

US Rates Watch

Weekend homework: Positioning indicators mixed, modest US gov fund outflows

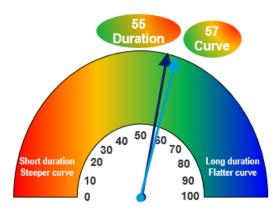
Positioning is mixed across the various indicators we monitor. Our futures positioning proxy shows longs are now out of the money and prone to covering, CFTC speculative positioning still historically short, and non-reportable positions & our cross over momentum signal suggest that CTAs are neutral / long duration.

Flows into US fixed income were concentrated in HY and mixed allocation funds on the week, while short and intermediate-term gov funds saw outflows. Japanese investors are back to buying after some potential profit-taking over prior weeks. Foreign official institutions have reduced usage of foreign repo facilities which contributed to the build in custodial holdings. Data as of April 12 shows that US bank balance sheets declined by about \$40bn, likely driven by a drop in reserve balances.

Positioning mixed across duration and curve

Exhibit 1: Curve-o-meter

Positioning is more mixed: futures positioning proxy shows bias for rates to sell off, while CFTC speculative positioning still historically short



Source: BofA Global Research, Note: dials show 5y percentiles for our proxy of futures positioning for duration and the average of CTA betas and our proxy for futures positioning for the curve. CFTC data excluded due to data reporting issues.

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Futures positioning proxy: Our futures positioning proxy now indicates that rates are biased to sell off, particularly in FV and WN (Exhibit 8). As of Thursday, most long positions were OTM while shorts are more mixed across contracts (Exhibit 7). On the week through Thursday, open interest increased across with curve with more shorts vs longs created; TU saw the most shorts added.

Trading ideas and investment strategies discussed herein may give rise to significant risk and are not suitable for all investors. Investors should have experience in relevant markets and the financial resources to absorb any losses arising from applying these ideas or strategies.

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Refer to important disclosures on page 12 to 13.

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TSY= Treasury

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

COB = close of business

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

CTA model: Our cross-over momentum signal suggests long duration, and our top-down model sees the most divergence between the signal and CTAs positioning since the past few years (Exhibit 9). While our model still reflects more limited covering, this may be due to a 3-month lag in the rolling 10yT beta. CFTC non-reportable positioning (viewed as a proxy for CTAs) is no longer short and shows CTAs neutral duration (Exhibit 12).

CFTC non-commercial positioning: Showed some covering particularly in SOFR positions, while shorts were added in TU, TY, and UXY (Exhibit 5). 10y equivalent speculative positioning remains short, while curve positioning is relatively neutral.

Japan back to buying, foreign official liquidity need abates

Japan added foreign bond holdings by \$4bn the week ending April 14th, after reducing \$10bn the prior two weeks (Exhibit 20). We think buying was likely done without hedging FX risk, given still high costs (Exhibit 19) and may reflect investors taking a view on UST vs JGB duration given recent bank stress in the US and an expected hawkish BoJ rate adjustment at some point this year.

Foreign custodial UST holdings ticked up about \$10bn from the prior week and have recovered \$60.5bn since March 22 (Exhibit 21). Rather than reflecting net buying / selling, recent fluctuations in UST custodial holdings are likely a function of foreign official liquidity need / repo usage which continues to decline following banking risk events. Since mid-March, custodial holdings are about \$15.5bn lower and repo usage is \$20bn higher.

Fixed income inflows concentrated in HY

For the week ending April 19th, US fixed income funds saw \$1.8bn inflows overall led by corporate HY and mixed allocation funds, while short, intermediate-term govt, & muni funds saw outflows (Exhibit 22). Inflation funds continue to see a steady pace of outflows consistent with what we have observed over the past 52 weeks. As rates sold off, weighted-average fund returns are roughly in line with Agg fixed income benchmark performance (Exhibit 24).

Deposit decline led by drop in reserves

Over the week ending April 12th, NSA domestic bank balance sheets declined by \$40bn, stemming from cash on the asset side (Exhibit 27) and deposits on the liability side (Exhibit 28). This likely represents a fall in reserves which dropped about \$34bn that week and continued to decline by \$183bn the following week (which will be reflected in H8 data this upcoming Friday, week ending April 19th).

In the past four weeks (since March 15th), most of the decline in domestic bank assets have been driven by securities holdings. However, once accounting for the removal of bridge banks discussed in the Fed's notes, the net decline in securities holdings was much lower. As shown in Exhibit 29, once accounting for the removal of bridge banks from the domestic bank balance sheet, securities holdings are lower by only \$61bn (vs \$114bn lower unadjusted) and loans and leases are modestly higher (vs \$35bn lower unadjusted).

Dealer cash positions moderate at back-end

Since the start of the banking risk events, primary dealers are still holding more cash positions, particularly at the back end of the curve, despite some selling evidenced in the most recent data (Exhibit 31). Over the week ending April 12th and 11th, dealer cash and futures positions were reduced at the back end, but were added across the belly of the curve (Exhibit 30). Cash longs increased at the 7-11y sector and futures longs increased at the 3-7y part of the curve.



Exhibit 2: On deck next week

 ${\it Calendar}\, of \, up coming \, events$

US Data	_		Fod Spooker / Ever	et Tuo	anna Anati		Treas Settler	-
Series	-	BB Consensus	Fed Speaker / Ever Speaker Voter		sury Aucti Amount (\$b			
Regional Fed activity indicators		DD CONSCIISUS	Fed blackout period	13 week bil		0	Jecurity I	AITIOUITE
Regional red activity indicators			гей війскойт репой	26 week bil		0		
Case-Shiller HPI (yoy)	2%		Fed blackout period	2Y note	40	0	Bills	-22
Consumer Confidence	104.5	104.1	гей бійскойт репой	21 11016	42	U	DIIIS	-22
New Home Sales	630k	630k						
MBA Mortgage Applications	-	-	Fed blackout period	2Y FRN	24	0		
Wholesale Inventories	_	_	i eu blackout periou	5Y note	43	0		
Durable Goods Orders	1.00%	0.90%		17 week bil		U		
Durables Ex Transportation	-0.20%	-0.30%		17 WEEK DII	I IVA			
Core Capital Goods Orders	0.10%	0.20%						
Core Capital Goods Shipments	0.10%	0.20%						
	-\$90.0bn	- -\$90.0bn						
Initial Jobless Claims	250k	-	Fed blackout period	4 week bill	N/A		Bills	12
GDP (gog saar)	2.00%	2.00%	i eu blackout periou	8 week bill	N/A		DIII3	12
Personal consumption (gog saar)		2.00%		7Y note	35	0		
GDP Price Index (gog saar)	4.00%	3.70%		7111016	22	U		
Core PCE (gog saar)	4.60%	4.70%						
Pending Home Sales	1.00%	1.00%						
Personal Income	0.10%	0.20%	Fed blackout period				Coupons	21
Personal Spending	0.10%	-0.10%	гей бійскойт репой				Coupons	۷1
PCE Headline Prices (mom)	0.00%	0.10%						
PCE Headline Prices (Morri)	4.10%	4.10%						
PCE Core Prices (mom)	0.30%	0.30%						
PCE Core Prices (yoy)	4.50%	4.50%						
Personal saving rate	4.70%	4.50%						
Employment Cost Index	1.00%	1.10%						
Chicago Purchasing Managers	43	43.4						
U. of Michigan Sentiment	63.3	63.5						
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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 suggests longs are out of the money and prone to covering, CFTC data still reflects notable short, top down CTA model is lagged and shows historic shorts that have likely already been covered

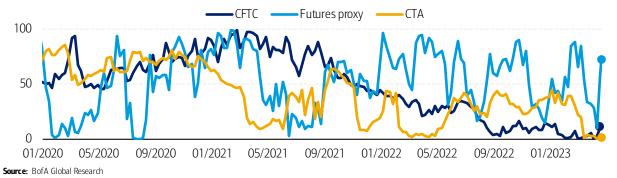
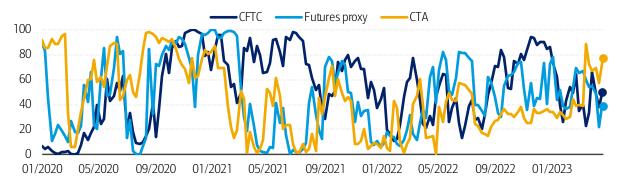


Exhibit 4: 5y percentile of curve positioning (percentile: higher = longer back-end relative to front end)

Indicators generally point to modestly steep curve positioning

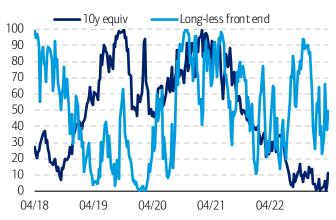


Source: BofA Global Research

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Exhibit 5: 5y percentile of CFTC non-commercial futures positioning

10y equivalent positioning covered modestly, generally short



Source: BofA Global Research, Bloomberg

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Exhibit 7: Proxies for futures positioning

Longs are now mostly OTM while shorts are mixed across contracts

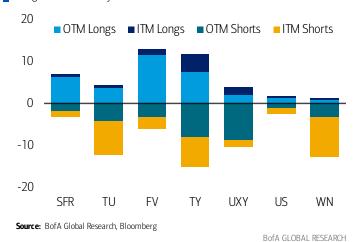
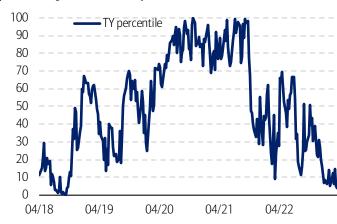


Exhibit 6: 5y percentile of CFTC non-commercial futures positioning

Positioning in TY still extremely short

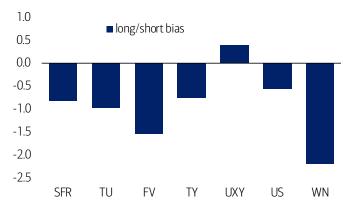


Source: BofA Global Research, Bloomberg

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Exhibit 8: Analysis of proxies for futures positioning

Bias is for rates to sell off across the curve



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

Exhibit 9: CTA positioning in 10yT

CTAs saw some short covering over the past 2 weeks



Source: BofA Global Research

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Exhibit 11: Changes in CTA 10yT beta

Change in 10yT beta increased on the week



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Exhibit 10: CTA positioning in longer duration and shorter duration bonds

Top-down model suggests CTAs added short exposure to shorter duration and moderate short covering in long duration bonds



Source: BofA Global Research

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Exhibit 12: CTA 10y TSY beta and non-reportable positions

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



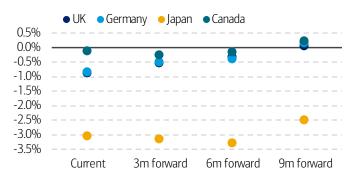
Source: BofA Global Research, Bloomberg

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FX hedged pickup and foreign flows

Exhibit 13: 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



 $\begin{tabular}{ll} \textbf{Source:} BofA Global Research, Bloomberg, Note: pickup vs 10y local alternative except Japan which is relative to 20y JGB using 3m forward FX hedge \\ \end{tabular}$

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Exhibit 14: 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



Exhibit 15: 10Y UST pickup to 10Y JGB, with 3m fx hedge (bps)

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

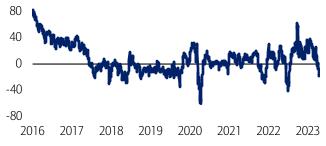


Source: BofA Global Research, Bloomberg

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Exhibit 17: 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 16: 10Y UST pickup to 10Y Bund, with 3m fx hedge (bps)

10y TSY offers negative pickup vs 10y Bund



Source: BofA Global Research, Bloomberg

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Exhibit 18: 10Y UST pickup to 10Y Gilt, with 3m fx hedge (bps)

10y TSY offers negative pickup vs 10y Gilt



Source: BofA Global Research, Bloomberg

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Exhibit 19: 3m rolling JPY currency hedge

From the perspective of Japanese investor, pickup has been unattractive except vs the EU periphery

	4/20/2023		As of 1 wk ago		As of 1	mo ago	As of 1 yr ago		
	Pickup to	Pickup to	Pickup to	Pickup to	Pickup to	Pickup to	Pickup to	Pickup to	
	10y JGB	20Y JGB	10y JGB	20Y JGB	10y JGB	20Y JGB	10y JGB	20Y JGB	
10y UST	-2.43%	-3.05%	-2.40%	-3.00%	-2.31%	-3.06%	1.27%	0.72%	
10y GER	-1.57%	-2.19%	-1.50%	-2.11%	-1.42%	-2.17%	1.12%	0.57%	
10y FRA	-1.01%	-1.64%	-0.94%	-1.54%	-0.89%	-1.65%	1.57%	1.02%	
10y BEL	-0.89%	-1.51%	-0.83%	-1.44%	-0.72%	-1.48%	1.63%	1.08%	
10y ITA	0.29%	-0.33%	0.34%	-0.26%	0.45%	-0.31%	2.82%	2.27%	
10y SPA	-0.53%	-1.16%	-0.47%	-1.08%	-0.37%	-1.12%	2.09%	1.54%	
10y UK	-1.53%	-2.15%	-1.50%	-2.11%	-1.71%	-2.46%	0.36%	-0.19%	
10y CAN	-2.30%	-2.92%	-2.22%	-2.83%	-2.34%	-3.10%	1.00%	0.45%	

Source: BofA Global Research, Bloomberg



Exhibit 20: Japan investment in foreign bonds, cumulative weekly (\$bn) Long & medium term bonds (\$bn) holdings have picked up since Feb. & took

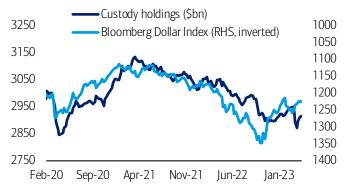
a pause on the week



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Exhibit 21: Weekly UST custody holdings, foreign official (\$bn)

Custody holdings have declined since start of '22 & picked up on the week



Source: BofA Global Research, NY Fed

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Fund flows and returns

Exhibit 22: US fixed income fund flows (\$million)

US fixed income & corp HY funds saw inflows over the past week. Govt (short, intermediate-term) & muni funds saw outflows

	4/19/2023	Rolling 4w average	Rolling 8w average	Rolling 12w average	Rolling 52w average
Gov: short	(1,162)	629	2,359	2,006	1,469
Gov:					
intermediate	(489)	187	601	467	642
Gov: long	668	1,531	1,456	1,195	1,157
Corp: IG	506	1,315	241	(27)	351
Corp: HY	2,648	1,149	22	(791)	(343)
Corp: all quality	94	29	27	20	(12)
MBS	239	236	273	312	(127)
Inflation	(515)	(658)	(470)	(591)	(494)
Muni	(1,061)	(362)	(375)	(333)	(741)
Mixed					
allocation	1,575	1,084	1,442	2,615	(732)
All US FI	1,864	4,537	4,745	4,043	743

Source: BofA Global Research, EPFR

Exhibit 23: Total return FI fund performance vs benchmark

Over the last week, AUM weighted fund performance was in line with benchmark

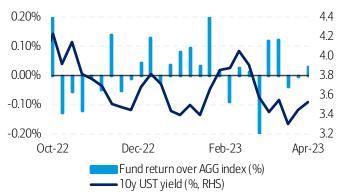
	AUM				
	(\$Bn)	4/20/2023	Vs. Agg	Last 4w	Vs. Agg
Vanguard Total Bond Market II Index Fund	244	-0.57%	-0.02%	-0.40%	0.00%
Vanguard Total Bond Market Index Fund	203	-0.46%	0.09%	-0.40%	0.00%
PIMCO Income fund	119	-0.63%	-0.08%	0.11%	0.51%
The Bond Fund of America	76	-0.62%	-0.07%	-0.59%	-0.19%
MetWest Total Return Bond Fund	64	-0.57%	-0.02%	-0.55%	-0.15%
PIMCO Total Return Fund	56	-0.60%	-0.05%	-0.22%	0.18%
Dodge & Cox Income Fund	56	-0.32%	0.23%	0.09%	0.49%
PGIM Total Return Bond Fund	40	-0.50%	0.05%	-0.20%	0.20%
BlackRock Strategic Income Opportunities Fund	38	-0.24%	0.31%	0.14%	0.54%
Baird Aggregate Bond Fund	38	-0.51%	0.04%	-0.33%	0.07%
JPMorgan Core Bond Fund	37	-0.48%	0.07%	-0.52%	-0.12%
DoubleLine Total Return Bond Fund	34	-0.55%	0.00%	-0.87%	-0.47%
Fidelity Series Investment Grade Bond Fund	34	-0.42%	0.13%	-0.20%	0.20%
Fidelity Total Bond Fund	30	-0.45%	0.11%	-0.11%	0.29%
Western Asset Core Plus Bond Portfolio	26	-0.65%	-0.10%	0.61%	1.01%
Baird Core Plus Bond Fund	24	-0.49%	0.06%	-0.30%	0.10%
John Hancock Bond Fund	21	-0.51%	0.04%	-0.06%	0.34%
TIAA-CREF Bond Index Fund	21	-0.56%	-0.01%	-0.50%	-0.10%
BlackRock Total Return Fund	17	-0.51%	0.04%	-0.31%	0.09%
JPMorgan Core Plus Bond Fund	17	-0.55%	0.00%	-0.52%	-0.12%
Bridge Builder Core Bond Fund	16	-0.48%	0.07%	-0.38%	0.02%
T Rowe Price New Income Fund	16	-0.53%	0.02%	-0.45%	-0.05%
Western Asset Core Bond Fund	15	-0.57%	-0.02%	0.16%	0.56%
CREF Bond Market Account	11	-0.43%	0.12%	-0.29%	0.11%
Fidelity Investment Grade Bond Fund	9	-0.48%	0.07%	-0.29%	0.11%
DoubleLine Core Fixed Income Fund	7	-0.53%	0.02%	-0.35%	0.05%
TCW Total Return Bond Fund	3	-0.60%	-0.04%	-0.97%	-0.57%
Janus Henderson Flexible Bond Fund	3	-0.55%	0.00%	-0.54%	-0.14%
Weighted avg	1273	-0.52%	0.03%	-0.29%	0.11%
Agg		-0.55%		-0.40%	
10y return		-0.87%		-1.05%	

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

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Exhibit 24: Total return funds, excess return vs. 10y rate

Weekly asset-weighted total returns for total return funds. Funds return in line with benchmark on the week

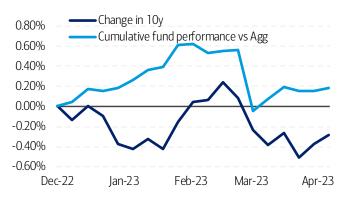


Source: BofA Global Research, Bloomberg, Note: Excess returns are fund total returns over Bloomberg Bardays Agg index

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Exhibit 25: Cumulative return of TR FI funds over benchmark vs 10yT

Funds have modestly outperformed since start of the year



Source: BofA Global Research, Bloomberg, Note: Excess returns are fund total returns over Bloomberg Bardays AGG index



Exhibit 26: Total return funds' published UST allocations from Q3 and Q4 '22 Funds were underweight duration at the start of the year

	AUM (Sbn)	Q3 (%)	Q4 (%)	Change (PPTS)
Vanguard Total Bond Market II Index Fund	243.8	1.5	1.6	0.1
Vanguard Total Bond Market Index Fund	202.6	1.3	1.2	-0.1
PIMCO Income fund	119.3	-41.5	-37.7	3.8
The Bond Fund of America	75.9	-11.2	-9.7	1.5
MetWest Total Return Bond Fund	64.0	-16.7	-17.4	-0.7
Dodge & Cox Income Fund	56.0	-29.4	-31.2	-1.8
PIMCO Total Return Fund	55.6	-12.8	-15.2	-2.4
PGIM Total Return Bond Fund	40.5	-	-33.8	-
Baird Aggregate Bond Fund	38.0	-15.1	-17.7	-2.6
BlackRock Strategic Income Opportunities Fund	37.5	-9.9	-14.6	-4.7
JPMorgan Core Bond Fund	37.3	-12.8	-7.3	5.5
Fidelity Series Investment Grade Bond Fund	33.7	-12.2	-10.4	1.8
DoubleLine Total Return Bond Fund	33.7	-32.2	-32.4	-0.2
Fidelity Total Bond Fund	30.0	-18.4	-18.3	0.0
Western Asset Core Plus Bond Portfolio	25.7	-29.8	-29.1	0.6
Baird Core Plus Bond Fund	24.0	-17.9	-20.0	-2.0
John Hancock Bond Fund	21.3	-24.7	-26.1	-1.4
TIAA-CREF Bond Index Fund	20.8	0.3	0.9	0.6
BlackRock Total Return Fund	17.5	-33.0	21.3	54.2
JPMorgan Core Plus Bond Fund	16.8	-15.4	-7.6	7.8
Bridge Builder Core Bond Fund	16.4	-21.9	-22.6	-0.7
T Rowe Price New Income Fund	15.6	-15.7	-11.2	4.5
Western Asset Core Bond Fund	15.1	-29.7	-23.6	6.1
CREF Bond Market Account	10.9	-22.8	-22.3	0.5
Fidelity Investment Grade Bond Fund	8.5	-10.1	-8.6	1.5
DoubleLine Core Fixed Income Fund	7.1	-21.3	-20.3	1.1
TCW Total Return Bond Fund	3.0	-38.6	-40.6	-2.0
Janus Henderson Flexible Bond Fund	2.9	-10.6	-9.5	1.1
AUM weighted	1273.2	-13.2	-12.7	0.5

Source: BofA Global Research, funds' publicly available reports



Bank balance sheets

Exhibit 27: Changes to bank balance sheet assets (\$bn)Most of domestic bank balance sheet decline driven by cash holdings

		Current	1w change	Rolling 4w avg wkly chg	Rolling 8w avg wkly chg	Rolling 12w avg wkly chg	Rolling 52w avg wkly chg
	Total Assets	22951	-35	-77	-8	-9	1
	Cash	3353	-28	-25	24	9	-7
All (\$bn,	UST & Agency	1549	-4	-16	-11	-9	-3
NSA)	MBS	2604	-18	-30	-19	-13	-7
	Loans and Leases	12051	-9	-10	0	2	19
	Other	3393	24	4	-1	1	-1
	Total Assets	13194	-37	-20	26	11	-3
	Cash	1601	-36	-5	36	20	-2
Large Domestic	UST & Agency	1143	-2	-12	-7	-7	-3
(\$bn, NSA)	MBS	1946	-15	-3	-3	-1	-3
(JUII, NJA)	Loans and Leases	6558	-7	5	5	3	8
	Other	1945	22	-5	-5	-4	-2
	Total Assets	6742	-3	-51	-13	-9	1
Small	Cash	480	-3	-13	7	3	-5
Domestic	UST & Agency	300	0	-2	-3	-2	0
(\$bn, NSA)	MBS	633	-1	-27	-17	-10	-4
(JUII, 143A)	Loans and leases	4457	2	-14	-2	0	9
	Other	871	-1	5	2	1	1
	Total Assets	19935	-40	-71	13	2	-2
	Cash	2081	-39	-18	43	23	-7
All Domestic	: UST & Agency	1443	-2	-14	-10	-9	-3
(\$bn, NSA)		2579	-16	-30	-19	-12	-7
	Loans and leases	11015	-5	-9	3	2	17
	Other	2817	22	0	-3	-3	-2
	Total Assets	3016	5	-6	-21	-11	3
	Cash	1272	11	-7	-19	-14	0
Foreign	UST & Agency	106	-3	-2	-1	0	0
(\$bn, NSA)	MBS	26	-2	0	0	-1	0
	Loans and leases	1036	-4	-1	-3	-1	2
	Other	577	2	4	2	4	1

Source: BofA Global Research, Federal Reserve, Bloomberg

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Exhibit 28: Select bank balance sheet liabilities (\$bn, NSA)

Domestic bank deposits decline

		Current	1w change	Rolling 4w avg wkly chg	Rolling 8w avg wkly chg	Rolling 12w avg wkly chg	Rolling 52w avg wkly chg
	All	17380	-49	-28	-34	-31	-19
Donosits	Domestic	16132	-49	-15	-21	-25	-18
Deposits (\$bn, NSA)	Large Domestic	10736	-41	-15	0	-9	-14
(SUII, NSA)	Small Domestic	5396	-8	0	-21	-16	-4
	Foreign	1248	-1	-12	-13	-6	-1
	All	2399	43	-21	53	40	16
Other	Domestic	1447	11	-36	48	35	16
borrowing	Large Domestic	893	1	4	31	23	10
(\$bn, NSA)	Small Domestic	553	10	-40	18	12	6
	Foreign	952	32	16	5	5	-1

Source: BofA Global Research, Federal Reserve, Bloomberg



Exhibit 29: Change in domestic bank balance sheet accounting for removal of bridge banks

According to Fed's H8 data notes, most of the decline in domestic banks' security holdings can be explained by the removal of bridge banks from the data series

Change 3/15-4/12 Bridge Bank adjustment		Net of Bridge Bank adjustment
-284	174	-110
-73	-	-73
-175	114	-61
-35	60	25
0	-	0
	-284 -73 -175	-284 174 -73 - -175 114

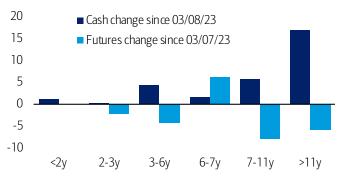
Source: BofA Global Research, Federal Reserve

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Primary dealer balance sheet



Exhibit 31: Dealers change in positions since bank risk events 10y equivalent, \$bn, cash positions added most at the back-end



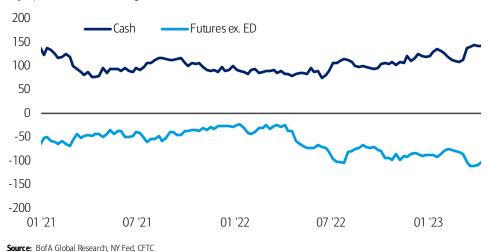
Source: BofA Global Research, NY Fed, CFTC

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Exhibit 32: Dealers total sector positions

10y equivalent, \$bn, cash longs leveled in recent weeks while futures shorts continued to increase

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