1,809	2,077	1,933	1,175
Gov: intermediate	258	340	437	420	337
Gov: long	1,417	2,678	1,903	1,505	1,316
Corp: IG	2,338	(370)	(670)	(558)	181
Corp:HY	6,454	1,177	(308)	(98)	(206)
Corp: all quality	(5)	17	21	31	30
MBS	223	556	328	248	236
Inflation	(299)	(394)	(333)	(348)	(435)
Muni	1,003	(82)	(367)	(274)	(124)
Mixed allocation	(740)	611	1,287	1,297	1,659
All US FI	10,428	6,134	4,185	4,126	3,723

Source: BofA Global Research, EPFR

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Exhibit 36: Sovereign fund inflows by year (\$bn)

Flows YTD are on track with highs of last year

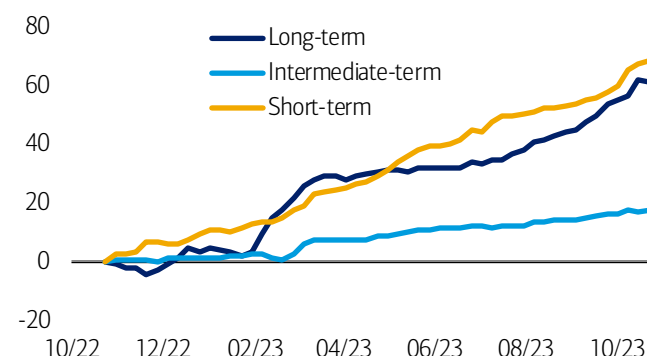


Source: BofA Global Research, EPFR

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Exhibit 37: Sovereign inflows by tenor (\$bn)

Inflows have been concentrated in long-term and short-term funds

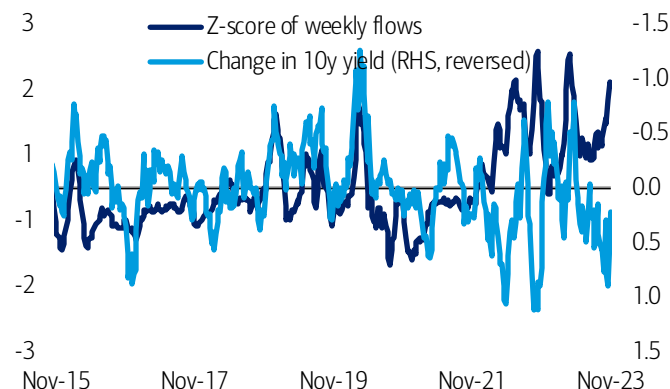


Source: BofA Global Research, EPFR

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Exhibit 38: Fund flows and rate change (Z-score)

Fund flows recently have been historically strong alongside rates rally

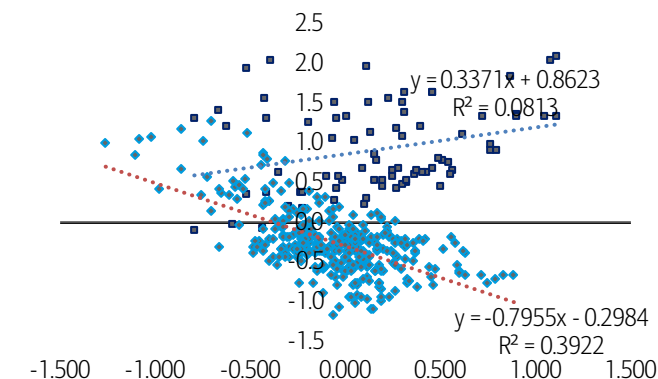


Source: BofA Global Research, EPFR

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Exhibit 39: Fund flows and rate change

Since start of '22, fund flows are less negatively correlated to change in rates



Source: BofA Global Research, EPFR, Bloomberg. Note: dark = post '22, light = '15-'22

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Exhibit 40: Total return FI fund performance vs benchmark

Over the last week, AUM weighted fund performance was above benchmark

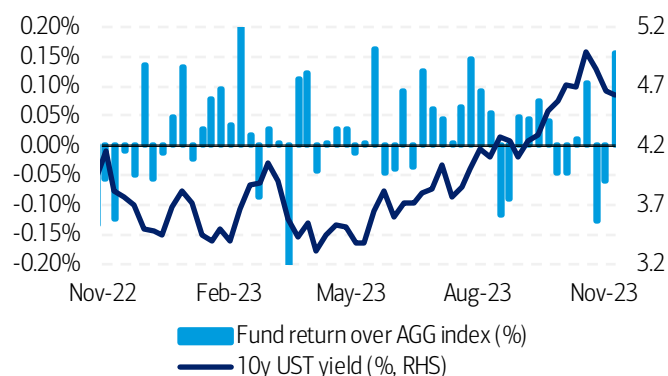
	AUM (\$Bn)	11/9/2023	Vs. Agg	Last 4w	Vs. Agg
Vanguard Total Bond Market II Index Fund	246	0.29%	0.15%	0.82%	-0.01%
Vanguard Total Bond Market Index Fund	193	0.28%	0.15%	0.81%	-0.02%
PIMCO Income fund	126	0.23%	0.09%	1.01%	0.17%
The Bond Fund of America	76	0.17%	0.03%	0.88%	0.04%
MetWest Total Return Bond Fund	55	0.44%	0.31%	1.06%	0.23%
PIMCO Total Return Fund	51	0.33%	0.19%	1.06%	0.23%
Dodge & Cox Income Fund	55	0.34%	0.20%	1.10%	0.27%
PGIM Total Return Bond Fund	40	0.37%	0.23%	0.91%	0.08%
BlackRock Strategic Income Opportunities Fund	35	0.31%	0.18%	0.80%	-0.03%
Baird Aggregate Bond Fund	40	0.32%	0.19%	0.98%	0.14%
JPMorgan Core Bond Fund	40	0.21%	0.07%	0.70%	-0.13%
DoubleLine Total Return Bond Fund	31	0.36%	0.22%	0.77%	-0.07%
Fidelity Series Investment Grade Bond Fund	33	0.29%	0.16%	0.97%	0.14%
Fidelity Total Bond Fund	31	0.31%	0.17%	1.02%	0.18%
Western Asset Core Plus Bond Portfolio	21	0.43%	0.29%	1.40%	0.57%
Baird Core Plus Bond Fund	25	0.31%	0.17%	0.97%	0.13%
John Hancock Bond Fund	21	0.32%	0.18%	1.06%	0.23%
TIAA-CREF Bond Index Fund	21	0.28%	0.14%	0.91%	0.08%
BlackRock Total Return Fund	17	0.41%	0.27%	0.98%	0.14%
JPMorgan Core Plus Bond Fund	17	0.29%	0.15%	0.94%	0.10%
Bridge Builder Core Bond Fund	16	0.32%	0.18%	0.92%	0.08%
T Rowe Price New Income Fund	16	0.08%	-0.06%	0.59%	-0.24%
Western Asset Core Bond Fund	14	0.48%	0.34%	1.23%	0.40%
CREF Bond Market Account	10	0.36%	0.22%	0.97%	0.13%
Fidelity Investment Grade Bond Fund	8	0.37%	0.23%	1.05%	0.21%
DoubleLine Core Fixed Income Fund	7	0.34%	0.20%	0.78%	-0.06%
TCW Total Return Bond Fund	3	0.53%	0.39%	0.84%	0.01%
Janus Henderson Flexible Bond Fund	3	0.32%	0.18%	1.05%	0.21%
Weighted avg	1250	0.30%	0.16%	0.91%	0.08%
Agg		0.14%		0.84%	
10y return		0.35%		0.73%	

Source: BofA Global Research, Bloomberg. Note: Excess returns are fund total returns over Bloomberg Barclays Agg Index

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Exhibit 41: Total return funds, excess return vs. 10y rate

Weekly asset-weighted total returns for total return funds. Funds return above benchmark on the week

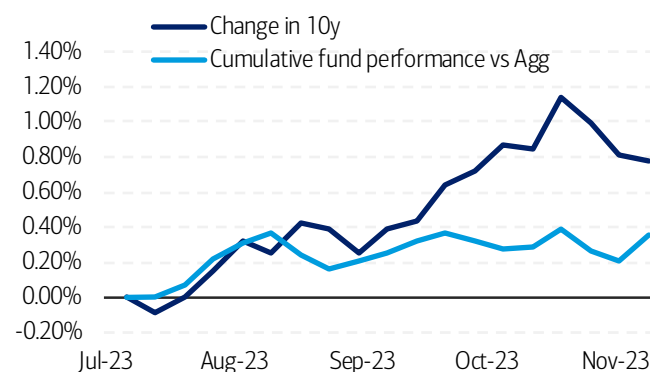


Source: BofA Global Research, Bloomberg. Note: Excess returns are fund total returns over Bloomberg Barclays Agg index

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Exhibit 42: Cumulative return of TR FI funds over benchmark vs 10yT

Funds have modestly outperformed since middle of the year



Source: BofA Global Research, Bloomberg. Note: Excess returns are fund total returns over Bloomberg Barclays Agg index

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Exhibit 43: Total return funds' published UST allocations vs benchmark from Q1 and Q2 '23

Funds moderated underweight UST position from Q1 to Q2

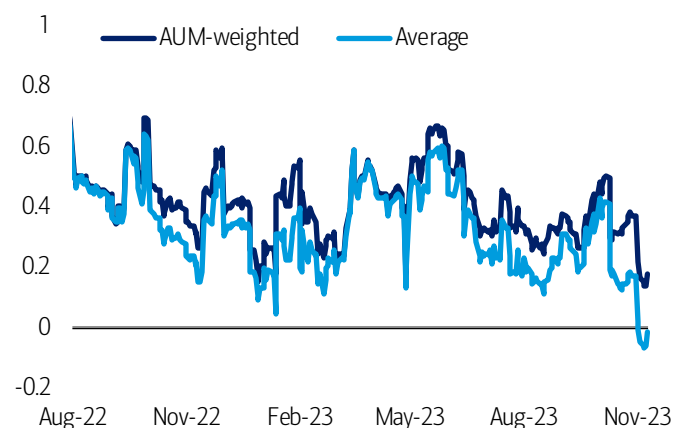
		AUM (\$bn)	Q2 '23 (%)	Q3 '23 (%)	Change (PPTS)
VTBIX	Vanguard Total Bond Market II Index Fund	246.3	2.1	2.2	0.1
VBMFX	Vanguard Total Bond Market Index Fund	193.2	1.4	1.3	-0.1
PIMIX	PIMCO Income fund	125.5	-34.1	-34.8	-0.6
ABNDX	The Bond Fund of America	75.8	-14.0	-22.4	-8.4
DODIX	Dodge & Cox Income Fund	55.0	-32.7	-29.8	2.9
MWTIX	MetWest Total Return Bond Fund	54.7	-18.7	-17.4	1.3
PTTRX	PIMCO Total Return Fund	51.1	-18.6	-23.9	-5.3
PGBOX	JPMorgan Core Bond Fund	40.5	-2.2	-3.9	-1.7
PDBAX	PGIM Total Return Bond Fund	40.3	-34.2	-34.9	-0.7
BAGIX	Baird Aggregate Bond Fund	40.2	-17.7	-18.8	-1.1
BSIIX	BlackRock Strategic Income Opportunities Fund	35.4	-23.4	-24.0	-0.7
FSIGX	Fidelity Series Investment Grade Bond Fund	32.5	-10.1	-6.4	3.7
DBLTX	DoubleLine Total Return Bond Fund	31.3	-32.8	-34.6	-1.8
FTBFX	Fidelity Total Bond Fund	30.7	-12.5	-11.6	0.9
BCOIX	Baird Core Plus Bond Fund	24.9	-18.4	-19.1	-0.7
WACPX	Western Asset Core Plus Bond Portfolio	21.5	-38.0	-38.6	-0.6
JHBIX	John Hancock Bond Fund	21.1	-22.5	-21.6	0.9
TBIIX	TIAA-CREF Bond Index Fund	20.5	0.3	0.0	-0.3
MAHQX	BlackRock Total Return Fund	17.3	88.0	-1.9	-89.9
ONIAx	JPMorgan Core Plus Bond Fund	16.6	-2.9	-3.1	-0.2
BBTBX	Bridge Builder Core Bond Fund	16.3	-23.0	-24.6	-1.6
PRCIX	T Rowe Price New Income Fund	16.0	-11.8	-8.6	3.2
WATFX	Western Asset Core Bond Fund	13.9	-31.1	-32.1	-1.0
QCBMIX	CREF Bond Market Account	10.0	-22.6	-23.0	-0.4
FBNDX	Fidelity Investment Grade Bond Fund	7.7	-0.3	3.5	3.8
DBLFX	DoubleLine Core Fixed Income Fund	6.6	-17.9	-18.5	-0.6
JFLEX	Janus Henderson Flexible Bond Fund	2.6	-17.9	-26.0	-8.0
TGLMX	TCW Total Return Bond Fund	2.5	-39.6	-39.9	-0.3
AUM weighted		1250.1	-11.9	-13.8	-1.9

Source: BofA Global Research, funds' publicly available reports

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Exhibit 44: Rolling 30-day correlation between excess return and change in 10y UST yield

A higher correlation between the two would suggest that when UST yields increase, excess return is higher (more short), recent decline may suggest moderation in short positioning

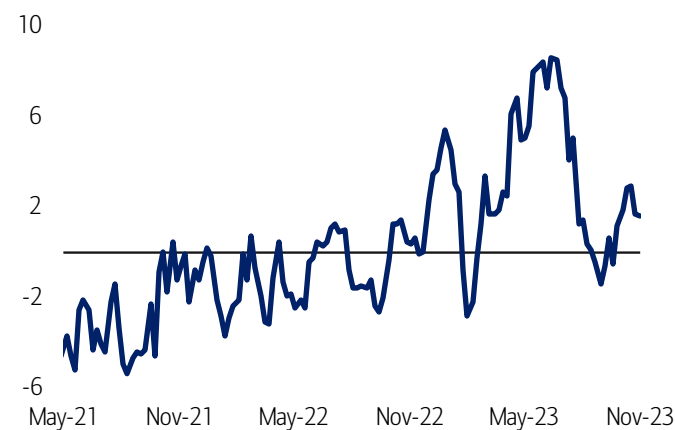


Source: BofA Global research, Bloomberg

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Exhibit 45: Primary dealer 2-6y holdings of TIPS (\$bn)

Primary dealer holdings declined in November



Source: BofA Global research, Note: cumulative change since 2021 reflects adjustment for change in market value

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Bank balance sheets

Exhibit 46: Changes to bank balance sheet assets (\$bn)

Domestic bank balance saw increase in assets driven by cash and securities

		Current	1w change	Rolling 4w avg wkly chg	Rolling 8w avg wkly chg	Rolling 12w avg wkly chg	Rolling 52w avg wkly chg
All (\$bn, NSA)	Total Assets	22989	116	29	9	16	5
	Cash	3404	50	23	3	10	6
	UST & Agency	1541	24	7	6	3	-3
	MBS	2518	5	-2	-7	-4	-5
	Loans and Leases	12240	9	5	8	9	8
	Other	3285	28	-3	0	-2	-1
Large Domestic (\$bn, NSA)	Total Assets	13399	123	18	11	17	1
	Cash	1675	80	9	8	14	5
	UST & Agency	1138	21	7	5	3	-2
	MBS	1920	7	0	-4	-1	-1
	Loans and Leases	6770	0	3	3	3	1
	Other	1896	14	-1	-1	-2	-3
Small Domestic (\$bn, NSA)	Total Assets	6531	9	0	-2	0	2
	Cash	441	8	-1	-2	0	1
	UST & Agency	294	-3	0	1	0	-1
	MBS	572	-3	-2	-4	-3	-4
	Loans and leases	4435	7	4	4	4	6
	Other	789	-1	-1	-1	-1	0
All Domestic (\$bn, NSA)	Total Assets	19930	132	18	9	18	3
	Cash	2116	87	9	6	14	6
	UST & Agency	1433	19	7	6	3	-3
	MBS	2491	5	-2	-7	-4	-5
	Loans and leases	11205	7	7	7	7	7
	Other	2685	14	-2	-2	-3	-3
Foreign (\$bn, NSA)	Total Assets	3059	-16	12	0	-2	2
	Cash	1288	-37	14	-3	-4	0
	UST & Agency	108	5	0	0	0	0
	MBS	27	0	0	0	0	0
	Loans and leases	1035	1	-1	1	1	1
	Other	600	14	-1	2	1	2

Source: BofA Global Research, Federal Reserve, Bloomberg

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Exhibit 47: Select bank balance sheet liabilities (\$bn, NSA)

Domestic liability increased in deposits

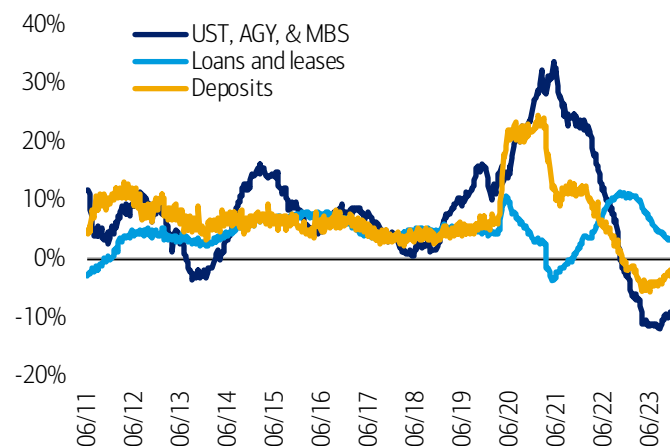
		Current	1w change	Rolling 4w avg wkly chg	Rolling 8w avg wkly chg	Rolling 12w avg wkly chg	Rolling 52w avg wkly chg
Deposits (\$bn, NSA)	All	17357	156	6	2	3	-7
	Domestic	16099	169	11	2	7	-6
	Large Domestic	10804	142	9	1	4	-6
	Small Domestic	5295	28	2	1	3	-1
	Foreign	1259	-14	-5	0	-3	-1
Other borrowing (\$bn, NSA)	All	2329	-23	-7	7	8	11
	Domestic	1366	12	7	10	10	9
	Large Domestic	942	21	8	12	13	7
	Small Domestic	424	-8	-1	-2	-2	2
	Foreign	963	-35	-14	-3	-3	2

Source: BofA Global Research, Federal Reserve, Bloomberg

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Exhibit 48: YoY change in securities, loans, and deposits

Securities growth usually only positive when deposit growth is positive

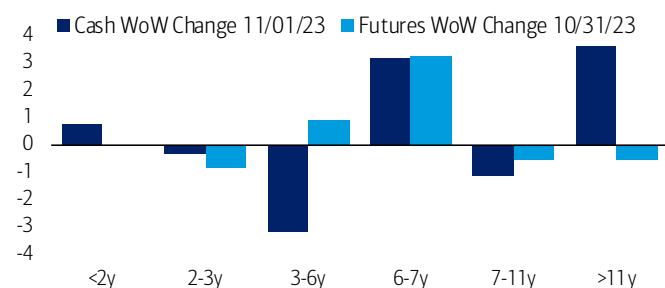


Source: BofA Global Research, Bloomberg, Federal Reserve

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Primary dealer balance sheet**Exhibit 49: Dealers WoW change in positions**

10y equivalent, \$bn, cash & futures positions higher in the belly (6-7y), cash also higher in the back-end

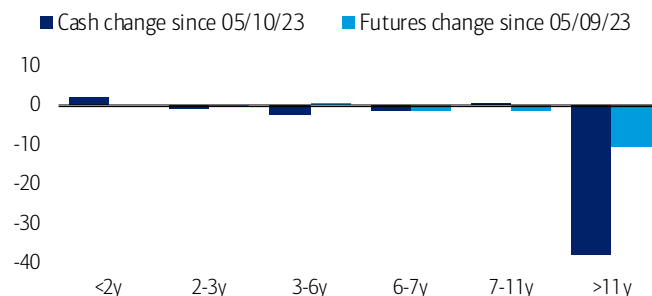


Source: BofA Global Research, NY Fed, CFTC

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Exhibit 50: Dealers change in positions over last 6mo

10y equivalent, \$bn, cash positions lower at back-end

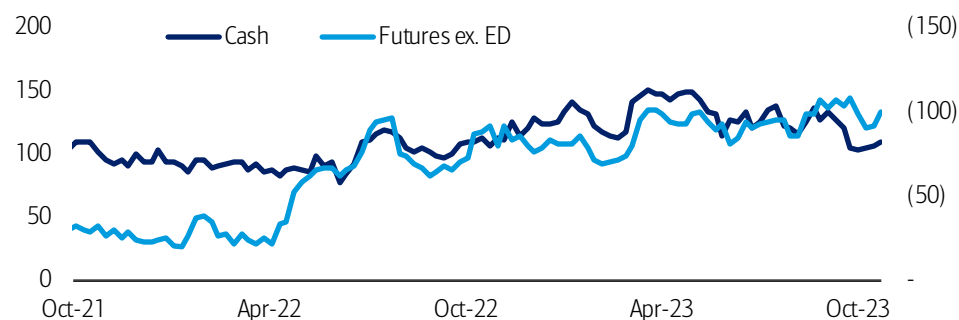


Source: BofA Global Research, NY Fed, CFTC

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Exhibit 51: Dealers total sector positions

10y equivalent, \$bn, short futures increased on the week



Source: BofA Global Research, NY Fed, CFTC

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Auction statistics

Exhibit 52: Auction summary statistics

Z-score calculated on levels, Investment fund participation in auctions remains robust

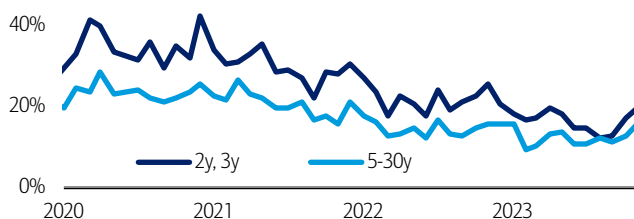
		Primary Dealer	Indirect Bidder	Direct Bidder	Investment Fund	Foreign	Depository Institution
2y	10/31/2023	17.6%	62.0%	20.3%	66.4%	12.8%	0.0%
	MoM Change	3.6%	-3.0%	-0.7%	-2.4%	-1.1%	0.0%
	1Y Z-score	0.0	0.0	-0.1	0.5	-0.6	-0.6
3y	10/16/2023	22.1%	56.0%	21.9%	62.8%	13.1%	0.0%
	MoM Change	1.8%	-1.7%	-0.2%	-0.7%	-0.4%	0.0%
	1Y Z-score	0.9	-1.1	0.9	-0.2	-0.8	0.1
5y	10/31/2023	19.4%	19.1%	61.5%	68.0%	10.8%	0.0%
	MoM Change	8.2%	1.5%	-9.6%	-5.8%	-2.6%	-0.1%
	1Y Z-score	2.0	0.5	-1.8	-0.9	-0.8	-0.7
7y	10/31/2023	11.0%	70.6%	18.4%	75.0%	11.6%	0.0%
	MoM Change	-3.6%	5.1%	-1.5%	4.3%	-1.4%	0.0%
	1Y Z-score	-0.5	0.4	0.0	0.5	-0.3	-0.2
10y	10/16/2023	18.7%	60.3%	20.9%	66.1%	11.6%	0.0%
	MoM Change	4.9%	-6.0%	1.0%	-1.5%	-4.6%	0.0%
	1Y Z-score	0.5	-0.7	0.8	-0.1	-0.4	-0.6
20y	10/31/2023	11.9%	72.9%	15.2%	71.0%	13.9%	0.0%
	MoM Change	2.7%	7.5%	-10.2%	-1.8%	-1.5%	0.0%
	1Y Z-score	0.6	0.5	-1.3	-0.5	-0.1	#DIV/0!
30y	10/16/2023	18.2%	65.1%	16.7%	69.0%	10.6%	0.0%
	MoM Change	2.4%	0.6%	-3.0%	2.1%	-4.2%	0.0%
	1Y Z-score	1.9	-0.9	-1.4	-0.4	-0.9	1.1

Source: BofA Global Research, Treasury

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Exhibit 53: Primary dealer – average auction allotment

Dealer participation has picked up

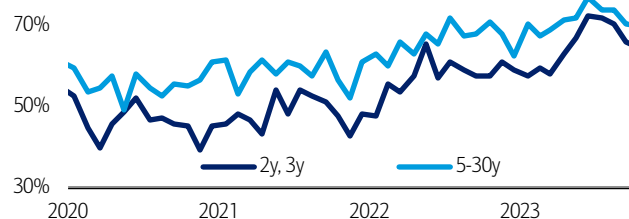


Source: BofA Global Research, Treasury

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Exhibit 54: Investment fund – average auction allotment

Fund participation still elevated but shows sign of decline

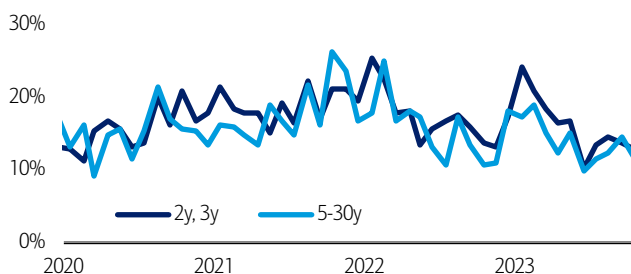


Source: BofA Global Research, Treasury

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Exhibit 55: Foreign investment – average auction allotment

Foreign participation still below average despite modest uptick in recent weeks

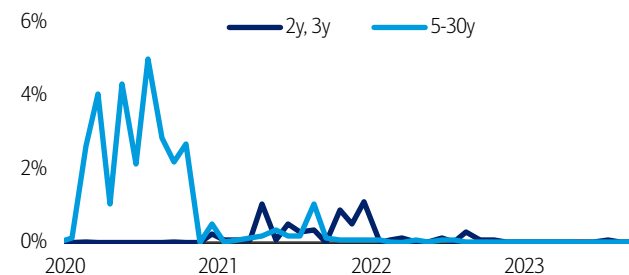


Source: BofA Global Research, Treasury

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Exhibit 56: Depository institutions – average auction allotment

Participation is minimal



Source: BofA Global Research, Treasury

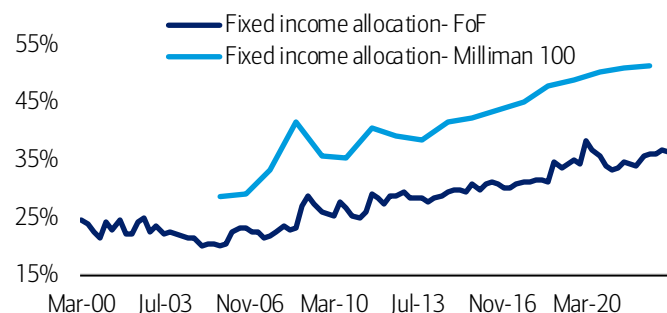
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Pensions

Exhibit 57: DB private pension fixed income allocation from Flow of Funds and smaller Milliman subset

Milliman funds have shown more de-risking than broader private DB pension funds according to FoF

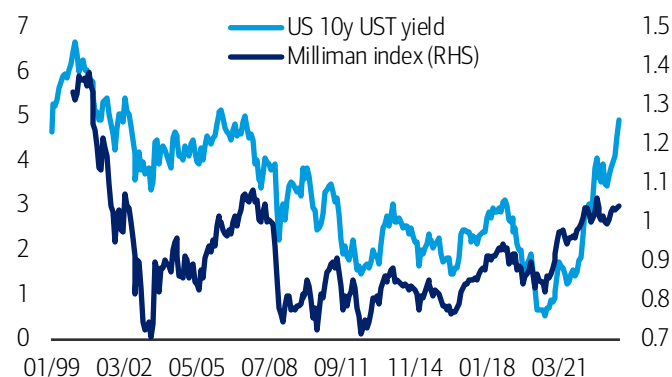


Source: BofA Global Research, Milliman, Federal Reserve

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Exhibit 58: 10y UST yield and Milliman pension funded index

Funded status historically improves with an increase in interest rates

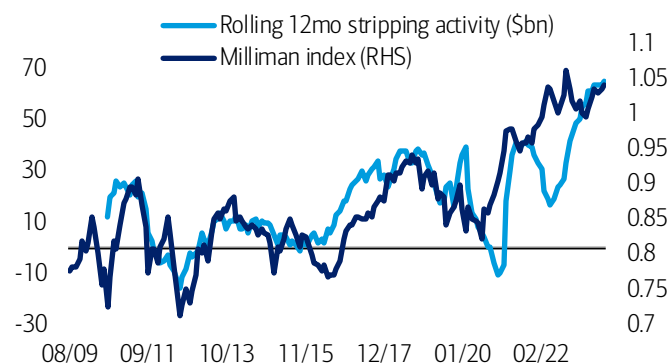


Source: BofA Global Research, Bloomberg

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Exhibit 59: Milliman index and 12mo increase in USTs held in stripped form

Higher pension funded status aligns with higher stripping activity

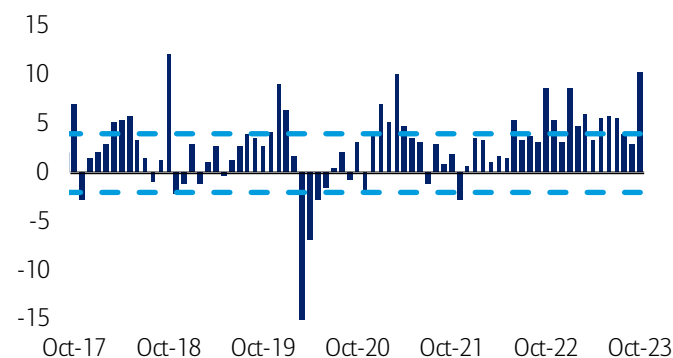


Source: BofA Global Research, Bloomberg

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Exhibit 60: Change in USTs held in stripped form (\$bn)

Stripping activity were notably higher in October

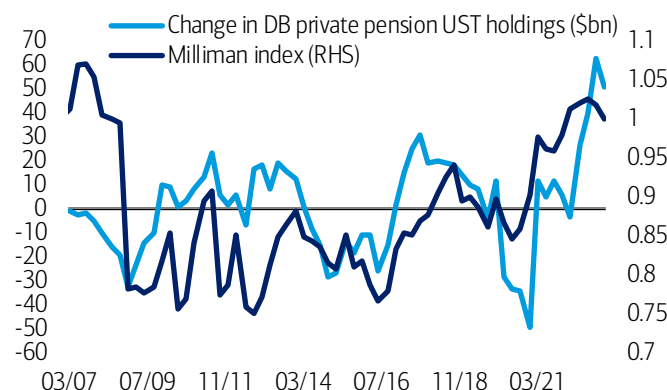


Source: BofA Global Research, Note: dashed line is 1stdev

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Exhibit 61: UST holdings of private DB pensions and funded status

When funded status is higher, pension funds buy more USTs



Source: BofA Global Research, Bloomberg, Federal Reserve

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