BofA SECURITIES

US Rates Viewpoint

Mid-year update: surprisingly resilient

15 June 2023

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Taking stock of macro resilience shock

We take stock of our core rates views for 2H23. Coming into '23 we expected: macro uncertainty to decline with slower place of Fed hikes / eventual pause, falling though still high inflation, softening labor market, USTs regaining their risk-off hedge value. We thought this meant "rates to move past their peak & decline in '23, vol to drop, real rates to fall, spread curve likely steeper." We remain confident in eventual economic moderation + lower nominals, real rates, & vol timing seems longer vs expected.

Updated views: more Fed, higher rates, flatter curve

Our US economists recently pushed out the timing of their mild recession call, penciled in more Fed hikes, & slightly pushed out timing of rate cuts. We reflect these views in updated rates forecasts & views. The most notable shift: (1) higher fed funds path = higher rate forecasts & a flatter curve (2) UST cheapening risks with increased supply & softer demand backdrop (3) 2Y spread carry views.

Macro rates guidance: longer time to evolve

We summarize our updated core rates guidance. **Duration** = still recommend clients trade with a bullish bias & 10Y tactically in recent range of 3.25-3.75%, outright longs compelling around 4%. Duration is easier trade vs curve at the point in cycle. Still favor duration longs in reals vs nominals. **Curve** = lower conviction; flattener curve till Fed done hiking, steepening only after the labor market softens or Fed prematurely pauses.

Specialty coverage: details matter

Our more detailed views: **Front end** = play for higher Fed hike path, position for higher funding costs, stay in Nov SOFR/FF wideners, watch for MMF reform finalization. **Inflation** = still favor long 30y TIPS at attractive level; 1Y swap does not reflect inflation persistence that underpins potential additional hikes. **Spreads** = we like 2y spread carry, long-end more directional with QT timing, bank UST liquidation evolution the key driver of belly spreads in the near term. Risk to cheaper USTs if weak demand amidst growing bill & coupon supply. **Vol** = slow normalization of vol grid as macro uncertainty stabilizes & declines. **Asset allocation** = expect a slight upgrade of portfolios risk profiles still within transition type portfolios. We see the macro backdrop as one that justifies hedging relatively wide tails, i.e., hard landing and reacceleration scenarios.

Bottom line: key themes persist over time

We expect higher front-end rates in the near term & a flatter curve. It will take more time for US macro slowdown, lower rates, & curve steepening. We still recommend clients trade with a long bias & tactically in recent ranges; duration is easier trade at this point in cycle. The curve will flatten with more hikes or lower '24 cuts; curve steepening to wait for (1) macro deterioration (2) premature Fed pause.

Timestamp: 15 June 2023 06:00AM EDT

Lessons learned in 1H23

In our year-ahead we wrote: "macro uncertainty to decline in '23. Lower uncertainty … because: slower place of Fed hikes / eventual pause, falling though still high inflation, softening labor market, USTs regaining their risk-off hedge value… Rates to move past their peak & decline in '23, vol to drop, real rates to fall, spread curve likely steeper."

We have learned 3 key things since our year-ahead:

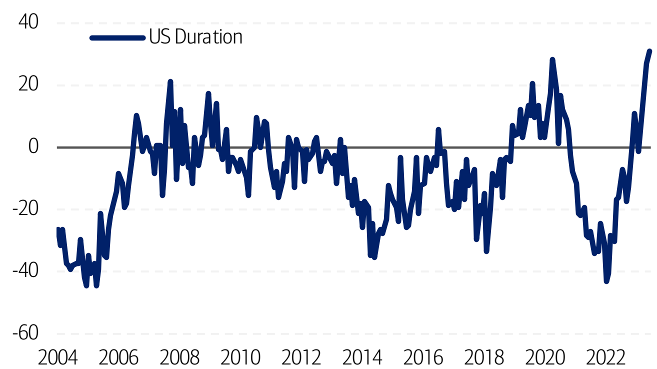
- **US macro resilience**: strong macro backdrop has extended uncertainty / volatility. Our economists still hold a mild recession call but have pushed out the timing of it to 1H '24 (see Resilient economy, higher policy rates). They now expect 2 additional Fed rate hikes in July & Sept. A strong economy & Fed hikes will keep nominal & real rates high + curve flat.

- **US banking system fragility**: we expected increased bank competition for funding with Fed QT & higher overnight rates. We did not expect large bank failures & emergency Fed lending. Banking concerns are likely to encourage Fed to go slower, which reduces hard landing risk. Slower Fed = fewer cuts in '24.

- **UST long positioning is extended**: USTs appear to have already re-gained risk-off hedge value via stretched asset manager longs. We worry that a resilient economy could result in a reduction of these positions & result in soft longer-dated demand. Risk to cheaper USTs if weak demand amidst growing bill & coupon supply.

Exhibit 1: UST duration overweight now exceed the April 2020 pandemic highs

US duration longs extend further in June versus May for a new post-2004 high



Source: BofA Global Research FX and Rates Sentiment Survey

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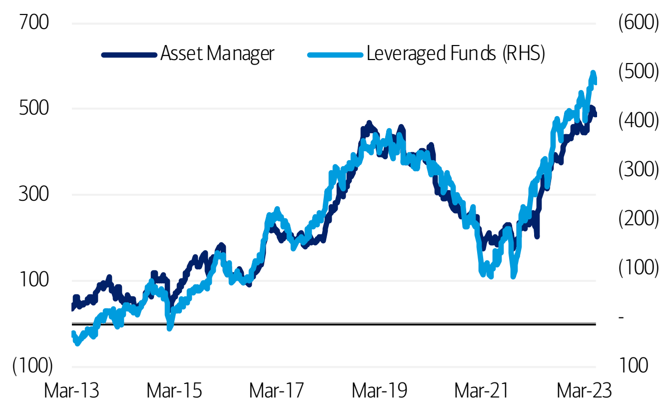
Exhibit 2: Asset manager and leveraged fund positioning (10y equivalent, $bn)

Asset manager longs correspond with leveraged fund shorts



Source: BofA Global Research, Bloomberg

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Key changes: forecast revisions & curve move

The lessons learned above have resulted in the following changes:

- **Forecasts**: we revise our front-end rate forecasts higher with more Fed hikes expected by our economists. We also nudge up our end '23 10Y forecast by 25bps to 3.5%, reflecting a longer period of macro resilience (Exhibit 3).

  In 2H23 our short rates forecasts are modestly above the forwards & above consensus; by early '24 our forecasts across the curve are below the forwards & consensus in-line with our US economists continued call for a mild recession & Fed cuts in '24. QT stops with cuts.

- **Curve**: we have lower conviction on the curve. The 2s10s curve is biased flatter near-term with additional rate hikes but should quickly shift steeper with signs of labor moderation. Popular forward starting curve steepeners make positioning vulnerable. Any steepener is safer in 5s30s vs 2s10s given additional Fed hike risk.

Where we felt good about our views:

- **Duration**: US rates have largely been in a range during 1H '23. This is especially true for the 10Y between 3.25-4%. Clients that traded tactically with a bullish rate bias have likely done reasonably well. We hold this guidance in 2H23. We also recognize it may take longer for the range to shift lower vs our prior expectation.
- **Front end spreads**: we expected short-dated UST cheapening with bill supply wave after debt limit. We were early on this theme in late '22 (see: US front end in '23). Debt limit was resolved slightly earlier than we anticipated in late '22 but the overall supply, spread, & spread curve story was right.

Exhibit 3: US rate forecasts & changes

We revise rates higher, especially at the front end; most UST curves are also flatter vs prior forecast

	New Forecast (%)							Old Forecast (%)					Change				
	3Q23	4Q23	1Q24	2Q24	3Q24	4Q24	4Q25	3Q23	4Q23	1Q24	2Q24	4Q24	3Q23	4Q23	1Q24	2Q24	4Q24
2y Govt	4.50	4.25	3.85	3.50	3.25	3.00	3.00	3.75	3.50	3.25	3.00	2.75	0.75	0.75	0.60	0.50	0.25
5y Govt	4.00	3.90	3.65	3.45	3.25	3.15	3.15	3.45	3.40	3.25	3.10	3.00	0.55	0.50	0.40	0.35	0.15
10y Govt	3.60	3.50	3.40	3.35	3.30	3.25	3.25	3.35	3.25	3.25	3.25	3.25	0.25	0.25	0.15	0.10	0.00
30y Govt	3.80	3.75	3.70	3.70	3.70	3.70	3.70	3.55	3.40	3.40	3.45	3.50	0.25	0.35	0.30	0.25	0.20
2s10s	-0.90	-0.75	-0.45	-0.15	0.05	0.25	0.25	-0.40	-0.25	0.00	0.25	0.50	-0.50	-0.50	-0.45	-0.40	-0.25
5s30s	-0.20	-0.15	0.05	0.25	0.45	0.55	0.55	0.10	0.00	0.15	0.35	0.50	-0.30	-0.15	-0.10	-0.10	0.05
10s30s	0.20	0.25	0.30	0.35	0.40	0.45	0.45	0.20	0.15	0.15	0.20	0.25	0.00	0.10	0.15	0.15	0.20

Source: BofA Global Research

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Bottom line: US macro resilience, roll forward of recession timing, & more Fed hikes results in higher rate & flatter curve path. We revise forecasts at the front end & only modestly at the back end. To trade, tactical duration longs are easier than curve at this stage of cycle. We prefer front end underweights, long 10Y at or above 4%, 2Y spread carry, & vol normalization. UST supply / demand imbalance is a risk for cheaper USTs.

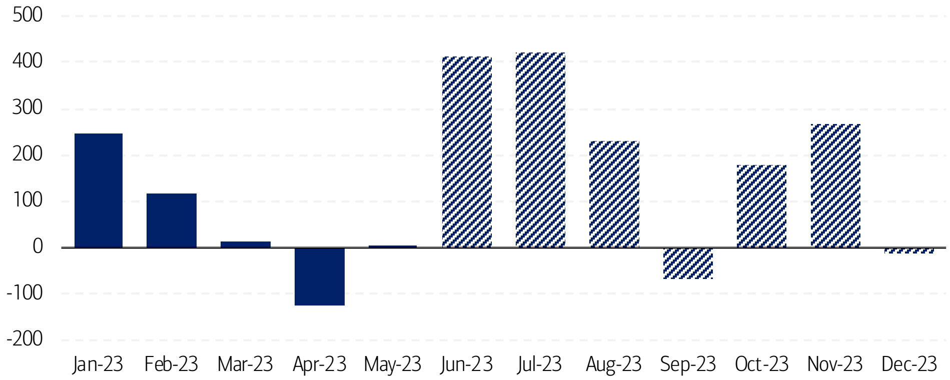
Supply

Debt limit resolution has opened the supply flood gates. We expect $2tn of net UST issuance from June through December '23. Over this period bill supply will rise $1.4tn & coupon supply $650b. Coupon sizes should grow at the August refunding.

Bills: largest supply surge excluding COVID

Bill supply is expected to rise $1.4tn from Jun to Dec '23. The average annual historic bill supply increase was $200b from '15-'19. Bill supply will total 7x annual average in 7m. Largest bill wave will be in Jun – Aug, where we expect net supply of $1tn. There will be an incremental $400b from Sep – Dec (Exhibit 4).

Exhibit 4: Monthly net bill issuance forecasts in 2023
We project $1.4tn in additional net bill supply by YE '23



Source: BofA Global Research, Treasury

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Bill supply surge for two reasons: (1) Treasury cash balance rebuild (2) incremental deficit financing. We expect Treasury cash balance of $425b at end Jun, $600b at end Sep, $700b at end Dec. Bills to fund incremental deficit till higher coupons.

Bill surge is expected to cheapen money market rates & encourage Fed ON RRP cash to extend out the curve. Most of upcoming Fed liquidity drain should be from ON RRP.

Coupons: higher sizes on the way

Coupon supply will also increase in 2H23; we expect $650b of new coupons from Jun – Dec. Treasury is likely to increase coupons at the August refunding, as signaled in May.

Exhibit 5 shows the coupon auction sizes we expect in the August and November refundings. We pencil in gradual increases in auction sizes shown in Exhibit 2: 2y-5y +$9bn, 7y +$6bn, 10y and 30y +$3bn, 20y +$2bn, TIPS starting with the new issue +$1bn, 2y FRN starting with new issue +$3bn. We expect UST to increase TIPS auction sizes alongside nominal issuance. However, UST will continue to monitor demand for TIPS to ensure that increases in sizes are met with appropriate demand.

We do not expect UST to increase coupon auction sizes further given: (1) bills will fall into UST target range of 15-20% in FY '25 (2) higher bill supply today does not pose the same risks to market functioning as lower bill supply. ON RRP should absorb bills.

We are more confident in who will buy the bill vs coupon supply. ON RRP will provide a meaningful backstop to bill rates. Coupon supply does not have as natural of a buyer (see Demand). USTs will likely need to cheapen to incentivize longer-dated demand.

Exhibit 5: Expected auction calendar through November '23 refunding
Expect auction size increases across the curve through January '24

	2y	3y	5y	7y	10y	20y	30y	5y II	10y II	30y II	2y FRN
5/31/2023	42	40	43	35	35	15	21		15		22
6/30/2023	42	40	43	35	32	12	18	19			22
7/31/2023	42	40	43	35	32	12	18		17		24

Exhibit 5: Expected auction calendar through November '23 refunding

Expect auction size increases across the curve through January '24

	2y	3y	5y	7y	10y	20y	30y	5y II	10y II	30y II	2y FRN
8/31/2023	44	42	45	36	37	16	23			8	22
9/29/2023	46	44	47	37	34	13	20		15		22
10/31/2023	48	46	49	38	34	13	20	22			26
11/30/2023	49	47	50	39	38	17	24		15		24
12/29/2023	50	48	51	40	35	14	21	20			24
1/31/2024	51	49	52	41	35	14	21		18		27

Source: BofA Global Research, US Treasury

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Bottom line: the debt limit has opened the UST supply flood gates with $2tn of net new paper from Jun to Dec. The initial bill supply surge has been met with strong demand but we expect additional cheapening as the supply accumulates. Coupon sizes will also increase in 2H23 & do not have as natural of a buyer base.

Demand

This is an excerpt of UST demand in 2H23

Coupon supply to follow bill surge

The market has been focused on the surge in bill supply that will hit the market in the next few months as we have long expected. However, we think an underpriced risk is the next supply phase which will be an increase in coupon auction sizes starting at the August refunding. Coupled with bills, this will drive marketable debt ex Fed as a share of GDP back to March 2020 highs.

Downside risk to duration demand in 2H

Alongside the elevated levels of supply in previous years there have been a few prominent buyer bases outside of the Fed: foreign investors, banks, and mutual funds. We think there are reasons the demand from these investors will be more challenged in the months ahead. Foreign investor demand likely to be muted given high hedging costs and official demand unlikely to increase without a weaker USD. Banks are unlikely to buy without a pickup in deposits & still strong loan growth. Mutual fund inflows may continue, but wavering conviction in long duration position is a key risk.

Leveraged hedge funds are key buyer

Outside of these traditional directional buyer bases, one prominent investor that has emerged is the levered hedge fund community. The presence of this buyer is likely to be instrumental for orderly absorption of additional coupon supply. However, the potential for (1) higher funding rates (2) reduced dealer balance sheet availability, and (3) lower asset manager futures demand may challenge their ability to take down collateral or make the trade less attractive. This may drive cash bond cheapening and could see a need for the Fed to end QT sooner.

Lower demand backdrop could see bonds cheapen

The potential for both a weaker demand backdrop from directional investors and an already stretched leveraged fund position suggests to us that we may see cheapening of UST cash bonds on incremental coupon supply. Indeed, the greatest risk to the demand backdrop is that the long duration view is challenged by either a softer landing or a need for additional rate hikes. The clearest expression of these views is cheaper long-dated USTs, likely via tighter back-end swap spreads & swap spread curve flattening.

Sooner end of Fed QT possible

In an extreme, we can envision a long-end UST demand vacuum that sees higher funding rates and messy supply digestion drive tighter financial conditions. The Fed could potentially see this as undesirable if the economy is already slowing. A UST back-end rate overshoot could therefore result in the Fed deciding to end QT before the system reaches reserve scarcity. Long end USTs will need to cheapen further before any Fed action is considered; buybacks are likely not large enough to offset the demand & may not be operational in time.

Front end

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- Key themes: Fed hikes, bill & FHLB supply, MMF reform
- We expect cheaper bills, higher term repo, & tighter USD funding in 2H23

US front-end 2H23: supply, ON RRP drop, & MMF reform

In our US front end year ahead, we flagged three key themes: (1) Fed hikes (2) bill / FHLB supply (3) MMF reform (see US front end in '23). These are still the key themes.

Fed hikes: skipping above 5.5%

Our economists expect the Fed to now hike 2 more times at the Jul & Sep meetings. Their logic: resilient economy & stubborn inflation. Terminal will rise to 5.5-5.75%.

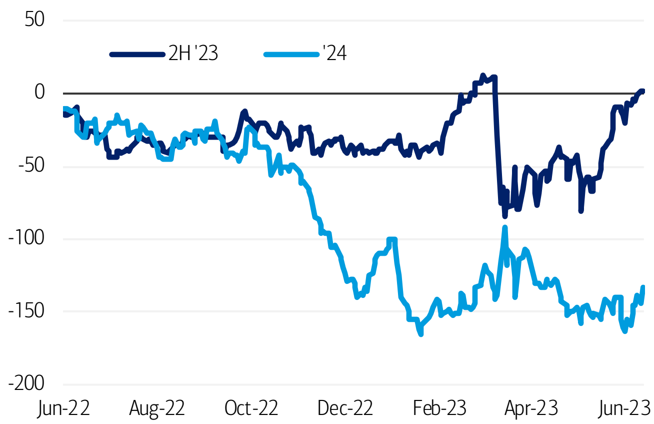
The market underprices these upside risks to the Fed. Investors should remain underweight the front end in case more restrictive levels are needed; extension can wait until the Fed hiking cycle appears finished. Cuts in '24 could get pushed out (Exhibit 6).

Our economics team now pencils in the first Fed rate cut at the April / May '24 FOMC meeting. We continue to expect Fed QT will end with the first Fed rate cut, especially if they are easing to stimulate in a growth slowdown. As we have long argued, Fed QT will likely stop for 1 of 3 reasons: (1) US slowdown that requires Fed rate cuts (2) market functioning issue (3) reserve scarcity, which we project in late '24 or early '25. A UST demand shortfall could result in market functioning issues (see Demand – US).

Bill supply: $1.4tn from June to December

We expect a UST bill surge of $1.4tn between June '23 and YE'23. We also expect $660b in coupon supply to the public over the same period. This supply surge will be a catalyst for cheaper UST-OIS, CP-bills, and ON RRP drain (Exhibit 7). We think SOFR-FF will widen with the supply but not likely to the extent the market expects in 2H23 (see SOFR-FF biased wider). For more detail on our supply projections, see Supply – US

Exhibit 6: Fed hikes or cuts in 2H23 & '24 (bps)
Fed cuts in '23 have been priced out, cuts in '24 are likely next



Source: Bloomberg

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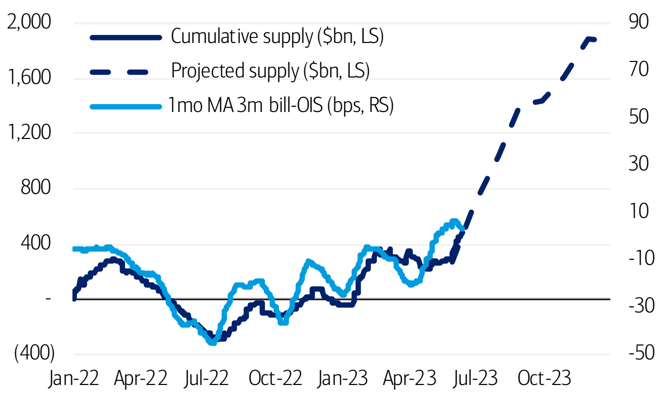
Exhibit 7: 3m bill-OIS & cumulative bill supply
Our model suggest bills could cheapen by as much as 76bps but we expect this to be capped by demand from MMFs



Source: BofA Global Research,

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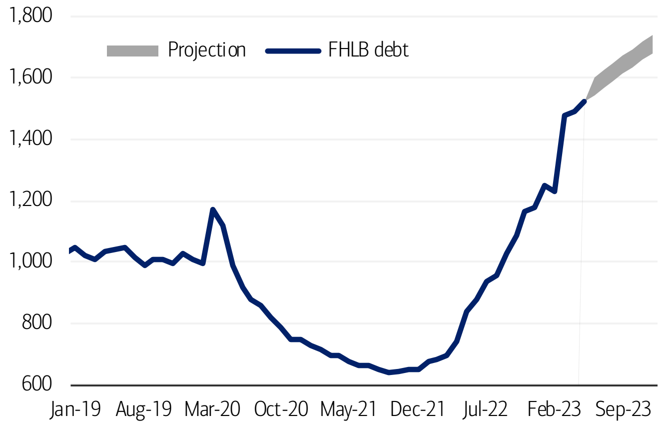
We also expect FHLB supply to remain elevated driven by bank funding demand, though down from Q2 peak. In our year-ahead we projected net new FHLB issuance of $500-$750b over '23. Through May YTD, FHLB issued $340b of net new debt driven by bank stress and deposit outflows. Given potential for bank stress persistence, we stick to our forecast of $500-$750b (Exhibit 8). Potential Fed hikes will continue to put pressure on bank NIMs and could lead to more deposit outflows & FHLB advance demand.

We expect the UST & FHLB supply increase will cheapen front end paper & draw cash out of the Fed ON RRP. Once bills are sufficiently cheap, we project a Fed liquidity drain that draws 90% from ON RRP & 10% from reserves. These numbers imply a false sense of precision, but they reflect our expectation the marginal bill buyer will be a cash re-allocation out of ON RRP. Our numbers suggest QT + $650b in TGA rebuild from May month-end to year-end will drain $1.26tn from ON RRP and $140b from reserves.

The supply surge is expected to place upward pressure on dealer balance sheets & term repo (Exhibit 9). As dealers hold more USTs, they will have less capacity to hold other paper. This should be clear in 2H23 especially as dealers prepare for year-end.

Exhibit 8: FHLB debt outstanding and projections
We project an additional $160b-$410b in FHLB by year-end



Source: BofA Global Research, FHLB Office of Finance

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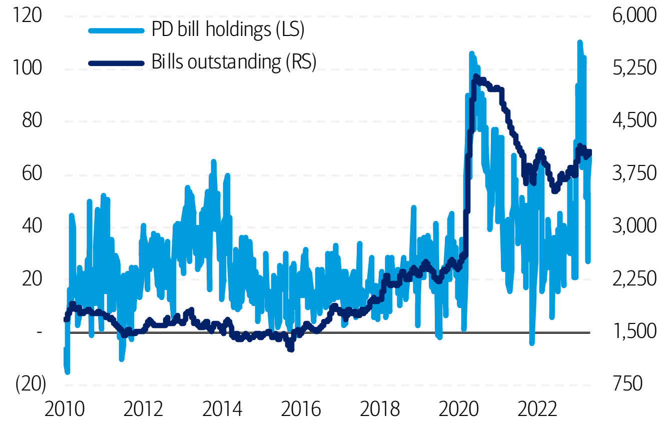
Exhibit 9: Primary dealer bill holdings & UST bills outstanding ($bn)
PD bill holdings tracks bills outstanding closely



Source: BofA Global Research, Bloomberg

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Increased UST holdings will likely strain dealer balance sheets which may lead to a modest deterioration in market functioning and higher overall "risk premium". This will especially be true in balance sheet intensive activities like cross currency basis; tighter XCCY basis should drive wider CP-bill spreads. Clients should anticipate market functioning challenges from the supply surge and crowding out of dealer sheets.

Money fund reform: delayed by disagreement

Money market fund (MMF) reform remains the last key front end theme for 2023. We expected a final SEC ruling in late '22 & then Q1, but the timing keeps getting pushed back. There has been no official explanation for the delay, but we suspect there are disagreements amongst SEC commissioners on how best to proceed.

The key sticking point is likely "swing pricing" or a liquidity fee on institutional prime & tax-exempt funds. Our prior analysis of the proposed rule suggested substantial outflows from prime MMF or a voluntary closure of some funds (see: US money fund reform).

If the final rule contains swing pricing or a liquidity fee, prime MMF outflows will likely see CP rates cheapen and increase bill demand. We originally estimated 3m L-OIS could widen 3-7bps and that bill demand could increase over $300bn. Risks now skew to the higher end of this estimate with recent prime institutional inflows. Market impact will likely be closer to any future reform implementation date.

Spreads

Ralph Axel
BofAS

- We like owning 2y spreads as a carry trade with attractive ROE
- Risks: banks are still shedding UST holdings, repo costs could rise
- Long end sprds could be more directional as QT-end timing a function of CPI data

Spreads: banks, regs and QT

Our year ahead spread view was to go long 5y spreads at -25bp, target -15bp. We reached -16bp in the interim, 1bp shy of target, and 5y spreads are now back down to around -22bp. Our recommendation was a result of weighing the impact of offsetting pressures on spreads, and these factors continue to make the spread call challenging today. We see banks as the key driver in our 2y-7y spreads outlook. Net/net we would lean towards tighter 2y and belly spreads until the banking sector slows its decline of Treasury holdings - and then for some spread widening as those flows stabilize or reverse. Regulations and the end of QT we think will be main drivers of the long end in H2 which we see as spread positive. Supply indigestion is a risk as it could impact funding available via reduced balance sheet availability.

Coming into this year, our view was that diminishing coupon supply to the public – even with Fed QT – plus creeping market structure advancements would ultimately push 5y spreads wider despite an expected pullback in bank demand for Treasuries and MBS as we anticipated banks to seek loan growth instead of securities growth.

Today we see the same mix of forces at play. Duration supply is lower vs last year as Tbills are handling a larger percentage of the govt financing needs. Coupon sizes should increase later this year but that should be baked in. Market structure themes like clearing and buybacks continue to move forward which is a spread positive across the curve.

If the Bank Term Funding Facility (BTFP) were made permanent, it could be a strong boost to "equilibrium" UST demand from banks supporting 2y-10y spreads. But we worry today about bank activity in Treasuries, especially since early March 2023 which began a new phase of sharp reduction in securities holdings as deposits drained and shuffled, requiring tapping of liquidity sources.

Banks the key factor in H2

We had already been undergoing a wave of bank liquidation of Treasuries before the Silicon Valley Bank event (Exhibit 10). But with heavy liquidity needs developing since 9 March, the pace of Treasury disposition accelerated and remains a threat to spreads in the 2y through the 10y area. We think this has likely been the single biggest factor in tightening 2y spreads to -10bp, as we now see 1m and 3m Tbill spreads relatively close to 0bp. This implies that the deluge of Tbill supply has been mostly priced into the spread markets. The collapse of 2y spreads occurred in the 1y1y forward part of the spread curve and 1y spreads in the 3y and 4y forwards are at distressed levels.

Bank demand is likely to change only when liquidity needs decline and/or regulators incentivize increased UST holdings as HQLA (high quality liquid assets). We expect regulatory developments this year, and we expect higher HQLA requirements. If regulations also include more requirements to hedge rate-risk with swaps, this could have a similar widening impact on swap spreads. The eventual turn in bank behavior we think will be the key for spread widening in the 2y-7y sector.

We consider 0bp to be an equilibrium fair value of spreads based on an approximate arbitrage between SOFR swaps and cash Treasuries. Without mark-to-market risks, balance sheet costs, or risk of access to repo funding, we would expect the spread curve to trade near 0 because any non-0 spread would offer free carry. This approximate arbitrage is more binding in the front end, where spread duration is lower. We view 2y spread fair value a little below 0bp, say to -3bp to -5bp range to provide some realistic incentive to buy the spread and offset the actual costs. At -10bp we think 2y spread longs offer an attractive ROE and like that position as a carry trade.

Long end: QT end potentially coming into focus
Further out the curve, the long end is most impacted by changes in deficit expectations. A deficit reduction bill was just passed, which is positive for 30y spreads. Until the market sees a high chance of a unified government (all GOP or all Democrat), we think deficit risks will remain muted and help 30y spreads from dipping back below their -80bp low point of the last 9 months during which 30y spreads have traded in a 15bp range. Pension demand is likely peaking, which is negative, but this is likely more of a corporate bond spread issue. Quantitative tightening is a major factor for the 30y sector, in our view. QT could possibly end by H1 2024, assuming the Fed is able to start cutting by then. The impact of QT on spreads will be felt long before QT ends, and we think this makes 30y potentially more directional going forward with benign inflation data pulling forward the end of QT, and strong data pushing it back out.

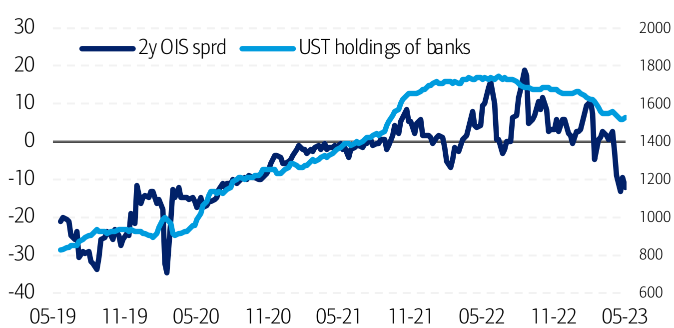
Volatility levels should continue to be a factor for swap spreads across the curve (Exhibit 11), but more pronounced in the 5y and beyond where mark-to-market risk is more substantial per dollar of spread carry. Our view is that vol should grind lower, but global central banks remain very much in play, and realized vol remains very high for now.

There is a risk to cheaper USTs across the curve if bank balance capacity declines which could increase repo costs – a view we discuss in the front end section. In addition, with bond demand currently very strong, risks are skewed to demand reduction for USTs.

Summarizing spread views across the curve

We like owning 2y spreads as a carry trade for investors who have low marginal costs to enter in terms of repo haircuts and initial margin requirements. Ongoing bank liquidation is negative for 2y spreads partially offset later in the year by moving beyond the Tbill supply wave. If the banking sector normalizes, we think there is scope for widening in the 2y-7y sectors. The long end of the spread curve we think has a supportive supply backdrop, but as soon as the end of QT comes into sight, we see scope for a move wider in 30y spreads – more likely late in H2. Increased funding costs due to balance sheet constraints is a key risk for spreads, as is a major flight to cash risk-off scenario.

Exhibit 10: Bank liquidated USTs and relied more on "borrowings"
Initially loan growth led to security declines, but pace accelerated post SVB



Source: BofA Global Research

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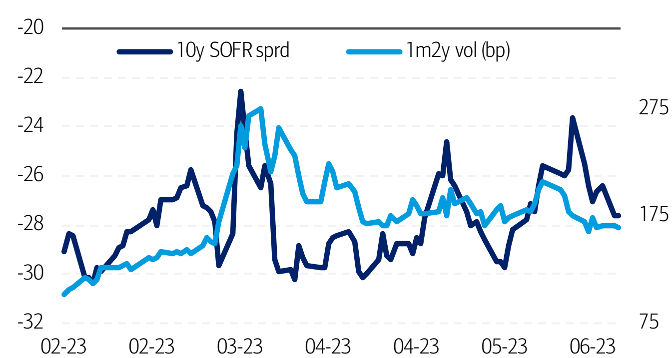
Exhibit 11: implied vol levels have been a factor for long end sprd
We expect vol to grind lower, but the path could be very uneven



Source: BofA Global Research

BofA GLOBAL RESEARCH

Inflation

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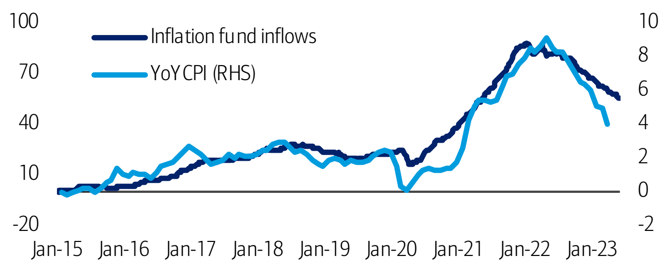
- 30y real yields still seem far from fundamentals but economic strength and supply/demand imbalance near term risk
- 1y inflation swap not reflecting inflation persistence that would likely underpin need for additional hikes and potential way to hedge risk that hiking cycle is not over.

30y TIPS trade challenged by macro resilience

In the Year Ahead, we recommended clients go long 30y TIPS (see: Prepare for landing). This trade was underpinned by our US Economics team's view for a recession this year while inflation proved more persistent (see: Rooting for the anti-hero).

We saw upside risk to inflation term premium as our economists anticipated an uptick in unemployment over the course of the year driving a pivot from the Fed but inflation still above the Fed's target, making owning real yields attractive. We thought the 30y point was relatively insulated from potential additional Fed hikes and expected outflows from TIPS ETFs concentrated in the front-end and belly of the curve (Exhibit 13).

Exhibit 12: Inflation fund flows and realized YoY CPI
Fund flows trend with realized inflation



Source: BofA Global Research, EPFR, Bloomberg

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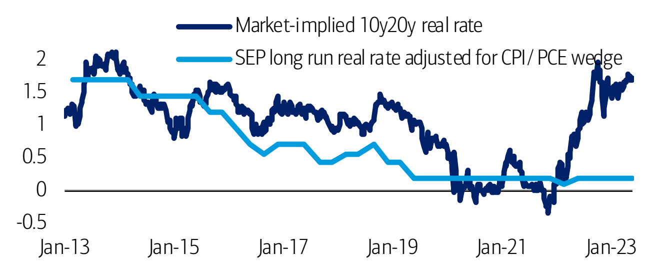
Exhibit 13: SEP real long run rate and market implied 10y20y real rate
Fed and market estimate of neutral have meaningfully diverged



Source: BofA Global Research, Bloomberg, Federal Reserve

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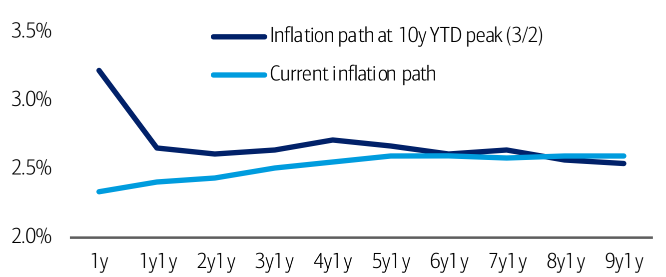
A stronger than expected economic backdrop and greater confidence in declining inflation near term have been headwinds to the trade. The 30y real yield at 165bps, not far from where we initiated the trade (160bps), reflects an attractive entry level. We think that fundamental fair value for the 30y point should be anchored on expectations for the neutral rate, which the Fed still sees around 50bps (Exhibit 13). Even the upper end of the central tendency of the longer run dot at 2.8% suggests much lower longer-term real yields vs market pricing.

Exhibit 14: 1y forward inflation swaps
Front-end and belly of inflation curve have moved lower



Source: BofA Global Research, Bloomberg

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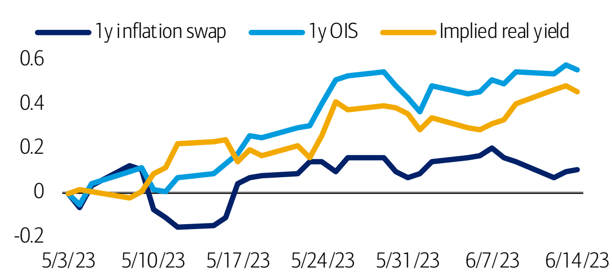
Exhibit 15: Cumulative change in 1y rates (PPTS)
Move higher in front-end real rates driven by real yields



Source: BofA Global Research, Bloomberg

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A key headwind to being long 30y real rates is wavering conviction in a US recession which could see Fed cut to neutral vs a stimulative policy rate. A more challenged demand backdrop (see: UST demand in 2H) may also be a near-term risk to this trade.

However, for longer term investors we think that as the economy cools and conviction in cuts increase, 30y real yields have room to normalize closer to 100-125bps.

Forecast revisions for higher reals, lower BEs

Real yields across the curve are at some of the highest levels we have seen since the start of the Fed's hiking cycle, while nominals are lower. This divergence has been driven by market pricing for a sharp decline in inflation over coming months (Exhibit 14).

In our forecast revisions for the composition of rates (Exhibit 16), we generally see more upside risk to BEs across the curve vs market pricing given our econ team's view for a stronger economy near term and upside risks to inflation. Compared with our prior forecasts, we revise breakeven levels down at the front-end given lower commodity pressures and broader realized disinflation. A key risk to lower breakeven levels vs what we currently reflect would be expectations for a more significant recession.

Exhibit 16: Nominal, breakeven, and real rate forecasts
Revision lower in front end BEs, higher real rates across the curve

		New							Old		Change	
		3Q23	4Q23	1Q24	2Q24	3Q24	4Q24	4Q25	3Q23	4Q23	3Q23	4Q23
	2y	4.50	4.25	3.85	3.50	3.25	3.00	3.00	3.75	3.50	0.75	0.75
	5y	4.00	3.90	3.65	3.45	3.25	3.15	3.15	3.45	3.40	0.55	0.50
	10y	3.60	3.50	3.40	3.35	3.30	3.25	3.25	3.35	3.25	0.25	0.25
Nominal	30y	3.80	3.75	3.70	3.70	3.70	3.70	3.70	3.55	3.40	0.25	0.35
	2y	2.40	2.40	2.40	2.40	2.40	2.40	2.40	2.70	2.70	-0.30	-0.30
	5y	2.40	2.40	2.40	2.40	2.40	2.40	2.40	2.50	2.40	-0.10	0.00
	10y	2.40	2.40	2.40	2.40	2.40	2.40	2.40	2.40	2.40	0.00	0.00
Breakeven	30y	2.40	2.40	2.40	2.40	2.40	2.40	2.40	2.40	2.40	0.00	0.00
	2y	2.10	1.85	1.45	1.10	0.85	0.60	0.60	1.05	0.80	1.05	1.05
	5y	1.60	1.50	1.25	1.05	0.85	0.75	0.75	0.95	1.00	0.65	0.50
	10y	1.20	1.10	1.00	0.95	0.90	0.85	0.85	0.95	0.85	0.25	0.25
Real	30y	1.40	1.35	1.30	1.30	1.30	1.30	1.30	1.15	1.00	0.25	0.35

Source: BofA Global Research

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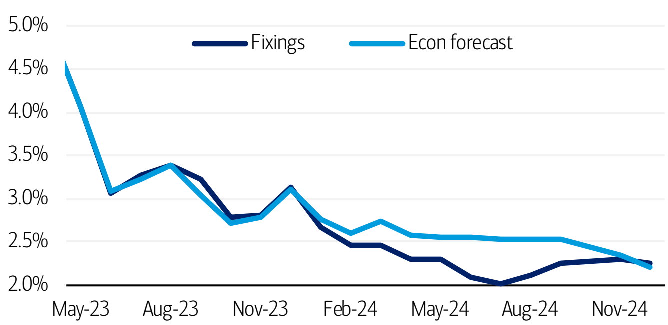
More hikes unlikely without persistent inflation

Going long 1y inflation swap is a way to hedge risk that the Fed delivers more hikes given: 1) divergence between 1y OIS and 1y inflation swap (Exhibit 15), 2) 1y market pricing traditionally underestimates realized inflation (see: Less than great expectations).

Exhibit 17: YoY CPI from US Econ forecast and CPI fixings
Econ above market for mid '24 YoY



Source: BofA Global Research

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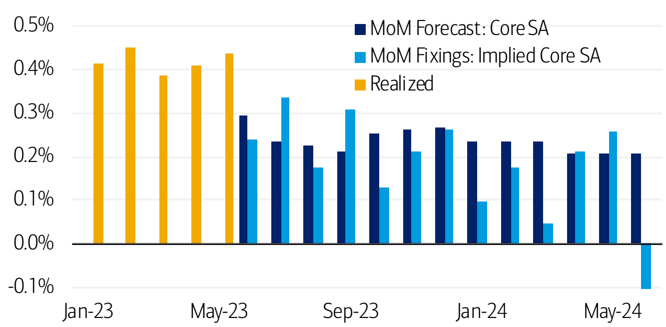
Exhibit 18: MoM SA Core CPI from forecast and fixings implied
Expectations for core show step down in coming months



Source: BofA Global Research, Note: non-core & SA assumptions from US Econ forecasts

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We continue to think that there is a discrepancy between the market conviction in the lack of inflation persistence and the ability to price incremental hikes (see: Core strength). The market path of inflation over the next year diverges below our econ team's expectations most notably in mid-24 (Exhibit 17). We think that inflation pricing will need to be challenged for more hikes to be justified; with expectations for core CPI stepping down to around 0.2%-0.3% starting this summer (Exhibit 18).

Volatility

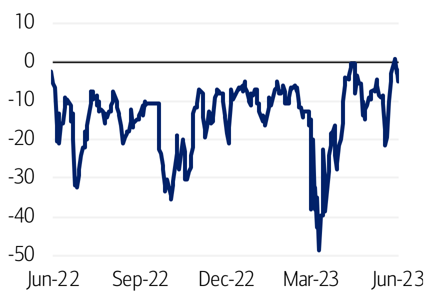
Bruno Braizinha, CFA
BofAS

- Fading of major risks to the near-term outlook helped drive some normalization of the vol grid, but macro resilience = Fed policy uncertainty & sticky grid distortions
- We continue to expect a slow process of grid normalization over '23, but recommend hedging hard-landing and re-acceleration tails

Grinding lower

Some of the major risks around the near-term outlook (particularly the perception of systemic risk around the banking sector and debt limit uncertainty) have faded in recent weeks. This has helped fade some of the richness of gamma versus intermediates (Exhibit 19) and left side of the grid vs. the right side (Exhibit 20).

Exhibit 19: 1y10y vs. 1m10yNormal Volatility
Vol inversion faded over the last week to virtually flat levels



Source: BofA Global Research; Bloomberg
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Exhibit 20: 3m10y vs. 3m2y Normal Volatility
Left side lost some richness vs right side over the last week

Source: BofA Global Research; Bloomberg
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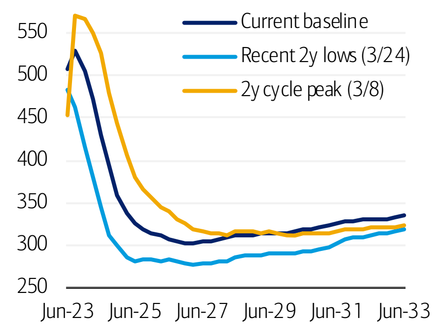
Exhibit 21: Recent pricing of the policy path
Policy trough back at c.3% a fade in our view



Source: BofA Global research
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Macro data resilience, however, continues to feed into uncertainty around the Fed policy path (see Exhibit 21). While the timing of the first rate cut continues to get pushed out (now at a 7m horizon – Exhibit 22), the range of outcomes around the Fed widens and that supports a sticky richness of the left side of the grid vs the right side (1y10y vs 1y1y vol spread still c.-52bp inverted).

As we noted in recent publications, lower data dispersion and a recoupling of macro data to the downside in line with market expectations, along with a higher degree of confidence in declining inflation, are necessary for: (1) a collapse of the uncertainty around the policy trajectory; (2) a mean reversion of 10yT yields back to steady state levels around c.3%; and (3) a normalization of the volatility grid.

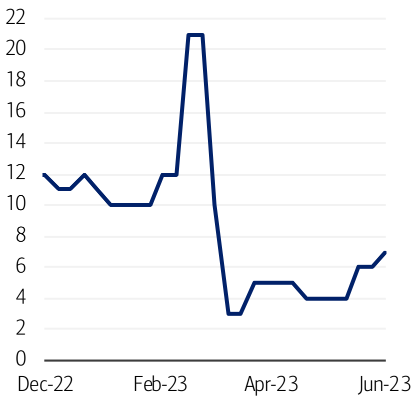
However, macro scenarios for the US outlook over 2H23 (abstracting from the potential for exogenous shocks) continue to bifurcate between:

- Soft landing scenarios or scenarios where the slowdown continues to be priced at c.6m horizons on a rolling basis, which likely support a more credible on-hold stance for the Fed. These scenarios continue to support trading the 3.25-3.75% range for 10yT with a bullish bias and a slow process of normalization for the volatility grid (1y1y vol towards c.120-130bp and a resteepening of the 1m10y vs 1y10y vol spread into c.-5bp to 5bp levels)
- Re-acceleration scenarios where inflation stays sticky near term and the market prices a higher terminal for the Fed, which are likely to continue to support the recent distortions on the vol grid for longer

The analysis of the dynamic of 10y BEs allows us to infer the likelihood that the market may be assigning to the two scenarios above. We note that despite the recent macro data resilience: (1) the dynamic of breakevens continues to reflect expectations for a recoupling of growth and inflation fundamentals over '23 (more orthodox bull tightening and bear widening moves that reflect positive correlations and causalities between growth and inflation account for c.80% of the recent dynamic – Exhibit 23); and (2) a higher likelihood of lower growth and lower inflation scenarios (50% frequency of bull tightening moves recently – Exhibit 24) vs re-acceleration scenarios (30% frequency of higher growth and higher inflation scenarios that generally drive a bear widening of breakevens).

Exhibit 22: Horizon of first Fed cut

Market pricing one cut fully at a 7m horizon currently



Source: BofA Global research

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Exhibit 23: Frequencies of different moves in the recent dynamic of 10y breakevens

Orthodox moves (that contain positive correlation and causality between growth and inflation) now account for 80% of the 10y BE dynamic. Bull tightening frequencies (which reflect lower growth and lower inflation expectations) still dominate the 10y BE dynamic

	bull-Tight	bear-Wide	bull-Wide	bear-Tight
Current	50%	30%	14%	5%
1m	40%	34%	13%	13%
2m	27%	32%	13%	27%
3m	29%	33%	13%	25%

Source: BofA Global research

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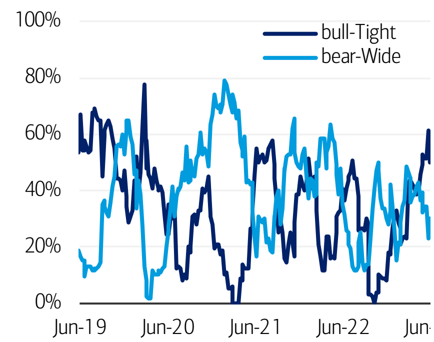
Exhibit 24: Frequencies of bull tightening (lower growth & inflation) and bear widening (higher growth & inflation) moves over time

Frequency of bull tightening moves on the rise since the end of October '22



Source: BofA Global research

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The market seems to therefore continue to show a bias towards softer landing scenarios or slowdown expectations at a c.6m horizon priced on a rolling basis. These scenarios support buying duration on dips beyond c.3.75% for 10yT (levels above fair values that are consistent with both US macro fundamentals and global yield levels), and expectations for a slow process of normalization of the vol grid (selling peaks in vol on the left side of the grid and deep richness of gamma vs intermediates).

These scenarios also tend to support carry strategies (see Postcard from Europe). However, (1) we are careful of expressing carry strategies (which are generally short gamma) in rates space; and (2) we see the current context as a meta-stable equilibrium state where the market dynamic may be shocked into relatively wide tail scenarios. These tail scenarios should be hedged on both sides of the distribution of outcomes:

- Higher probabilities of harder landing scenarios (within broader slowdown expectations) where risky assets reprice meaningfully lower despite deeper and faster Fed cuts, which may be hedged through bull steepeners on deep OTM puts on risky assets
- Re-acceleration scenarios noted above where growth and inflation expectations stay supported near-term and drive a hawkish repricing of Fed expectations, which may be hedged though OTM payers or payer spreads at the frontend of the curve

Bottom line: We expect the vol grid to continue to normalize gradually over 2H23 (expected ranges by 4Q23: 120-130bp for 1y1y, 100-110bp for 1y10y, and -5 to 5bp for the 1y10y vs 1m10y vol spread). Soft landing or scenarios where the recession continues to be priced at a 6m rolling horizon support carry strategies. We find these more attractive in risky assets, but also see the current context as a meta stable equilibrium state that justifies hedging wide tails. i.e., hard landing and reacceleration scenarios.

Asset Allocation

Bruno Braizinha, CFA
BofAS

- Our updated macroeconomic outlook justifies a slight upgrade of portfolios risk profiles, albeit still within transition type portfolios (closer to balanced allocations). These imply still at best the potential for a convergence to c.3% steady state levels for 10yT. We see the current context as a meta stable equilibrium state that justifies hedging relatively wide tails, i.e., hard landing and reacceleration scenarios.

Still in a transition state... for longer

Our economists upgrade for the '23 macroeconomic outlook creates scope for a material shift in market dynamic:

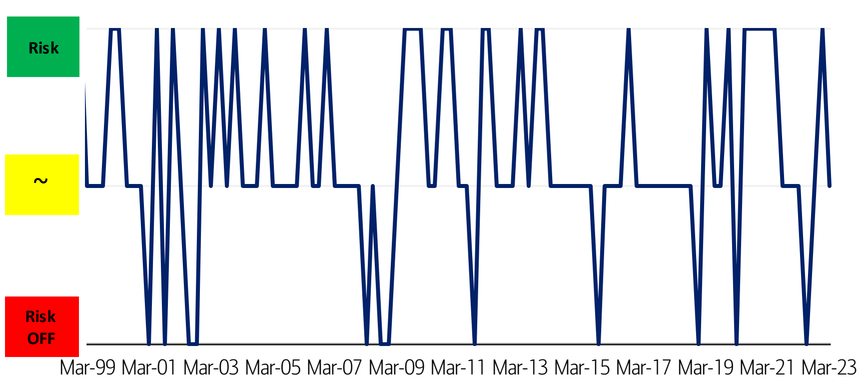
- In the recent market dynamic risky assets have found a significant level of support from Fed on-hold expectations or potentially rate cuts in the context of softer landing scenarios for the economy (see The stress and uncertainty are all in rates).
- The upgrade to macro expectations creates scope for a dynamic whereby risky assets remain supported despite the potential for further Fed tightening, i.e., a decoupling of the dynamic of risky assets from the discounting component of valuations and a refocus on risky assets intrinsic fundamentals (growth and earnings expectations).

We are skeptical of such a shift, which in essence would have implied a shift of asset allocation profiles towards a risk-on bias.

Coming into '23, the view for allocation was predicated on the following themes: (1) expectations for a DM slowdown; (2) potential for EM complex to decouple, particularly in reopening scenarios for China; (3) persistence of geopolitical premium; (4) downward trajectory on inflation; (5) some increase of the utility of USTs as a hedge and a diversifier for portfolios as the Fed shifted to an on-hold stance; and (6) the search for hedges and diversifiers for portfolios.

All of these (we argued in Asset Allocation & Duration Demand in '23) justified asset allocation profiles closer to those implied by a transition state, in between risk-on and risk-off asset allocation profiles (Exhibit 25 & Exhibit 26). Withing that transition state, we favored allocation weights in between risk-averse (min-variance) and balanced profiles.

Exhibit 25: Regimes for quarterly performance across asset classes
Market dynamic in 4Q22 was closer to risk on.... shift towards a transition dynamic in 1Q23



Source: BofA Global Research

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Exhibit 26: Transition probabilities between different states for the market dynamic
Transition probability from risk-off/recession to risk-on (57%) larger than from risk-on to risk-off (6%). The transition state is the stickiest, once in the transition state there is 61% probability of staying in the transition state.

	Risk off	~	Risk on
Risk off	14%	29%	57%
~	16%	61%	23%
Risk on	6%	61%	32%

Source: BofA Global Research

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Most of these macro stories have faded over the first two quarters of '23: (1) the outlook for DM has been upgraded, with the latest revisions another step in this process; (2) the outlook for EM and China reopening scenarios has been downgraded; (3) geopolitical premium has been less significant than previously expected (this is particularly obvious in the dynamic of the commodities complex); (4) despite the downward trajectory, inflation has been stickier than previously anticipated; and (5) we have seen only a marginal upgrade of the utility of USTs for portfolios (see Update on the utility of USTs for portfolios).

Broadly, however, the evolution of the outlook for '23 has been more about tempering of expectations rather than a reversal of the view. In our recent update on asset allocation (see Allocations & Duration Demand - 2Q View) we noted how the optimal portfolio for 1Q23 was closest to transition states, and reiterated our preference for transition state portfolios with risk profiles between risk-averse and balanced for the remainder of '23.

The current upgrade to the macroeconomic outlook justifies in our view an upgrade of risk profiles of portfolios still within transition type portfolios, i.e., risk profiles closer to balanced allocations (see Exhibit 27): This upgrade implies: (1) slightly higher allocation to equities (upgrade of small caps and growth) to roughly neutral, (2) lower allocations to bonds (10-25%, with an upgrade to EM hard currency debt and a downgrade to the DM sovereign debt – implying still at best the potential for a convergence to c.3% steady state levels for 10yT); (3) downgrade of cash allocations to underweight; (4) downgrade to commodity allocations; and (5) upgrade to mortgage allocations. This allocation profile is based on historical data. The idiosyncrasies of the current cycle likely support a positive skew to credit (particularly IG) and EM allocations (EM Asia ex-China and Latam in particular) vs. these results, and a negative skew on commodities and growth stocks.

The slight upgrade to allocations profiles suggested here is consistent with higher soft-landing probabilities or scenarios where the recession continues to be priced at a 6m rolling horizon. As we noted in the US Volatility section, these scenarios create scope for carry in portfolios, and transition style portfolios are to some extent carry portfolios. However, we see the current context as a meta stable equilibrium state that justifies hedging relatively wide tails. i.e., hard landing scenarios (through long OTM equity puts or bull steepeners) and reacceleration scenarios (though long OTM payers or payer spreads at the frontend of the curve).

Exhibit 27: Optimal global portfolios over transition periods

Mean variance optimization on weekly returns over transition periods

	Min	Max	Risk Averse	Balanced	Risk Seeking
Equities	30%	70%	30%	56%	70%
Large Caps	10%	50%	10%	10%	40%
Small Caps	5%	35%	10%	35%	5%
Value	0%	25%	0%	0%	0%
Growth	0%	25%	0%	11%	25%
EM	0%	15%	10%	0%	0%
Bonds	5%	50%	25%	10%	10%
Sov	0%	45%	25%	0%	0%
Linkers	0%	5%	0%	0%	0%
EM Hard	0%	10%	0%	10%	10%
EM Local	0%	10%	0%	0%	0%
Credit	0%	15%	10%	10%	10%
IG	0%	20%	0%	0%	0%
HY	0%	10%	10%	10%	10%
Cash	0%	15%	15%	4%	0%
US	0%	15%	15%	4%	0%
Alt	0%	20%	20%	20%	10%
Commodities	0%	15%	15%	13%	0%
Mortgages	0%	15%	5%	7%	10%

Source: BofA Global Research

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Models

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- Expectations continue to be centered around lower growth and lower inflation states, with reacceleration odds put only at c.30%. In this context, selloffs are still less-than-structural, and we continue to favor buying dips in 10yT yields beyond 3.8% levels that are fair vs current fundamentals and global yields.

Models update... buy the dip above c.3.8% fair values

At any point in time, the view for the macroeconomic outlook near/medium term can be thought of as a linear combination of 4 different potential states for the economy (weighted by a given probability for each state): (1) higher growth & higher inflation; (2) lower growth & lower inflation; (3) lower growth & higher inflation (stagflation); and (4) higher growth & lower inflation (goldilocks).

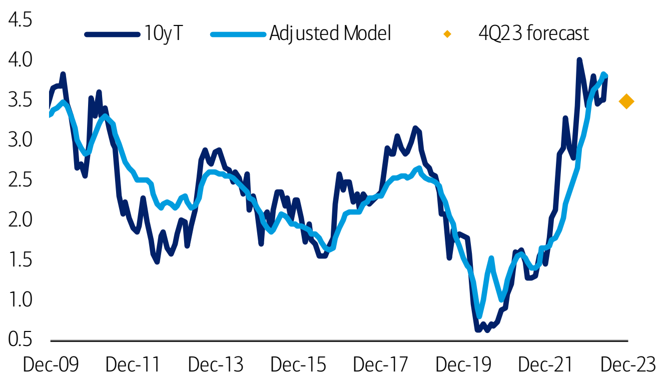
The key therefore is to extract some information from the market dynamic on the likely probabilities assigned to these different states. Because we can map different types of moves for the 10y breakevens to each one of those 4 states (bear widening, bull tightening, bull widening and bear tightening, respectively), we use the recent dynamic of breakevens to extract some information on these probabilities. The recent dynamic suggests:

- Market expectations for a recoupling between growth and inflation fundamentals. The first two states are more structural and orthodox as they reflect positive correlations and causalities between growth and inflation, and the frequency of these two types of moves accounts for 80% of the recent dynamic of breakevens.
- Higher likelihood of lower growth & inflation (recently 50% frequency of bull tightening moves – see US volatility) vs re-acceleration scenarios (30% frequency of higher growth & inflation moves that generally drive a bear widening of breakevens)

Selloffs in this context are less that structural and this analysis suggests buying on dips in the recent range. The relevant question from here is at what levels does it make sense to buy on dips. To answer that question, we turn to gauges of fair value for 10yT.

Both our 10yT macro model (Exhibit 1) and our global yield framework (Exhibit 2) show an upgrade of fair values in recent weeks to c. 3.75-3.8% (see A hitchhikers guide to RV on the UST curve).

Exhibit 28: 10yT macro model has 10yT fair value c.3.8%
Cheap value vs fundamentals reflect expectations for upgrade of macro fundamentals ahead



Source: BofA Global Research

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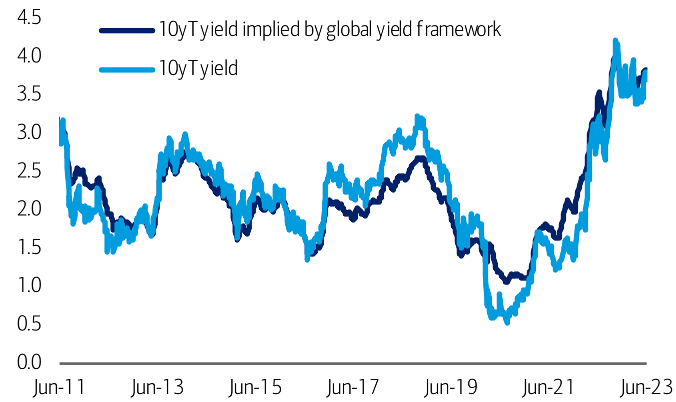
Exhibit 29: Global yield framework has 10yT fair value c.3.8%
Boas late cycle is for 10yT to trade fair or rich to global yield.



Source: BofA Global Research

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However, these 3.75-3.8% fair value levels should be interpreted differently in the context of these two frameworks:

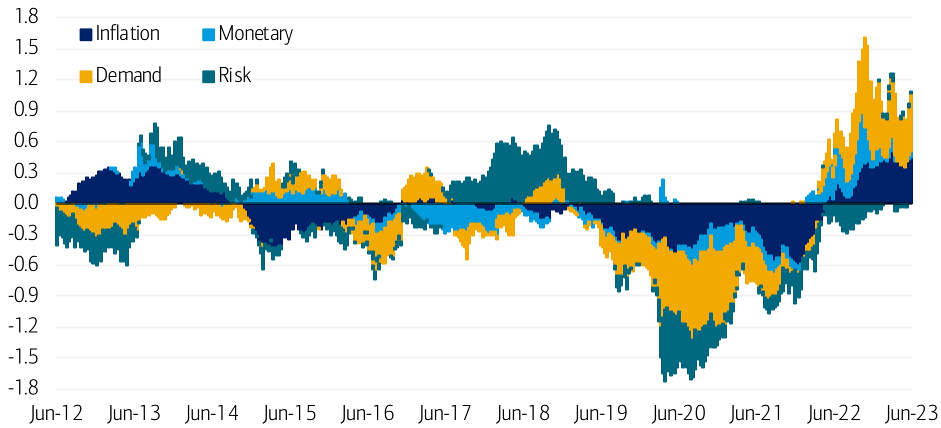
- 10yT levels cheap/rich to current US macro fundamentals suggest expectations for an upgrade/downgrade of macro fundamentals ahead (10yT levels reflect both current fundamentals and forward-looking expectations), particularly when cheapness/richness exceeds c.30-35bp (the standard deviation of residuals in this framework). Current levels are fair to fundamentals in a context where macro expectations continue to be biased towards a slowdown over the next couple of quarters. This framework therefore suggests buying on dips > 3.8% for 10yT.
- The global yield framework should reflect a bias for 10yT over the cycle: 10yT should trade cheap to global yields early in the cycle (as portfolios sell safe havens and rotate towards higher beta assets) and rich later in the cycle (as portfolios rotate back to the dollar and safer havens). 10yT may selloff in the late cycle, but in this framework, it is more likely that the selloff is driven by a first principal component type of move (cheapening of all global yields, and 10yT along with them) rather than outright cheapening of 10yT vs global yields (particularly into the cheap side of fair value). 10yT levels fair to global yields late in the cycle suggest buying on dips beyond the c.3.8% fair value, particularly if first principal component moves are deemed to be somewhat unlikely.

Our models therefore suggest buying of dips in 10yT yields above the fair value levels implied by both US macro fundamentals and global yields. The last question should be where to go neutral on duration.

Our framework for the decomposition of the 10yT dynamic as a function of monetary policy, risk, inflation, and demand shocks (see A hitchhikers guide to RV on the UST curve and Exhibit 3) suggests an upgrade of the steady state for 10yT over the covid crisis from c.2% to c.2.75-3%. This model therefore suggests adopting a more neutral stance around c.3% stead state levels, particularly in softer landing scenarios for the US economy or in contexts where the slowdown continues to be priced at a c.6m horizon on a rolling basis.

Exhibit 30: Decomposition of the 10yT dynamic ...

... as a function of monetary policy, risk demand and inflation shocks



Source: BofA Global Research

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An asset allocation and portfolio demand approach to the same question (see Asset Allocation) leads to similar conclusions, with portfolios likely aligned to transition style allocations over '23. These suggest bond allocations in the 10-25% range, which at best allow for a convergence to the steady state.

Analyst Certification

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