Global Rates Year Ahead

Year Ahead 2023: Prepare for landing

20 November 2022 Corrected

Rates Research
Global

The View: A challenging base case

Consensus forecasts and our economists' base case see rising recession risks, inflation normalizing and policy rates returning to neutral from above. This would argue for a bullish bias on bonds medium term. But the uncertainty surrounding the outlook for inflation and fiscal policy remains sizeable. However, some clear themes emerge.

Rates: Steep landing: lower rates & steeper curve

We are bullish US real yields outright and cross market. We see steeper curves in US, eventually in EUR, but not in AUD and JPY. We remain bearish Gilts outright and cross-market. Terminal rates mispriced in EUR and AUD.

Front end: Hikes, supply, & reform

US bills to cheapen on surging supply, EUR bills to richen on chg in deposit remuneration

Spreads: Divergence

US ASW should widen on improving coupon supply and turn in rate cycle that brings back demand. EGB and Gilt ASW should cheapen on record issuance, which may see more spread decompression in EGBs esp if ECB QT starts. JGB ASW driven by YCC fears.

Volatility: Embracing the Pivot

Vol should correct lower, easier to express in USD than EUR. We favour hedging higher terminal scenarios near-term, and to position for lower rates and vol medium term.

Inflation: Rooting for the anti-hero

We see lower USD and JPY real yields, and attractive hedges against inflation persistence in BTPeis and RPI flatteners.

Supply: US coupon dearth, bill glut, EGB and Gilt tsunamis

US net coupon supply falls sharply, EGB and Gilt supply spikes, JP story depends on BoJ.

Technicals: Sell the 4Q22 UST rally for higher 1Q23 10Y

Our wave counts and channel breakout measures still favor higher US 10Y yield

Special topics: Liquidity, supply/demand, inflation and YCC

The repricing of global rate markets will see deleveraging across the financial system, both voluntary and involuntary. The combination of quantitative tightening and on-going large government funding needs will drive a significant increase in the amount of government bonds to be absorbed by the private sector at a time when the performance of government bonds as a hedge to risk assets has been historically challenged. FX reserve managers' behaviour is changing and an eventual BoJ decision on the future of yield curve control presents a potential VaR shock for global rate markets. All of this in an environment where liquidity in government bonds has deteriorated across all regions, and the base case is vulnerable to inflation remaining sticky.

Table of Contents

Refer to important disclosures on page 71 to 73. Analyst Certification on page 70. 12489465

Timestamp: 20 November 2022 04:30PM EST

Ralf Preusser, CFA
Rates Strategist
MLI (UK)
ralf.preusser@bofa.com

See Team Page for List of Analysts

See Team Page for List of Analysts

Our medium term views

Exhibit 1: Our medium-term views
Global views

	Rationale
Duration	• US: Short frontend bias near-term, lean long belly/backend duration with US recession expected & risk off flows from risk assets that are likely underpricing the slowdown • EU: We remain bearish rates in the short term, as we expect the ECB to hike to 3.25%, vs market pricing of sub 3%. It is for 2H23 that our forecasts turn bullish vs the forwards, in anticipation of weaker than consensus growth, limited wage growth and thereby downside risks to inflation pushing the market that starts to price in cuts back to neutral. • UK: We now forecast 10y Gilt and Sonia yields peaking at 4.00%, still above the forwards and underperforming on a cross market basis. • JP: We remain bearish JP rates through 2Q23 as JGB market participants concern about a change in BoJ policy. • AU: Rising inflation and accelerating wage growth supports AUD 10y yields around 4.5% and a flatter curve by '23 year-end.
Front end	• US: USTs vs OIS to trade with cheapening bias amidst more bill & FHLB supply; extent of cheapening is limited with MMF likely to soon extend out the curve • EU: Less government deposits at the central bank to richen bills vs swaps. Less excess liquidity to raise term premium in wholesale market. More bond supply to cheapen repo. • UK: We expect the BoE to hike 50bp in December and reach 4.50% terminal rate in Q2 2023. We see two Bank rate cuts in 2024. Risks are balanced. • AU: We are bearish the front end as the RBA delivers five 25 bps hikes between December '22 and May '23 to 4.1% terminal rate. Risks from increasingly dovish RBA.
Curve	• US: Trade curve tactically & position more inversion of 2s10s; steepening will follow softening of labor market • EU: We expect the 2y-5y curve to flatten throughout 2023 and the 5y sector to outperform on the curve from 1Q23. The 2y10y curve could pivot from bear flattening to bull steepening in H2, but a 2y-10y bull flattening is not impossible. 10y-30y should be stable/ steeper in 2023, led by the swaps curve and reduced long-end receiving. • UK: We expect some curve steepening pressures to emerge when the BoE is done with Bank rate hiking cycle & some 10s30s flattening due to LDI hedging and supply skew. • JP: We expect the 10yr30yr JGB curve to bull-flatten from 2Q23, reflecting our view that Japanese real-money investors will increasingly shift from foreign bonds to JGBs • AU: We see a flattening of the curve as economy shifts from mid-cycle to late-cycle and RBA hikes rates in response to higher wage growth and inflation prints.
Inflation	• US: Longer-dated real yields offer attractive levels historically, like owning 30y TII on higher carry near term and potential for rally on turn in cycle • EU: Long 10y BTPei breakevens as an inflation persistence play, taking advantage of cheap iotas. Long linkers expensive on curve and versus US. • UK: We favour 1y4y/5y5y RPI flatteners. 1y4y underprices risk of inflation persistence, while 5y5y fails to fully value impact of RPI reform. • JP: We expect a pickup in inflation from 4Q23 as the impact of the stimulus fades, which could also drive up Japan's BEI.
Spreads	• US: Treasury market resilience efforts plus lower supply and potential slowing of foreign selling is supportive of spreads, risk is large dollar strengthening or risk-off trade • EU: Weaker macro, monetary policy tightening and the record amount of EGB supply over Q1 puts widening pressures on EGB spreads over the period (with BTP-Bund heading to 270bp). As rates vol and rates decline later in the year, we expect recompression. Given the cheapening of OATs, we see good risk-reward shorting Bonos vs OATs • UK: We sell 10y Gilts versus Sonia into large Gilt issuance. Low coupon Gilts should be tax-efficient for retail investors and may outperform vs. high-coupon ones. • AU: We see inflationary pressures in AU compressing geographic spreads to US. We like a box trade (flattener in AU vs steepener in US).
Vol	• US: Vol will drift lower in 2023, to flat levels of left vs right c.110bp by 1Q23, and cheap left side vs right by end-23 c.100bp • EU: We are long 1y1y vol vs the US, expecting the theme of an ECB pivot .to be challenged in coming months Instead, we position for lower vol in forward space, and 10y tails. In vega, space, we believe the effective start of the transition to a new pension system in the Netherlands should provide support for long-dated vol in 30y tails.

Source: BofA Global Research

BofA GLOBAL RESEARCH

Our key forecasts

Exhibit 2: Our key forecasts
Global forecasts

% EoP	2019	2020	2021	YE 2022	Q1 23	Q2 23	Q3 23	YE 2023
Fed Funds	1.50-1.75	0.00-0.25	0.00-0.25	4.25-4.50	5.00-5.25	5.00-5.25	5.00-5.25	4.75-5.00
10-year Treasuries	1.92	0.92	1.51	4.00	4.00	3.75	3.50	3.25
ECB refi rate	0.00	0.00	0.00	2.50	3.25	3.75	3.75	3.75
10y Bunds	-0.19	-0.57	-0.18	2.40	2.40	2.20	2.10	2.00
BoJ	-0.10	-0.10	-0.10	-0.10	-0.10	-0.10	-0.10	-0.10
10y JGBs	-0.02	0.02	0.07	0.25	0.25	0.25	0.15	0.15
BoE base rate	0.75	0.10	0.25	3.50	4.25	4.50	4.50	4.50
10y Gilts	0.82	0.19	0.97	3.75	4.00	4.00	4.00	4.00
RBA cash rate	0.75	0.10	0.10	3.10	3.60	4.10	4.10	4.10
10y ACGBs	1.37	0.97	1.67	3.90	4.00	4.20	4.50	4.50

Source: BofA Global Research

BofA GLOBAL RESEARCH

What we like right now

Exhibit 3: What we like right now
Global views

AMRS	We see risks of higher front-end rates due to inflation uncertainty, but slowdown concerns should keep longer dated rates more anchored
EMEA	In EUR, we are paid Sep-23 €str, long Jun23 BTF vs €str, in 2y fwd 10s30s steepeners, long 10y BTPei breakevens, long 1y1y vol vs the US and short 1y forward 1y10y vol
APAC	In AU, we favor paid Jun RBA OIS positions, and 2s10s flatteners vs the US. In JP, we like 10s20s TONA flatteners and JGBi real yield longs

Source: BofA Global Research; For a complete list of our open trades and those closed over the past 12 months, please see below.

BofA GLOBAL RESEARCH

The View

Ralf Preusser, CFA
MLI (UK)
ralf.preusser@bofa.com

The year that will be

A year ago, we were short rates, real rates, short the periphery, and long volatility. We held flatteners in USD, steepeners in EUR, before turning bearish the EUR front-end. We were right about the direction, but vastly underestimated the size of the moves, missed the initial underperformance of Bunds vs USTs, and tried to fade the sell-off in US rates too early (see Global Rates Year Ahead 2022, 21 Nov 21 and Global Rates, FX & EM Year Ahead 2022, 21 Nov 21). Today, the macro outlook is considerably more clouded.

Getting inflation wrong means getting the rates call wrong

Consensus forecasts and our economists' base case see rising recession risks, inflation normalizing and policy rates returning to neutral from above. This would argue for a bullish bias on bonds, and an outperformance of US rates cross market. However, terminal rates are likely underpriced in EUR and AUD. The uncertainty surrounding the outlook for inflation and fiscal policy remains sizeable. And so are therefore the risks to this central scenario. Relative to consensus and our forecasts, stickier inflation is the biggest risk, though we are concerned that the concerted nature of monetary policy tightening ends up generating larger multipliers, even without the risk of additional fiscal tightening.

Fundamentals may matter much less than in the past

The rates market also faces more structural challenges: The repricing of global rate markets will see deleveraging across the financial system, both voluntary and involuntary. The combination of quantitative tightening and on-going large government funding needs sees a significant increase in the amount of government bonds to be absorbed by the private sector. The performance of government bonds as a hedge to risk assets has been challenged. FX reserve managers' behaviour is changing and an eventual BoJ decision on the future of yield curve control presents a potential VaR shock for global rate markets. All of this in an environment where liquidity in government bonds has deteriorated across all regions. We discuss these challenges in a series of special topic pieces following the main rates sections across currencies below.

How to position in this challenging rate market

Markets whipsawing through the drafting process of a year ahead piece is always a fun exercise, even without the uncertain macro outlook and the market structure challenges we face this time round. However, there are high conviction views to us:

- US real yields offer value both outright and cross-market – real yields should drop materially if our economists are right, and EUR rates look too expensive cross market in a global bond market rally.

- In that environment, rate vol should correct lower. We like 1y2y receiver ladders in the US and express the short view more medium term in EUR, selling 1y fwd 1y10y vol.

- Terminal rates are likely underpriced especially in EUR and AUD – we are short the front-end in those markets and see value in AU flatteners both outright and vs US.

- Inflation persistence is the key risk to this core conviction. Being long real rather than nominal yields offers some carry protection, being short the EUR front-end, and long 1y1y EUR vol vs US vol are also hedges of sorts. But we see value in BTPei breakevens, UK breakeven flatteners and JGBi real yields as explicit hedges against sticky inflation.

- Supply will pick up meaningfully in Europe, both in absolute terms and relative to the US. We are short Gilts on ASW and short 10y DBRs vs 5y USTs on ASW.
- EUR supply picking up should also help spread decompression, we see risks to the periphery and look for an outperformance of OATs vs Bonos.
- In the US, bill supply drives the lack of bond supply in part, we short bills vs SOFR.
- In the Euro Area (EA), risks are skewed the other way owing to likely change in ECB remuneration of non-monetary policy deposits – we are long BTFs vs Estr.
- YCC changes are not our central scenario, but 10y-20y TONA flatteners offer a cheap (carry) opportunity to hedge the risk

Rates – US

Mark Cabana, CFA
BofAS

Meghan Swiber, CFA
BofAS

Bruno Braizinha, CFA
BofAS

Ralph Axel
BofAS

- US nominal & real rates headed lower in '23, esp around time of last Fed hike
- UST curve to steepen, vol lower, front-end spreads tighter, long end spreads wider

Steep landing: lower rates & steeper curve

Macro uncertainty to decline in '23. Lower uncertainty in our forecasts because: slower pace of Fed hikes / eventual pause, falling though still high inflation, softening labor market, USTs regaining their risk-off hedge value with increased demand. Rates to move past their peak & decline in '23, vol to drop, real rates to fall, spread curve likely steeper.

Our year-ahead trades: duration = cautious near term, constructive medium term; curve 2s10s curve steeper near last Fed hike; front end = SOFR/FF tightening with supply wave; TIPS = long 30Y real rates; vol = 1y2y receiver ladders; spreads = wider long end.

Less uncertainty => lower volatility

We are uncertain about '23, but less uncertain than in '22. Lower uncertainty stems from long-awaited progress in the Fed's inflation fight and early signs of labor cooling. We also take confidence in broader signs of macro moderation: US housing standstill and falling prices, tighter US lending standards, & slower global growth. Volatility should fall.

Reduced uncertainty and lower volatility should make rate outcomes more symmetric. In '22 rates were clearly headed higher, though the magnitude and speed was surprising. In '23 rates will likely be headed lower, though the move will require further labor market softening and may not occur until later in 2023. Risks to the outlook are more balanced.

Forecasts: Fed successful, but inflation may be sticky

Our rate forecasts by end '23 call for 2y & 10y UST each at 3.25% (Exhibit 6). We expect the UST curve to dis-invert and move towards a positive slope in '24. These forecasts are based on our US economist forecasts but reflect stickier inflation risk.

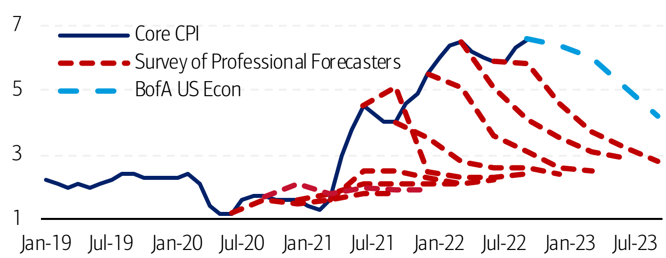
Exhibit 4: Economics and rates forecasts
Bullish rates consistent with expectations for lower inflation

		1Q23	2Q23	3Q23	4Q23
Real GDP	BofA	-1.0	-2.0	-1.5	1.0
	Consensus	-0.1	-0.1	0.6	1.0
UE Rate	BofA	3.7	4.2	4.8	5.3
	Consensus	4.0	4.2	4.5	4.5
Core PCE	BofA	4.5	4.1	3.7	3.1
	Consensus	4.3	3.8	3.3	3.0
10Y Rate	BofA	4.00	3.75	3.5	3.25
	Consensus	3.83	3.72	3.59	3.44

Source: BofA Global Research, Bloomberg

BofA GLOBAL RESEARCH

Exhibit 5: Core CPI, survey measures of expected CPI, BofA forecast (%)
Forecasters have consistently estimated a rapid return towards 2% inflation



Source: BofA Global Research, Bloomberg

BofA GLOBAL RESEARCH

US base case: our US economists expect Fed terminal to reach 5-5.25% in Mar '23. This is expected to drive a mild recession, steep job losses that push U3 from 3.7% to 5.5%, moderating inflation and Fed rate cuts in Dec. We see risks to stickier inflation and more economic momentum that might keep the Fed from cutting in '23 (Exhibit 5). If sticky inflation = rates > our forecasts.

Fed QT is expected to continue through '23. We expect the Fed will stop QT if they are cutting rates; the BofA base case of Fed cut in Dec '23 would see QT end in Jan '24. Funding pressures are unlikely to be severe enough to prompt early QT end in '23.

A slowing economy, eventual Fed hiking pause, and lower vol should support UST demand. We expect the supply/ demand balance to improve in 2023 and support the rally that we reflect in our US rates forecasts into Q2. Net coupon supply to the public should decrease and we expect more of a bid from end users on concrete signs of an economic slowdown. For more detail see: UST demand in 2023: I want you back.

Exhibit 6: BofA rate forecasts for '23 (%)

BofA forecasts are slightly above forwards near term, but bellow forwards medium term (3.25% 10yT by end-'23)

	1Q23	2Q23	3Q23	4Q23	4Q24
2y Govt	4.50	4.25	3.75	3.25	2.75
5y Govt	4.25	4.00	3.65	3.25	3.00
10y Govt	4.00	3.75	3.50	3.25	3.25
30y Govt	4.10	3.85	3.65	3.40	3.50

Source: BofA Global Research

BofA GLOBAL RESEARCH

Exhibit 7: How far before peak FF does a 10y short outperform fwds?

10y short less reliable closer to ff peak

Peak ff date	3m10y vs realized	Short 3m pre-ff peak?	6m10y vs realized	Short 6m pre-ff peak?	1y10y vs realized	Short 1y pre-ff peak?
Feb-95	-0.79	no	N/A	N/A	0.74	yes
May-00	-0.14	no	0.02	yes	0.53	yes
Jun-06	0.28	yes	0.73	yes	1.12	yes
Dec-18	-0.40	no	-0.23	no	0.15	yes

Source: BofA Global Research, Bloomberg

BofA GLOBAL RESEARCH

Trades in '23: +ve duration, steeper curves, 1y2y receiver

We discuss our favorite rate expressions across our major coverage areas:

Duration: we expect rates to realize well below forwards by end '23 (Exhibit 6). Near term, we recommend clients remain underweight front end and neutral back end. We like fading the degree of cuts priced in 2H23 and think that terminal has room to re-price higher. More data is needed to justify Fed pause (another soft CPI, NFP miss, etc). Medium term, we are constructive duration with economic slowdown and end to hikes.

When to get long? Buy duration after last Fed hike (BofA baseline = last hike in Mar '23); see: History says buy bonds close to last hike. Leaning long is historically attractive 2-3m before the last Fed hike. Our forecast for a final hike in March implies more conviction in a long duration bias early next year, assuming jobs slow as we expect.

Curve: the curve should steepen in '23, most likely bull steepen as the Fed cuts to offset a weakening labor market. However, the curve could modestly bear steepen as well if the Fed prematurely turns dovish or if there is a UST liquidity event. We suggest waiting for more clarity the last Fed hike is near before entering outright steepeners.

Vol: vol will fall. The left side of the grid to underperform vs the right side to flat levels by end-1Q23 and trade cheap to the right side by year end (around 100bp or lower for 1y1y). Vol trades: receiver ladders in frontend/belly, US vs EUR receivers, short left vs right side vol, 2s10s caps/cap spreads & right side fwd vol (long vega vs intermediates).

Real rates: we are constructive real rates on the expectations of: (1) economic downturn, which will see back end real rates drop; (2) sticky inflation, which should be positive for carry and skew risk towards higher breakevens on a premature Fed pivot.

Front end: rates should be moving higher with bills & CP cheaper. On bills, eventual debt limit resolution is expected to unleash a tidal wave of bill supply: 1y SOFR/FF to remain stable or wider before resolution but tighten meaningfully after. On MMF reform, we expect prime outflows, increased bill demand & CP cheapening; 3m L-OIS could increase 3-7bp.

Spreads: we expect a steeper spread curve. Front end spreads should tighten with bill supply late in '23 while long end spreads should benefit from lower coupon supply and improving UST demand. Market structure changes may also help the performance of long end USTs, especially if Treasury proceeds with a buyback plan. If Fed QT ends in '23 would be very supportive of long-dated spreads. US dollar stabilization also likely to benefit belly spreads, and potentially bank demand if loan growth slows.

Bottom line: rates likely headed lower in '23 (esp real), curve steeper, vol drop, spread curve steeper (front end tighter, back end wider).

Rates – EU

Sphia Salim
MLI (UK)

Ronald Man
MLI (UK)

Erjon Satko
BofASE (France)

Mark Capleton
MLI (UK)

- Terminal rate is too low in EUR. Forwards repricing higher to keep curves flat in Q1.
- Medium-term market will have to price cuts, which will deliver rates below forwards in H2, an outperformance of 5y & support a Dutch PF reform led 10s30s steepener.

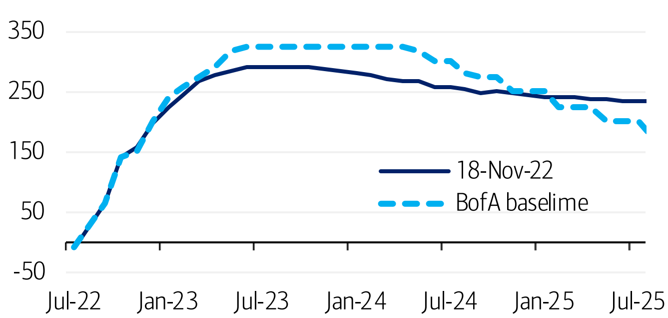
Extent of ECB tightening in 2023 still under-priced

As we head into 2023, our baseline is for the pace of ECB rate hikes to slow, supported by declining inflation, negative growth in 4Q22-1Q23, and a tightening in financial conditions (eg a TLTRO-led reduction in the ECB's balance, more bond supply to be absorbed by the private sector, and a more cautious approach to bank lending). This is also the market's baseline, as portrayed by the pricing of an €str rate increase of 58bp in Dec, 40bp in Feb, and 30bp in Mar, and a drop in headline inflation to 2.7% by Dec-23.

Where we differ from the market for the next 3-6 months is on:

1. **The terminal rate**. Our economists' baseline is that it will reach 3.25%, with risks of a tightening to 3.5% if the ECB hikes by 75bp in Dec of 50bp in Mar (vs peak €str currently priced sub 3% - Exhibit 8). Indeed, our call on the terminal is predicated on the idea that it will be hard for the ECB to stop hiking in 1H23 with inflation still over 6% by mid 2023, making the terminal dependent on the size of the next hikes.
2. **The level of certainty around the path of rates**: The market prices in already that the envisaged slowdown in the pace of hikes corresponds to a central bank pivot that shrinks the uncertainty around short rates in 2023. We believe the collapse in short-dated implied volatility has been too extreme in the top left, with many external uncertainties risking to challenge a clear pivot from the ECB.
3. **The tightening to come in financial conditions**: We believe 10y rates may not have peaked yet, contrary to what market forwards imply. Further upward pressures on rates can materialise as a result of the highest net government bond supply on record, a move towards Quantitative Tightening, and tighter bank lending conditions as TLTROs are repaid and risk appetite declines. Demand for bonds can materialise in the very long-end initially, but in the 10y it may require the ECB to under-deliver.

Exhibit 8: Market implied path of 1m €str vs our economists' baseline
Even as it includes a risk premia, the peak in €str is priced below our baseline



Source: BofA Global Research

BofA GLOBAL RESEARCH

Exhibit 9: EUR rates forecasts
Our forecasts reflect our economists' call for terminal depo of 3.25%

	Current	YE 22	1Q23	2Q23	3Q23	YE 23	YE 24
3m Euribor	1.80	2.50	3.10	3.40	3.40	3.40	2.60
2y BKO	2.10	2.50	2.50	2.20	2.10	1.90	1.20
5y OBL	1.98	2.40	2.45	2.15	1.95	1.60	1.50
10y DBR	2.02	2.40	2.40	2.20	2.10	2.00	1.90
30y DBR	1.92	2.25	2.30	2.10	2.05	2.05	2.20
2y swap *	2.87	3.35	3.40	3.10	2.90	2.65	1.80
5y swap *	2.73	3.20	3.20	2.90	2.65	2.25	2.00
10y swap *	2.76	3.15	3.10	2.85	2.70	2.55	2.40

Source: BofA Global Research. Current as of 17 November 2022. (*) swaps vs 6M Euribor

BofA GLOBAL RESEARCH

This leaves us with a bearish rates view heading into 2023. We currently express it in the front-end, where the market can price in a higher terminal and higher risk premia. More specifically, we are paid Sep23 €str (entered at 2.58%, current: 2.89% target: 3.5% stop: 2%) and hold a risk-reversal in 3m2y to leverage the recent cheapening of the payer skew (see Volatility EU)

The risk to the front-end short is that the tightening in financial conditions stemming from the ECB's balance sheet reduction (expected at 21ppt of GDP from post-covid peak to end of 2023) is large enough to stop the hiking cycle in H1.

We expect rates to deliver below the forwards by the middle of the year, as an on-hold ECB triggers the pricing of rate cuts over the following year, and more so than currently embedded in the curve. Inflation should continue to drift lower. With no sign of meaningful wage growth (ie not much above 4%), the market likely will focus on the risks that inflation drops below 2% in 2024/25.

Curve: 5y outperformance and long-end steepening.

We expect the 2s5s curve to remain in a flattening trend throughout 2023 (initially bear flattening before bull flattening). The outlook for the 2s10s curve is more mixed and complex in our view. We expect it bear flatten still into end of 1Q23 (more so than implied by the forwards), before starting to bull steepen from 2Q23. Traditionally, the curve can bull flatten when the CB turns on hold, but the fact that the ECB will hike in restrictive territory will challenge that (the market can price in a rapid return to neutral). Also, quantitative tightening, and the likely resilience of 5y5y breakevens should support term premia and the idea that neutral rate is indeed close to 2%.

We base our 10y swaps forecasts on the assumption that the market will continue to price in a peak 1y Euribor in the 2-3% range, around the 8-12y forward part of the curve.

We expect therefore the 5y sector to outperform on the curve and position for this with by **receiving the belly in 1y fwd 2s5s10s** (entry: -15.8bp, target: -50bp, -stop: 7bp). The risks to the trade include more paying the 5y as some financial actors still adjust to a higher terminal rate, and a more persistent inflation that prevents the pricing of cuts.

We also look for the 10s30s curve to steepen as rates rally and the transition to a new Defined Contribution system in the Netherlands (expected from Jul-23) reduce the long-end receiving in swaps. Given the risks of a bear flattening as rates sell-off near term, **we chose to express the view via a costless 2y fwd 10s30s bull steepener** (long €100mln 2y10y ATM receiver, short €41mln 2y30y ATM+9bp receiver). We target €400K with a stop at -€200K. The vol pick-up is negative (entering at steeper than forwards), but the position still carries positively. The risk is continued 30y receiving in a rally.

Exhibit 10: BofA forecasts: implied swap curve levels

We expect 2s5s curve to flatten throughout 2023, but 2s10s should pivot from flattening to steepening as the ECB approaches the last hike. We kook for the belly of 2s5s10s to richen as cuts are priced

	Latest	YE 22	Q1 23	Q2 23	Q3 23	YE 23	YE 24
2s5s	-14	-15	-20	-20	-25	-40	20
2s10s	-11	-20	-30	-25	-20	-10	60
2s5s10s	-17	-10	-10	-15	-30	-70	-20

Source: BofA Global Research, Latest as of 17-Nov-22

BofA GLOBAL RESEARCH

Exhibit 11: BofA forecasts: implied bond curve levels

We expect 2y-5y curve to flatten, but limited moves in 2y-10y as a relative richening of Schatz spreads vs Bund spreads caps the flattening, We look for 10y-30y curve to steepen somewhat as rates rally in 2H23, & more after.

	Latest	YE 22	Q1 23	Q2 23	Q3 23	YE 23	YE 24
2y-5y	-12	-10	-5	-5	-15	-30	30
2y-10y	-8	-10	-10	0	0	10	70
10y-30y	-9	-15	-10	-10	-5	5	30

Source: BofA Global Research, Latest as of 17-Nov-22

BofA GLOBAL RESEARCH

The tale of two-halves impacts view on vol & spreads

It is hard not to project lower volatility in 2023. However, we see the recent collapse in implied vol as premature for short tails. In vol, like in rates, we believe the idea of a CB pivot can be challenged in coming months, and project vols to drop later in the year when the ECB nears the end of the cycle (Vol EU). The outlook for volatility is particularly important for periphery spreads and swap spreads, especially the later where the correlation vs implied vol has remained strong throughout this year (Spreads EU II)

We are bearish on periphery spreads for Q1. Higher supply and a weaker macro will weigh in the context of high / rising core yields. A rates rally from Q2 could mechanically support the periphery, but the start of QT and only a modest growth rebound should contain the tightening (Spreads EU). Swap spreads could be torn between, on the one hand, positive net supply and TLTRO repayments that improve the cash/collateral imbalance, and, on the other, the change in the remuneration of non-monetary policy deposits at the ECB, which will aggravate the imbalance (more in Spreads EU II).

Rates – UK

Agne Stengeryte
MLI (UK)

Mark Capleton
MLI (UK)

- Another month, another Budget, another year to ask 'who will buy all the Gilts?'
- We stay short 10y Gilts on ASW ahead of the upcoming surge in Gilt supply.

Who will buy all the Gilts in 2023/24?

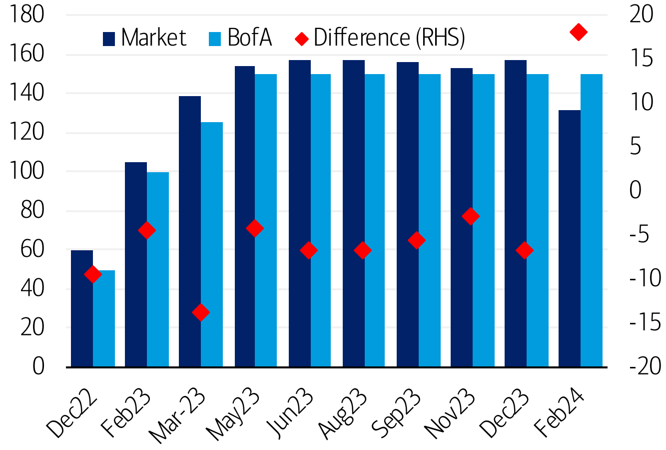
Front-end: Opportunity to receive

As outlined in Front-end – UK, we expect 2022 to come to an end with Bank rate at 3.5% and the Bank of England (BoE) hiking cycle to conclude, after another 100bp of hikes, at 4.5% in May 2023. Looking at the Monetary Policy Committee (MPC) term structure, what continues to stand out to us is the incremental change of some 35bp for Bank rate hike pricing at the March 2023 meeting – we favour receiving it (Exhibit 12). Further out, with Gilt issuance and BoE Gilt sales resulting in record-high Gilt supply net of BoE in the next fiscal year, the UK market will have to become more like the other major government bond markets, in our view. Growing the T-bill market over time into something much more substantial and skewing issuance much shorter on the curve are two ways we expect that to happen.

Duration: Bearish relative to forwards and other markets

We stay bearish rates relative to the forwards and other markets, emphasizing 1) the increasing dependency on the kindness of strangers (the need for overseas investors to buy even more Gilts than they have been buying), 2) the negative feedback loop between an increasing shortfall in the Bank of England (BoE) Gilt portfolio and the deficit-increasing losses crystalized on sales and 3) a burgeoning current account deficit with a deteriorating International Investment Position (IIP). These are serious macroeconomic fragilities that the UK will continue facing next year. Investors do not disagree with our view, with the FX and Rates Sentiment (FXRS) Survey indicating Gilt positioning has remained short for a while now (Exhibit 13).

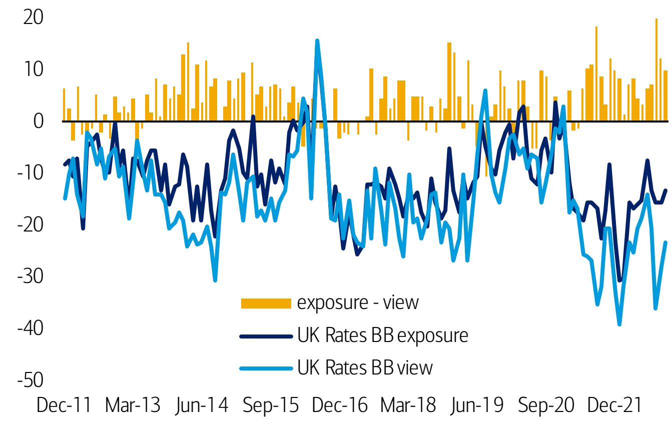
Exhibit 12: MPC-dated Sonia Bank Rate hike exp. vs. BofA f'casts, bp
We think market expects too large BoE Bank Rate hike in March 2023



Source: Bloomberg, BofA Global Reearch

BofA GLOBAL RESEARCH

Exhibit 13: Duration exposure and view: UK
BB is the Bull-Bear Index for exposure and view. It weights responses to create an index ranging from -100 to + 100, zero representing neutral



Source: BofA Global Research FX and Rates Sentiment Survey

BofA GLOBAL RESEARCH

Curve: Long-end Gilts – mystery to the market
As the dust settles following the Government's credibility crisis that culminated in the fiscally conservative duo of Sunak and Hunt taking the reins, the 1y Sonia gap term structure is almost back to where it was pre-Truss, with a marginally higher peak rate and slightly less inversion towards the belly of the curve (Exhibit 14). We expect the belly of the swap curve to underperform when the BoE is done hiking (Exhibit 15). In Gilts, the long-end is stabilising after acute curve volatility during late September's Liability Driven Investment (LDI) meltdown. We see some flattening in 10s30s due to an expected skew shorter in Gilt supply and with the return of LDI hedging after the turmoil.

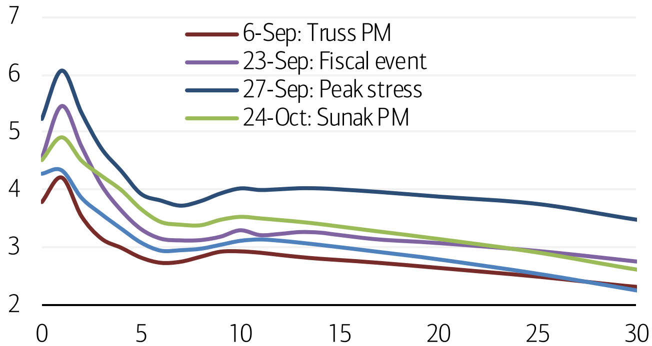
Spreads: Gilts in the belly of the curve to underperform vs. Sonia
In Spreads – UK section, our forecasts show Gilts in the belly of the curve underperforming Sonia the most. At the front-end, we do pencil in some cheapening of Gilts on ASW, but repricing might take some time with Gilt issuance skew shorter potentially more pronounced next fiscal year. Investors are unsure of what's next for the long end ASWs. In our latest FXRS Survey, 34% expect long-end Gilts to cheapen, either due to Gilt supply pressures or as pension fund demand falls given deleveraging pressures. 10% expect the long-end to richen, either as pension demand rises on improving solvency or as received swap positions are unwound. A mammoth 56% think something else, or don't know (we presume it's the latter). We discuss long-end dynamics in Pensions section. Finally, we do not give tax advice and we do not give any investment advice for UK retail investors, and nothing in this note should be construed as such, but we note that the tax efficiency of low-coupon Gilts could attract retail, driving a swap spread RV wedge between neighbouring Gilts with different coupons.

Supply – demand: Another year to ask 'who will buy all the Gilts?'
In Supply – UK, we wonder who will buy all the Gilts coming down the pipe next year. The big surprise from the Autumn Statement was the DMO's Illustrative Gross Financing Requirement (IGFR) showing £305.1bn next fiscal year, £65bn higher than we were expecting. Not all of that will be done in Gilts, of course, but the Bank of England (BoE) will also be selling - we assume at the current run rate of £80bn per year. Also stretching into the 2023/24 fiscal year the Bank intends to dispose of the £19.3bn Gilts recently acquired through its emergency purchases. We stay short 10y Gilts on ASW ahead of the upcoming surge in Gilt supply.

Inflation: persistence pays

In the Inflation-UK section, we return to the theme of inflation persistence, which we believe is under-priced in the RPI curve. Yes, the 1y4y/5y5y RPI curve has inverted recently, but not enough to factor in RPI reform due in early 2030 (in the middle of the 5y5y span), let alone what we regard as a strong likelihood that problematic inflation continues well beyond the start horizon of the 1y4y period.

Exhibit 14: Market implied path of 1y Sonia gaps, %
Almost back to pre-Truss level and shape



Source: BofA Global Research

BofA GLOBAL RESEARCH

Exhibit 15: BofA Gilt and Sonia yield forecasts, %
We now expect 10y Gilts at 4%

	Gilts			
	1Q23	2Q23	3Q23	4Q23
2y	3.75	3.75	3.50	3.25
5y	4.00	4.25	4.25	4.25
10y	4.00	4.00	4.00	4.00
30y	3.75	3.75	3.75	3.75
	Sonia			
	1Q23	2Q23	3Q23	4Q23
2y	4.50	4.50	4.25	4.00
5y	4.25	4.25	4.25	4.25
10y	3.75	3.75	3.75	3.75
30y	3.50	3.50	3.50	3.50

Source: BofA Global Research

BofA GLOBAL RESEARCH

Rates – AU

Oliver Levingston
Merrill Lynch (Australia)
oliverllewellyn.levingston@bofa.com

- Our economists' above-consensus inflation and RBA forecasts leave us bearish the front-end.
- We like curve flatteners both outright, and cross-market.

Rising inflation and a wages surprise in 2023/24

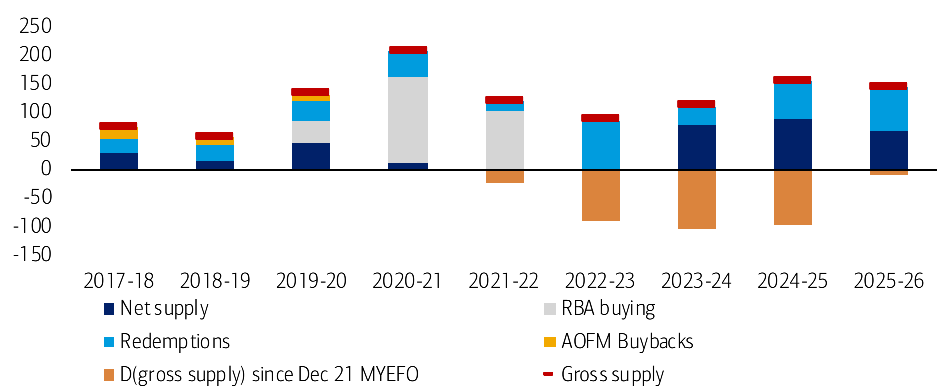
Our economists are above consensus on wage growth and inflation in 2023 and see five consecutive Reserve Bank of Australia (RBA) rate hikes taking the cash rate to 4.1% by May 2023. Wages should accelerate as the lagged effects of historically low unemployment in 2022 start to be felt in 2023. Tighter financial conditions should dampen consumption leading to softer GDP prints but expansionary fiscal policy should continue to provide protection against domestic and global headwinds.

The RBA's downshift to 25bp hikes in October 2022 will prolong the rate hike cycle, in our view. We expect headline and especially core inflation to remain higher than forecast in 2023. Inflation should gradually decelerate and the RBA's stated concerns about the impact of rising rates on household interest payments will likely prompt a pause in the rate-hike cycle May 2023 – just before fixed-rate mortgage resets peak in June 2023. We then expect the RBA to remain on hold for the balance of 2023 and 2024 as the road back to target inflation takes longer and wage growth surprises to the upside but softer GDP prints support the RBA's patient approach to returning inflation to target.

Lower supply, flatter curves

We expect the curve to flatten into mid-year terminal gets repriced higher and the market braces for the impact to households of fixed-rate mortgages settled during 2020/21 resetting at higher, variable rates. Despite the global and domestic headwinds for households and growth, we remain sanguine on the sustainability of higher rates in Australia over 2023/24 and see the curve staying flat on rising recession fears.

Exhibit 16: Commonwealth Government Bond Supply
Budget upgrades reduce the projected supply of ACGBs



Source: AOFM, BofA Global Research

BofA GLOBAL RESEARCH

After consolidating over 2022, a positive boost to budget forecasts from soaring commodity prices and higher-than-expected tax receipts reduce the pressure on policymakers to halt or reduce deficit-financed public spending (see Exhibit 16). At the same time, a long period of low unemployment is likely to have a more robust effect on wages as a tighter labour market becomes the norm. We see both dynamics as providing meaningful protection from downside risks as higher wages partly offset the dampening effect of rising loan payments on consumer demand, reducing the risk of a housing-led downturn, while positive budget reports provide fiscal policymakers with room to fund their existing commitments and respond to future shocks with new spending. Upside risk could come from a more substantial relaxation of China's public health restrictions which could boost Australian GDP and give the central bank space to hasten its rate hikes against a positive economic backdrop.

We like to pay June 2023 OIS which is currently pricing a cash rate of 3.68% against our forecast of 4.1%. Enter at 3.68%. Target 4.2%. Stop at 3.5%. Risks to the trade are an increasingly dovish RBA that overweights headwinds to housing, growth and consumers.

Curves

We prefer 2s-10s curve flatteners as the economy transitions from mid-cycle to late-cycle. Enter at 54bps, targets 0bps and stop at 69bps. Risk is from the RBA pausing or moving too slowly in the face of accelerating inflation and investors demanding a higher term premium at the long end.

Geographic spreads

We see the AU (positive) and US (inverted) 2s-10s curves converging as inflation prints and central banks in each country move in opposite directions. Recent signs of disinflation in the US (downside surprises in CPI/ PPI) contrast with the RBA's upgrade to its forecast for peak inflation and a surprise to the upside on CPI in October 2022. We find an expression of this view in a box trade (flattener in AU vs steepener in US). Enter at 122bps. Target 0 bps. Stop at 160bps. Risks to the trade come from offshore where currency markets could reverse current inflation trends (via a weaker USD). Australian tradables and headline inflation is likely to print lower on movements in currency and energy markets and our forecast is for core inflation to remain stubbornly high in 2023.

Rates – JP

Tomonobu Yamashita
BofAS Japan
tomonobu.yamashita@bofa.com

Shusuke Yamada, CFA
BofAS Japan
shusuke.yamada@bofa.com

- BoJ unlikely to adjust policy within 2023, but change in governor could strengthen speculation on BoJ rate hikes in 1H23
- JGB yields to edge down from 2H CY23 on potential dovish pivot by major central banks; estimate end-2023 10yr yield of 20bp

BoJ leadership changer

The main theme for the JGB market in 2023 will likely be the change of BoJ governor in April. We think the BoJ will maintain current monetary policy in the near term if either deputy governor Masashi Amamiya or former deputy governor Hiroshi Nakaso (the front-running candidates) succeed incumbent Haruhiko Kuroda, but we think JGB market concerns about a change in policy will persist through April 2023. Unless the BoJ hikes rates under the new governor, we think JGB yields could gradually fall through end-2023 given the potential for a dovish pivot by major central banks. Our end-2023 estimates are 20bp for the 10yr yield and 140bp for the 30yr yield.

Exhibit 17: Our JGB yield forecasts
Estimate 10yr JGB yield of 20bp at end-2023

(%, EOP)	1Q23	2Q23	3Q23	4Q23	1Q24	2Q24	3Q24	3Q24
3month TORF	-0.03	-0.03	-0.03	-0.03	-0.03	-0.03	0.02	0.02
2y Govt.	-0.05	-0.05	-0.05	-0.05	-0.05	-0.05	0.25	0.25
5y Govt.	0.10	0.05	0.05	0.05	0.05	0.10	0.40	0.40
10y Govt.	0.25	0.20	0.20	0.20	0.20	0.25	0.70	0.70
20y Govt.	1.10	1.00	1.00	1.00	1.00	1.15	1.50	1.50
30y Govt.	1.50	1.40	1.40	1.40	1.40	1.50	1.85	1.85
40y Govt.	1.75	1.65	1.65	1.65	1.65	1.75	2.10	2.10
2y Swap	0.10	0.05	0.05	0.05	0.05	0.10	0.45	0.45
5y Swap	0.30	0.20	0.20	0.20	0.20	0.30	0.65	0.65
10y Swap	0.60	0.40	0.40	0.40	0.40	0.60	1.20	1.20

Source: BofA Global Research

BofA GLOBAL RESEARCH

Duration: Bearish pressures through Apr-Jun 2023

Our JGB yield forecasts are lower than forward rates. The 1yr10yr forward rate has remained above 0.25% to factor in a potential change in the BoJ's YCC policy. However, we think either of the front-running candidates to succeed Mr. Kuroda when he steps down as BoJ governor in April 2023 would maintain current monetary policy. We also think bearish views on JGB yields could recede from Apr-Jun 2023 given the potential for major central banks' rate-hiking cycle to peak around this time. However, external conditions could sustain expectations for the BoJ to normalize policy.

Curve: modest-bull flattening from Apr-Jun 2023

We expect the 10yr30yr JGB curve to modestly bull-flatten from Apr-Jun 2023. This reflects our view that Japanese real-money investors will increasingly shift from foreign bonds to JGBs given considerable uncertainty about macro policy in key overseas markets. We estimate a ¥50bn increase in monthly 40yr JGB supply from April 2023, but expect demand to outweigh supply, resulting in a modest decline in superlong yields. However, we do not expect front-end yields to continue falling given our view that the -0.1% rate applied to some BoJ current account deposits represents the de facto floor. In our risk scenario, which posits rising expectations for the BoJ to normalize policy, we would expect the JGB curve to bear-steepen (but TONA swap curve would bear-flatten) as rising superlong JGB yields coincide with limited rise in 10yr JGB yields.

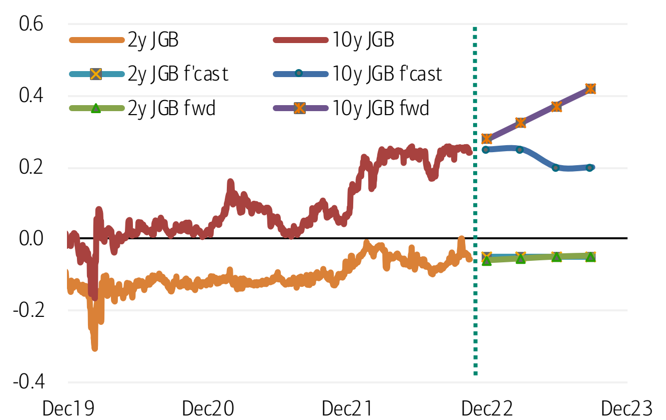
Spreads: Set to narrow from Apr-Jun 2023

We estimate the 10yr swap spread (10yr TONA swap rate - 10yr JGB yield) will narrow from around 35bp at end-March 2023 to around 20bp at year-end. While the BoJ's YCC has kept the 10yr JGB yield below 0.25%, TONA swap rates (which the BoJ does not control) are likely to rise amid growing concerns about a change in monetary policy. We therefore think swap spreads are likely to widen until the change in BoJ governor in April 2023, but we expect 10yr swap spreads to gradually narrow as USD/JPY peaks and US Treasury yields fall, easing concerns about a change in BoJ policy.

Supply-demand: Depends on BoJ purchases

We expect issuance of 40yr/5yr JGBs and JGBis to increase from April 2023, nudging up gross JGB supply versus 2022. Based on gross supply, we think net JGB supply after deducting JGB redemptions (total JGB redemptions - redemptions of BoJ holdings) and the BoJ's outright JGB purchases will fall slightly in 2022 and rise slightly in 2023. However, we think upbeat demand from Japanese institutional investors will easily absorb the greater supply we expect for some maturities. We expect sizeable JGB redemptions at quarter-end to result in negative net supply (Exhibit 19). The greatest risk to our net supply outlook is the BoJ's JGB purchases. If concerns about a change in monetary policy persist through year-end and the BoJ increases its JGB purchases in response, net JGB supply could remain negative in 2023.

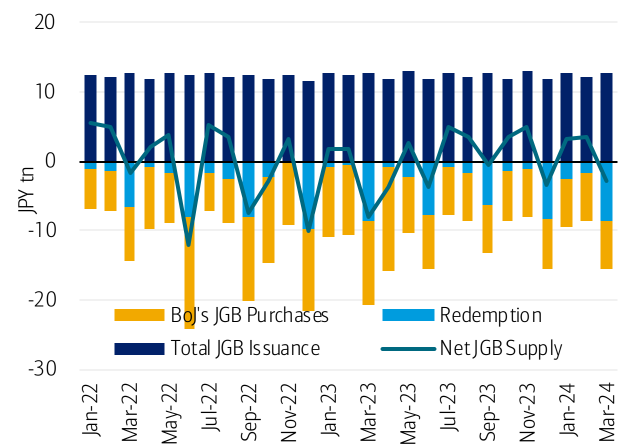
Exhibit 18: Actual and estimated 10yr JGB yields (%)
Our JGB yield forecasts are lower than forward rates



Source: Bloomberg, BofA Global Research

BofA GLOBAL RESEARCH

Exhibit 19: Actual and forecast net JGB supply
Expect positive net JGB supply except at quarter-end



Source: MoF, BoJ, Bloomberg, BofA Global Research
Note: Our estimates are from November 2022; redemption excludes BoJ holdings redemption

BofA GLOBAL RESEARCH

Inflation: we see decline in real yields

We see the potential for the 10-year JGBi yield to fall through end-2023. We expect the Japanese government's comprehensive stimulus package to support households from January to September 2023 to depress the CPI inflation referenced by JGBi, but BEI has not moved substantially even after the details of the stimulus were announced, and the results of the November JGBi auction were upbeat. Our Japan economists expect a pickup in inflation from Oct-Dec 2023 as the impact of the stimulus fades, which could also drive up Japan's BEI. We expect it to rise from around 85bp at present to roughly 110bp in Jan-Mar 2024.

Front end – US

Mark Cabana, CFA
BofAS

Katie Craig
BofAS

- 3 key front-end themes (1) Fed hikes (2) bill / FHLB supply (3) MMF reform 3.0
- Bill supply wave after debt limit to be seminal change in funding markets

US front-end in '23: hikes, supply, and reform

The 3 largest front-end 2023 themes: (1) Fed hikes (2) collateral overwhelming cash (3) MMF reform 3.0. On the Fed, we see risks terminal will be above the market: still stay underweight front-end for now. On cash / collateral, eventual debt limit resolution will unleash a tidal wave of bill supply: SOFR/FF to remain stable or wider before resolution but tighten meaningfully after. On MMF reform, we expect prime outflows, increased bill demand, and CP cheapening.

Fed outlook: risks to higher terminal, QT to keep rolling

The BofA house view is for 5-5.25% Fed terminal, slightly above current market pricing. Risks skew to stronger economy, higher Fed terminal, and pushing out of Fed rate cuts. Investors should remain underweight the front end in case more restrictive levels are needed and extend once Fed is closer to pause.

QT likely will continue in '23 and likely see liquidity drain transition from reserves to ON RRP in 2H '23. ON RRP drain likely catalyzed by large bill supply wave and bill-OIS cheapening after debt limit resolution. Fed QT to continue unless (1) US recession that requires Fed rate cuts (2) market functioning issue. Reserve scarcity unlikely until at least '24.

Supply outlook: seminal bill increase, elevated FHLBs

Bill & FHLB supply to surge in '23. We project bill supply higher by nearly +$1tn and a FHLB supply increase of +$500b-$750b or more. Debt limit resolution to be "seminal shift" in bill supply, which could see upwards of $1tn net issuance over 3-6m; the post debt limit supply surge will be catalyst for cheaper bills-OIS, tighter SOFR/FF, and ON RRP drain. FHLB supply tailwind to be slow and steady with bank competition for funds.

Three bill supply periods to know: (1) now until Feb '23, bill supply to total $300b (2) March '23 to debt limit X-date, bill supply to decline and TGA drop to increase liquidity in system (3) post debt limit supply surge, which would materially cheapen bills-OIS.

Trade recommendation: the trade for this supply surge will be tighter FF/SOFR basis. We prefer to express it as curve trade to hedge against an outright level shift and expect Nov '23 SOFR-FF basis to decline and the May '23 basis to increase. We enter this trade with May '23 at 2.5bps vs Nov '23 at 7.5bps, a slope of 5bp. We target May '23 at 3bps and Nov '23 at 2bps, so a slope target of -1bp. We put a stop at 8bp. Risks to this trade are an early end to Fed QT or later resolution of debt limit / lower bill supply.

MMF reform 3.0: prime fund outflows still likely

Money market fund (MMF) reform is set to increase prime MMF liquidity requirements and require prime institutional fund "swing pricing", a liquidity fee on these institutional funds. We expect reform will see substantial outflows from prime MMF or a voluntary closure of some funds, especially in 2H '23 (SEC reporting glitch has pushed out reform timing).

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 skew to lower end of impact if prime outflows smaller.

Bottom line: front end rates likely will be moving higher and paper cheaper in '23.

Front end – EU

Ronald Man
MLI (UK)
ronald.man@bofa.com

- For the front-end EUR rates market, 2023 likely will be characterised as a year of less deposits at the central bank and more government bond supply
- We expect euro area bills to richen vs swaps, term premium in the unsecured wholesale market to build, and repo rates to cheapen

Three themes for 2023

We believe one defining characteristic of 2023 for the front-end EUR market will be how much lower the Eurosystem's balance sheet will be when compared with recent years. This decline is expected to be driven by lower bank and non-bank deposits at the central bank. Another characteristic will be high net bond supply. We believe these two traits generate three themes for the front-end EUR market.

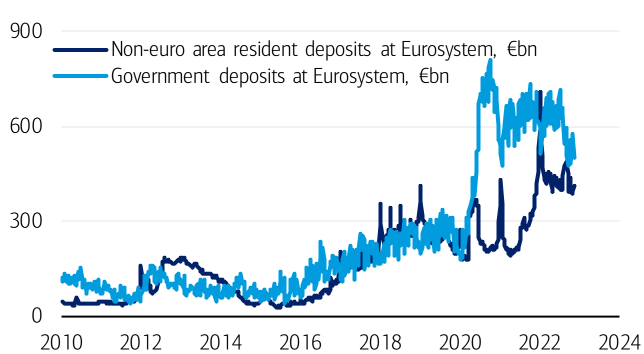
Theme 1: less government deposits at central bank = richer bills vs swaps

Euro area government and non-euro area residents collectively have c. €900bn of deposits at the Eurosystem (Exhibit 20). These deposits are currently remunerated at a rate linked to the euro short-term rate (€str) and the deposit facility (depo) rate. But after 30 April 2023, the remuneration rate on these deposits is scheduled to fall to 0% (Exhibit 21).

In a positive rate environment, we believe this change to the remuneration rate may 1) reduce bill supply: governments have a much lower incentive to roll over bills at positive yields only to deposit the cash back at the Eurosystem for 0%, and are likely to allow maturing bills to roll off; 2) raise demand for short-dated euro assets: non-euro area residents may reallocate their euro cash from the Eurosystem to search for yield in other short-dated euro assets, such as euro area bills; or they may take the euro deposits out, and convert it into foreign currency to invest in non-euro assets.

We believe this provides scope for short-dated euro area assets to richen vs swaps. We maintain our long Jun23 BTF vs €str recommendation (current: -39bp, target: -80bp, stop: -25bp). The trade would also benefit from year-end collateral scarcity pressures. One risk is ECB bill issuance, which would raise supply of short-dated euro area assets. Another risk is public sector institutions strongly supporting the repo market over the year-end turn.

Exhibit 20: Government non-euro area resident deposits at Eurosystem
Deposits are high from a historical perspective



Source: ECB

BofA GLOBAL RESEARCH

Exhibit 21: Remuneration of euro deposits at Eurosystem
Remuneration rate on gov and non-euro resident deposits to fall to 0%

Deposit type	Category	Split	Current rate	Rate after 30Apr23
Monetary policy deposits	Current account	Min reserve requirements	Depo rate	Depo rate
		Other cash	0%	0%
	Deposit facility	All cash	Depo rate	Depo rate
Non-monetary policy deposits	Government deposits	Cash	Lower of €str or depo	**0%**
	Other euro area residents	Cash	Likely 0%	Likely 0%
	Non-euro area residents	Tier 1	Linked to €str and depo	**Majority likely at 0%**
		Tier 2		
		Excess balance		

Source: BofA Global Research, ECB

BofA GLOBAL RESEARCH

Theme 2: less bank reserves = more term premium

We estimate excess liquidity in the euro area will fall to c. €3trn by the end of 2023. This will be driven by repayment and maturity of targeted longer-term refinancing operations (TLTROs), as well as the start of quantitative tightening (QT). An excess liquidity level of c. €3trn will still be meaningfully higher than pre-Covid levels of c. €1.7trn (Exhibit 22). But some banks that are less cash rich may rely increasingly more on the wholesale market for funding, especially as TLTROs mature and if the ECB does not introduce additional TLTRO operations to act as a backstop.

We believe greater reliance of some banks on the wholesale market for funding may cause term premium to build structurally. We expect the 3M Euro interbank offered rate (Euribor) fixing to widen vs 3M €str. We forecast 3M Euribor at 3.40% by end-2023, with the 3M Euribor-€str spread at c. 20bp. We see risks on both sides: new TLTROs introduced to act as backstop that could contain widening pressure on the 3M Euribor-€str spread, and a more aggressive QT profile that would increase widening pressure on the 3M Euribor-€str spread by reducing excess liquidity by more than we expect.

Theme 3: more EGB supply = cheaper repo

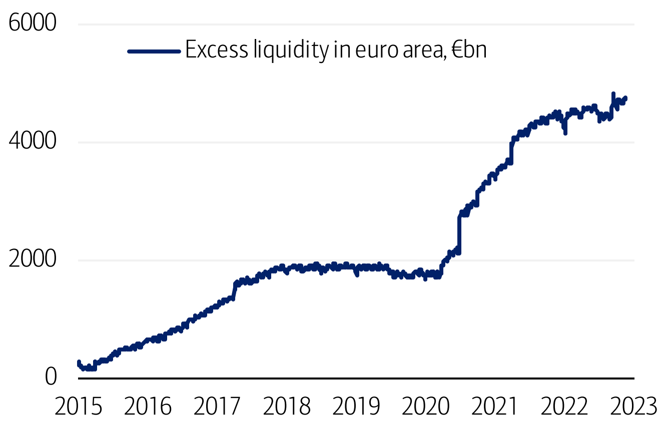
We forecast European Government Bond (EGB) plus supra supply net of coupons, redemptions, and buybacks in 2023 to be c. €400bn (see Supply-EU). This would be the highest net number on record.

In addition to net EGB supply, the repayment and maturity of TLTROs by banks will unencumber c. €400bn of EGBs (Exhibit 23). We believe more peripheral bonds have been pledged by banks to the central bank as collateral than core and semi-core bonds. This means as the EGBs become unencumbered, this will impact peripheral markets more than core and semi-core. The reduction in excess liquidity and banks' balance sheet as TLTROs mature and are repaid may also free up banks' balance sheet, causing the €str-depo spread to tighten to c. -4.5bp by end-2023.

We believe the euro repo market move towards an increasingly cash-scarce collateral-abundant environment in 2023, putting cheapening pressure on repo rates. We expect these pressures to be strongest in 2H 2023. We forecast the spread between Germany one-day general collateral (GC) and the deposit facility rate to rise to -7bp by the end of 2023. This would bring the spread, a measure of the cost of banks to facilitate GC repo, towards the lower end of its interquartile range. We also expect peripheral repo rates to cheapen relative to core repo rates, given more peripheral bonds are likely to be unencumbered from TLTRO repayments and maturity than core bonds.

Exhibit 22: Excess liquidity in the euro area

We forecast excess liquidity to fall to c. €3trn by end-2023

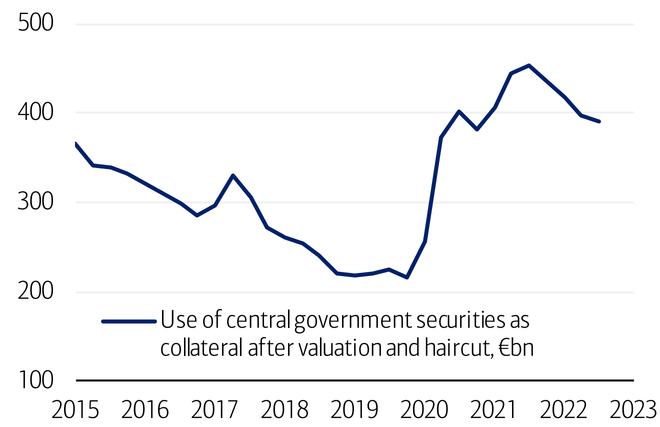


Source: BofA Global Research, ECB

BofA GLOBAL RESEARCH

Exhibit 23: Government securities pledged at Eurosystem

TLTRO repayments would unencumber collateral



Source: ECB

BofA GLOBAL RESEARCH

Front-end – UK

Agne Stengeryte
MLI (UK)
agne.stengeryte@bofa.com

Mark Capleton
MLI (UK)
mark.capleton@bofa.com

- Bank rate to peak at 4.5% in May 2023 (risks balanced). We continue receiving March 2023 MPC-dated Sonia thinking too much is priced in incrementally.

Bank of England: Risks skewed to the downside

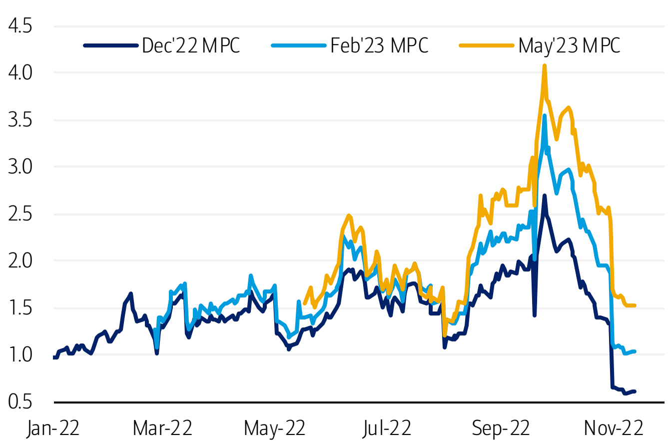
As last year's Global Rates Year Ahead went to press in November 2021, the Bank of England (BoE) had just declined to increase interest rates, having walked the market up the hill with strong hawkish communication after the previous meeting. But it did not leave Bank rate unchanged thereafter, hiking to 3% in eight consecutive Monetary Policy Committee (MPC) meetings. The magnitude of hikes accelerated also, with the latest 75bp increase in November 2022 the biggest single interest rate rise in decades.

The market pricing of Bank rate hikes was erratic, with the government credibility crisis in early Autumn resulting in as much as 400bp of additional rate hikes being priced in by May 2023 MPC (Exhibit 24). The fiscally conservative duo of Prime Minister Sunak and Chancellor Hunt calmed down the market, resulting in some 60bp of Bank rate hike priced in for December 2023 and Bank rate at around 4.6% by late 2023 (Exhibit 25).

Our Chief UK Economist Rob Wood expects 2022 to come to an end with Bank rate at 3.5% and the BoE hiking cycle to conclude after another 100bp hikes, at 4.5% in May 2023. We forecast two 25bp rate cuts in 2024 leaving the Bank Rate at 4.0% at end-2024. Risks to this forecast are balanced. On one hand, the economy may weaken more than we expect. On the other hand, the supply side may prove persistently weak meaning falling output does not ease capacity pressures much.

Looking at the MPC term structure, what continues to stand out to us is an incremental change of 35bp for Bank rate hike pricing at the March 2023 Monetary Policy Committee (MPC) meeting (Exhibit 25). We wonder if by late Q1 2023 the BoE would still be hiking in larger than 25bp increments (our own base case is 25bp). **We continue receiving March 2023 MPC-dated Sonia entered at 4.47%, targeting 4.00% with a stop of 4.70%** (see Rates – UK section of Global Rates Weekly published on 28 October). Current level is 4.38%. Risk is BoE continuing to hike in large increments.

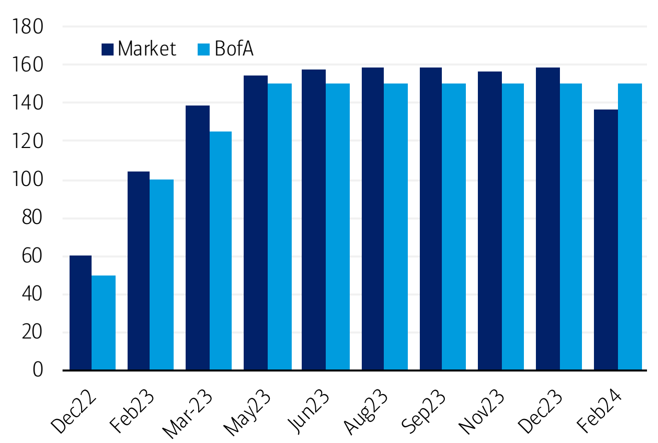
Exhibit 24: BoE MPC-dated Sonia pricing of Bank rate hikes, bp
Back from peak stress levels observed during government credibility crisis



Source: Bloomberg, BofA Global Research

BofA GLOBAL RESEARCH

Exhibit 25: MPC-dated Sonia Bank Rate hike exp. vs. BofA f'casts, bp
60bp of Bank rate hike priced in for December 2023 MPC meeting



Source: Bloomberg, BofA Global Research

BofA GLOBAL RESEARCH

Spreads – US

Ralph Axel
BofAS

- We lean towards a general widening spread outlook beyond the bills sector for 2023.

Supply outlook supports widener
On the positive side for Treasuries – the spread widening side - is a reduction in coupon supply from $1.5tn in calendar year 2022 net of Fed to $900bn in 2023 (see US Rates Viewpoint: UST demand in 2023: I want you back 14 November 2022 for more detail). This is a significant reduction in duration supply, down to an amount equal to what we saw in 2019. This reduced supply should meet increasing demand as the Fed eventually goes on hold and the market anticipates a slowing economy as per our US Economics team's forecasts. Back in 2019, spreads uniformly widened in the 2nd half of the year.

Regulatory reform on net supports widening - with caveats
Also on the positive side for Treasury debt versus swaps is the suite of ongoing efforts to increase Treasury market liquidity and resilience in stress periods. The SEC is promoting central clearing of cash and repo transactions, the Treasury Department is considering a program to purchase off-the-runs funded by on-the-run issuance, and the Fed is likely to consider capital tweaks to the supplementary leverage ratio. There are other regulatory ideas in the works, such as expanding the counterparties eligible for the standing repo facility and increasing scope for all-to-all trading. We recommended additional ideas such as CUSIP fungibility to allow dealers to net off-the-runs against on-the-runs, and also a public utility to act as a dealer of last resort. Regulatory focus on UST market resilience effectively translates into a set of programs to increase net demand for Treasuries by making them more cash-like for end users and possibly by decreasing their capital consumption for banks.

But regulatory efforts are not always supportive of widening, as things like reducing leverage or increasing reporting requirements could lead to less relative value trading and Treasury cheapening vs swaps. If leverage becomes less accessible before other reforms are made, we could see tightening spreads as RV players step back. The types of regs and their sequencing will matter for spreads in 2023, but at the moment we see reg reform as a net positive for Treasuries.

US dollar stabilization a potential benefit for spreads
Another potential positive for widening camp in 2023 could be a stabilization of the US dollar and the reduction in foreign selling which appears to be correlated to belly spread tightening. The extreme strengthening of the dollar in 2022 led to interventions from Japan but also led to selling of USTs to support non-USD currencies across other regions. The 3 main foreign selling events of the past decade were 2015-16, March 2020, and the last 18 months. Each of these periods saw a sharp cheapening of USTs vs swaps and so a reversal of these flows would clearly be one of the big potential stabilizing forces for swap spreads in 2023. This will depend on whether US inflation and jobs soften enough to allow the Fed to pause and how well the rest of the world's economies handle restrictive monetary policy. Our expectation is that the US dollar will peak with US inflation.

Bank demand might turn back towards securities in slowing economy
In addition to a reduction in foreign selling, there is scope for increased bank demand for securities if loan growth subsides as the labor market softens. We have seen a clear tradeoff over the years between loan growth and securities growth on the bank asset side. While 2022 was a year of strong loan growth at the expense of securities holdings, if the US enters a recession we would expect banks to increase demand for Treasuries. If the Fed carves out cash reserves from the SLR denominator, this could increase SLR

ratios by 0.5%-1% within the largest banks, allowing them to potentially seek more assets during the slowdown. MBS is cheap and would likely be preferred, but Treasury yields at the highs since 2007 should help and MBS supply will be potentially quite low next year, on the order of $300bn.

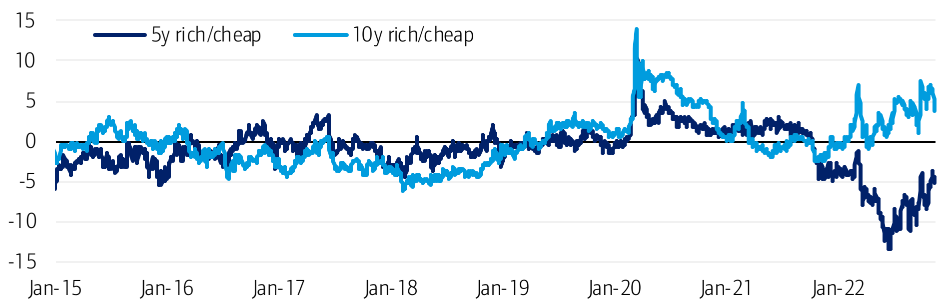
Liquidity / stress events a big risk to spreads

One of the most dramatic changes to swaps spreads in recent years is that we now see Treasuries cheapening to swaps in risk-off events. This is a result of low liquidity and friction amongst dealers to liquify Treasury holdings during a dash for cash. Risk-off events can include a geopolitical conflict, an equity market breakdown, a housing crash, a credit market default wave, a bad debt ceiling episode, a resurgence of the pandemic, a margin call episode, and other possibilities. These types of events we think would all lead to cheapening of Treasuries versus swaps, even if rates rally. This makes spread wideners – contrary to past decades – at risk to "black swan" events, which makes spread wideners in general an overall risker trade compared to the past. Historically, owning spreads offered a kind of low-cost insurance trade for big risk-off events.

Bill supply a risk to the front end

TBill supply is expected to increase dramatically in 2023 and this, combined with FHLB discount note supply, should help to further cheapen the 3mo-6mo Tbill sector, which has already normalized from extremely rich levels to just 2-8bp rich to OIS from 40-50bp rich to OIS earlier in the year. There is a relatively loose correlation between 2y spreads and bills, with for example the big Tbill cheapening wave of October 2022 coinciding with a richening of 2y USTs. But all things equal, the addition of around $1 trillion of Tbill supply in 2023 should be considered a negative for 2y spreads. We have seen bouts of 2y note specialness which has driven 2y UST richer, and in general there is a strong incentive while the Fed is hiking to avoid higher duration Treasuries which appears to have shifted some demand towards 2s. But if the economy slows as we expect, we would expect duration demand to increase further out the curve which could hurt front end spreads vs the long end as TBill supply builds. In general, we think the spread curve can steepen.

Exhibit 26: PCA framework shows 5y sector normalizing but still cheap (bp, positive = rich)
Also reveals that 5y-10y spread slope is about 8bp too steep



Source: BofA Global Research

BofA GLOBAL RESEARCH

PCA analysis shows 5y sector still cheap – but less so

We have been discussing the cheapness of 5y spreads for a few months (see [US Rates Watch: Rates relative value update with PCA 02 August 2022]). Our recent PCA update shows that while 2y spreads are back to fair, the 5y sector still looks cheap, but less so, and 10y spreads look a little wide (given how much it lagged vs the recent 30y spread tightening). Because we like wideners in general, we would prefer to buy 5y spreads outright as RV looks favorable given they are 5bp too tight on the spread curve. In addition, the 5y sector we think will benefit most from a slowing of foreign sales and a potential increase in bank demand.

Trade: Buy 5y SOFR swap spread at -25bp, stop out -32bp, target -15bp. Risk = increased foreign UST liquidation on stronger dollar, big risk-off flight to safety.

Spread – EU I

Erjon Satko
BofASE (France)
erjon.satko@bofa.com

Sphia Salim
MLI (UK)
sphia.salim@bofa.com

- Resumption of the rates sell-off as well as the Q1 EGB supply shock will likely drive EGB sovereign spreads wider overall. Demand should return later in Q2 with the turnaround in rates trend, bringing spread recompression
- The technical cheapening in OATs seems exaggerated compared with the state of the French economy and market risks. We like to fade this against Bonos

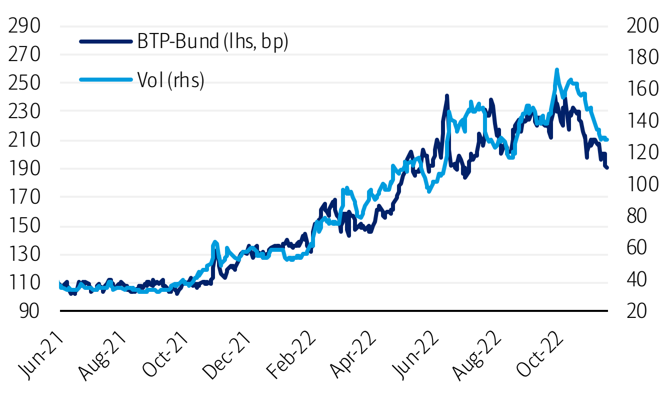
EGB spreads: widening in Q1, tightening potential later

Triggered by a steady decrease in expected rates volatility (post US CPI surprise) and sustained by record short/underweight positioning, EGB markets witnessed a significant tightening in sovereign credit spreads led by Italy (BTP-Bund trading below 190bp).

While the US CPI surprise was significant and supports the expectation of a Fed soft landing, we worry it may be too early to call for a regime change on uncertainty and central bank terminal rates (and consequently on sovereign spreads). Already in early 2023, EGB spreads will face: 1) a historical supply shock in January-February; 2) weaker GDP growth with two major economies entering recession; 3) remarkable tightening in monetary conditions including, later, the start of Quantitative Tightening (weakening the central bank's role as market stabilizer); 4) the persistence of weak demand from speculative investors until the policy outlook turns more predictable; and 5) the availability of historically high yields from higher-credit-quality alternatives. The outlook in early 2023 can hardly be supportive for sovereign credit spreads: barring a much faster turnaround of inflation dynamics (which would increase the probability of a central bank soft landing), we think there is more space for EGB spreads to restart widening.

After Q1, rates are expected to start falling again globally. We think the resulting return of investor demand for FICC may dominate the cheapening effect from high govie bond supply and the expected start of ECB Quantitative Tightening. This could trigger the resumption of a spread compression trend (see Demand section).

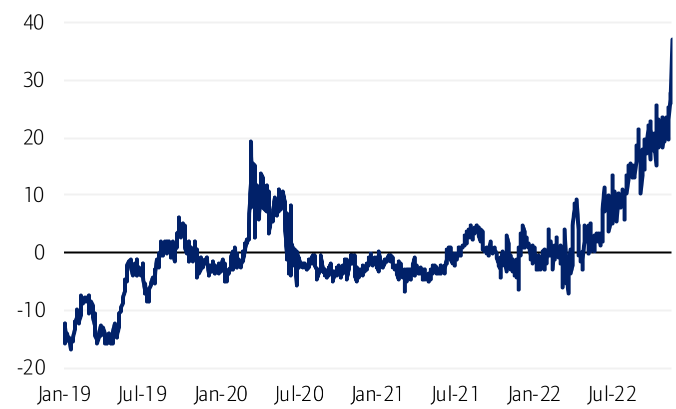
Exhibit 27: BTP-Bund spreads tighten as rates volatility declines
Markets optimistic that certain signs of economic slowdown and inflation normalization imply reduced risks of a hard landing



Source: Bloomberg

BofA GLOBAL RESEARCH

Exhibit 28: OAT residual vs expected level from Bono directionality
High bond supply and rebalancing flows are driving OATs extremely cheaper



Source: Bloomberg, own calculations. Residual expressed in basis points

BofA GLOBAL RESEARCH

We see 10y BTP-Bund widening towards 270bp in Q1-2 but gradually tightening back towards 220bp over H2, assuming politics remain benign. At peak, 10y Bono spreads may widen to c.140bp and OATs to c.65bp. Ireland could outperform in semi-core with Italy doing the same in the periphery after Q1.

With Italian budget risks subsiding short-term, we also close our short BTP 5s in the 2s5s10s fly vs swaps recommendation at 20bp (entered at 6bp). We also initiate a long 5y OAT vs Bonos (OAT Feb28 vs SPGB Jan28) at 33b targeting 60bp and with a stop at 20bp. The trade takes advantage of already cheap OATs (because of supply and foreign selling flows) and positions for liquidity premia repricing, risk-off regime as well as the resumption of FX reserve flows later in 2023 (dragging 5y richer through the front-end). Risk-on and an acceleration in PEPP reinvestment flexibility are the risks.

Semi-core: too cheap on 2023 supply and demand dilution

Semi-core spreads have been underperforming significantly (relative to directionality) and now trade at the upper end of the range seen since late 2013 (when core rates were trading at similar levels to currently). The cannibalisation of demand from €230bn of EU issuance since late 2020 together with the tentative rebalancing of demand towards core debt as the ECB abandoned its "negative interest rate policy" have been the main drivers of semi-core underperformance (Exhibit 28). The rise in JGB yields along with the BoJ's FX intervention and the resulting Japanese outflows from foreign bond holdings have added to the underperformance more recently (see our report here).

As is customary at year-end, markets worry about the high net supply numbers for France on a cross-market basis the following year. However, with concerns around secondary market functioning increasing early next year, the resulting rise in illiquidity premia should contribute to OAT outperformance vs the rest. France is also where tightening of monetary policy is easiest to justify given the state of the economy and because policy transmission may be slower given the high share of long-maturity fixed rate debt (the last Bank Lending Survey from the ECB added to this). Mindful of the already cheap levels (which heavily discount supply and demand rebalancing), OATs could still perform better than implied by directionality especially during 1Q23.

Periphery: suffering the most from lower liquidity and weak demand

Despite the support from PEPP reinvestment flexibility and the record short base in the periphery, it is difficult not to expect underperformance over the first quarter of next year. Beyond: 1) the deteriorating macroeconomic outlook; 2) the likely rating downgrades (especially risky for Italy's IG status); 3) weak demand; 4) faster transition of higher interest costs (higher share of floating rate stock of debt, especially in Spain); and 5) a more challenging debt sustainability outlook if core rates remain above 2%, rising illiquidity premia and the record increase in EGB net supply (see Supply-EU) should pressure these spread wider. The ECB can do little to contain this in the current set-up: the start of Quantitative Tightening will partially offset the effectiveness of PEPP flexibility while rates are currently too far from levels that can justify TPI.

With markets adapting to the high volumes of issuance, rates volatility likely dropping together with the level of rates over H2, there is space for sovereign credit spreads to recompress but remain above 190bp. The continuation of strong retail demand in the 2-3y area into year-end could prove effective in rebalancing demand and provide a ceiling to spreads over the longer horizon.

Outlook remains very uncertain and risks abound

Around this central forecast there are meaningful risks both on the upside and the downside. The top risks for wider spreads are the legal challenges of NGEU or the ECB's QE programmes, a further worsening of the geopolitical outlook, populist government policies, an actual series of downgrades up to losing IG status and an inflation outlook that justifies the ECB keeping the rate well above 3% for an extended period. On the other hand, another round of common (EU) issuance, an early end to the conflict in Ukraine, easier monetary policy conditions by the ECB and/or a continued decline in rates volatility are the top risks driving tighter spreads.

Spreads – EU II

Sphia Salim
MLI (UK)

Ronald Man
MLI (UK)

Erjon Satko
BofASE (France)

- We discuss our fair value frameworks for 2-10y spreads and for 30y spreads. We look for spreads to tighten in 2023, but more so in H2, and in 5-10y vs 2y & 30y.

2-10y swap spreads: tightening in 2023, but not uniformly

2022 was a remarkable year for German swap spreads. Market consensus was for a cheapening of bonds versus swaps given the end of net ECB QE purchases, and the resulting positive net government bond supply to the private sector (first positive net supply year since 2014). Yet, not only did German bonds richen versus swaps, but swap spreads across the 2-10y part of the curve registered new record wide levels in Oct. To paint the outlook for 2023, we believe it is important to take note of the factors behind this year's richening, especially given the temptation to argue that a surging net government bond supply should tighten spreads. We highlight the following five drivers:

(1) Surging rates volatility

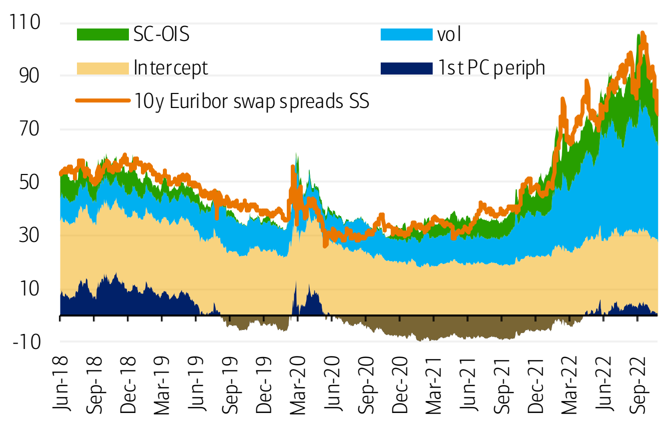
(2) Wider periphery spreads

(3) Swap paying flows by mortgage portfolios / negative convex portfolios

(4) Risks of punitive remuneration of cash at the ECB: for non-monetary policy deposits given the rules when the Depo rate is positive, and for monetary policy deposits given the ECB's desire to cut the carry on Targeted Long Term Repo operations.

(5) Collateral shortage in context of extreme short positioning (esp. in front-end), and increased demand from foreign central banks (at least in 1H22 – see FX reserves).

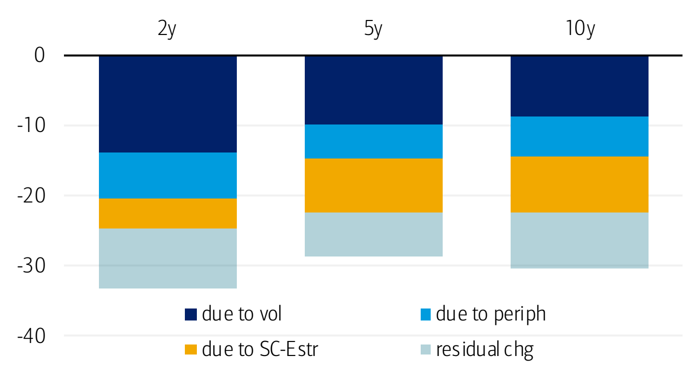
Exhibit 29: 10y Bund swap spreads & estimated drivers (*)
Volatility and repo richness (scarcity & short positioning) drove the widening



Source: CME group. BofA Global Research

BofA GLOBAL RESEARCH

Exhibit 30: Cheapening in German bonds vs swaps since Oct 7th
We estimate that 75% of the tightening in spreads can be explained by the collapse in vol, tightening in periphery spreads & cheapening in repo rates



Source: CME group. BofA Global Research. (*) Data as of Nov 16th. Based on a regression of swap spreads vs implied vol, 1st PC of periphery spreads and SC-estr spread since May-18.

BofA GLOBAL RESEARCH

All of these 5 drivers have turned less pressuring in the last couple of weeks. Volatility collapsed, periphery spreads tightened and shorts were cut as the market priced in a pivot from central banks. The balance of flows in swaps shifted to receiving, as financial bond issuance surged. The ECB delayed the change in remuneration of non-monetary policy deposits to end of April 2023 and decided to change the terms of the TLTROs instead of changing the remuneration of banks deposits. Action was taken to alleviate the collateral shortage heading into year-end: the German Finanzagentur announced the creation of €54bn of bonds to lend in the repo market and the ECB announced an increase in the maximum amount of QE securities it can lend against cash.

Spreads are now 30-40bp off the wides but appear perfectly fair in our regression versus implied volatility, periphery spreads and Special Collateral rate vs €str, having traded rich on that metric as of early October. We can look at 2023 with a clean slate.

To determine a potential fair value for spreads by end 2023, we input in our regression:

- Lower volatility (Volatility – EU) -> back to the pre 2014 average of 75bp/annum
- Wider periphery spreads (see Spreads – EU) -> back to fair value w/ Bunds at 2%
- A tightening in Special Collateral repo spread to €str to account for reduced short positioning and reduced scarcity given record net govt bond supply (Supply-EU)

We find fair values of 55-60bp for swap spreads vs 6M Euribor (Exhibit 31). Our forecasts for YE 23 differ somewhat from those fair values, as we express:

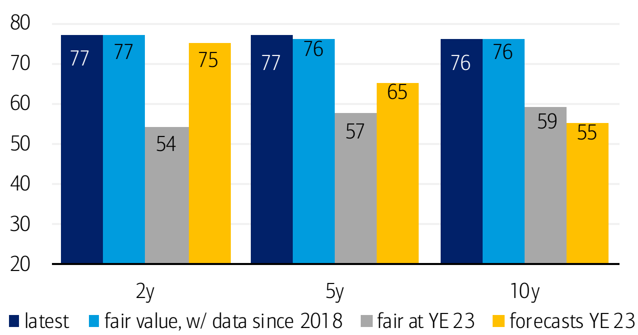
(1) A richening of 2y spreads relative to fair value, especially in the first half of the year, due to the change in the remuneration of non-monetary policy deposits at the ECB (to 0%, from a rate currently linked to €str/Depo – see front-end EU) and then continued foreign central bank demand for EUR-denominated paper.

(2) A slight cheapening of 10y spreads vs fair value, as the supply/demand imbalance may be challenging in that part of the curve, especially in a QT environment.

In Q1, a recovery in implied vol and renewed widening in periphery spreads may limit the extent of the cheapening in bonds vs swaps. This is why we do not have an outright bearish position on at the moment. In fact, we still recommend being long bills vs €str, (front-end) while we express the bearish 10y spread view vs US (see supply/demand).

Exhibit 31: Swap spread levels, fair values (*) and BofA forecasts

Vol, periph & repo developments point to spread tightening by end of '23

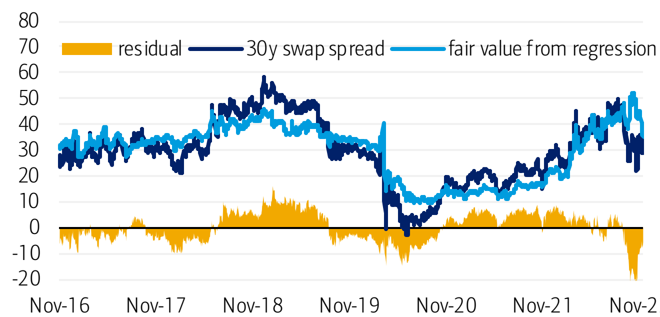


Source: BofA Global Research. (*) based on relationship vs vol, periph spreads & SC-€str spread

BofA GLOBAL RESEARCH

Exhibit 32: 30y Buxl spreads vs fair value in historical regression (*)

30y spreads have traded cheap this year, and remain slightly so (6bp).



Source: BofA Global Research. (*) Regression of 30y Euribor swap spreads vs 10y swap spreads, a dummy variable for when 10s30s is steeper than 60bp, and a dummy variable since Mar-20.

BofA GLOBAL RESEARCH

30y spreads: a different beast, linked to supply & PF flows

Unlike 2-10y spreads, 30y spreads cannot be explained by vol, periphery and repo spreads. They are correlated to 10y spreads, but the R-Square is low and residuals large. This is because real money activity play a major role: pension funds receiving 30y rates e.g. when the curve was steep and again since 2020 with dynamic hedging in a rising rate environment. Adding dummy variables to capture this helps in the regression (Exhibit 32).

In the year(s) ahead, we see scope for 30y and 10y Euribor spreads to converge. While pension fund receiving flows may continue to weigh on 30y spreads in coming months, 30y spreads already trade cheap vs 10y and the outlook should shift as (1) rates rally, reducing the receiving flows, (2) the transition to a Defined Contribution Dutch system starts in July, (3) the supply demand imbalance turns more favourable in the 30y vs 10y, with a lower maturity of issuance, and demand for long-dated bonds emerging in the rally (starting with bonds that trade at a discount to swaps in semi-core). Also, historically, a tightening in 10y spreads reflect only partially in 30y spreads (beta of 0.6) and the tendency for range trading in 30y spreads should provide some tactical support.

Spreads – UK

Agne Stengeryte
MLI (UK)
agne.stengeryte@bofa.com

Mark Capleton
MLI (UK)
mark.capleton@bofa.com

- We think that Gilts out to ten years on the curve should cheapen vs. Sonia.
- RV: retail demand for Gilts on tax efficiency may support low coupon issues.

10y Gilts to cheapen vs. Sonia and high coupons vs. low

Short-end ASW: Slowly, short-dated Gilts could start cheapening

Short-dated Gilts have stayed rich to Sonia during 2022, with the government's credibility crisis resulting in some Gilts trading as much as 120bp rich to Sonia (Exhibit 33). The richness was mostly the result of limited free float (with Bank of England –BoE- holdings at or near limit for most issues) and persistent demand from overseas investors (see Supply – UK for more). Gilt issuance skew shorter from the Debt Management Office (DMO), that seems to be taking shape slowly, should help alleviate the pressures. So should the 3-7y BoE Quantitative Tightening (QT) operations. We pencil in some cheapening of Gilts on ASW in our forecasts, but repricing might take some time with issuance changes potentially more pronounced next fiscal year. We suspect it will be harder for sub-3y area Gilts to cheapen with both "active" QT and DMO mostly focused in 3y+.

Belly of the curve: 10y Gilts to underperform vs Sonia

As outlined in Supply – UK, gross Gilt issuance net of gross BoE buying will be a record high this fiscal year, breaching that record again, much more substantially, next fiscal year. And while we can identify several categories of buyers of short-dated Gilts, it is less clear who might be interested in the belly of the curve. We took the opportunity to sell 10y Gilts versus Sonia on 4 November (see the Rates – UK section of the Global Rates Weekly 4 Nov '22). We recommended positioning for belly Gilt underperformance by **selling UKT 4¼% 32 vs. Sonia, to be tracked on a Z-spread OIS basis. We entered at -28.5bp with a target 0bp and a stop at -45bp.** Although the trade has repriced to -19.1bp currently, the magnitude of Gilt issuance next fiscal year strengthens our conviction in the trade. Emergence of Gilt demand in 10y is a risk.

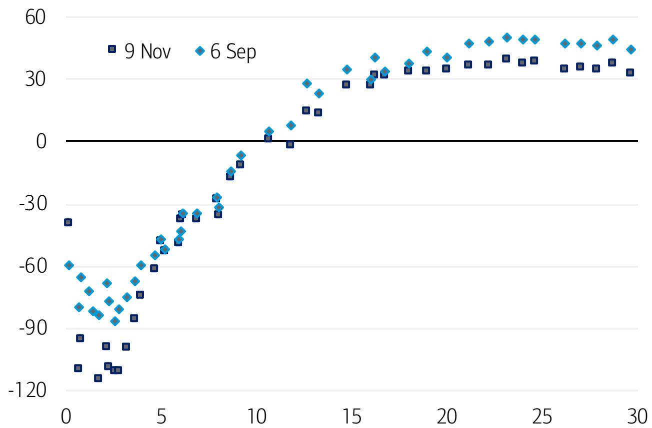
Long-end ASW: Conflicting drivers of Gilt demand = conflicting views on ASW

As highlighted in Rates – UK, investors are unsure of what's next for the long-end ASWs in the UK. In our latest FX and Rates Sentiment Survey (Positioned for the pivot published on 11 November), 34% expect long-end Gilts to cheapen versus swaps, either due to Gilt supply pressures or as pension fund demand falls given deleveraging pressures. 10% expect the long-end to richen, either as pension demand rises on improving solvency or as received swap positions are unwound (Exhibit 34). A mammoth 56% think something else, or don't know (we presume it's the latter). As outlined in the Pensions section, we do not disagree with the view that 30y spreads are hard to judge. All in all, although we feel confident in the view that Gilts out to ten years on the curve will cheapen versus Sonia, the spread story for the long end seems more finely balanced given the competing influences upon pension behaviour.

ASW RV: Retail investors hold few Gilts. That could change

We have debated the 'who will buy all the Gilts' question for a long time now. Last week's Budget brought it back into focus. Despite retail investors having never bought many Gilts directly (Exhibit 35), we wonder if that could that change given possible tax efficiency of low coupon issues. We do not give tax advice and we do not give any investment advice for UK retail investors and nothing in this note should be construed as such. Our understanding of UK income tax rules suggests that low coupon Gilts are very tax efficient for retail investors. If this is correct, demand for low coupon issues could rise as policy rates rise. Exhibit 36 shows high dispersion in taxed yields due to coupon differences. Low coupon taxed yields compare very favorably with deposit rates. The tax efficiency of low coupon Gilts could likely attract retail, driving an RV wedge between neighboring Gilts with different coupons, likely accentuated in a post-QE environment of superabundant liquidity, where banks do not feel compelled to compete aggressively for retail term deposits. **We continue to recommend shorting the new 4 1/8% 2027 Gilt versus a long in UKT 1/8% 2028 on asset swap.** We monitor the trade on an OIS z-spread basis (current level is 2.7bp), having entered the trade for a pick-up of 1.8bp (Will retail discover Gilts? A little bit complicated maybe, but not too taxing on 10 November). We set a target of -25bp, with a stop-loss at +12bp. Risk to the trade is that the new Gilt accrues a strong benchmark premium.

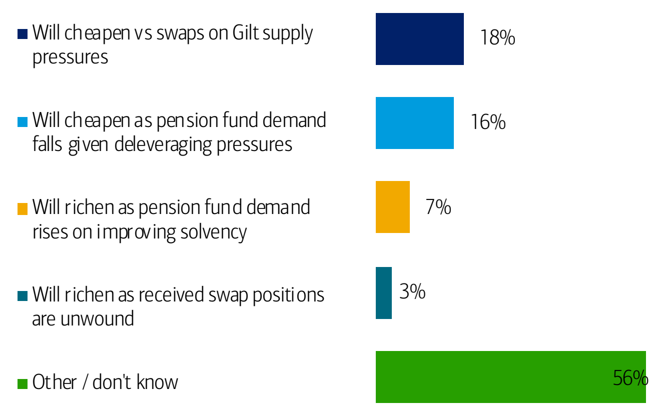
Exhibit 33: Gilt z-spreads to Sonia versus years to maturity, bp
Some short Gilts trading near 120bp through Sonia



Source: BofA Global Research, Bloomberg

BofA GLOBAL RESEARCH

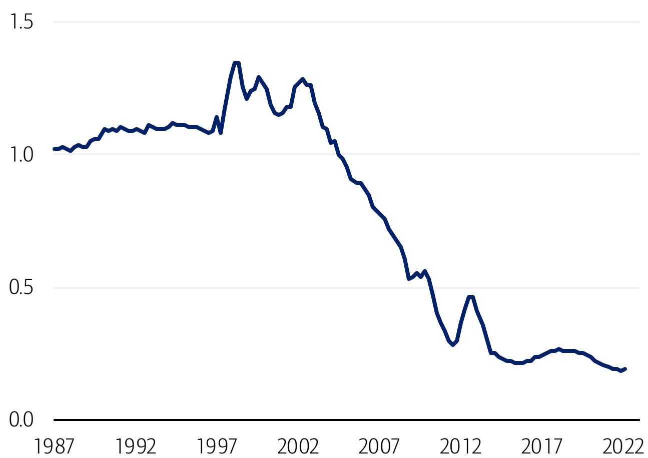
Exhibit 34: In the long-end of the curve, Gilts:
Gilts remain a mystery to investors



Source: BofA Global Research FX and Rates Sentiment Survey

BofA GLOBAL RESEARCH

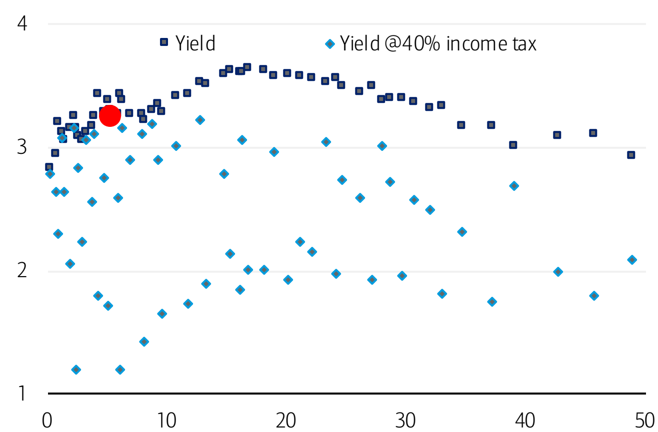
Exhibit 35: Household ownership share of the Gilt market, %
Always small and has been getting smaller



Source: BofA Global Research, DMO

BofA GLOBAL RESEARCH

Exhibit 36: Gilts untaxed and at an income tax of 40% (% vs. mat in yrs.)
Wide coupon dispersion = wide post-tax yield dispersion for retail



Source: BofA Global Research, Bloomberg

BofA GLOBAL RESEARCH

Spreads – JP

Tomonobu Yamashita
BofAS Japan

Shusuke Yamada, CFA
BofAS Japan

- Expect swap spreads to widen in 1H CY23 given concerns about change in BoJ policy
- However, expect Japanese swap spreads to fall around Apr-Jun on changes in USDJPY trends/other external factors

We think swap spreads (TONA swap rates minus JGB yields) are likely to widen through April 2023 on concerns about a change in BoJ monetary policy, but we expect them to gradually narrow from around Apr-Jun given the potential for a peak in USD/JPY and a dovish pivot by major central banks. We estimate a 10yr swap spread of 20bp at end-2023.

Expect spreads to widen in 1H CY23, tighten from 2H

The 1yr10yr forward rate has recently remained above 0.25% due to lingering concerns about a change in BoJ monetary policy. While the BoJ's yield-curve control (YCC) policy targets 10yr and shorter maturities of JGBs, TONA swap rates are not included in this target. This means that TONA swap rates are tending to rise more readily than JGB yields amid growing concerns about a change in BoJ monetary policy.

BoJ Governor Haruhiko Kuroda's term ends in April 2023, but we think both of the front-running candidates to succeed him are likely to maintain current dovish monetary policy. We therefore expect changes in external conditions such as a peak in USD/JPY to ease concerns about a change in BoJ monetary policy and drive a sharper decline in TONA swap rates than in JGB yields.

JGBs: Higher issuance unlikely to affect yields

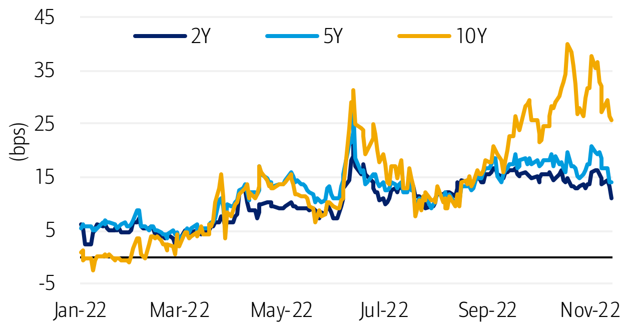
We expect issuance of 40yr and 5yr JGBs to increase from April 2023, but this is unlikely to drive up yields given the BoJ's ongoing YCC policy. The outlook for demand from Japanese real-money investors suggests that demand factors will outweigh the increase in supply. We also expect JGB yields to gradually decline from Apr-Jun through end-2023 given the potential for USD/JPY to peak and a dovish pivot by major central banks.

TONA swaps: To decline as concerns about BoJ pivot fade

We expect TONA swap rates to remain high, on the view that concerns about a change in monetary policy will persist until the change in BoJ governor in April 2023. However, we think the potential for a peak in USD/JPY and dovish pivot by major central banks will ease market participants' concerns about a change in BoJ policy, causing TONA swap rates to fall more sharply than JGB yields.

Exhibit 37: Japan swap spreads

10yr swap spreads widening on concerns about BoJ policy change

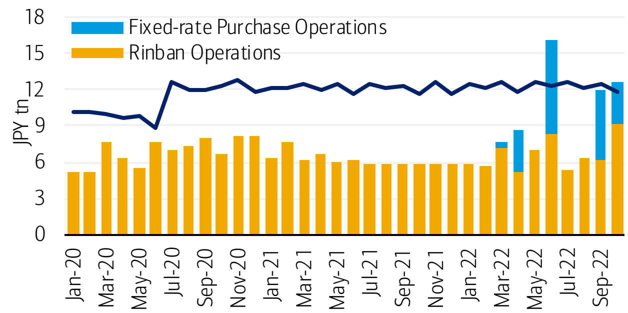


Source: Bloomberg, BofA Global Research

BofA GLOBAL RESEARCH

Exhibit 38: Monthly JGB issuance and BoJ purchases

BoJ's purchases exceeded JGB issuance in Oct to maintain viability of YCC



Source: MoF, BoJ, BofA Global Research

BofA GLOBAL RESEARCH

Volatility – US

Bruno Braizinha, CFA
BofAS

- Vol will likely drift lower in '23 led by the left side. We favour hedging higher terminal scenarios near-term, and to position for lower rates and vol medium term.

2023 Volatility: Embracing the Pivot

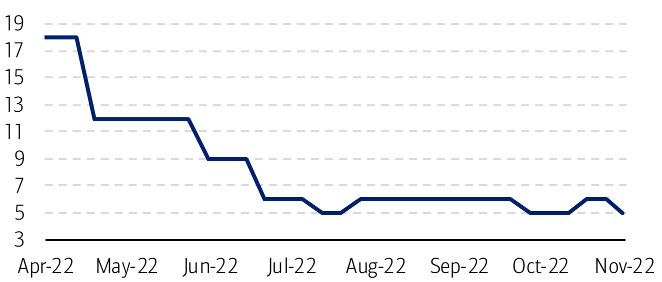
Main '23 theme... recession, with implications for covariances and returns expectations across asset classes. But '23 is also the year of the pivot, and a material shift in market dynamic.

Ahead of the pivot (3-6m horizons)

The vol market has been biased towards overweighing expectations for a slower Fed pace vs. the potential for a higher terminal in the recent price action. This is evident both in the lower levels of implied volatility led by the left side of the grid and gamma, and in the richening of left side receiver vs. payer skew (see Rates volatility and the Fed).

There is, however, still a material gap between the soft pivot expectations which are becoming more consensual, and expectations for a hard pivot where the Fed ultimately shifts to an on-hold stance (see Exhibit 39). To see a more decisive shift in sentiment that pushes cash back from the sidelines, we think the market needs: (1) a hard confirmation of the downward trajectory on inflation; (2) a more significant crystallization of the view for the Fed terminal, (3) lower volatility, and (3) a recovery of the utility of USTs for portfolios as a hedge and diversifier (see Treasuries' existential crisis). The earliest that we see these factors coming together is in late-22/early-23.

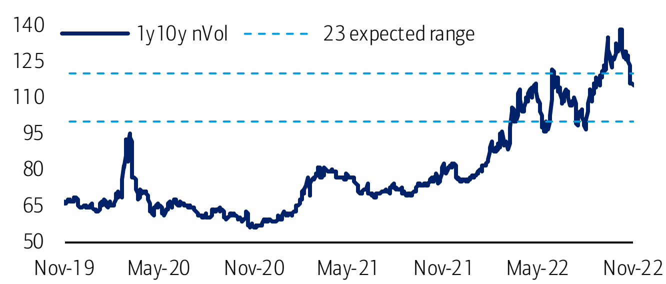
Exhibit 39: Full Fed pivot still priced at 5-6m horizon
Horizons sub c.3m likely provide more significant support for sentiment



Source: BofA Global Research

BofA GLOBAL RESEARCH

Exhibit 40: 1y10y vol dynamic since the COVID recession
Expected range c.100-120bp for 1y10y in 2023



Source: BofA Global Research; Bloomberg

BofA GLOBAL RESEARCH

The question at this point is whether the pricing of a soft pivot is enough to frontload this dynamic. We remain constructive but cautious. Our baseline is to see 10y yields move sideways into end-1Q23, while left vs right side vols converge gradually to flat levels around 110-120bp. However, we see risks at this horizon skewed to the upside for both rates and volatility - in particular, we favour hedging scenarios where the Fed may need to reach higher in a context where inflation persists higher for longer.

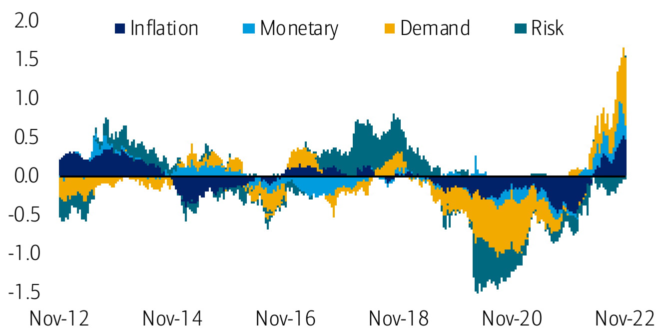
Our trade recommendations at this horizon leverage relatively fair left side vol levels and richness of receiver vs payer skew, to hedge higher Fed terminal rate scenarios: (1) **3m2y 25bp out risk reversals** - costless (indicative), with the risk a rally beyond the receiver strike (4.1% SOFR strike) with potentially unlimited downside; (2) **6m2y payer spreads atm/atm+50bp vs receivers atm-45bp** - costless (indicative) and c.16bp/3m carry, with the risk a rally beyond the receiver strike (3.7% SOFR strike), with potentially unlimited downside; and (3) **6m2y payers vs 1y2y payers** – vega weighted, as a proxy for selling left side vol forward, costless (indicative) and c.11bp/3m negative carry, with the risk an extension of the tightening cycle beyond 6m, and/or fewer Fed cuts priced in over the next year with potentially unlimited downside.

Beyond the shift (from c.6m and up to 1-2y)

Beyond the pivot, the market dynamic is likely to be dominated by: (1) higher recession probabilities; (2) lower inflation; (3) lower volatility; and (4) a process of recoupling of 10yT to fundamentals. We expect lower yields by year-end (3.25% for 10yT).

The Curve dynamic is likely to be biased towards steepeners, on both bullish (more Fed cuts in harder landing scenarios) and bearish (in the cycle turn) dynamics. This view is supported by the potential we see for a reset of the 10yT steady state over the next cycle, from c.2% over the last decade to c.2.5-2.75% (see Exhibit 41).

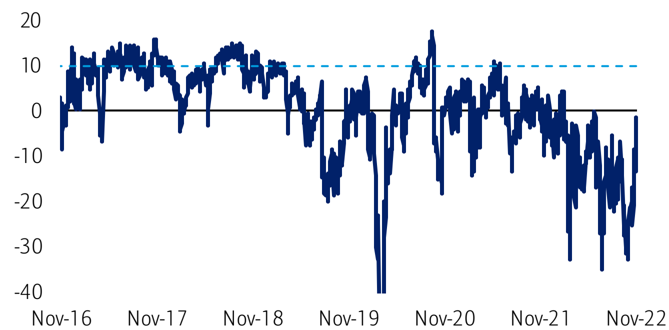
Exhibit 41: Decomposition of the 10yT dynamic
Demand shock continues to dominate the bearish dynamic



Source: BofA Global Research

BofA GLOBAL RESEARCH

Exhibit 42: 1y10y vs 1m10y spread
Term structure of volatility will steepen to 0-10bp as Fed pivot is priced in



Source: BofA Global Research; Bloomberg

BofA GLOBAL RESEARCH

At horizons beyond 6m our trade recommendations reflect a baseline lower rates view, lower volatility led by the left side of the grid, and the potential for steeper curves: (1) **1y2y Receiver ladders** - costless (indicative) with main risk on the position a rally beyond the downside breakeven (c.2.20% SOFR); (2) **1y10y US vs EUR receivers** - fx weighted notionals (slightly short delta at inception and costless indicative by striking EUR leg ATM-9bp) with the risk an outperformance of EUR rates in a rally with potentially unlimited downside; (3) **Short 1y1y vs 1y10y vol** - vega weighted straddles, receiving 23bp of vega on the position (indicative), with the risk a higher uncertainty around the Fed trajectory and left side vol outperformance, with potentially unlimited downside; (4) **1y 2s10s cap spreads and 2y 2s10s caps** - which we continue to find attractive (see UST curve nearing inflection with slowdown risks), with cost 17bp and 43bp, respectively, and risks capped to the upfront premium); and (5) **Long 5y30y vol vs 2y30y vol** - vega weighted straddles as a proxy for fwd vol, receiving 14bp of vega with the risk underperformance of vega vs. intermediates, likely on a more bullish dynamic, with potentially unlimited downside.

Between the two tail risks inherent to stagflation scenarios, un-anchoring of inflation on the upside and growth on the downside, the former is more of a tail to our baseline slowdown view. We continue to recommend hedging these tail scenarios in portfolios. We see the receiver ladder as the reflecting the essence of the baseline view, and the 30y fwd vol proxy as a hedged for scenarios of un-anchoring of inflation on the upside.

Across the grid

The baseline view for the grid dynamic in '23 is for the left side to underperform vs the right side (flat levels vs right by end-1Q23 c.110bp for 1y1y, cheap levels by year-end c.100bp or lower). The vol term structure will steepen as the Fed pivot gets priced, into c.0-10bp for 1y10y vs 1m10y by 1Q23 (see Exhibit 42), providing a more constructive context for short gamma. We continue to see long vega exposures as attractive for portfolios on: (1) the persistence of higher term premium and inflation risk premium; (2) tail risks skewed towards a higher for longer inflation context; and (3) an attractive vol rollup on the grid. Headwinds from Formosa issuance seem relatively capped (we expect c.10bn for the year). We see levels in the low 70bp range for 5y30y as attractive to add to structural long vega exposures.

Volatility – EU

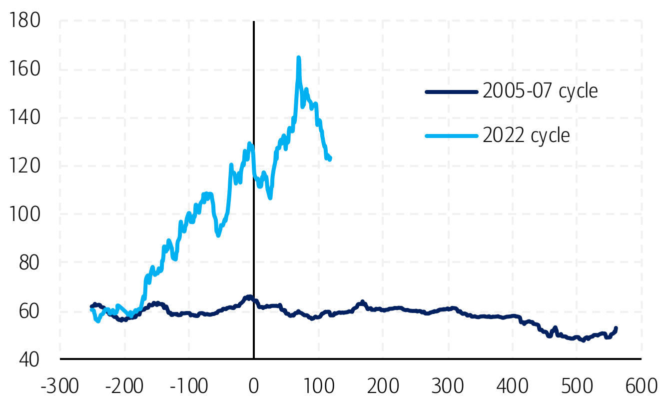
Sphia Salim
MLI (UK)

- Vol should drift lower in '23, but pricing the pivot is premature. We leverage the cheapness in payers vs receivers to express our bearish front-end view, buy 1y1y vol vs US and favour forward vols in 1y10y to position for lower vols medium term.

2023 Volatility: Lower, but not so fast

We have argued for higher volatility in EUR rates, both outright and compared to the US in our 2022 year-ahead, and again in February and June (see Rates & Vol in Euro vs US). Still, the surge in implied and realised vols exceeded our expectations. For the first time, EUR vol traded consistently above US vol in long tails and EUR implieds reached records.

Exhibit 43: EUR 1y implied vol (avg across tails *) around the 1st hike
Vol has surged pre & post 1st ECB hike., in stark contrast with prior cycle



Source: BofA Global Research

BofA GLOBAL RESEARCH

Exhibit 44: Residual (z-score of residual) of regressions of implied vol points versus the first three principal component of swaps curve
Gamma is trading cheap relative to rates, with a residual that is large historically (over 1 standard deviation).

Expiry \ tail	1y	2y	5y	7y	10y	30y
3M	-27 (-1.9)	-19 (-1.5)	-15 (-1.5)	-13 (-1.5)	-12 (-1.5)	-7.1 (-0.7)
6M	-19 (-1.6)	-15 (-1.3)	-12 (-1.4)	-11 (-1.5)	-10 (-1.6)	-7.3 (-0.9)
1Y	-12 (-1.2)	-9.0 (-1.0)	-7.3 (-1.1)	-7.8 (-1.3)	-7.1 (-1.3)	-6.6 (-1.1)
2Y	-2.9 (-0.4)	-2.7 (-0.4)	-1.6 (-0.3)	-1.7 (-0.4)	-3.0 (-0.7)	-6.1 (-1.3)
3Y	1.5 (0.2)	0.6 (0.1)	1.2 (0.3)	0.4 (0.1)	-1.2 (-0.3)	-4.1 (-1.0)
5Y	4.0 (0.8)	3.2 (0.6)	2.3 (0.7)	1.1 (0.3)	-0.6 (-0.2)	-2.6 (-0.9)
10Y	0.8 (0.3)	0.9 (0.3)	-0.6 (-0.2)	-0.7 (-0.3)	-1.0 (-0.5)	-1.4 (-0.8)

Source: BofA Global Research, as of 16-Nov-22. Colored by z-score

BofA GLOBAL RESEARCH

It is hard to imagine a more volatile year than this one, and the contrast with the last and only full tightening cycle from the ECB in 2005-07 cannot be starker. At that time, implied vols stood around 60bp/annum before and after the first hikes were delivered, collapsing sub 50bp/annum mid-way in the cycle. To determine whether it's only one way (down) from here, it is worth reviewing the main factors that supported vol in '22:

(1) **Dramatic upside surprises in inflation**, in part related to geopolitical events.

(2) **Unprecedented pace of rate hikes globally.** Beyond the volatility this created in front-end rates, large incremental hikes triggered significant changes in hedging needs in the belly of the EUR curve, and the unravelling of long-dated UK Gilts.

(3) **Extreme changes in forward guidance.** The ECB recognised that having forward guidance in place early in the year was probably a mistake which made the need for urgent tightening even more pronounced in H2. It has now moved to a Meeting-by-Meeting approach, but signalling hikes over the next few meetings only.

(4) **There was uncertainty on neutral rates and path of balance sheet unwind.** The Fed had been providing long run dots, which can be thought of as estimates of the neutral rate. It is only recently that ECB speakers have provided clarity on their view of neutral rate, pointing to a level of around 2%. Also, the ECB is now clearer about its desire to reduce its balance sheet, pushing for TLTRO repayments and a start of QT in 2023, having designed new tools to try and support the periphery.

(5) **Unorthodox central bank reaction function.** Indeed, the ECB stopped relying on medium term forecasts to guide its policy decisions, and has been focused on actual inflation prints. Its latest meeting in Oct created hopes that this may be reverting, notably thanks to Lagarde's reference to the lag in monetary policy transmission.

The market is already set for a turn in all of these factors. It prices a slowdown in the pace of ECB hikes and a straight downward trajectory for inflation from 10.6% currently, to 2.7% by Dec-23. This, alongside clarity on the neutral rate can justify the pricing of more certainty on the terminal too, creating the sense of a more traditional hiking cycle:

a) **Vols have collapsed relative to delivered:** 6m expiries trade at less than 0.9x delivered, which is more than 1 standard deviation below the 1-year average.

b) **Vols are cheap on their historical relationships vs rates.** Implied vols in 6m expiries tails look over 10-20bp/annum too low based on their relationship vs the first three principal components of the swaps curve since 2020 (Exhibit 44).

But the message to take from the volatility market goes beyond the absolute decline in implied vols. We would argue that it is not just a more traditional hiking cycle that swaptions begin to price, but also one where central banks are pivoting. We can see:

c) **Payer skews have cheapened, esp in 3-6m expiries:** We can see this in from the evolution of the break-evens in 1x2 payer spreads vs implied vol (Exhibit 45).

d) **The vol market now implies a 2s5s bear-steepening / bull-flattening dynamic.** This is what transpires from vol picks-ups in conditional trades.

Exhibit 45: 3M Z-score of 1x2 payer spread breakevens/implied vol
Payer skews cheapened across most of the surface, but esp. in short expiries

expiry\tail	1y	2y	5y	7y	10y	30y
3M	-2.1	-2.2	-2.1	-2.1	-2.0	-1.8
6M	-2.1	-2.1	-2.2	-2.2	-2.2	-1.3
1Y	-2.1	-2.1	-1.9	-2.0	-2.0	-0.3
2Y	-2.0	-1.8	-2.0	-2.0	-2.0	-0.8
3Y	-2.1	-2.0	-1.9	-1.9	-1.9	-0.6
5Y	-1.5	-1.5	-1.3	-1.4	-1.5	-0.2
10Y	0.6	0.6	0.3	0.2	-0.1	-0.3

Source: BofA Global Research, as of 16-Nov-22

BofA GLOBAL RESEARCH

Exhibit 46: Ratio of normal US implied vol/EUR implied vol
It is in 1y1y that the ratio of vols is highest.

Expiry	1y	2y	5y	7y	10y	20y	30y
3M	1.10	1.06	1.01	0.97	0.94	0.93	0.89
6M	1.11	1.08	0.99	0.96	0.93	0.91	0.87
1y	1.15	1.10	1.00	0.95	0.91	0.88	0.85
2y	1.14	1.10	0.99	0.95	0.91	0.87	0.85
3y	1.11	1.06	0.97	0.93	0.90	0.87	0.85
5y	1.00	0.97	0.94	0.93	0.92	0.89	0.88

Source: BofA Global Research, as of 17-Nov-22

BofA GLOBAL RESEARCH

We believe it is premature to price in such a pivot. It can still be challenged by upside surprises in inflation, raising the prospects of a 75bp hike in Dec / more 50bp hikes in 2023, but also by the ECB's communication in an environment where headline inflation should remain above 6% in six months' time. We fear that the central bank will, in fact, not account for transmission lags in Q1, esp. if growth data is not as weak as consensus expects. Also, we are still short the front-end of the curve and recommend:

- **Buying a 3m2y risk reversal** to leverage the cheapness of the payer skew / richness of receivers for a short front-end position. We sell €100mln 3m2y receiver ATM-30bp (2.7%) to buy €100mln 3m2y payer struck at 3.35%. The position is costless and should expire in the money if our 3.4% forecast for 2y rates in 1Q23 materialises. The risk is a rally in rates beyond 2.7% (19bp below current spot).

- **Buying 1y1y vol vs US**. Unlike in prior cycles, the market may be a (a) lot faster to price in rate cuts when the ECB stops hiking (given the move to restrictive territory), and (b) less prone to trade a low bound in rates, limiting the decline in vol on short tails outright and vs US. The position can hedge a more persistent inflation in the Euro Area due to energy effects. We buy €100mln EUR 1y1y ATM straddle (3.01%) vs $106mln USD 1y1y ATM straddle (4.15%) – vega weighted, receiving €180K. we target a Pnl of €300K, with a stop at -€150K. The risk is an ECB on hold before Fed.

- **Expressing the short vol view in the 10y tail**: by selling 1y fwd 1y10y vol (at 111bp, targeting 70bp, with a stop at 140bp) and directionally in 1y10y vs the US (Volatility- US). The risks to the trade are a bear steepening / surge in delivered vol.

Inflation – US

Meghan Swiber, CFA
BofAS

- Expect real yields to compress well below forwards in '23
- Recommend long 30y TIPS: carry today, duration return on economic downturn

Rooting for the anti-hero

In 2023, we think it will be time to move into long real yield positions after favoring short real yield expressions leading into 2022. While the timing of the real yield rally will be conditional on concrete signs of an economic slowdown, our forecasts reflect a notable decline in real yields over the course of the year. We think the best way to express this view is to be long 30y TIPS.

'23 Forecasts: conviction in the real yield rally

Exhibit 47 shows our yield forecasts for 2023 across nominal, breakevens, and real yields. We expect the 2s10s breakeven curve to remain modestly inverted and still see more potential for stickier inflation vs what the market is pricing. Near-term inflation uncertainty should keep front-end breakevens elevated while back-end breakevens should be more anchored. We see financial conditions tightening further in the months ahead, which should generally limit the extent of a breakeven rally.

One risk to higher inflation term premium is a Fed pivot on an increase in unemployment while inflation remains elevated. The October CPI print reflected cooling goods inflation which we expect will continue putting downward pressure on core inflation the months ahead (see: CPI inflation forecast update: Affirming the story). Greater confidence in a moderation in goods inflation reduces the risk of a Fed pivot before the job on inflation is done. Goods inflation tends to be less cyclical and not respond as directly to an increase in unemployment, while services inflation will likely fall with weaker growth. However, risks around inflation remaining stickier for longer even as the economy cools lead us to favor the long TIPS expression.

Exhibit 47: US nominal, breakeven and real rate forecasts for 2023
Expect real yields to decline far below forwards by the end of '23

		1Q23	2Q23	3Q23	4Q23
	2y Govt	4.5	4.25	3.75	3.25
	5y Govt	4.25	4.00	3.65	3.25
	10y Govt	4.00	3.75	3.50	3.25
Nominal	**30y Govt**	4.10	3.85	3.65	3.40
	2y Govt	2.60	2.60	2.60	2.60
	5y Govt	2.50	2.50	2.50	2.40
	10y Govt	2.50	2.40	2.40	2.40
Breakeven	**30y Govt**	2.50	2.45	2.45	2.45
	2y Govt	1.90	1.65	1.15	0.65
	5y Govt	1.75	1.50	1.15	0.85
	10y Govt	1.50	1.35	1.10	0.85
Real	**30y Govt**	1.60	1.40	1.20	0.95

Source: BofA Global Research

BofA GLOBAL RESEARCH

Our nominal rates forecasts are well below forwards by the end of 2023, largely stemming from expectations for a sharp decline in real rates. We expect 10y real yields around 85bps by the end of '23 which is about 70bps below current levels and 65bps below forwards. While the near-term risk is that market pricing for a higher terminal rate drives real yields higher across the curve, we think a higher terminal would also need to accompany higher inflation vs what is priced.

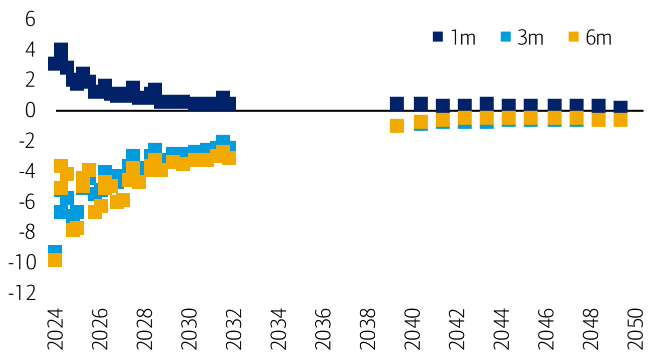
30y TIPS: carry today, yield compression tomorrow…

We like owning 30y TIPS which we believe will offer higher carry than what is priced near term and has potential to rally significantly on expected economic downturn.

Market pricing for inflation over the next year on a headline and core level is below our US Economists' estimates. In general we believe that risks skew above even these forecasts. This translates to higher carry over a 3-6m investment time horizon vs what is currently implied by CPI fixings (Exhibit 48 and Exhibit 49). Despite less conviction in real rate rally timing, prospect for higher carry partially offsets this risk.

Exhibit 48: TIPS carry implied by CPI fixings across maturity dates and investment time horizon (BPS)

Inflation levels implied by fixings suggest relatively low to negative carry over the next 6m

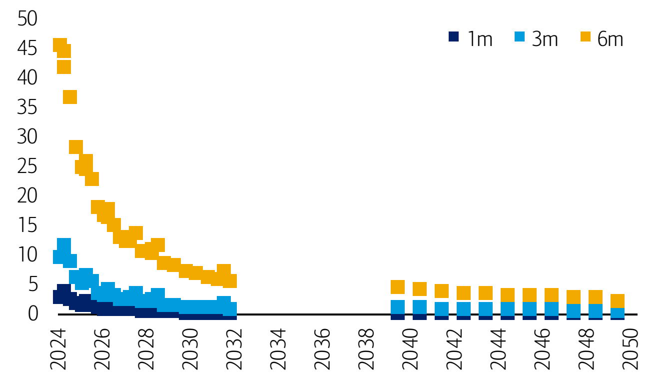


Source: BofA Global Research, Bloomberg

BofA GLOBAL RESEARCH

Exhibit 49: TIPS carry implied by BofA Economists' forecasts across maturity dates and investment time horizons (BPS)

Economist expectations suggest positive carry over next 6m



Source: BofA Global Research, Bloomberg

BofA GLOBAL RESEARCH

One reason we like owning 30y TIPS vs other parts on the curve is from a supply/demand perspective. We remain wary of how demand may shift at the front-end/ belly of the TIPS curve. As we have long discussed (see: TIPS: talk is cheap), inflation fund flows had been supportive of this sector for much of 2020-early 2022. Despite notable losses on TIPS ETFs given the sharp move higher in real yields, we have yet to seen notable outflows from this space. Greater confidence in the inflation outlook may be another trigger for potential outflows which could cheapen this sector further.

The 30y TIPS has also not seen the increase in supply vs the 5y and 10y TIPS sectors. Over the course of 2022, Treasury increased auction sizes in 5y and 10y TIPS to grow TIPS vs nominal issuance but held 30y TIPS auction sizes stable. While demand at TIPS auctions have been robust, a reduction in inflation concern could be a risk to continued demand. This risk may be greater across tenors that will see an increase in gross issuance in 2023 vs 2022.

We continue to believe that the best guide for fundamental fair value at the back-end of the TIPS curve is the real neutral rate. While this is an abstract concept that is hard to pin down, using the Fed's SEP we get an implied rate (adjusted for the longer term core CPI-PCE wedge) of around 20bps. This is 150bps above the 10y20y real rate and 140bps above the 30y real yield. We think that this represents an attractive level for longer term and real money investors and expect that greater clarity on the terminal rate will help support broader duration demand in 2023 (see: UST demand in 2023: I want you back). A strong bid at the back-end could help to compress real yield levels back towards fair value in the year ahead.

We recommend going long Feb 52 TIPS at 1.58%, targeting 1.00% with a stop of 1.90%. Risks to the trade are that terminal continues to get priced higher near term, bringing real rates higher across the curve. However, we think that 30y TIPS will benefit from higher carry vs market pricing near-term and eventually rally significantly on the turn in the cycle we expect in 2023.

Inflation – EU

Mark Capleton
MLI (UK)
mark.capleton@bofa.com

Supporting evidence

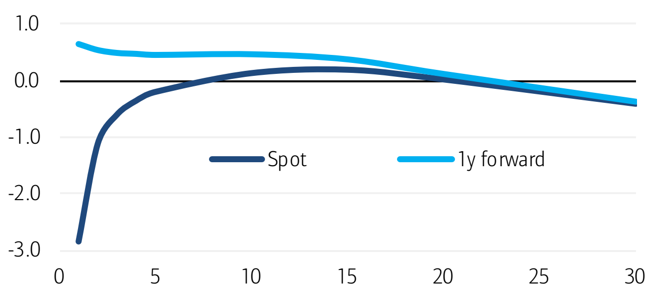
- Several arguments can rationalise the long-end real curve inversion, but it still looks dislocated. BTPei iota cheapness supports case for using Italy for breakeven longs.

Unprecedented long-end real curve inversion priced to go much further

Earlier in this note, we discussed the steepness of the euro inflation curve, supporting our case for holding breakeven longs shorter on the curve, and for being short long-end euro real yields versus US. Here we focus on the real swap curve (derived by combining nominal and inflation curves), where the picture is, if anything, more dramatic.

A number of factors are behind an acute long-end real curve inversion (Exhibit 50 and Exhibit 51), especially on a 1y forward basis with the real 10s30s curve at -84bp (-54bp spot). When bond markets sell off, bear-flattening is not a surprise. Pension solvency has improved, encouraging derisking. Volatility has been acute, making the convexity value at the long-end more tangible. Nevertheless, we think this inversion will moderate, encouraged, we hope, by issuers terming out issuance for fiscal sustainability reasons.

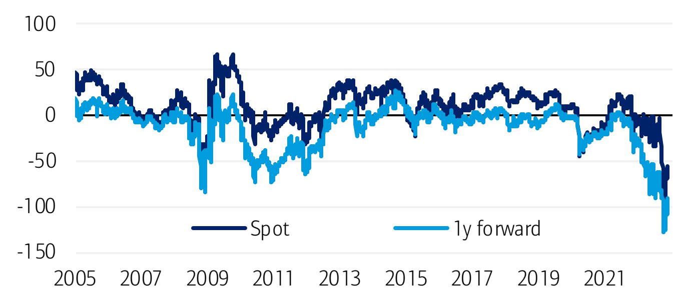
Exhibit 50: Euro real swap curve, spot and 1y forward, %
Large 10s30s inversion currently, and priced to get larger.



Source: BofA Global Research

BofA GLOBAL RESEARCH

Exhibit 51: 10s30s real swap curve history, spot and 1y forward, bp
What we are seeing now is unprecedented.



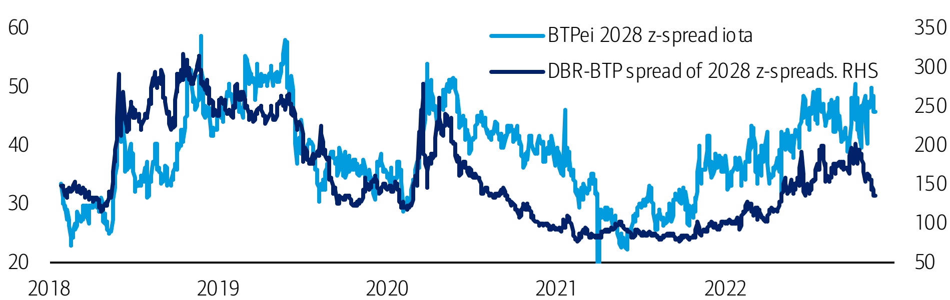
Source: BofA Global Research

BofA GLOBAL RESEARCH

Our bullish BTPei breakeven view

We also discussed earlier in the report our liking for 10y area BTPeis on a breakeven basis. One of the reasons we had in mind is their cheapness on "iota". Exhibit 52 shows the loose relationship between BTPei iotas and Italy spreads, and the recent divergence. We see iota cheapening, perhaps related to large BTP Italia issuance, as an opportunity.

Exhibit 52: The Italy iota/credit spread relationship is loose, but recent divergence is striking
We suspect that heavy BTP Italia issuance has contributed to this iota cheapening.



Source: BofA Global Research, Bloomberg

BofA GLOBAL RESEARCH

Inflation – UK

Mark Capleton
MLI (UK)
mark.capleton@bofa.com

Persistence personified

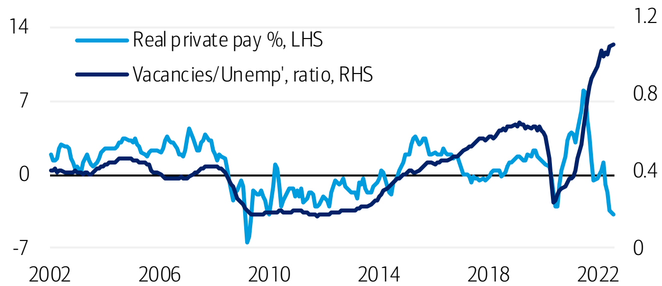
- Pro-cyclical fiscal tightening, as the economy heads into recession, makes BoE policy calibration harder than for most. Inflation persistence risk still underpriced.

Nowhere in the major markets is inflation persistence more of a threat

Earlier in the report, we discussed inflation persistence risk and how our preferred expressions differed between the US and Euro markets. However, the prints for October inflation in the US and UK, with the former surprising to the downside and the latter to the upside, provide a reminder that our favourite persistence play is in the UK.

In the 28 October Global Rates Weekly, we recommended a 1y4y/5y5y RPI flattener, arguing that the spread (then -8bp) failed to fully allow for RPI reform within the 5y5y period, let alone the threat of inflation persistence beyond the next twelve months. We set a target for the spread of -50bp and a stop-loss at +20bp (currently -31bp). Risks to the trade are pension demand focused in the 10y. With the severity of the real income squeeze, supplemented by (pro-cyclical) fiscal austerity and rising mortgage costs, tacit BoE acceptance of a slower path back to its inflation target is a distinct possibility.

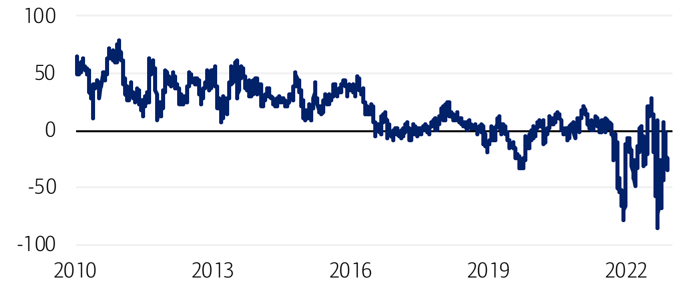
Exhibit 53: Tight labour market an obvious inflation persistence risk
Will these two lines recouple through falling vacancies or firming pay?



Source: ONS, BofA Global Research

BofA GLOBAL RESEARCH

Exhibit 54: RPI 1y4y/5y5y curve should be much flatter, bp
Inflation persistence and 2030 RPI reform justifies greater inversion.



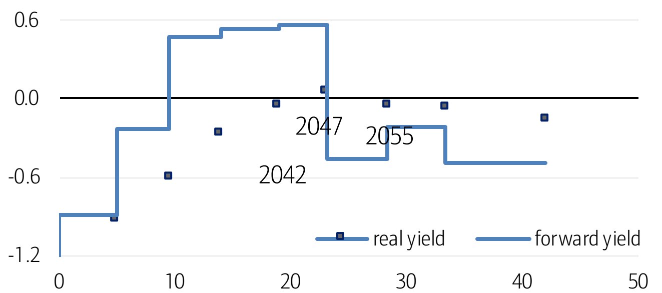
Source: BofA Global Research, Bloomberg

BofA GLOBAL RESEARCH

Market trauma leaves pronounced anomalies

BoE emergency buying calmed the market but perhaps accentuated individual anomalies. For instance, UKTi 2055s was heavily bought and now appears rich.

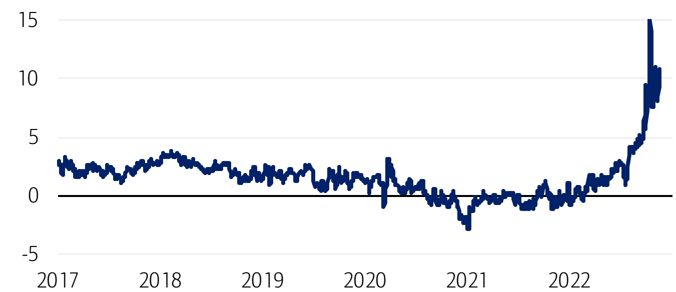
Exhibit 55: Real yield curve v duration, November UKTi maturities, %
LDI trauma has passed, but dislocations remain.



Source: BofA Global Research

BofA GLOBAL RESEARCH

Exhibit 56: UKTi 2042/47/55 cash-and-duration neutral fly, bp
BoE bought a lot of '55s, leaving them rich (-46%/+100%/-54% risk weights)



Source: BofA Global Research, Bloomberg

BofA GLOBAL RESEARCH

Assuming the Bank sells its linkers by September 2023, as planned, this should unwind.

Inflation – JP

Tomonobu Yamashita
BofAS Japan
tomonobu.yamashita@bofa.com

Shusuke Yamada, CFA
BofAS Japan
shusuke.yamada@bofa.com

- Japanese government stimulus package to depress inflation, but unlikely to lower BEI
- We view 10yr JGBi (JX27) as attractive and recommend bidding

BEI to continue rising despite temporary dip in inflation

The Japanese government will deliver a comprehensive stimulus from January 2023 with the goal of curbing rising consumer prices, and we expect inflation and BEI to rise again once the impact of these fiscal policy measures fades. We think sustained support from the BoJ and MoF also adds to the appeal of 10yr JGBis.

Inflation outlook: Temporary slowdown, renewed pickup from 4Q 2023

Our Japan economists expect growth in the nationwide core CPI excluding fresh food (the reference for 10yr JGBi) to remain elevated at +3.5% YoY in Oct-Dec, but slow to +2.2% in Jan-Mar 2023 in response to the government stimulus (for details, see our Japan Watch: Inflation forecast update: Focusing on price trends excluding policy distortions 04 November 2022). This is broadly consistent with the Cabinet Office analysis indicating a 1.2ppt negative impact on the CPI through September 2023.

We initially expected the government measures to support consumers to weigh over BEI, depressing JGBi demand (for details, see our Japan Rates Supply Preview: JGBi auction: Expect weak auction owing to the government's economic package 04 November 2022); however, the results of the JGBi auction after the stimulus was announced were strong, with the bid-to-cover ratio virtually unchanged from the previous auction. This is likely because the recent global uptrend in inflation is also driving up companies' and households' inflation expectations.

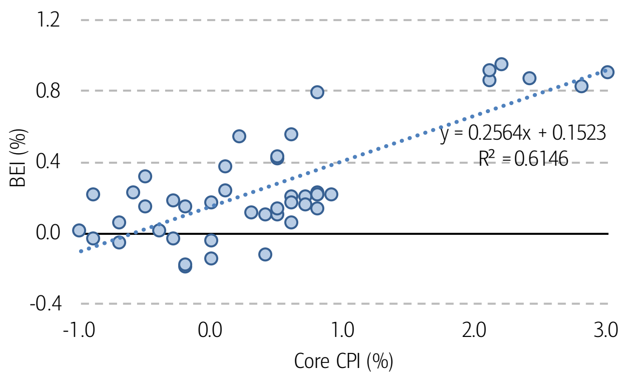
The downward pressure on consumer prices from the Japanese government's economic stimulus package will likely be short-lived, and our economists expect inflation to accelerate to +3.1% YoY in Oct-Dec 2023 and +3.7% in Jan-Mar 2024. In fact, the package could be positive for inflation from a longer-term perspective as it is a fiscal expansion.

The shunto spring labor negotiations could also result in higher wage growth that translates into higher inflation. Japan's core CPI is known to be positively correlated with BEI (Exhibit 57); a simple calculation based on this suggests that Japan's BEI could rise from roughly 85bp at present to around 110bp.

Trade recommendation: Outright long JGBi 27

Based on the above, we recommend being long the 10yr JGBi (Issue number: 27) maturing on 10 March 2032. Another positive catalyst is the lack of progress with BoJ purchases or MoF buybacks of this issue (Exhibit 58). Our recommendation has an entry of -62.3bp, target of -77.3bp, and stop loss of -54.8bp. The risk to this trade is an unlimited extension of the government's economic stimulus package, which would artificially depress CPI inflation for longer.

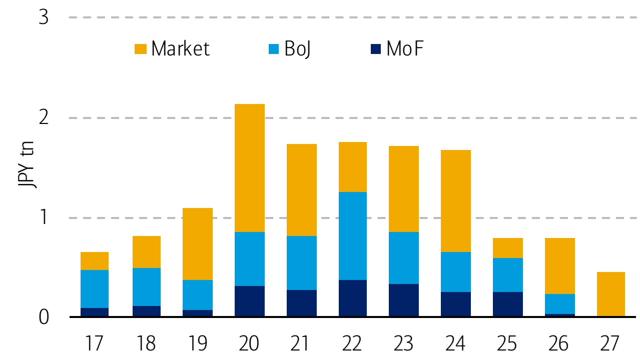
Exhibit 57: Japan core CPI (YoY) and 10yr BEI
Positive correlation between core CPI and BEI



Source: MIC, Bloomberg, BofA Global Res

BofA GLOBAL RESEARCH

Exhibit 58: MOF buybacks, BOJ holdings, and market holdings by issue
Supply-demand being tightened by MOF and BOJ policies



Source: Bloomberg, BofA Global Research
Note : Horizontal axis shows JGBi issue

BofA GLOBAL RESEARCH

Supply – US

Meghan Swiber, CFA
BofAS

Katie Craig
BofAS

- Expect no change in nominal coupon sizes and no further increase to on the run TIPS auctions
- We project bill supply will rise upwards of $1tn through end CY'23

Coupon auction sizes level off, bill supply higher

The November refunding announcement had no change in nominal coupon sizes and no further increases to on-the run TIPS auctions (Exhibit 59); this was in-line with our expectations (see November refunding). We expect no further changes to coupon sizes in the near future.

Bill supply likely will increase in FY '23, though the amount likely will depend on debt limit timing (see: Bill supply is on the rise (finally!)). Bill issuance is projected to be strong over the next two quarters. Higher deficit forecasts + stable coupon sizes have added room for Treasury to issue more bills. In Q4 '22 & Q1 '23 we project $193b & $257b, respectively (Exhibit 60). TBAC recommends slightly higher bill issuance vs our projections by $100b in Q4'22 & Q1'23. This may be explained by differing cash balance assumptions by Q1'23 (BofA = $500b).

Bill supply should be particularly strong in Nov '22, Feb '23, and Mar '23 where bills are expected to rise $170b, $160b, and $106b respectively (Exhibit 61). These are typically heavy deficit months that require additional bill supply to sustain the cash balance. Our projections assume a cash balance of $700b by end '22 and $500b by end Q1 '23.

Our bill supply projections and the associated market impact are complicated by (1) uncertainty around the timing of the debt limit (2) MMF reform 3.0 (3) Fed QT. Additional detail is below and in November refunding.

Debt limit headache is back

Our bill supply projections are materially complicated by the debt limit. We can clearly see that bill supply will be substantially positive between now and after the debt limit is resolved. Assuming no debt limit bill supply in CY '23 would be nearly +$1tn, bringing it up to 18.3% of marketable debt, the higher end of TBAC's 15-20% recommended range. However the monthly path is much less clear, especially in mid '23.

The debt limit could become constraining as early as Dec '22. Treasury would then enter a debt issuance suspension period (DISP) which would restrict its ability to issue debt. To keep coupon auction sizes unchanged UST will likely cut bills. The Treasury has other tools, extraordinary measures (EM) and their cash balance, to keep the gov't funded for some time. We project the potential default or X-date would be in Aug or Sept '23. We discuss the debt limit in more detail here: US debt limit.

The debt limit will likely see bill supply reduced in the spring and summer. It is difficult for us to know the precise timing of these supply cuts today but we expect bill growth will slow and likely become negative for a few months in mid '23. After the debt limit is resolved we expect a surge of bill supply to replenish a likely depleted cash balance.

Market impact: bills cheaper near term

Bill supply in the next 2 quarters should be strongly positive which should help to cheapen bills relative to OIS. We might estimate bills cheapen upwards of 10bps (Exhibit 62). However, risks such as the debt limit will likely result in bill cuts later in the year.

Exhibit 59: Expected auction sizes through Jan '23

Expect auction sizes to hold steady at Nov refunding

	2y	3y	5y	7y	10y	20y	30y	5y II	10y II	30y II	2y FRN
8/31/2022	44	42	45	37	35	15	21			8	22
9/30/2022	43	41	44	36	32	12	18		15		22
10/31/2022	42	40	43	35	32	12	18	21			24
11/30/2022	42	40	43	35	35	15	21		15		22
12/30/2022	42	40	43	35	32	12	18	19			22
1/31/2023	42	40	43	35	32	12	18		17		24

Source: BofA Global Research, US Treasury

BofA GLOBAL RESEARCH

Exhibit 60: BofA bill forecast vs TBAC recommended ($bn)

Our T-bill forecast is below TBAC recommended net bill issuance over the next 2 quarters

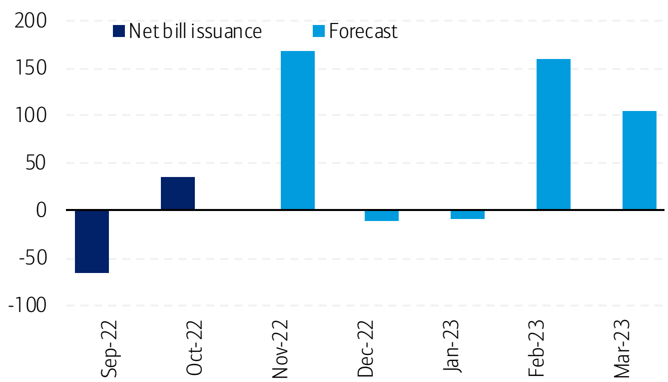
	Q4'22	Q1'23
BofA Bill forecast	193	257
TBAC recommended bill issuance	250	301
Difference	-57	-44

Source: BofA Global Research, US Treasury

BofA GLOBAL RESEARCH

Exhibit 61: Monthly bill supply forecast ($bn)

Net bill issuance is expected to $170bn in November

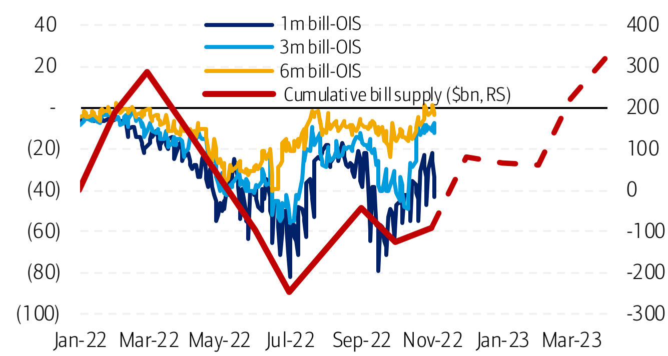


Source: BofA Global Research, Treasury

BofA GLOBAL RESEARCH

Exhibit 62: Bill-OIS (bps) and cumulative bill supply forecast

Bill-OIS tracks bill supply, which is projected to increase over the next 2 quarters



Source: BofA Global Research, Bloomberg, Treasury

BofA GLOBAL RESEARCH

Exhibit 63: Bill and coupon issuance estimates by month

TGA to decline as a result of a debt issuance suspension, but bill issuance expected to be positive in FY'23

	Financing Need	TGA EOP	TGA Change	Marketable Borrowing	Net Coupon	Net Bills	Fed Coupon maturities	Fed Bill maturities	Net Coupons to the Public	Net Bills to the Public
	1		2	3 = 1 +2	4	5	6	7	4+6	5+7
Oct-22	90	596	-40	50	29	21	46	14	75	35
Nov-22	175	650	54	229	60	169	60	0	120	169
Dec-22	23	700	50	73	91	-18	53	7	144	-11
Jan-23	-63	700	0	-63	-49	-14	55	5	6	-9
Feb-23	302	700	0	302	42	260	60	0	102	260
Mar-23	276	700	0	276	74	202	56	4	130	206
Apr-23	-335	700	0	-335	-41	-294	60	0	19	-294
May-23	72	700	0	72	43	29	60	0	103	29
Jun-23	97	700	0	97	77	20	48	12	125	32
Jul-23	230	700	0	230	-56	286	50	10	-6	296
Aug-23	239	700	0	239	13	226	60	0	73	226
Sep-23	71	700	0	71	72	-1	39	21	111	20
Oct-23	219	700	0	219	-3	222	52	8	49	230
Nov-23	254	700	0	254	0	254	60	0	60	254
Dec-23	28	700	0	28	68	-40	46	14	114	-26

Source: BofA Global Research, US Treasury, Federal Reserve

BofA GLOBAL RESEARCH

Supply – EU

Erjon Satko
BofASE (France)
erjon.satko@bofa.com

Sphia Salim
MLI (UK)
sphia.salim@bofa.com

- Eurozone sovereign debt markets face a major test in early 2023 with investors facing a record increase in issuance to almost €400bn
- NGEU+PEPP flexibility may keep Italian net supply relatively low despite QT in Q3-4

2023: a big test for Euro govie markets

Eurozone government deficits are largely stable between 2022 and 2023 but, despite this, the change in ECB QE flows will drive 2023 Euro govie net issuance flows to the highest level on record. EUR Supras net flows add around €110bn in 2023 (Exhibit 64).

Also, the optimistic growth assumptions skew the balance of risks towards more, rather than less, issuance next year relative to these assumptions.

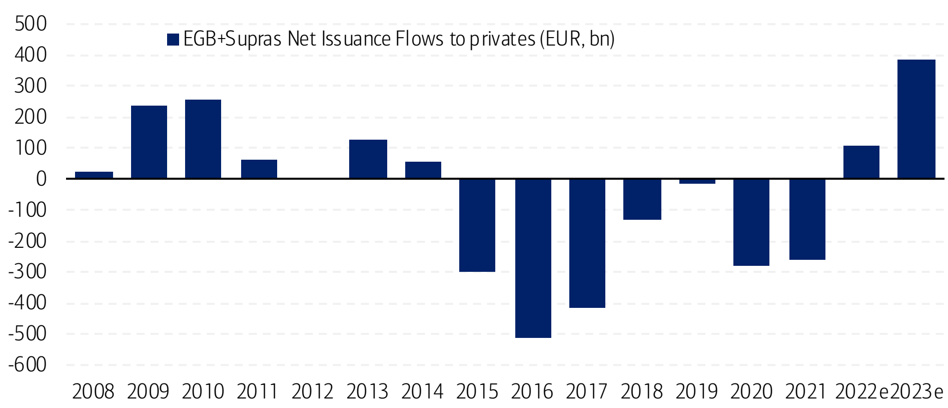
We assume the ECB will keep the stock of PEPP holdings largely constant over 2023 but start running down that of APP from Q2. We also expect the ECB to take off APP €20bn in Q3 (of which c.€13bn from central government debt securities) and €40bn in Q4.

We also take into account the possible reinvestment of €92bn in coupon repayments to privates (so we net out the estimated payment to the Eurosystem in virtue of APP and PEPP holdings).

Considering the high level of rates vol, 2023 net flows require much more private capital to keep the risk impact on balance sheets manageable (see report here).

The seven consecutive years of negative net issuance and ensuing reduction of the EGB market (in absolute but even more so in relative terms) also adds the risk that intermediaries in the primary and secondary markets may need to substantially increase inventories (and therefore employed capital) to help balance supply and demand. Given the sudden increase in government flows, this is far from a given.

Exhibit 64: EGB+Supras issuance net of coupons, redemptions, buybacks and QE flows
Even on relatively conservative funding assumptions, 2023 net issuance is set to almost double the previous record in 2009-10



Source: National treasuries, ECB, Bloomberg and own calculations. The ECB QT scenario assumes €20bn APP rundown in Q3 and €40bn in Q4. Numbers are in EUR billions.

BofA GLOBAL RESEARCH

We think treasuries should significantly reduce the weighted average maturity of issuance next year to soften the extra DV01 put on privates' balance sheets. Moving this average from 10-11 years to 7-8 years would largely neutralise the expected supply increase in risk terms in 2023 relative to 2022.

The publication of most treasuries' funding programmes from later in November to mid-December should clarify this theme. Given the structural scarcity of high-quality EUR-denominated securities that have good characteristics as collateral, we do not exclude a higher share of funding needs being covered by bills instead of bonds, especially for core issuers. This would be the main downside risk for 2023 flows.

Issuance front-loaded in Jan-Feb

The breakdown of net flows (gross issuance minus coupon and redemption repayments, buybacks and QE flows) by month and country provides further details on the timing as well as the drivers of levels and changes.

In accordance with seasonality, the majority of issuance has placed in the first few months of the year. At €156bn in total volumes, January and February would already account for more than half of the year's total.

Cross-country, the assumption of the pace of ECB PEPP reinvestment flexibility weighs heavily on Italy/Spain numbers relative to core and semi-core. We assume that the total monthly reallocation of PEPP reinvestments from "donor" to "recipient" countries would slow to c.€2bn.

We also assume that these flows are split based on the capital keys in each issuer category, which implies a higher participation from France in forgoing OAT reinvestments (this assumption may not necessarily prove correct). If the Banque de France continued the strategy seemingly adopted so far on reinvestments, French net issuance flows may be c.€8bn lower.

The assumed deceleration in PEPP reinvestment flexibility is also a consequence of the impact it would have, especially on Italy's net funding flows. The expected c.€29bn in NGEU loans reduce market funding by enough that, without a change in PEPP reinvestment policy, the country's net flows would remain negative.

The German c.€60bn in net issuance is likely the most uncertain forecast. The country is used to tapping a very diverse funding mix, which beyond bills vs bonds, includes a more forceful use of repo as well as secondary market operations using "own-quota" bonds. On top of this, the actual usage (in 2023) of the €200bn tool for dealing with the energy crisis as well as the €100bn defence fund adds another layer of uncertainty. Finanzagentur's funding strategy document expected in December may help clarify at least the funding mix component.

Exhibit 65: Projected supply net of coupons, redemptions, buybacks and QE
Monthly net supply through the year: France leads the year total, Jan-Feb see the highest concentration

EUR bn	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	2023	Chg.
Austria	9	1	6	-5	6	2	-8	2	6	-10	2	2	13	11
Belgium	5	5	0	5	5	-10	4	2	5	-6	1	0	14	13
Finland	4	0	1	-4	4	1	0	3	-4	1	2	0	7	4
France	31	15	2	6	-20	28	5	15	30	-25	16	5	107	58
Germany	20	-2	5	-20	1	5	22	1	2	8	28	-10	59	52
Ireland	4	0	-7	0	1	0	0	0	1	0	0	0	-1	9
Italy	18	28	-15	16	-17	10	9	-31	-2	-7	-5	5	9	33
Netherlands	-7	6	5	3	5	5	-15	1	6	3	3	0	14	17
Portugal	3	1	1	3	1	1	0	0	1	-9	2	0	2	5
Spain	-2	19	13	10	-10	19	-14	6	17	-12	0	5	51	8
Total	84	72	13	12	-26	61	2	-2	61	-57	48	7	275	210

Source: National treasuries (when possible), ECB, own assumptions and calculations

BofA GLOBAL RESEARCH

Supply – UK

Agne Stengeryte
MLI (UK)
agne.stengeryte@bofa.com

Mark Capleton
MLI (UK)
mark.capleton@bofa.com

- We expected a lot of supply in 2023/24, but the DMO has projected even more.
- This projected surge in supply adds to our view to short 10y Gilts vs. Sonia.

Another year of 'who will buy all the Gilts'?

£169.5bn of Gilt sales planned for the current fiscal year

Following Chancellor Hunt's Autumn Statement, the Debt Management Office (DMO) cut its Net Financing Requirement (NFR) for fiscal year 2022/23 (Exhibit 66). The reduction was implemented via a decrease in planned Gilt sales in 2022/23 to £169.5bn, and a decrease in net sales of T-bills to £33.2bn (see UK Budget: grim published on 17 November). The outcome was very close to our own expectations for £168.1bn and £30.2bn, respectively (see Autumn statement preview: back loaded published on 9 November) and compared to a Bloomberg survey estimate of £185bn.

Skew shorter to temper duration delivery and appeal to likely buyers

Across the curve, the DMO shifted issuance shorter – in line with our own expectation heading into the Remit – now planning 39.2% in shorts, 25.5% in mediums, 23.5% in longs and 10% in index-linked Gilts. Skewing issuance much shorter on the curve should help the DMO both to temper the duration being delivered with a significant quantum to sell and appeal to the preferences of the dominant (overseas) investor base, as well as encourage the banking sector to return to the market. Growing the T-bill market is another option we think would address the same issues.

Exhibit 66: UK DMO Remit for fiscal years 2022/23 and 2023/24 including BofA projections, £bn
DMO's Gross Financing Requirement projection came out much higher than expected in FY 2023/24

UK DMO financing Remit arithmetic (£bn)	FY 2022/23 (DMO - Sep'22)		FY 2022/23 (DMO - Nov'22)		FY 2023/24 (DMO - Nov'22)
CGNCR & Growth Plan	166.7		136.1		188.1
Redemptions	107.1		107.1		117.0
Adj. from prev. FY	-33.1		-33.1		
Gross Financing Req. (GFR)	240.7		210.1		305.1
Less:					
NS&I	6.0		6.0		
NS&I green	-		-		
UK Sukuk	n/a		n/a		
Other financing	0.7		1.4		
Net Financing Req. (NFR)	234.0		202.7		
To be financed through:					
Gilt sales, through:	193.9		169.5		
Short conventional	*73.5*	*38%*	*66.5*	*39%*	
Medium conventional	*46.6*	*24%*	*43.2*	*25%*	
Long conventional	*47.0*	*24%*	*39.8*	*23%*	
Index-linked	*21.2*	*11%*	*17.0*	*10%*	
Unallocated	*5.6*	*3%*	*3.0*	*2%*	
Net T-bill sales	40.2		33.2		
Total financing	234.1		202.7		
DMO net cash position	2.3		2.3		

Source: DMO, BofA Global Research

BofA GLOBAL RESEARCH

Fiscal year 2023/24: we expected a lot, but the DMO has projected even more

The big surprise (for us, at least) was in the DMO's illustrative Gross Financing Requirement (IGFR) showing £305.1bn in Gross Financing Requirement (GFR) next fiscal year, £65bn higher than we were expecting heading into the Remit. Not all of that will be done in Gilts, of course, with T-bills and National Savings & Investment (NS&I) to allow for. But the Bank of England (BoE) will also be selling – we assume it will continue beyond the next 12 months at the current run rate of £80bn per year ("passive" plus "active" Quantitative Tightening (QT)). Also over the next 12 months, therefore stretching into the 2023/24 fiscal year, the Bank intends to dispose of the £19.3bn in Gilts recently acquired through its emergency purchases.

So, who will buy all those Gilts?

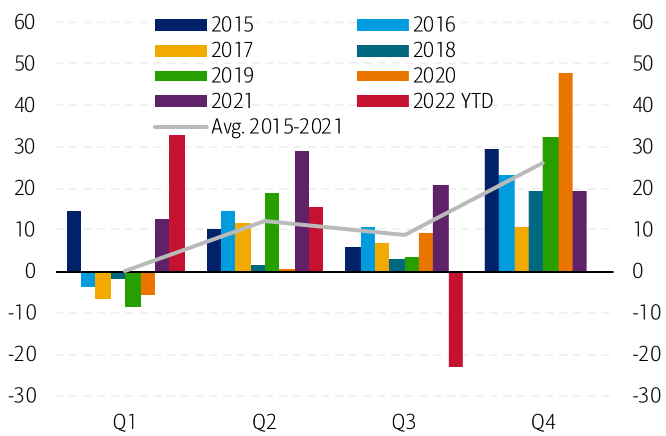
Taking the DMO's £305.1bn GFR and assuming similar levels of NS&I and slightly higher net T-bill sales (£20bn and £40bn, respectively) implies some £245bn Gilt sales for 2023/24. Gross Gilt issuance net of gross BoE buying will therefore be a record high this fiscal year, breaching that record again, much more substantially, next fiscal year.

We have debated the 'who will buy all the Gilts?' question for a while now:

- **Overseas:** After the highest Q1 net buying of Gilts since 2000 and good net buying in Q2, overseas investors sold £13.0bn of Gilts in Q3 (Exhibit 2). As highlighted in Another large net Gilt selling by overseas investors in September published on 31 October, a low Q3 number is not unusual from a seasonality perspective. Meaningful net Gilt selling in July and September should also be viewed in the context of negative net Gilt supply in those months. And it is possible that September's sales could have been tainted by pension fund selling amid Liability Driven Investment (LDI) turmoil. We await Q4 data to look for any changes in overseas investor demand for Gilts.
- **Banks:** Bringing the banking sector back into the Gilt fold was a key way to diversify the investor base, we thought (Exhibit 68). We do believe that banks have the potential to buy a lot of Gilts. But at the right price. It's a 'water table' scenario – shorter-dated Gilt yields might have to rise a lot, relative to Sonia, before the flow surfaces. Thereafter, demand would be relatively elastic, we think (a highly desirable feature, given funding uncertainty).
- **Retail:** Will retail discover Gilts? A little bit complicated maybe, but not too taxing – we explore the possibility in the Spreads – UK section.

This projected surge in supply adds to our view to short 10y Gilts vs. Sonia, outlined in more detail in Spreads – UK section of this publication.

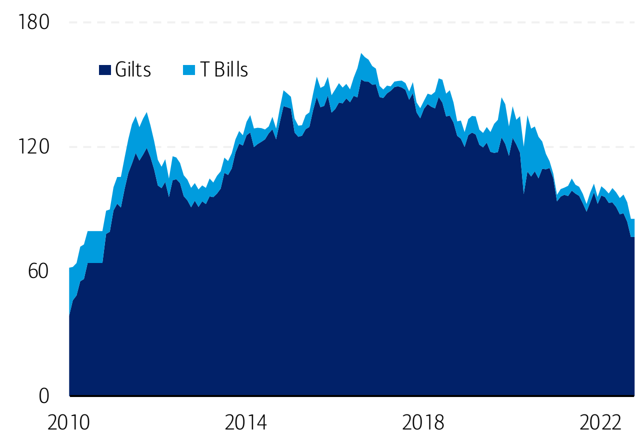
Exhibit 67: Quarterly overseas investor net buying of Gilts, £bn
£13bn net selling of Gilts in Q3 is hard to interpret so we await Q4



Source: BoE, BofA Global Research

BofA GLOBAL RESEARCH

Exhibit 68: Banking sector holdings of Gilts and Treasury Bills, £bn
A steady shedding of Gilts...



Source: BoE, BofA Global Research

BofA GLOBAL RESEARCH

Supply – JP

Tomonobu Yamashita
BofAS Japan
tomonobu.yamashita@bofa.com

Shusuke Yamada, CFA
BofAS Japan
shusuke.yamada@bofa.com

- Expect 40yr, 5yr, JGBi issuance to increase from April, resulting in positive net JGB supply in 2023
- However, BoJ's JGB purchases up sharply YTD; similar/faster pace in 2023 could result in negative net supply

Expect increase in 40yr JGB issuance

We forecast a slight YoY decline in total JGB issuance in FY23 (Apr 2023-Mar 2024). The Ministry of Finance (MoF) typically announces JGB issuance plans for next fiscal year in late December. In FY23, we expect (1) an increase in 40yr issuance, (2) an increase in 5yr issuance, (3) a reduction in issuance of Treasury Discount Bills (T-Bills), and (4) an increase in 10yr JGBi issuance. We expect issuance of other maturities to remain unchanged versus FY22 (Exhibit 69).

Higher 2yr JGB/T-bill issuance may not imply sustained decline in WAM

MoF's FY22 JGB issuance plan, announced after the second supplementary budget and ahead of the FY23 issuance plan, included an increase in T-bill and 2yr JGB issuance. This was likely because investors noted at meeting of JGB market special participants held by the MoF that they continue to see the scope to purchase 10yr and shorter maturities.

JGBs' weighted average maturity (WAM) lengthened from 7.6 years when the BoJ launched large-scale monetary easing in 2013 to 8.9 years in 2021. This was likely intended to avoid an immediate increase in the interest payments in the event of a shift to monetary tightening. However, MoF has mainly used T-bills (which are in high demand) to finance the rapid increase in fiscal spending since the start of the COVID-19 pandemic. The WAM for JGBs scheduled for issuance in FY22 is roughly seven years, and we think MoF will avoid shortening the WAM to curb interest payments.

Scope to increase 40yr/5yr JGB, JGBi issuance

We therefore see scope to increase issuance of 40yr and 5yr JGBs and 10yr JGBis. Our reasons are as follows.

- 40yr JGB: 40yr JGB auction results are relatively solid despite weak outcomes for the 20yr/30yr auctions. This likely reflects growing demand for superlong JGBs from Japanese life insurers and the dutch-style-price-competitive auction method.
- 5yr JGBs: The 5yr yield remains positive, and we think Japanese deposit-taking corporations could shift a portion of their BoJ current account balances subject to zero or negative interest rates into 5yr JGBs with positive yields.
- JGBi: We see scope to increase 10yr JGBi issuance given sustained support from the BoJ and MoF, the lack of prospects for a near-term decline in BEI (for details, see the Inflation section of this report), and the use of the dutch-style-price-competitive auction method.

We think it is possible to flexibly increase T-bill issuance during the fiscal year given relatively high demand, and therefore expect the initial target to be set somewhat low.

Exhibit 69: FY22/FY23 JGB issuance plans (¥tn)

Expect increase in 40yr JGB issuance from April 2023

	FY2022				FY2023 (BofA's estimates)				Difference
40-year	0.7	×	6	4.2	0.8	×	6	4.8	0.6
30-year	0.9	×	12	10.8	0.9	×	12	10.8	0.0
20-year	1.2	×	12	14.4	1.2	×	12	14.4	0.0
10-year	2.7	×	12	32.4	2.7	×	12	32.4	0.0
5-year	2.5	×	12	30.0	2.6	×	12	31.2	1.2
2-year	2.8 2.9	× ×	9 3	33.9	2.9	×	12	34.8	0.9
TBs				64.6				60.0	-4.6
10-year Inflation-Index	0.2	×	4	0.8	0.3	×	4	1.2	0.4
Auction for Enhanced-liquidity				12.0				12.0	0.0
Total				203.1				201.6	-1.5

Source: MoF, BofA Global Research

Note: FY2022= official plan based on 2nd supplementary budget, FY2023=BofA estimates

BofA GLOBAL RESEARCH

We see slight increase in 2023 net JGB supply

As a result, we expect net JGB supply (excluding T-bills) to increase slightly YoY in 2023 (Exhibit 70). The net supply of JGBs (JGB issuance minus redemptions and BoJ purchases, plus redemptions of BoJ holdings) began increasing in 2021 for the first time since 2012; we expect a decline in 2022, followed by a slight increase in 2023. This reflects a rapid increase in the BoJ's purchases.

The BoJ gradually reduced its JGB purchases through 2021, then increased its buying mainly of 10yr issues to maintain its yield-curve control (YCC) policy. We therefore expect it to increase purchases by more than ¥30tn YoY in 2022. We do not expect it to adjust monetary policy until at least 2024, so its 2023 JGB purchases could exceed 2022 in case investors test the limits of YCC, resulting in negative net JGB supply. The greatest risk to our outlook is the BoJ's JGB purchases.

Exhibit 70: Actual and forecast net JGB supply (JPY tn)

We see slight increase in CY2023 net JGB supply

CY	Issue(a)	All Redemptions(b)	BoJ Purchases(c)	BoJ's JGB redemptions(d)	Net supply=(e)=(a)-(b)-(c)-(d)
2010	120.9	77.8	22.5	-13.8	34.5
2011	123.7	100.4	24.4	-15.2	14.1
2012	128.2	100.9	43.7	-20.6	4.3
2013	136.3	98.4	77.3	-24.9	-14.5
2014	138.3	108.9	88.7	-28.5	-30.8
2015	137.4	107.6	112.4	-32.2	-50.4
2016	134.7	105.8	119.2	-40.6	-49.8
2017	130.8	101.3	101.0	-43.2	-28.4
2018	126.0	103.3	92.0	-54.4	-14.9
2019	120.7	106.0	71.1	-55.3	-1.1
2020	131.9	110.6	83.0	-60.7	-1.0
2021	145.7	105.6	73.6	-60.1	26.6
2022	147.2	107.2	108.4	-62.2	-6.2
2023	148.8	114.2	105.0	-73.5	3.1

Source: MoF, BoJ, Bloomberg, BofA Global Research

Note: up to CY2021=actual figures, CY2022 and CY2023=BofA estimates

BofA GLOBAL RESEARCH

Technicals

Paul Ciana, CMT
BofAS
paul.ciana@bofa.com

- Our wave counts and channel breakout measures still favor higher US 10Y yield. The daily chart of 10Y yield currently lacks a top pattern to show a yield peak.
- We stick with trend into 1Q23 and prefer selling 10Y UST in the 4Q22 rally. A snapback in stretched long term momentum is the risk.

View: Sell the 4Q22 UST rally for higher 10Y yield in 1Q23

Short 10Y UST at 3.77%, target 4.25-4.5%, stop below 3.4%

In the Rates Technical Advantage (02 November 2022) we discussed our base case view of fading a rally in the 10Y UST somewhere between 3.65-3.90%. The impulsive rally in USTs after US CPI data resulted in yield falling like a knife into our sell zone. We expected some residual momentum to push yield closer to 3.65% and it has (Global Rates Weekly 11 November 2022). We short the 10Y with yield below the 50d SMA and with RSI in the sell zone as shown in Chart 1. This should complete a standard "abc" corrective wave pattern. We also favor shorting when the correction is larger than the average correction since March 2020, which is more than 57bp. The last intraday yield high of 4.34% less 57bp favors shorts when yield is below 3.73%. Weekly chart technicals suggest wave III higher in yield isn't complete yet (Chart 2). Monthly chart technicals have suggested >=5% is a risk since yield broke out of the declining channel in April 2022 (Chart 3).

One risk to shorting here is a double "abc" correction like that seen in June-Aug 2022. Then, a 99bp correction occurred from 3.50% to 2.51%. Another risk presents itself in the long term chart. The monthly RSI (momentum) is still stretched and a continued snapback in momentum would results in lower 10Y yield sooner.

Chart 1: US 10Y Yield – Daily Chart

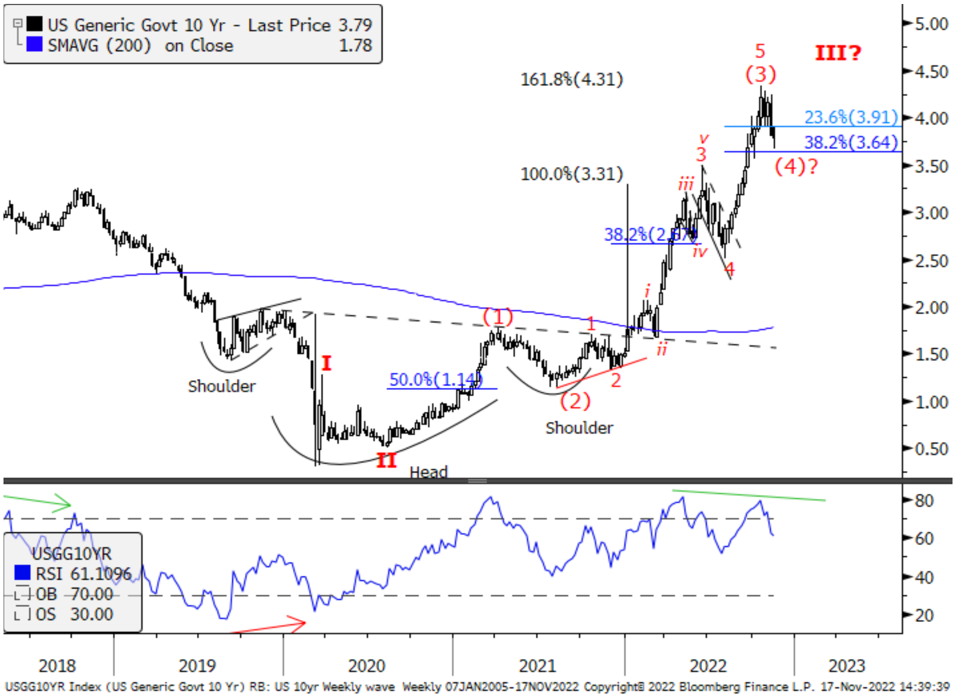
A typical "abc" correction ends between 3.65% and the 50d SMA to consider reloading shorts.

Source: BofA Global Research, Bloomberg

BofA GLOBAL RESEARCH

Chart 2: US 10Y Yield - Weekly Chart

Our wave counts indicate we're in wave (4) of five waves higher to complete a larger wave III. A modest two peaked RSI divergence is a trend risk. However three peaked divergences tend to work better. Maybe in 1Q23.



Source: BofA Global Research, Bloomberg

BofA GLOBAL RESEARCH

Chart 3: US 10Y Yield – Monthly Chart

Largest cycle shows upside measure of >= 5.00% as a potential outcome in 2023. The 4Q22 snap back resolved some of the stretched momentum conditions but a larger snapback is a risk.

Source: BofA Global Research, Bloomberg

BofA GLOBAL RESEARCH

Global bond liquidity

Mark Cabana, CFA
BofAS

Ralph Axel
BofAS

Sphia Salim
MLI (UK)

Erjon Satko
BofASE (France)

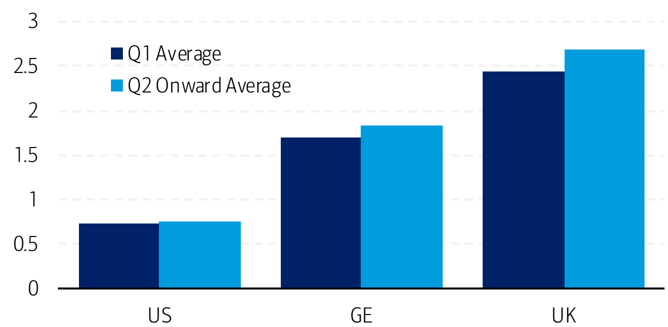
Larger uncertainty, debt & tightening pace=> liquidity hit

Global rate liquidity is thin and conditions are fragile. Reasons include (1) elevated macro uncertainty (2) global debt > demand (3) an unprecedented global tightening cycle. We detail fragility drivers, market risks, and potential policy solutions.

Top 3 liquid bond markets are no longer

The decline in global rate liquidity can been seen via wider bid-offer spreads (Exhibit 71), elevated discrepancies relative to fair values on the spline curves (Exhibit 72) and thin market depth (see Exhibit 3 for our estimate for the Bund future using 5-min volumes).

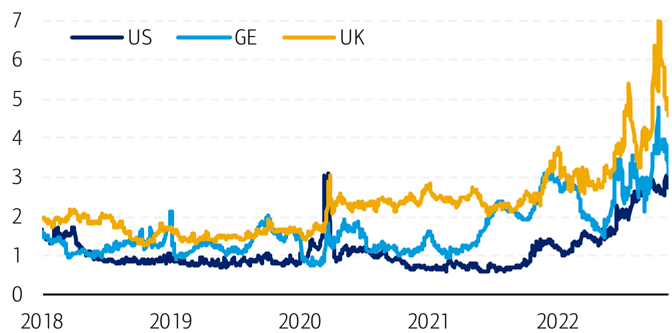
Exhibit 71: Bid-ask spreads in ticks across 2022
Bid-ask spreads have widened on average from Q2 onwards



Source: BofA Global Research

BofA GLOBAL RESEARCH

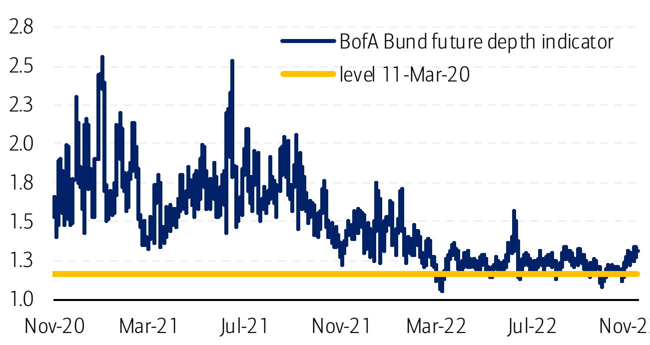
Exhibit 72: Bloomberg gov't liquidity index
Spline price errors have risen materially in 2022



Source: BofA Global Research, Bloomberg

BofA GLOBAL RESEARCH

Exhibit 73: BofA estimate of market depth for Bund future
Market depth this year has hovered around the lows recorded in Covid shock



Source: Bloomberg, BofA Global Research. (*) the indicator corresponds to the ratio of: 7-day average volumes across 5-min periods where the future price moves by more than 5 ticks divided by the 7-day average volumes across all 5-min periods from 7am to 7pm, using Bloomberg GIT.

BofA GLOBAL RESEARCH

Exhibit 74: 120D rolling correlation of changes in US 10Y yield & SPX
Negative corr of changes in yields & equities reflect lower UST hedge value

Source: BofA Global Research, Bloomberg

BofA GLOBAL RESEARCH

Rapid debt growth, after years of already increased leverage, called for greater compensation, especially as the traditional positive correlation of UK, US & GE yields vs equity changes flipped negative (Exhibit 74), removing part of their risk-off hedge value. These market conditions establish a "rates impossible trinity" where all 3 conditions cannot be simultaneously satisfied: (1) elevated debt burdens / profligate fiscal policy (2) restrictive regulations (3) markets free from central bank intervention.

We worry global rate markets are one forced seller away from a material deterioration, similar to the UK. We are unsure where this forced selling might come from but see the following risks: risk parity deleveraging, mutual fund outflows, reserve manager selling, RV HF long-end cash/futures basis unwind. A shift in BoJ YCC policy or acute bank funding stress would also be problematic. A rates market breakdown is a tail risk.

No silver policy bullet: forceful actions needed

Regulators are aware of the deterioration in market liquidity & working on structural changes. We present potential US changes in Exhibit 75, with more details in Liquidity is a privilege, not a right. We are concerned the most likely changes are the least effective.

In the Euro Area, while similar regulation changes (such as the removal of sovereign bonds from the LR calculation), would be most helpful, we believe that it is debt agencies that will remain the first actors to try and improve secondary market liquidity. From an issuance perspective, useful measures include: (a) more taps of low coupon off-the-run bonds, (b) shortening the maturity of supply, to adapt to demand, (c) higher new issue premiums at syndications. Also, the pricing of EU syndicated bonds vs OATs rather than swaps could make them easier to hedge. For the secondary market, treasuries could (a) spread their buy-backs beyond the front-end, (b) be more active in repo/reverse repo, as done by Finanzagentur and contemplated by the Greek debt agency, and (c) increase primary dealers' incentives to provide secondary market liquidity. Besides debt agencies, Eurex's decision to add a minimum trading period for bonds to be eligible in the deliverable baskets should help lower the CTD uncertainty and thereby futures' volatility.

Central banks remain the ultimate backstop

Central banks (CBs) remain the ultimate global rates market backstop if market structure changes are insufficient. They must ensure sovereign debt market functioning, given their quintessential role in policy transmission to broader markets and the real economy.

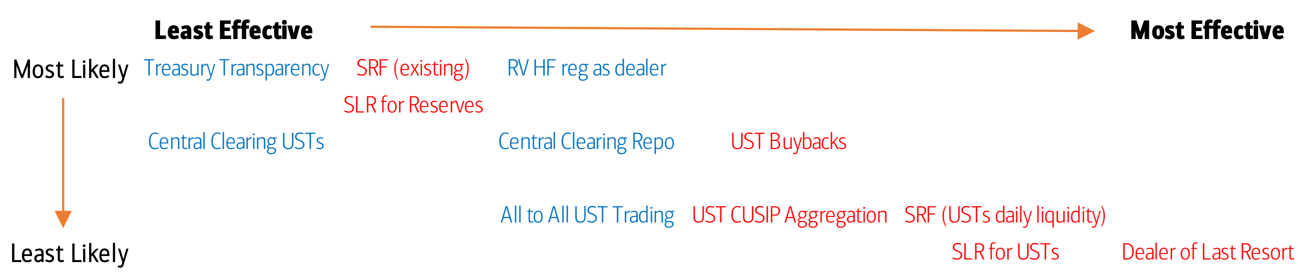
Any new CB intervention today would likely look very similar to BoE / LDI driven gilt purchases: targeted, limited in scope, and sterilized. Interventions must be targeted and limited since CBs can't effectively lower inflation while doing asset purchases / easing financial conditions. New interventions would also likely be sterilized to the extent possible; if CBs need to buy long duration sovereign debt we would expect them to offset this by selling an equivalent amount of shorter dated ones. CBs may twist again.

Beside purchases of bonds, central banks could consider opening direct lines with, for eg, Pension Funds (as the Dutch currently campaign for), or, less extreme in the case of the ECB, selling bills / launching RRPs, instead of doing QT to drain excess liquidity.

Market takeaways: cheaper bonds, high strike protection

Investors concerned about a further deterioration of global rate liquidity should position for this by (1) being short long-dated US swap spreads (2) owning high strike protection. Acute dislocations likely won't last long however. CBs will intervene if they see large spillovers. Investors will need to exit any liquidity tail hedge before such intervention. Any reduction in macro uncertainty will also make these positions less attractive.

Exhibit 75: Potential market structure changes to promote UST functioning ranked by likelihood & effectiveness
The most effective measures to support UST market functioning appear the least likely



Note: blue = steps to improve resilience & transparency, red = steps to increase demand, limit market dislocation; Source: BofA Global Research

BofA GLOBAL RESEARCH

Supply and Demand

Meghan Swiber, CFA
BofAS

Erjon Satko
BofASE (France)

- Expect the supply/ demand backdrop to favor a bid for the US vs EZ in '23
- This dynamic supports our recommended US real rate long vs EUR

Supply/ demand shift to favor USD rates

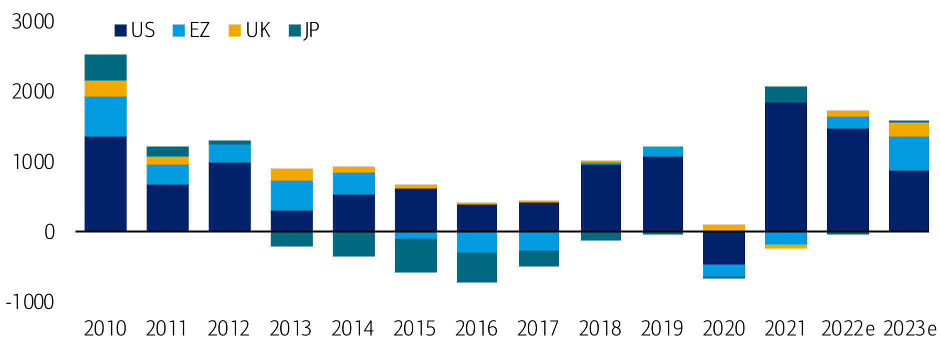
In 2023 we expect the supply/ demand backdrop to favor a bid for the US vs Eurozone. In the US the net coupon supply to the public will be on the decline while in the EZ we anticipate a notable uptick as the ECB steps back from the market. We also believe that the demand picture will shift earlier in the US relative to the Eurozone as confirmation of an economic slowdown brings a larger bid to UST duration and an earlier Fed cut cycle relative to the ECB.

This backdrop should support a widening of US swap spreads vs EUR swap spreads. We recommend clients position for this at the 10y point: buying USTs vs swap and selling EU vs swap at a current level of -105bps (-31bps US 10y spread, +74bps EU 10y spread) target: -85bps, stop: -115bps. Risks to the trade are that demand remains sidelined in the US and that continued UST vol drives an illiquid selloff.

Supply: ECB QT = record EGB supply

The supply picture for next year shows a divergence between US and EUR that will likely support a relative richening of USTs (Exhibit 76). EZ share of net marketable supply will be the largest since 2013/14. We think that this increase in issuance will require an unprecedented shift in Eurozone investor behavior, complicating the supply/demand balance in the EZ.

Exhibit 76: Net supply to the public across major government bond markets ($USD, billion)
The EZ will see sharp net supply pickup in '23 vs other regions



Source: BofA Global Research, Bloomberg. Treasury, Federal Reserve, Note: numbers exclude historical & expected changes in central bank holdings, US figures exclude T-bills.

BofA GLOBAL RESEARCH

In the Eurozone, sovereign bond net issuance is set to break new records in 2023 (see: Euro govies: a major supply shock in 2023?). A conservative assumption of the pass-through to bond issuance from the government measures to tackle the economic slowdown and the energy crisis already results in net funding needs reaching new records in the Eurozone sovereign bond market in 2023. An ECB "passive" QT would require significantly more reliance on private investor. In risk delivery terms, if current rates volatility persists well into 2023, EGB net issuance would require private balance sheets to absorb market risks well above the previous record in 2010, unless treasuries cut the weighted average maturity of issuance markedly to around seven/eight years.

In the US we estimate net marketable borrowing in coupons however will decline from $1.5 trillion in CY 2022 to just under $900bn in CY 2023. This shift in issuance is the result of TSY's reductions in coupon auction sizes which we anticipate will level off and hold steady in the coming year (see: November refunding: in line with expectations). This would allow Treasury to grow bills as a share of marketable debt from 15% to about 18% by the end of the year.

Demand: slowdown to support stronger bid in US

We are more optimistic on the end-user bid in the US vs Europe. While near-term uncertainty around how high the Fed will bring terminal may keep investors at bay, a clearer turn in the data would be seen as a buying opportunity for TSYs (see: UST demand in 2023: I want you back). In the Eurozone, we see a high probability that the market is not able to digest issuance flows unless treasuries drop the maturity of supply.

US demand returns in '23

In the US, we expect flat to stronger demand across large buyer bases in 2023. The >100bps rally in 10y rates we forecast by the end of next year would be particularly supportive of demand from mutual funds. We also believe that foreign investors, particularly foreign official accounts could start to buy if we observe the USD depreciation our FX team anticipates. Banks will likely begin to grow securities portfolios in the second half of the year once they fight to retain deposits and see a slowdown in loan growth alongside a cooling economy. Finally, pension de-risking could drive a bid at the back-end of the curve given the strong funded status of private defined benefit (DB) plans.

While our baseline forecasts have QT (quantitative tightening) ending in January 2024, after the Fed cuts for the first time in December 2023, an earlier end to QT would also be very supportive for the demand. If the Fed ends QT, we would expect the Fed to reinvest MBS maturities into secondary market TSY purchases. We estimate this could total between $10-$25bn per month depending on the speed of MBS pay-downs.

EZ demand will struggle to keep up with issuance

With inflation and the energy crisis hitting Eurozone investor savings hard in 2022-2023, the record rise in EGB net supply cannot come at a worse time. In order to clear out supply-demand, Eurozone investors are called to deeply change their asset allocations in favor of domestic sovereign bond markets.

In terms of differences relative to the "usual" flows, we think it is the cash rich ones that are most likely to cover for funding needs over Q1-2, time when rates volatility and the central bank hike trend may keep certain speculative investors at bay. Unless there are major shifts in the inflation/growth outlook or in its uncertainty, it is hard to see a major allocation changes from the Pensions & Insurance or Fund industries in Q1 23.

On the other hand, domestic banks, corporates and retail are the investor categories most likely to substantially increase their participation in the EGB market relative to recent history already in Q1 (period when gross and net govie supply is highest) given their historically large shares of cash holdings as portion of their total assets.

Without large parts of the real money community allocating significantly more than their usual to EGBs over Q1 and with corporate/retail demand reacting slowly to market price changes, it is domestic banks who will be called to fill the demand gap initially. Given risk preferences (and mandates) from these investor types, EGB demand may be most concentrated in the front-end (up to the 5y point) initially and move towards longer maturities only later in Q2.

Bottom line: We expect the supply/ demand balance in 2023 to favor the performance of USTs vs EGBs, which we recommend expressing through a relative swap spread trade at the 10y point. We think that the 10y point reflects a clear area where coupon supply/ demand dynamics will be most clearly felt and more insulated from the funding dynamic that is more impactful at shorter-dated tenors.

FX reserves

Sphia Salim
MLI (UK)

Kamal Sharma
MLI (UK)

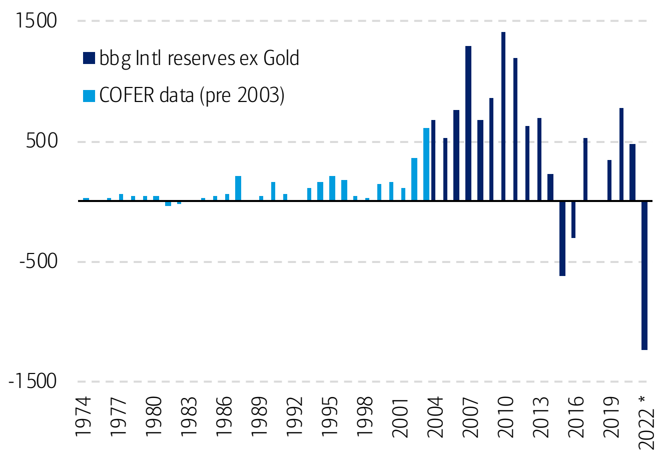
Bruno Braizinha, CFA
BofAS

Meghan Swiber, CFA
BofAS

Record collapse in value of FX reserves: a valuation story…

The value of international reserves (ex Gold) collapsed by $1.2tr this year. This is the largest even decline recorded in the space of a year (Exhibit 77). The c. 10% decline is also set to be the largest % decline on record, at par with the drop recorded in 1981/2.

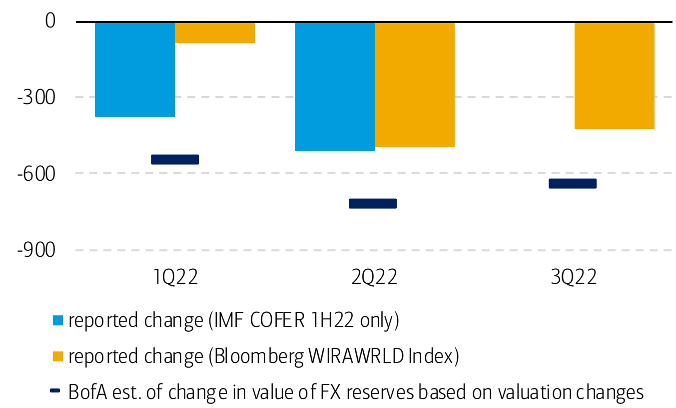
Exhibit 77: Yearly chg in USD value of international reserves (ex gold)
The USD value of FX reserves has collapsed the most historically in 2022



Source: Bloomberg, IMF, BofA Global Research. (*) Up to 11 Nov 2022

BofA GLOBAL RESEARCH

Exhibit 78: Changes in the value of global FX reserves (USD bn)
We estimate that FX, bond & equity valuation changes should have, on their own, lowered the USD value of FX reserves by more than reported in COFER or on Bloomberg



Source: BofA Global Research, IMF COFER, Bloomberg

BofA GLOBAL RESEARCH

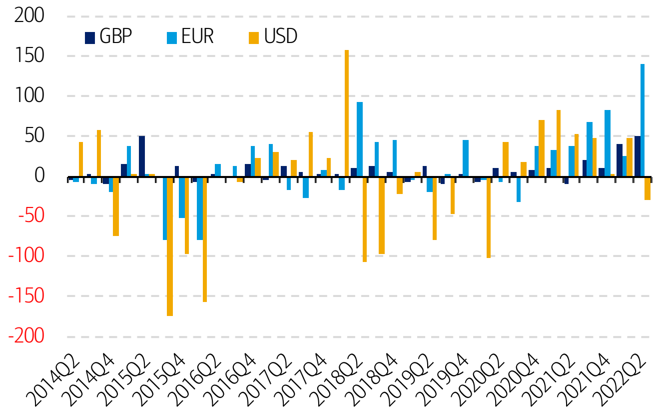
This, in the context of a 17% US dollar appreciation in the first three quarters of the year, has put the focus on CB FX interventions, and any related bond selling flows.

Yet, surprisingly, we estimate that this sharp decline in the value of FX reserves can be more than fully explained by valuation changes (USD strength reducing the USD value of all non-USD reserve holdings, and the global selloff in bonds and equities). When accounting for bond and equity valuations changes (not just FX), the USD value of FX reserves should have declined by $375bn *more* than reported in COFER up to end of Q2 (or for that matter Bloomberg for end of Q3) – Exhibit 78.

This means that, in terms of activity, central banks have actually been accumulating reserves, at least on aggregate in the first three quarters of the year. FX interventions in some parts of the world may have been offset a reserve build-up elsewhere, e.g. by commodity exporters, benefiting from high commodity prices and continued demand.

The net purchase of FX reserves that we estimate based on COFER data in 1H22 appears to have been most favourable to the EUR, GBP and JPY. We calculate that there might have been net selling of USD holdings in Q2 (Exhibit 79). Indeed, the USD denominated share of reserves has risen, but less so than would have been implied by all valuation changes. This could be due to FX interventions being mostly in USD, but also to the rebalancing of reserves on the back of the strong USD. We also find that Custody holdings at the NY Fed have declined by more than foreign RRP has increased in 2022, pointing to net USD sales (Exhibit 80).

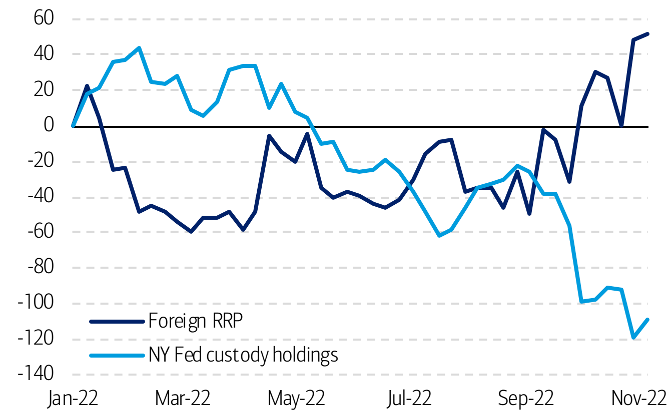
Exhibit 79: BofA est. of active CB reserve build-up (+) / selling (-)
We estimate that reserve managers were small net sellers of USD in 2Q22



Source: IMF COFER. Note: quarterly data from 2015 to 2018 may be impacted by the gradual reporting of China reserves in the allocated section of COFER statistics.

BofA GLOBAL RESEARCH

Exhibit 80: Change in custody & Foreign RRP holdings ($bn)
NY Fed holdings have declined by more than foreign RRP has increased since start of the year



Source: BofA Global Research, Federal Reserve

BofA GLOBAL RESEARCH

In 2023, we see scope for Central Banks to act as net buyers of bonds globally, including in USTs on the back of:

- **Reserve growth,** supported by: (a) export growth (esp. in the context of China re-opening), (b) still elevated commodity prices, and (c) reduced need for FX intervention as the end of the Fed tightening leads to a weaker USD.

- **CBs moving back from cash into bonds**. In the US, this would correspond to a drop in RRP in favour of UST holdings as the Fed stops hiking, and in EUR it would be led by a decline in foreign central banks' deposits at the ECB as their remuneration becomes punitive (potentially as low as 0%) at the end of April.

- **A desire to rebuild reserves** in regions where these have been sharply depleted this year. Such rebuild can be done for example with the sale of international bonds.

In the US, this would mean that central banks switch from being net sellers of USTs, to net buyers. DXY depreciation could also play a role as it results in rebalancing flows in favour or USTs, even if only partial given the reserve diversification drive (see estimated demand by foreign CBs based on historical correlation vs DXY in UST demand in 2023).

Market impact: in Q1, this is likely to be most supportive for short-dated EUR-denominated paper (as the USD may not be weakening yet). We express this via a long position in French bills vs €str (see front-end EU) and forecasts that imply limited tightening in 2y German swap spreads (outright and versus other sectors). Central Bank flows can turn positive for UST spreads thereafter, supporting our bullish view for 5-10y UST spreads (outright and vs EUR – see Supply/Demand special topic).

Risks to reserve managers' demand for European Government bonds and USTs are: (1) the weakening in the global economy next year which weighs on export growth in Asia, and puts downward pressure on commodity prices; and (2) a continued G10 policy tightening which causes risk-off, and maintains the need for FX interventions.

Pensions

Sphia Salim
MLI (UK)

Bruno Braizinha, CFA
BofAS

Mark Capleton
MLI (UK)

Meghan Swiber, CFA
BofAS

- Pensions demand for duration, both outright and/or by receiving on swaps, is likely to provide some support for longer dated yields in 2023…
- Reversing the 2022 dynamic where these portfolios lagged on the demand side, or were in fact catalysts for a more significant bearish dynamic at the backend

Pensions and duration demand in '23

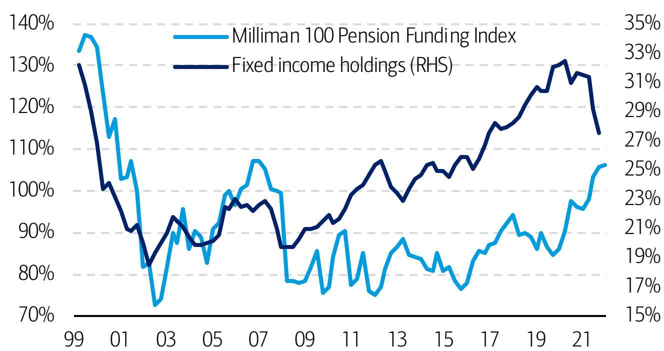
The search for marginal buyers of sovereign bonds in 2023 is on. A global slowdown context would generally drive a pickup in demand and allow for a more balanced supply and demand backdrop. However, the lack of support from some of the key market participants (particularly pension funds and LDI more broadly) in the 2022 demand backdrop continues to be a concern for 2023.

US – Bias for a pickup in demand

Higher rates and lower risk assets have likely exacerbated the divergence between private and public DB plans, with funded ratios improving significantly on the private side, but deteriorating on the public side.

Higher funded ratios, cycle highs in yields, and expectations for a slowdown ahead all contribute to expectations for a pickup in the de-risking momentum for private pension funds. Private DB pension funds have c.$3.7tn of assets, c.30% of which in fixed income and 8% specifically in UST. A conservative set of assumptions suggests c.$550bn demand for fixed income over 5y (assuming a de-risking glide path to a 30/70 allocation breakdown between USTs and IG over that horizon for a portion of the private DB universe -see Pension de-risking: the time for action is now). This corresponds to a yearly run rate of c.30-40bn demand for the 10y+ sector of the UST curve.

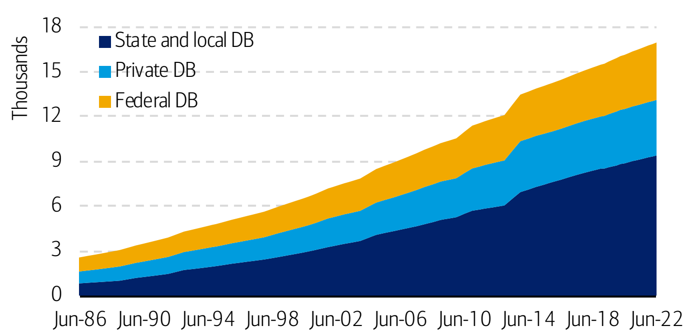
Exhibit 81: Funded status and fixed income allocation
Pensions have increased fixed income allocation post global financial crisis



Source: BofA Global Research, Federal Reserve, Bloomberg

BofA GLOBAL RESEARCH

Exhibit 82: US Private and public DB pension assets ($tn)
State and local and Federal pensions together are more than 3xs the size of private pension assets



Source: BofA Global Research, Federal Reserve

BofA GLOBAL RESEARCH

On the public side, the fiduciary duty of pension fund managers should drive more conservative allocations (higher FI allocations) as funded ratios deteriorate. However, we anticipate a bias towards slightly more dynamic allocations relative to what would otherwise be expected, particularly as the diversification benefits of bonds in portfolios have been relatively muted. Better buying of USTs is still the baseline, and we saw that bias also in the '19/20 slowdown (see Exhibit 81), but it would be a mistake to scale the private DB run rate by the relative public/private AUM (roughly 3x larger - see Exhibit 82).

UK – strong solvency overall, but conflicting drivers of Gilt demand

UK defined benefit pension funds will close 2022 in good shape on a solvency basis, at least on average, with higher yields devaluing liabilities by more than assets have typically suffered. Scheme experience of 2022 will likely have been fairly dispersed; for instance, it is possible that smaller schemes did not emerge from the LDI trauma unscathed if they were forced out of rate hedges at higher yields than currently prevail.

While we would say that improved solvency should, in isolation, increase the appetite for de-risking, the system as a whole is already a long way down the de-risking “glide path”. Therefore, the pace of de-risking might be accelerating but for a shrinking universe of funds needing to do so, making the quantum of demand very hard to judge.

There are other ambiguities, as far as pension demand for Gilts goes. For instance, de-risking can certainly mean shedding risk assets to buy Gilts, but for schemes at the end of their “journey”, it can also mean an insurer buyout, as a result of which Gilts will tend to be switched into spread product.

Another complicating issue is how the recent experience will affect both the appetite for leverage and illiquidity tolerance. Schemes that are comfortably solvent no longer have need for either leverage or risky and illiquid assets (at least in theory). They can, in principle, shift to a completely Gilt-based hedge. Past receiving in swaps (also a form of leverage) might also be reversed as part of such a shift. At the same time, we expect Gilt supply to be skewed shorter on the curve.

So, all in all, although we feel confident in the view that Gilts out to ten years on the curve will cheapen versus Sonia, the spread story for the long end seems more finely balanced given the competing influences upon pension behaviour.

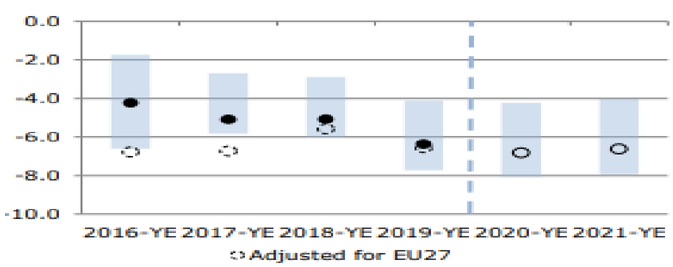
EUR – Demand from EU insurers & Dutch pension funds can rise as rates rally

We see the potential for receiving flows from insurers with duration gaps - when they believe the outlook for rates is clearer and levels are attractive. Duration gaps were still very large at the end of 2021 (Exhibit 83). While they will have mechanically declined as a result of the sharp duration selloff, they are unlikely to have closed.

Some Dutch pension funds may further increase their rate hedge ratios to lock in the currently elevated funding ratios (Exhibit 84). The increased risk of a delay in the pension reform could have played a role already, but we would argue that locking in the high funding ratios also makes sense ahead of the transition to the new Defined Contribution system (the shift may be more acceptable to members funding ratio is above 105%).

Exhibit 83: EEA Insurers’ duration mismatch (years)

The duration gap of insurers marginally recovered in 2021, but still large

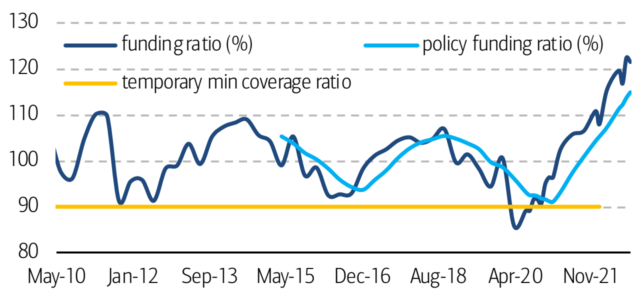


Source: EIOPA Risk dashboard. Distribution of indicator (interquartile range, median). Using Assets QFG (N2021 Q4=83); Liabilities AFG (N2021=83)

BofA GLOBAL RESEARCH

Exhibit 84: Industry Wide Dutch Pension Funds’ funding ratios

Dutch PFs funding ratios have surged with the rise in rates in 2021-22



Source: DNB

BofA GLOBAL RESEARCH

As funds transition to the new system however, there will be no need for them to receive long-dated swaps (no hedging needs), implying a structurally steeper 10s30s and 30s50s curve in the medium term, and richer bonds versus Euribor swaps in the long-end. As a result, we believe that from the moment the transition effectively starts (currently planned in Jul-23), there should be scope for 10y and 30y Buxl spreads to start converging, with a richening of 30y spreads while 10y spreads cheapen (spreads EU II).

Asset allocation

Bruno Braizinha, CFA
BofAS

- The search for portfolio hedges and diversifiers is likely to continue to be a theme in 2023, even as duration recovers some of its utility.
- As cash comes off the sidelines with the Fed pivot, UST allocations compete with glaring value across fixed income, and potentially other more tactical diversifiers.

Asset Allocation & Duration Demand in '23

Main '23 theme… US recession and a global slowdown, with implications for covariances and returns expectations across asset classes. But '23 is also the year of the pivot, with global central banks likely moving to an on-hold stance. This will drive a shift…

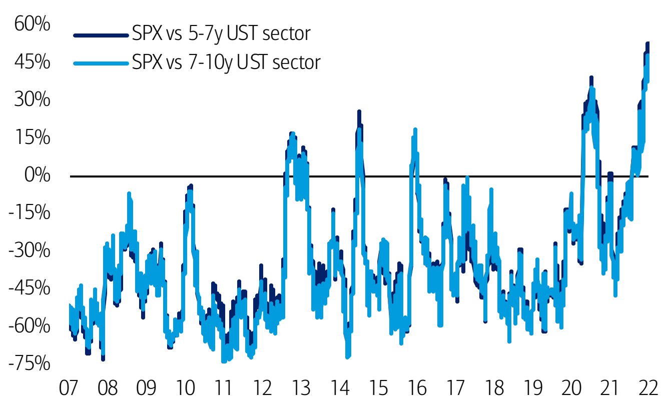
- From a first principal component type of dynamic across asset classes, which limits diversification benefits (see Exhibit 85), pushes vols higher, and reduces most positions essentially to the same small set of views – a dynamic supported by a higher inflation context and a consequent globally synchronized tightening process
- Into a context of higher dispersion in the dynamics of different asset classes, more orthodox correlations between risk and bonds, more two-way flows, and lower volatility… where cash may come off the sidelines and pounce on some of the glaring value, and opportunities for RV and carry increase

Other themes that may drive allocations and risk-taking decisions over the next year: (1) China bounce; (2) persistence of geopolitical premium; and (3) deficit of USTs utility as a portfolio hedge; all tying up in a (4) search for hedges and diversifiers for portfolios.

The baseline

The baseline for a US recession, in the context of a relatively synchronized global slowdown, is likely to drive portfolio allocations towards more conservative profiles (i.e., risk averse or balanced portfolios). Historically this has been expressed through an underweight in equity allocations and an overweight in bonds – particularly USTs and mortgages, but potentially also linkers (see Asset Allocation & Duration Demand in '23).

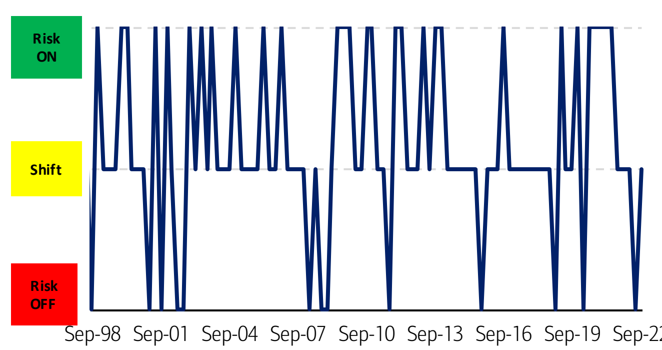
Exhibit 85: Correlation of USTs and S&P returns
Limited diversification benefits of USTs for portfolios



Source: BofA Global Research

BofA GLOBAL RESEARCH

Exhibit 86: Three different regimes for quarterly performance across asset classes
Shifts in performance regime follow the economic cycle (3- mini cycles of the last cycle clearly visible)



Source: BofA Global Research

BofA GLOBAL RESEARCH

However, portfolio managers are likely to remain sceptical of the potential for USTs to recover fully their utility until inflation converges to levels closer to target. We expect UST allocations to run below the levels suggested by historical optimal portfolios. We see the search for alternative hedges and diversifiers very a focus for portfolios in 2023, even as duration may recover some of its utility as a hedge.

We find it more likely, therefore, that allocation profiles converge to a midpoint between the heavy UST allocations implied by the historical recession/risk-off profiles and the balanced UST allocations implied by optimal portfolios in late-cycle/transition regimes (Exhibit 86), in favour of slightly higher exposures to Agency MBS, IG credit and commodities (Exhibit 87). The usual trade-off between cash, USTs, Agency MBS, and IG credit will likely be driven in 2023 as much by diversification considerations as by value.

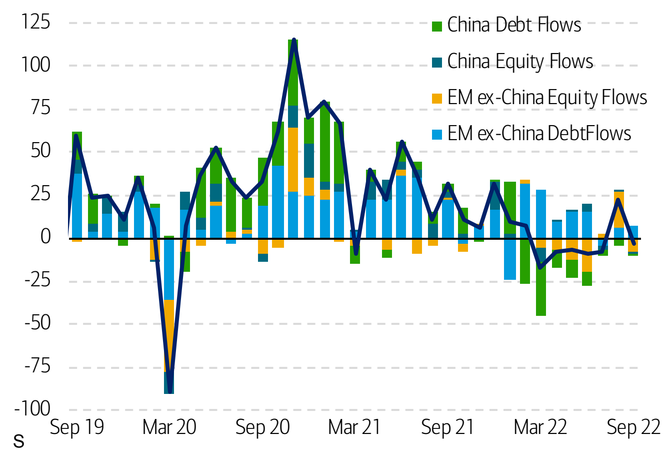
Exhibit 87: Optimal US portfolios contingent on a transition dynamic
Mean variance optimization on weekly returns over transition periods

	Min	Max	Risk Averse	Balanced	Risk Seeking
Equities	30%	70%	30%	50%	70%
Large Caps	10%	50%	23%	43%	50%
Small Caps	5%	35%	5%	5%	5%
Value	0%	25%	2%	2%	15%
Growth	0%	25%	0%	0%	0%
Bonds	5%	50%	26%	20%	5%
Sov	0%	45%	26%	15%	0%
Linkers	0%	5%	0%	5%	5%
Credit	0%	20%	9%	10%	10%
IG	0%	20%	0%	0%	0%
HY	0%	10%	9%	10%	10%
Cash	0%	15%	15%	0%	0%
US	0%	15%	15%	0%	0%
Alt	0%	20%	20%	20%	15%
Commodities	0%	15%	8%	15%	15%
Mortgages	0%	15%	12%	5%	0%

Source: BofA Global Research

BofA GLOBAL RESEARCH

Exhibit 88: Total Portfolio Flows into Emerging Markets ($bn)
Recent outflows from China as the market priced the zero Covid policy impact on the outlook



Source: National Sources, Bloomberg, IIF

BofA GLOBAL RESEARCH

There are alternatives...

As the credibility of all-weather structural hedges (USTs in particular) stays under pressure in 2023, the scope for more tactical portfolio hedges increases. Hopes for a deviation from the slowdown baseline in 2023 are tied to a significant degree to the fading of the two late-cycle transition catalysts of early 2021: (1) a bounce in the outlook for China; and (2) the fading of Russia's geopolitical risk. With roughly 2/3 of the global economy potentially heading for a slowdown in 2023, exposures to the other 1/3 (China & proxies, and potentially EM more broadly) becomes more compelling.

Significantly, the gap between DM and EM has closed over recent cycles. This justifies a lesser drive to rebalance into DM in the face of a challenging outlook and creates scope for a broader tactical role for EM in portfolios (cherry picking the exposures that may offer some diversification and risk adjusted returns). To some extent, the resilience of EM outflows to the most hawkish Fed tightening since the Volker days (and consequent dollar strength) may reflect these type of arguments (see Exhibit 88).

For portfolios to fully leverage a China rebound scenario, however, it is necessary that geopolitical risks fade. Indeed, scenarios where China starts to rebound under persistent geopolitical risks present a further challenge, as they create the potential for a scramble for commodities and critical production inputs. Commodities may continue to make sense in a portfolio in this context, in line with the transition regime above vs the typical recession/risk-off context where commodity allocations generally switch to underweight.

Bottom line: The search for hedges and diversifiers for portfolios is likely to continue to be a theme in 2023 even as duration recovers some of its utility. UST allocations will compete with glaring value across fixed income (and potentially also with more tactical diversifiers like commodities and EM exposures) as cash comes off the sidelines with the much-anticipated Fed pivot. While generally in recession years we would argue for significantly higher UST allocations and a material richening to fundamentals, we are comfortable at most with calling for a recoupling of USTs to fundamentals, or roughly 3.25% for 10yT by year-end '23.

Inflation markets

Mark Capleton
MLI (UK)
mark.capleton@bofa.com

Persistence, drift and skew

- 'Team transitory' lost the inflation debate, but this has not deterred markets from pricing speedy returns to targets. How to oppose this depends upon the market.

Near-term and longer-term upside skews to inflation risk

Perhaps we're preaching to the converted, but when we ask whether average inflation is more likely to be 1% higher or lower than priced, to any particular horizon, answers are near-universally to the upside. The perceived upside risk skew to inflation (and inflation expectations) of central banks understeering, rather than oversteering, seems great.

We have a live experience of very high inflation, and we can at last grasp the competing narratives explaining the 1970s episode. And it is not hard to construct scenarios relating to global trade frictions ("onshoring and friendshoring"), national interest imperatives, climate change mitigation, etc, that might threaten persistent or repeating inflation bouts at well-above target levels in the future. By contrast, one needs to go back to the 1930s for an example of material deflation (we would not classify Japan's as sufficiently serious), to give a counterweight to this apparent upside skew.

And then there is the possibility that central banks might raise their inflation targets at some stage. This seems a dim and distant prospect now, and the zero lower bound issue (the problem that raising the inflation target is sometimes proposed to address) is receding. There may never be "a good time" to raise an inflation target, but it is nevertheless a tail risk, and should thereby be seen as a source of upside skew to long-term inflation expectations.

Elsewhere in this report, we discuss inflation persistence risk in the UK, recommending a forward inflation curve flattener, and in Japan, proposing 10y JGBi longs on real yield. Here we contrast the implied evolution of inflation curves in the US and Euro markets, informing where and how we position for inflation persistence in these markets.

The demise of the "transitory" case has not dented faith in central banks

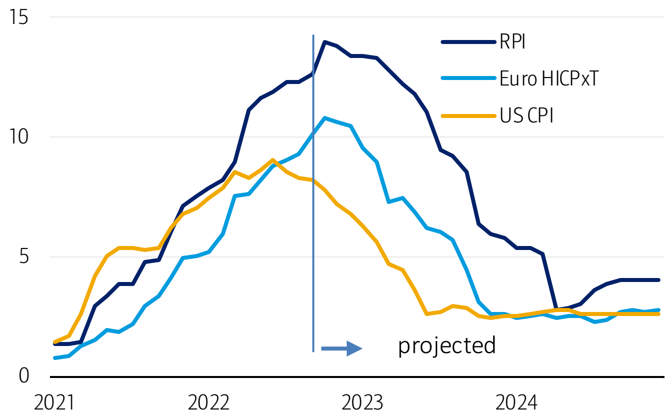
Markets, economists, and central banks have all had to accept the demise of the "transitory" view of inflation, given how long this high inflation bout has already persisted. Also, in the background, is a growing acceptance that we probably won't return to the prior inflation state, where inflation had to be underpinned rather than curbed. The variety of secular deflationary trends (globalisation, demographics, the internet, etc.) that kept inflation subdued have likely largely played out, or even turned.

Despite this, the inflation market retains a touching faith that either central banks or circumstance will deliver a fairly rapid return to, or close to, targets (Exhibit 89). We would also note what appears to have been a tendency for market pricing of this target return horizon to drift forward with the passage of time (Exhibit 90). This drift tendency alone encourages us to consider inflation persistence plays, as a form of roll-down, but there's a lot more to the case for being constructive inflation.

Where to express inflation persistence? That depends on the market

The US 2s30s inflation curve is currently 21bp inverted, spot, and priced to disinvert by 15bp to -6bp over the next couple of years, leaving it still very flat relative to its long term norm (Exhibit 91). Compare that with the Eurozone, where the same inflation curve is currently 140bp inverted, yet is priced to steepen by 170bp to +30bp over two years to leave it more in line with its history (Exhibit 92).

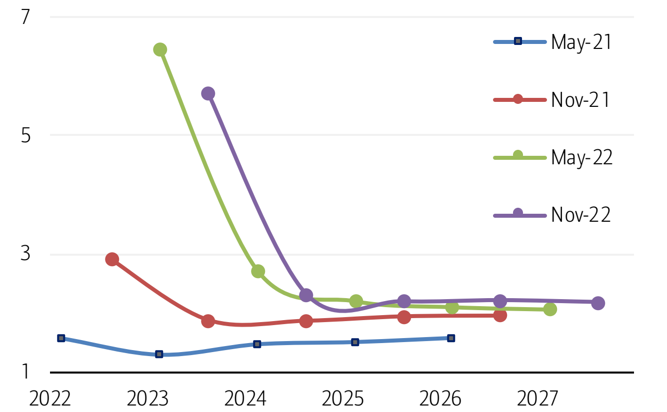
Exhibit 89: Current implied paths of US, Euro and UK inflation, %
Markets confident central banks will do their jobs, and do them quickly.



Source: BofA Global Research

BofA GLOBAL RESEARCH

Exhibit 90: EZ rapid return to target. Hope's triumph over experience?
Drop to target continues to be priced, but has drifted forward with time.

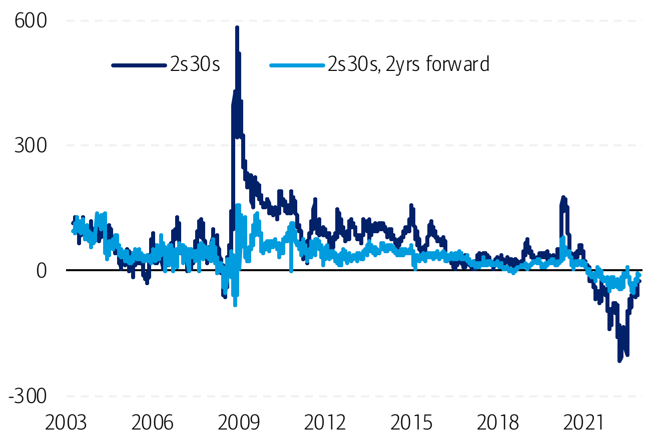


Source: BofA Global Research

BofA GLOBAL RESEARCH

A macro logic for such a discrepancy between the two would need to lean very heavily on a greater belief in a much more rapid reversion to target for inflation in the Eurozone than in the US (despite its currently more elevated inflation), perhaps because of a stronger anchoring of inflation expectations, or a milder 'wage/price spiral, or a greater perceived growth threat in Europe. On the other hand, it also requires the de-emphasising of the more aggressive policy tightening seen in the US and the (disinflationary) dollar strength/(inflationary) euro weakness. We regard this difference in the prospective evolution of the two inflation curves as too stark, and that partially informs our value preferences in the two markets.

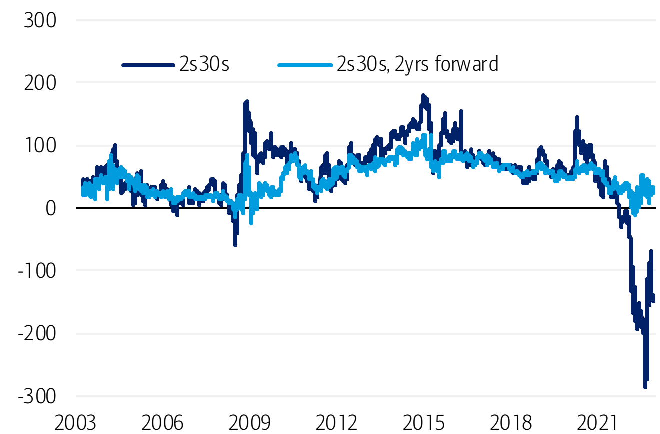
Exhibit 91: US inflation curves, spot and 2-years forward, bp
US curve slightly inverted spot, retaining inversion 2-years forward.



Source: BofA Global Research

BofA GLOBAL RESEARCH

Exhibit 92: Euro inflation curves, spot and 2-years forward, bp
Euro curve very inverted spot, but comfortably positive 2-years forward.



Source: BofA Global Research

BofA GLOBAL RESEARCH

In the Euro curve, we would prefer to be long inflation out to 10-years on the curve, but not further. With 1-year Euro inflation trading at 5.68%, we see prospective carry for a breakeven long in the 10y BTPei (our favoured token) at 219bp currently as attractive. We first recommended the trade at 232bp on 30 August, with a target of 285bp and a stop-loss at 210bp, and estimate positive carry since then to have been 16bp. Risk to the trade is a sharp fall in energy prices.

In the US, this cross market comparison reinforces our view that value resides at the long end, where we favour TIPS in real yield terms, on both an outright basis and versus Euro linkers.

What if BoJ hikes YCC rate?

Shusuke Yamada, CFA
BofAS Japan

Tomonobu Yamashita
BofAS Japan

BoJ unlikely to pivot in '23, but speculation to strengthen

As the base case, we expect the Bank of Japan (BoJ) to maintain the current policy framework, including the 0.25% cap on the 10-year Japanese government bond (JGB) yield under yield curve control (YCC), as the Bank likely needs more time to assess evidence of a sustained improvement in wages and further changes to firms' price-setting behavior (see our economists' report: BoJ review: 2% target—moving closer, but not yet achieved 28 October 2022).

Our economists expect the BoJ to implement policy normalization in the summer of 2024 by ending negative interest rate policy (NIRP) and YCC though it would maintain quantitative easing (QE) to control yield curve to some extent. We also see some chance that the BoJ would take two–step approach by raising the upper end of the 10yr target range by 25bp, either by widening the bandwidth or lifting the entire band from current +/-0.25% sooner - for example in 3Q23 – before removing NIRP and YCC.

However, we believe market expectations for the BoJ's rate hike could intensify in 1Q23 given strong tailwinds for inflation, the BoJ's leadership change in April 2023, and a deteriorating bond market functioning. In the section below, we examine a risk scenario in which the BoJ hikes rates in 1H23 and how it impacts the domestic and global rates market.

Implications of BoJ's YCC rate hike

From a flow perspective, banks and lifers would be key players when examining implications of the BoJ's policy adjustments on the domestic and global bond markets – specifically raising the cap on the 10yr target range, either by widening the bandwidth, raising the band level, or abandoning YCC.

Japan's financial institutions have been crowded out of the domestic bond market by the BoJ bond-buying since 2013. As the US Treasury curve has inverted this year, however, there are signs that domestic investors are starting to come back to the JGB market (see: Japan BoP: Shift back to JGBs 09 November 2022). An increase in the 10yr target could lift JGB yields across the curve and accelerate the investors' return to JGB.

Banks: deploy sleeping cash to JGBs

For banks, medium-term and long-term JGB yields are key given their relatively short liability duration. If the BoJ lifts the upper end of the 10yr target band to 0.50% from 0.25%, we believe the 10yr JGB yield will immediately test 0.50% because the underlying 10yr rate without YCC would probably be higher than 0.50%. An assumption of the real neutral rate range at -0.5% to 0.0% and inflation expectations +0.7% to +1.0% would lead to the nominal neutral rate range from +0.2% to +1.0%. With US nominal rates notably higher than the perceived long-run neutral rate (2-3%), the JGB 10yr yield should also trade above 0.5% without YCC and NIRP. The 5yr part could also rise to above 0.20% and, if the BoJ abandons NIRP, above 0.30%.

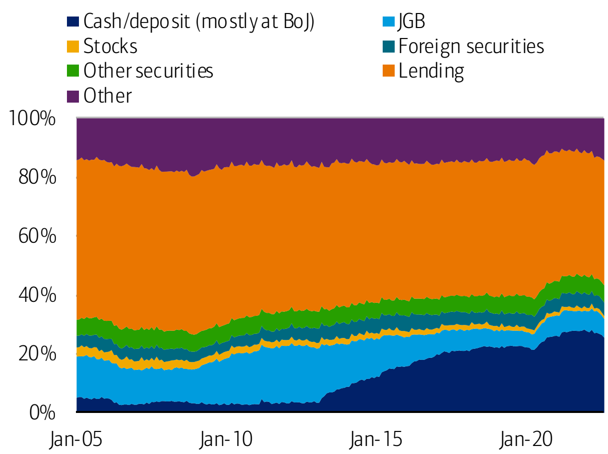
Japanese banks have reduced exposure to JGBs from ¥161tn at end-2012 to ¥86tn now and have piled up cash from ¥35tn to ¥347tn over the same period – mostly parked at their BoJ accounts, which yield 0.04% on average (Exhibit 93). They would likely reallocate these cash to medium-term JGBs with decent positive yields.

As Japanese banks have reduced exposure to JGBs in recent years, the direct impact of higher JGB yields on their balance sheet should be manageable, with a 25bp increase in the 10yr JGB yield estimated to result in less than 2% decline in major banks' book value, which excludes the offsetting impact from hedging, according to our bank analysts (Exhibit 94). Higher JGB yields and a steeper front-end-10yr curve should also improve banks' profitability. That said, banks with bigger exposure to JGBs may need to sell them to reduce risk initially, creating volatility in the market.

Panic selling unlikely, but banks to continue to sell foreign bonds

Meanwhile, we expect relatively limited direct impact on Japanese banks' foreign bond positions as these positions among megabanks are mostly financed by repo, not by yen liability. That said, Japanese banks are likely to continue cutting exposure to foreign bonds as they need to cut losses (see: Japan Bank Industry: Defensiveness and expectations for rate hikes; Buy on Mizuho, Neutral on Shinsei 06 October 2022). They sold around ¥1tn/month in foreign bonds in 1HFY22, and we expect this pace of selling to continue in 2023. As in the case of JGBs, if the BoJ's rate hike increases upward volatility in the global bond market, Japanese banks may have to cut exposure to foreign bonds sooner.

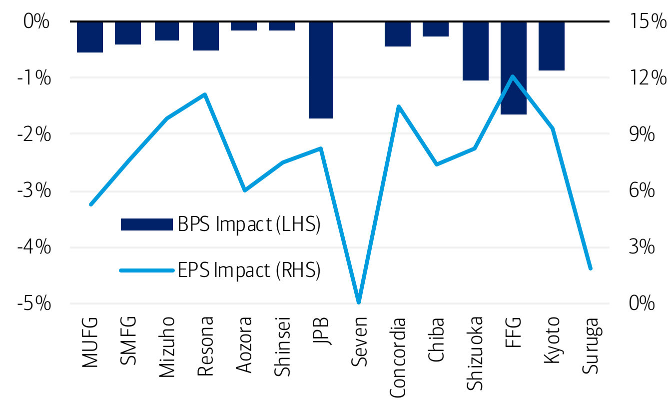
Exhibit 93: Bank asset composition (%)
Domestic banks have ¥347tn in cash



Source: Bank of Japan, BofA Global Research

BofA GLOBAL RESEARCH

Exhibit 94: BPS and EPS impact from +25bp shift in 10yr JGB yields
Valuation losses may be manageable



Source: BofA Global Research
Note: In the interest rate sensitivity analysis, we assume deposit interest rate to be unchanged (i.e. assumption on pass-through rate is zero)
Japan Bank Industry: Defensiveness and expectations for rate hikes; Buy on Mizuho, Neutral on Shinsei 06 October 2022

BofA GLOBAL RESEARCH

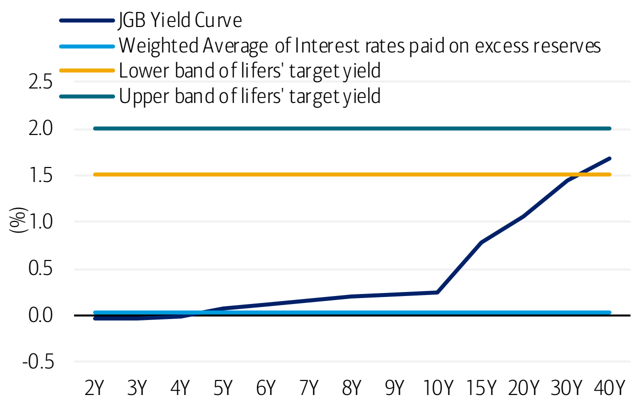
Lifers: rotation from foreign bonds to JGBs could average ¥0.5tn/m for 2yrs

For lifers with longer liability duration, superlong JGB yields will be key. Lifers' liability costs are likely in the 1.5-2.0% range. If the 30yr JGB yield rises to and above this range, they would be incentivized to lock in the yield (Exhibit 95). Lifers have already been re-allocating from foreign bonds to JGBs since 2020 in preparation for Economic Solvency Ratio (ESR) based regulation starting in 2025, where they are encouraged to match yen liability-duration risk with yen assets (see: Japan Rates and FX Watch: Life insurers' investment plans (2H FY22): shift to JGB continues 27 October 2022). The trend has accelerated this year given the inversion in the US Treasury curve and a steep JGB curve.

We believe the 30yr JGB yield can rise to 1.7-2.3% if the BoJ ends NIRP and lifts the YCC target range by 25bp (see Exhibit 99). Lifers have ¥49tn in foreign bonds and ¥78tn in JGBs in March 2022. As a percentage of their aggregate security holdings, foreign bond holdings rose from around 20% before the BoJ's aggressive monetary easing in 2013 to as high as 28.5% in 2019. They are now down to 25.6% (Exhibit 97). Lifers' JGB holdings accounted for 49% before 2013 and are now 40.5% after having fallen below 40%.

If the 30yr JGB yield rises to 2%, lifers may cut foreign bond holdings down back to 20% of their security holdings. This would be a reallocation of ¥11tn from foreign bonds to JGBs, bringing the JGB allocation to 46%. We could see an average monthly reallocation of ¥0.5tn from foreign bonds to JGBs over two years. This would be in addition to regular JGB purchases from redemptions and new capital, which we believe will average ¥0.7-0.8tn/month. The Ministry of Finance (MoF) currently issues about ¥1.35tn of 30yr and 40yr JGBs per month, so lifers could buy almost all of the superlong issuance, capping the yield at around 2%.

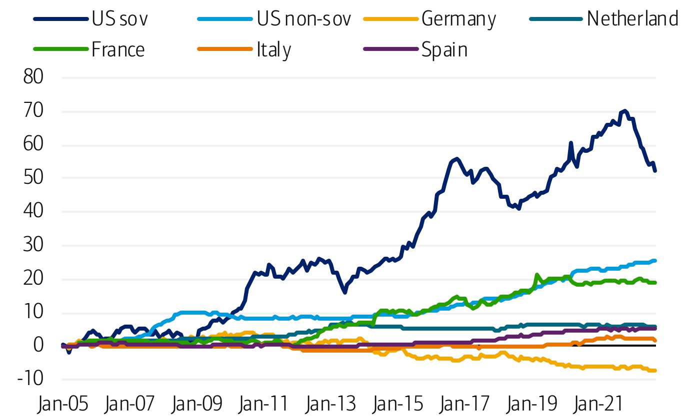
Exhibit 95: JGB yield curve, average interest paid on banks' current accounts at the BoJ, lifers' liability cost
YCC rate hike would make JGB attractive for banks in the intermediate/long-term sector and for lifers in the superlong sector



Source: BofA Global Research, Haver

BofA GLOBAL RESEARCH

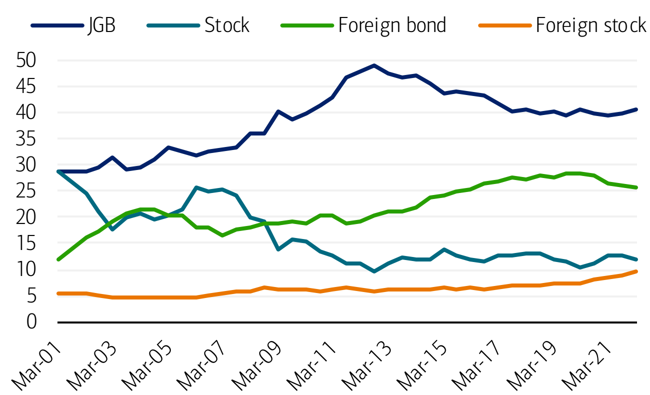
Exhibit 96: Japanese investors' cumulative foreign security purchases by country (¥tn)
US Treasuries and French OATs stand out



Source: BofA Global Research, Haver

BofA GLOBAL RESEARCH

Exhibit 97: Major lifers' security allocation (%)
Lifers held ¥78tn (40.6%) in JGBs and ¥49tn (25.6%) in foreign bonds



Source: Each lifer's websites, BofA Global Research

BofA GLOBAL RESEARCH

Exhibit 98: 10y20y TONA swap curve
We favor 10yr20yr TONA flattener

Source: BofA Global Research, Bloomberg

BofA GLOBAL RESEARCH

Implications

We draw the following implications:

- **YCC rate hike to draw demand for JGBs after initial sell-off**: Japanese institutions may reduce exposure to JGBs initially if the BoJ hikes YCC rate until visibility emerges on the rates outlook. Lifers would eventually buy superlong JGBs around 2% and banks may spend the cash pile sitting at their BoJ accounts to buy intermediate JGBs with decent positive yields (>0.20%).

- **Direct immediate impact on foreign bonds limited**: We believe immediate direct impact on global rates from asset reallocation among Japanese investors would be limited. We expect lifers' reallocation could lead to more supply of US Treasuries and French OATs as these are the two major types of foreign bonds the Japanese have accumulated since the BoJ's easing in 2013 (Exhibit 96). That said, ¥11tn selling over two years would not have a significant impact on the US Treasury market. It would put marginal widening pressure on the US-EU spread and OAT-Bund spread. Megabanks, the biggest foreign bond holders among Japanese banks, finance foreign bond positions with repo, so immediate asset reallocation from foreign bonds to JGBs would be limited.

- **But lifers and banks to continue to sell foreign bonds near term and cut demand for foreign bonds long term:** On top of lifers, banks would also continue selling foreign bonds as they carry losses on their foreign bond portfolio. Average monthly selling in foreign bonds by Japanese private investors could average ¥1.5tn (¥0.5tn lifers + ¥1.0tn banks) in coming months. Over the long term, increased JGB yields would reduce structural demand for foreign bonds by Japanese investors.

- **Risk scenario: global rates environment key:** If the BoJ lifts YCC rates in the higher global rates environment and the rise in yields is disorderly, both banks and lifers may not buy JGBs until volatility subsides. They could even sell both foreign bonds and JGBs initially if a disorderly sell-off in JGBs leads to expectations for much higher domestic and global rates – banks would have to manage fiscal-year results and lifers need to factor in the risk of cancellation of insurance contracts by customers. This would add to the general supply/demand imbalance in the US and developed market (DM) bond markets, and DM government bond yields could rise as much as those of JGBs. This increases the risk of an overshoot in domestic and foreign yields and of credit events.

  The instability in the JGB market could also lead to downgrade of the JGB credit rating, which is currently single A, and increases Japanese banks' funding costs. This could turn out to be negative for JPY.

BoJ to be highly cautious in implementing policy normalization

This is why we believe the BoJ may want to wait for global rates market to stabilize before making any adjustments to YCC. In terms of the type of normalization, it would likely choose tweaks rather than outright abandonment if it is to implement next year and especially if the market conditions – the weak yen and bond market functioning – urge the BoJ to flexibilize YCC sooner.

Exhibit 99 summarizes scenarios of BoJ rate hikes and market implications.

Flatter 10yr20yr swap curve

Our base case remains the BoJ will make adjustments to YCC in 2H24 by raising the upper band of the 10yr target to 50bp from 25bp and to end NIRP. We like 10yr20yr Tokyo Overnight Average rate (TONA) swap flattener. We believe the curve can flatten as expectations for YCC hike strengthen in 1Q23 (bear-flatten), while it could flatten as US rates start to come off from 2Q23 (bull-flatten).

Trade: We recommend 10yr20yr TONA swap flattener. Our recommendation has an entry of 46.3bp, target of 30.0bp, and stop loss of 54.4bp. Risks include receding expectations for the BoJ's pivot by a very dovish governor taking over Mr. Kuroda's position in April. The trade has +0.6bp carry and rolldown for 3 months.

Exhibit 99: Market scenario for BoJ YCC rate hike (3-month after BoJ rate hike)
Global rates environment will be key

	25bp increase on YCC upper band	Abandoning YCC and NIRP
Higher, volatile global rates	JGB: 10yr rise to 0.5%; 30yr 1.8-2.3% UST: 10yr rise by 25bp USD/JPY: Unclear	JGB: 10yr rise >1%; 30yr 2-3% UST: 10yr rise by 75bp USD/JPY: Unclear
Stable/lower global rates	JGB: 10yr rise to 0.5%; 30yr 1.7-2% UST: Limited impact USD/JPY: Lower (-5%)	JGB: 10yr rise to 0.7%; 30yr 1.8 – 2.5% UST: 10yr rise by 25bp USD/JPY: Lower (-10%)

Source: BofA Global Research

BofA GLOBAL RESEARCH

Rates Alpha trade recommendations

Exhibit 100: Global Rates Trade Book - open trades

Open trades

Region	Open Trades	Entry Date	Entry	Target	Stop	Latest Level	Trade rationale	Risk
Europe	Long 1y fwd 2s5s10s fly	20-Nov-22	-15.8	-50	7	-15.8	The 5y sector to outperform with rally	Eurozone Inflation more persistent
Europe	2y fwd 10s30s bull steepener	20-Nov-22	0	400k	-200k	0	Dutch Pension reform & rally limit 30y receiving	A bull flattening of the curve
Europe	3m2y risk reversal	20-Nov-22	0	400K	-200K	0	Bearish the front-end, leveraging the cheap skew	Pricing out of ECB hikes
Europe	Long 1y1y EUR rates vol vs US vol	20-Nov-22	-180K	120K	-330K	-180K	Top left EUR vol supported vs US. Hedge of persistent inflation in Euro Area	ECB on hold before the Fed
Europe	Short 1y forward 1y10y vol	20-Nov-22	111	70	140	111	Short vol view medium term, post ECB tightening	Bear-steepening / surge in delivered vol
Europe	Long OAT Feb28 vs SPGB Jan28	20-Nov-22	33.2	60	20	33.3	Position for Q1 EGB spread widening market	Rates vol declining/aggressive PEPP flexibility
Europe	Pay Sep23 €str	28-Oct-22	2.58	3.50	2.00	2.89	Fade the repricing lower of ECB terminal rate	Lower inflation prints
Europe	Long Jun23 BTF vs €str	21-Oct-22	-42	-80	-25	-39	Change in government deposit remuneration / YE pressure	Issuance of ECB bills / strong public sector support over year-end turn
Europe	Long 10y BTPei BE (target/stop carry-adjusted)	30-Aug-22	232	285	210	219	Carry, end-Sep index rebalancing	Sharp fall in energy prices
Europe	1y15y 1.55% receiver	26-May-22	15	45	0	4	Hedging scenario of an ECB that stops short of neutral rate	Structural paying flows in 10-20y sector
UK	Sell UKT4.125 27/Buy UKT0.125 28 on ASW	10-Nov-22	1.8	-25	12	2.7	Retail demand for low coupon Gilts	Benchmark premium for 27s
UK	Sell UKT 4¼% 32 vs. Sonia	4-Nov-22	-28.5	0	-45	-19.1	Sell 10y Gilts into large Gilt supply	Emergence of Gilt demand in the 10y
UK	Receive March 2023 MPC dated Sonia	28-Oct-22	4.47	4.00	4.70	4.38	Too much priced in incrementally	Prolonged hiking at large increments
UK	1y4y/5y5y RPI flattener	28-Oct-22	-8	-50	20	-31	Inflation persistence, RPI reform pricing	10y receiving demand
US	Long 5y US swap spread	20-Nov-22	-25.3	-15	-32	-25.3	Position for wider US spreads	Risk-off or foreign UST selling
US	Buy 30y TIPS: TII 2052	20-Nov-22	1.60%	1%	1.90%	1.60%	Higher carry vs market pricing near-term and eventually rally significantly on the turn in cycle we expect in '23	Terminal continues to get priced higher
US	Buy 10y UST vs swap and sell 10y GE vs swap	20-Nov-22	-105bps	-85bps	-115bps	-105bps	More supportive supply/ demand backdrop in US vs EU	Demand remains sidelined / continued UST vol drives an illiquid selloff
US	Buy May '23 SOFR/FF vs Nov '23 SOFR/FF futures	20-Nov-22	5bps	-1bps	8bps	5bps	Supply surge post US-debt limit will tighten SOFR-FF basis	Early end to QT, limited bill issuance, debt limit doesn't get resolved until later in '23
US	3m2y 25bp out risk reversals	20-Nov-22	0	25bp	-20bp	0	Near term hawkish Fed	Dovish Fed repricing
US	6m2y rtp spd a/a+50 vs rtr a-45	20-Nov-22	0	50bp	-20bp	0	Near term hawkish Fed	Dovish Fed repricing
US	6m2y payers vs 1y2y payers	20-Nov-22	0	25bp	-20bp	0	Higher terminal, cuts medium term	Tightening cycle extension
US	1y2y receiver ladders	20-Nov-22	0	35bp	-20bp	0	Fed cuts by end '23	More extreme easing cycle
US	1y10y US vs EUR receivers	20-Nov-22	0 (costless)	25bp of delta	-20bp of delta	0	Outperformance of US vs EUR rates	Underperformance of US vs EUR
US	Short 1y1y vs 1y10y vol	20-Nov-22	Rec 23bp of vega	15bp of vega	-10bp of vega	Rec 23bp of vega	Underperformance of lft vs right side vol	Extension of Fed cycle
US	Long 5y30y vol vs 2y30y vol	20-Nov-22	Rec 14bp of vega	15bp of vega	-10bp of vega	Rec 14bp of vega	Vega supported by neutral repricing	Aggressive inflation collapse
US	6m10y receiver spread	11-Jul-22	16	40	-15	2	Deterioration of outlook	Limited to upfront premium
US	18m fwd 2s10s bull flattener	16-Feb-22	0	30	-10	1	Late cycle by end-'22 / early-'23	Bull steepening on Fed cuts
US	1y fwd 2s10s cap spreads	8-Jul-22	23	50	-50	-39	Bull steepening dynamic as Fed pivots	Limited to upfront premium
US	2y fwd 2s10s cap	8-Jul-22	45	150	-50	3	Steepening as mkt enters new cycle	Limited to upfront premium
US	Buy 1y1y payer ladder	7-Apr-22	0	55	-20	-18	Moderate hawkish repricing of the Fed	Hawkish Fed beyond downside b/e
US	3y1y receiver ladder	8-Apr-22	0	40	-20	0	US economy medium term slowdown	Rally through c.70bp downside b/e o
APAC	ACGB 2s10s flattener	20-Nov-22	49	0	69	49	Transition from mid to late cycle	Economic slowdown/disinflation
APAC	2s10s AU flattener boxed vs US	20-Nov-22	116.8	0	160	116.8	Opposing inflation and central bank dynamics	Risk FX reversal
APAC	Pay June 2023 OIS (AU)	20-Nov-22	3.68%	4.20%	3.50%	3.68%	Accelerating wages and strong CPI	Dovish RBA
APAC	Long JGBi 27	20-Nov-22	-62.3	-77.3	-54.8	-62.3	BEI rising beyond temporary dip in inflation	Extension of govt stimulus to decrease CPI
APAC	10y20y TONA swap flattener	20-Nov-22	46.3	30.0	54.4	46.3	More rapid rate rise than expected	Dovish next BoJ governonr

Source: BofA Global Research, Bloomberg

BofA GLOBAL RESEARCH

Exhibit 101: Global Rates Trade Book - closed trades

Closed trades

	Closed trades	Entry date	Entry level	Target	Stop	Close date	Level closed
EUR	Short 5s BTP vs 2y, 10y on z-spread	21-Jul-22	6.8	70	-25	20-Nov-22	16
	Dec22 FRA-OIS widener	28-Oct-22	9	16	5	10-Nov-22	7
	OATei 2031-2040 cash-for cash extension	21-Oct-22	146	90	175	10-Nov-22	88.1
	DBRi '26/'30/'33 barbell	7-Jan-22	8.2	1	12	10-Nov-22	0
	2yf 20y 3s6s EUR basis widener	9-Aug-22	-9.2	-4.3	-12.5	17-Oct-22	-5.9
	OATei '27/'30'/'40 barbell (+44.8%/-100%/+55.2%)	17-Jun-22	14.4	0	22	13-Oct-22	23
	Long EU 2043 vs OAT 2044	23-Jun-22	7.4	-15	20	13-Oct-22	23.5
	Long US vs EUR 3m10y receiver	30-Aug-22	0	1.7mln	-1mln	12-Oct-22	119k
	Buy OATei 2040 (carry-adjusted)	23-Jun-22	11	-65	50	28-Sep-22	50
	Receive 5y5y EUR real rate	23-Jun-22	46	-30	90	28-Sep=22	90
	2s30s US CPI steepener, 2y fwd, vs EA	12-Jul-22	-55	20	-90	26-Aug-22	-95
	Long US vs EUR 6m10y receiver	4-Aug-22	0	2.5mln	-1.5mln	30-Aug-22	566K
	1y1y vs 5y5y flattener	7-Jul-22	90	30	150	18-Aug-22	30
	Pay Dec-22 € str	23-Jun-22	96.5	130	75	21-Jul-22	111
	Pay 5y5y 3s6s EUR basis	1-Feb-22	2.5	6	0	17-Jun-22	-0.3
	6m30y 1.9% payer	26-May-22	16	45	0	15-Jun-22	50
	2y10y p/s vs 2y10y OTM payer in USD	1-Jun-22	0	600K	-300K	15-Jun-22	-300K
	Short BTPS Mar37 vs DBR May36	29-Apr-22	185	250	150	15-Jun-22	226
	Pay Jul22 ECB €STR	8-Jun-22	-21.5	-10	-28	9-Jun-22	-28
	Pay Sep22 ESTR ECB	2-Jun-22	10	30	0	8-Jun-22	17
	1y1y 1.45/2% payer spread	26-May-22	150K	450K	0K	2-Jun-22	260K
	Buy 2y1y ATM payer vs 4y1y ATM+35	31-Mar-22	-90K	90K	-190K	2-Jun-22	-75K
	Long €100mln 3m10y ATM receivers	2-Mar-22	11	30	0	2-Jun-22	0
	1y1y/2y3y Euro inflation flattener	6-May-22	-43.8	-80	-25	1-Jun-22	-77
	Pay 2y30y EUR real rates	18-Mar-22	-149	-60	-200	26-May-22	-57
	5y fwd 2s10s bear steepener	18-Mar-22	0	500K	-250K	28-Apr-22	135K
	Short Mar37 BTP	21-Apr-22	2.75%	3.75%	2.25%	28-Apr-22	2.87%
	BTP 2s10s steepener	18-Mar-22	166	230	130	21-Apr-22	180
	Short 10y Spain (Apr32) on ASW	4-Feb-22	41	70	20	12-Mar-22	20
	18m1y ATM+25/+50 payer spread	18-Mar-22	6.5	19	0	31-Mar-22	10.9
	Jun22-Mar23 FRA-€str flatteners	15-Feb-22	7.7	4.5	9.8	7-Mar-22	1.7
	Long €100mln 3m5y ATM receivers	21-Feb-22	12	35	-5	2-Mar-22	1.35
	Short 7y Spain vs France	7-Jan-22	29	50	19	4-Feb-22	33
	Receive Dec22 €str	27-Jan-22	-37	-51	-30	1-Feb-22	-29
	Receive 2y2y vs 4y5y in EUR (steepener)	7-Jan-22	31	50	19	1-Feb-22	22
UK	Pay 1y4y RPI	8-Sep-22	478	380	530	27-Oct-22	375
	Receive UKTI 2034-2040 fwd real yield	14-Oct-22	209	120	250	20-Oct-22	56
	UKTi 2047/56/65 barbell (+31.6%/-100%/+68.4% risk)	16-Sep-22	-2.6	-6	-0.5	29-Sep-22	-6
	Pay 5y5y real Sonia	24-Aug-22	-128	-50	-165	26-Sep-22	-50
	1y forward 1s4s Sonia steepener	8-Sep-22	-68	-25	-85	28-Sep-22	-85
	UKTi 2050-62 flattener	21-Nov-21	17.2	5	23	15-Sep-22	2
	Long 1y1y UK RPI v US CPI	9-Jun-22	40	100	-10	26-Aug-22	-4
	5y5y/10y20y RPI steepener	28-Jun-22	-68	-20	-95	25-Aug-22	-95
	1y forward 2s5s Sonia steepener	24-Jun-22	-25	25	-50	17-Aug-22	-50
	UKT Jan-23/Jan-25 fwd ASW narrower	20-Apr-22	66	20	90	17-Aug-22	90
	Buy IL24 @-4.56 (terms are carry-adj. bp chgs.)	22-Apr-22	0	-120	60	2-Aug-22	137
	Receive 1y1y real Sonia vs. real SOFR	18-May-22	155	210	120	9-Jun-22	116
	1y fwd 1s5s real Sonia steepener	25-Mar-22	-96	-40	-130	1-Jun-22	-39
	Receive 1y1y Sonia vs. paying 1y1y SOFR	12-May-22	70	140	30	19-May-22	49
	Pay 10y5y Sonia and receive 10y5y €str	3-Mar-22	10.6	50	-15	21-Apr-22	-15
	Short UKT 0.125% 2026 Gilt at 0.89% and receive 4y Sonia swap at 1.18%	6-Jan-22	-29	0	-45	24-Feb-22	-45
	GBP 2s5s real swap curve steepener	11-Feb-22	45	80	20	24-Feb-22	98
	Receive December 2022 MPC-dated Sonia and sell UKT 0.125% 2026	31-Jan-22	-42	0	-60	14-Feb-22	-60
US	Short 1y1y inflation swap	12-Sep-22	3.20	2.75	3.5	29-Sep-22	2.75
	Long 10y20y TIPS (+100% 30y, -33% 10y TIPS)	24-May-22	61	15	85	12-Sep-22	85
	Buy 5y SOFR swap spread (long UST vs swap)	2-Aug-22	-25.5	-15	-32	3-Aug-22	24.25bp
	5y fwd 5s30s steepener	7-May-21	0	50	-30	13-Oct-22	-30
	Sell 1y1y vs 1y10y vol (vega wtd strds) -	1-Aug-22	-34	30	-15	12-Sep-22	-15
	Receive Sep FOMC OIS	26-May-22	2.13%	1.96%	2.23%	2-Jun-22	2.23%
	Buy 1y1y payers vs 3y1y payers	14-Mar-22	10	30	-15	4-Aug-22	40bp
	Long 10y TSY	14-Apr-22	2.83	2.25	3.1	5-May-22	3.1
	Costless 4y fwd 2s30s bear steepeners	13-Oct-21	0	30	-30	16-Jun-22	-30
	9m5y receiver spd vs 9m5y OTM payers	26-May-22	0	25	-15	16-Jun-22	-15
	1y forward 5s30s TIPS flattener	11-Jan-22	47	0	75	4-Apr-22	-6

Exhibit 101: Global Rates Trade Book - closed trades
Closed trades

	Closed trades	Entry date	Entry level	Target	Stop	Close date	Level closed
	1y1y real rate short	24-Mar-22	-44	-15	-60	1-Apr-22	-15
	1y fwd 2s10s floor	16-Feb-22	-38	12bp	-6bp	4-Aug-22	14bp
	18m7y costless payer ladders	13-Oct-21	0	30	-10	21-Aprl-22	-10
	Sell 6m30y payer atm+50bp	19-Nov-21	7bp	7bp	-10	21-Aprl-22	-10
	June '23 FF	3-Mar-22	1.84	2.4	1.55	16-Mar-22	2.4
	Sell SOFR/FF Basis	11-Jan-22	4.25	2.5	5.5	7-Mar-22	2
	Buy 2y10y rec spd vs 2y10y pay atm+75bp	18-Jan-22	0	50	-15	7-Apr-22	-15
	6m10y payer spread vs 6m10y receivers	8-Nov-21	0	30	-15	30-Mar-22	29
	Long 2y2y payers vs 1y2y payers	3-Dec-21	2.5	40	-10	11-Mar-22	-10
	Long 5y5y BE	9-Dec-21	2.17	2.45	1.95	27-Jan-22	2.19
	June '23 OIS	16-Feb-22	2.07	2.5	1.85	3-Mar-22	1.85
	Buy 1y10y payers spreads vs 1y2y payers	16-Dec-21	0	22	-15	17-Feb-22	-15
	Pay March FOMC OIS	28-Jan-22	28	50	31	10-Feb-22	51
	Pay Dec FOMC OIS	20-Jan-22	111	145.5	90	4-Feb-22	143
Asiapac	Receive AUD 10yr EFP (swap spreads)	21-Nov-21	32	5	50	30-Sep-22	50
Asiapac	Long 10-year swap spread	12-Sep-22	19.5	28.5	15	27-Sep-22	28.5
Asiapac	Paying 20yr TONA swaps	6-Jul-22	83	93	78	25-Jul-22	78
Asiapac	Pay Aug-22 RBA OIS	3-Jun-22	1.4	1.8	1.2	20-Jul-22	1.89
Asiapac	ACGB 5s-20s ASW curve flattener (s/q)	21-Nov-21	52	20	65	20-Jul-22	34
Asiapac	20yr JGB long (vs. a matched maturity TONA swap)	2-Jun-22	-5.5	3.5	-10	24-Jun-22	-10
Asiapac	10yr30yr TONA swap steepeners	4-Apr-22	46	55	41.5	2-Jun-22	55
Asiapac	Paying belly of 1yr forward 5yr10yr20yr TONA fly	28-Mar-22	-15	0	-22.5	26-Apr-22	-6.1
Asiapac	Long 10-year swap spread	23-Mar-22	5	15	9	4-Apr-22	15

Source: BofA Global Research, Bloomberg

BofA GLOBAL RESEARCH

Global rates forecasts

Exhibit 102: Latest levels and rate forecasts
Forecasts by quarter up to Q2 2023 plus 2023 and 2024 year-end

		Latest	YE 22	Q1 23	Q2 23	Q3 23	YE 23	YE 24
USA	3m Libor	4.67	5.00	5.25	5.25			
	2y T-Note	4.45	4.50	4.50	4.25	3.75	3.25	2.75
	5y T-Note	3.94	4.25	4.25	4.00	3.65	3.25	3.00
	10y T-Note	**3.77**	**4.00**	**4.00**	**3.75**	**3.50**	**3.25**	**3.25**
	30y T-Bond	3.88	4.10	4.10	3.85	3.65	3.40	3.50
	2y Swap	4.77	4.50	4.50	4.30	3.80	3.30	2.80
	5y Swap	3.98	4.05	4.05	3.85	3.55	3.15	2.90
	10y Swap	**3.74**	**3.70**	**3.70**	**3.50**	**3.30**	**3.05**	**3.05**
Germany	3m Euribor	1.80	2.50	3.10	3.40	3.40	3.40	2.60
	2y BKO	2.12	2.50	2.50	2.20	2.10	1.90	1.20
	5y OBL	1.99	2.40	2.45	2.15	1.95	1.60	1.50
	10y DBR	**2.02**	**2.40**	**2.40**	**2.20**	**2.10**	**2.00**	**1.90**
	30y DBR	1.93	2.25	2.30	2.10	2.05	2.05	2.20
	2y Euribor Swap	2.87	3.35	3.40	3.10	2.90	2.65	1.80
	5y Euribor Swap	2.73	3.20	3.20	2.90	2.65	2.25	2.00
	10y Euribor Swap	**2.76**	**3.15**	**3.10**	**2.85**	**2.70**	**2.55**	**2.40**
Japan	3m Libor	-0.04	-0.03	-0.03	-0.03	-0.01	-0.03	0.02
	2y JGB	-0.04	-0.05	-0.05	-0.05	-0.05	-0.05	0.25
	5y JGB	0.07	0.10	0.10	0.05	0.05	0.05	0.40
	10y JGB	**0.25**	**0.25**	**0.25**	**0.20**	**0.20**	**0.20**	**0.70**
	30y JGB	1.40	1.55	1.50	1.40	1.40	1.40	1.85
	2y Swap	0.14	0.10	0.10	0.05	0.05	0.05	0.45
	5y Swap	0.28	0.30	0.30	0.20	0.20	0.20	0.65
	10y Swap	**0.56**	**0.60**	**0.60**	**0.40**	**0.40**	**0.40**	**1.20**
U.K.	3m Sonia	3.43	4.25	4.50	4.50	4.50	4.50	3.75
	2y UKT	3.12	3.50	3.75	3.75	3.50	3.25	3.00
	5y UKT	3.26	3.75	4.00	4.25	4.25	4.25	4.25
	10y UKT	**3.20**	**3.75**	**4.00**	**4.00**	**4.00**	**4.00**	**4.00**
	30y UKT	3.35	3.50	3.75	3.75	3.75	3.75	3.75
	2y Sonia Swap	4.30	4.50	4.50	4.50	4.25	4.00	3.75
	5y Sonia Swap	3.84	4.25	4.25	4.25	4.25	4.25	4.25
	10y Sonia Swap	**3.39**	**3.75**	**3.75**	**3.75**	**3.75**	**3.75**	**3.75**
Australia	3m BBSW	3.04	3.30	3.80	4.50	4.40	4.30	4.30
	2y ACGB	3.11	3.20	3.70	4.10	4.25	4.25	4.25
	5y ACGB	3.34	3.50	3.80	4.10	4.30	4.30	4.50
	10y ACGB	**3.62**	**3.90**	**4.00**	**4.20**	**4.50**	**4.50**	**4.60**
	3y Swap	4.00	4.50	4.80	5.00	5.00	5.00	4.00
	10y Swap	**4.60**	**4.70**	**4.90**	**5.20**	**5.20**	**5.30**	**4.60**
Canada	2y Govt	3.93	3.80	3.70	3.50	3.35	3.25	2.95
	5y Govt	3.33	3.20	3.10	3.00	2.90	2.90	2.85
	10y Govt	**3.11**	**3.15**	**3.15**	**3.10**	**3.10**	**3.10**	**3.10**
	2y Swap	4.37	4.25	4.15	4.00	3.80	3.70	3.40
	5y Swap	3.67	3.55	3.45	3.35	3.25	3.25	3.20
	10y Swap	**3.58**	**3.65**	**3.65**	**3.60**	**3.60**	**3.60**	**3.60**

Source: BofA Global Research. US swaps vs overnight Sofr, EUR swaps vs 6M Euribor, Japan swaps vs Tona, GBP swaps vs Sonia, AUD swaps vs BBSW, CAD swaps vs 3M BAs

BofA GLOBAL RESEARCH

Analyst Certification

I, Ralf Preusser, CFA, hereby certify that the views expressed in this research report accurately reflect my personal views about the subject securities and issuers. I also certify that no part of my compensation was, is, or will be, directly or indirectly, related to the specific recommendations or view expressed in this research report.

Disclosures

Important Disclosures

BofAS or an affiliate was a manager of a public offering of securities of this issuer within the last 12 months: France, Germany, Italy, UK.
The issuer is or was, within the last 12 months, an investment banking client of BofAS and/or one or more of its affiliates: France, Germany, Italy, Japan, Spain, UK.
BofAS or an affiliate has received compensation from the issuer for non-investment banking services or products within the past 12 months: France, Germany, Italy, Japan, Spain, UK.
The issuer is or was, within the last 12 months, a non-securities business client of BofAS and/or one or more of its affiliates: France, Germany, Italy, Japan, Spain, UK.
BofAS or an affiliate has received compensation for investment banking services from this issuer within the past 12 months: France, Germany, Italy, Japan, UK.
BofAS or an affiliate expects to receive or intends to seek compensation for investment banking services from this issuer or an affiliate of the issuer within the next three months: France, Germany, Italy, Japan, Spain, UK.
BofAS or one of its affiliates has a significant financial interest in the fixed income instruments of the issuer. If this report was issued on or after the 15th day of the month, it reflects a significant financial interest on the last day of the previous month. Reports issued before the 15th day of the month reflect a significant financial interest at the end of the second month preceding the report: France, Germany, Spain.
BofAS or one of its affiliates trades or may trade as principal in the debt securities (or in related derivatives) that are the subject of this research report: France, Germany, Italy, Japan, Spain, UK.
The issuer is or was, within the last 12 months, a securities business client (non-investment banking) of BofAS and/or one or more of its affiliates: France, Germany, Italy, Japan, Spain, UK.
Due to the nature of strategic analysis, the issuers or securities recommended or discussed in this report are not continuously followed. Accordingly, investors must regard this report as providing stand-alone analysis and should not expect continuing analysis or additional reports relating to such issuers and/or securities.
BofA Global Research personnel (including the analyst(s) responsible for this report) receive compensation based upon, among other factors, the overall profitability of Bank of America Corporation, including profits derived from investment banking. The analyst(s) responsible for this report may also receive compensation based upon, among other factors, the overall profitability of the Bank's sales and trading businesses relating to the class of securities or financial instruments for which such analyst is responsible.
BofA Securities fixed income analysts regularly interact with sales and trading desk personnel in connection with their research, including to ascertain pricing and liquidity in the fixed income markets.

Other Important Disclosures

Prices are indicative and for information purposes only. Except as otherwise stated in the report, for any recommendation in relation to an equity security, the price referenced is the publicly traded price of the security as of close of business on the day prior to the date of the report or, if the report is published during intraday trading, the price referenced is indicative of the traded price as of the date and time of the report and in relation to a debt security (including equity preferred and CDS), prices are indicative as of the date and time of the report and are from various sources including BofA Securities trading desks.
The date and time of completion of the production of any recommendation in this report shall be the date and time of dissemination of this report as recorded in the report timestamp.

This report may refer to fixed income securities or other financial instruments that may not be offered or sold in one or more states or jurisdictions, or to certain categories of investors, including retail investors. Readers of this report are advised that any discussion, recommendation or other mention of such instruments is not a solicitation or offer to transact in such instruments. Investors should contact their BofA Securities representative or Merrill Global Wealth Management financial advisor for information relating to such instruments.
Rule 144A securities may be offered or sold only to persons in the U.S. who are Qualified Institutional Buyers within the meaning of Rule 144A under the Securities Act of 1933, as amended.
SECURITIES OR OTHER FINANCIAL INSTRUMENTS DISCUSSED HEREIN MAY BE RATED BELOW INVESTMENT GRADE AND SHOULD THEREFORE ONLY BE CONSIDERED FOR INCLUSION IN ACCOUNTS QUALIFIED FOR SPECULATIVE INVESTMENT.
Recipients who are not institutional investors or market professionals should seek the advice of their independent financial advisor before considering information in this report in connection with any investment decision, or for a necessary explanation of its contents.
The securities or other financial instruments discussed in this report may be traded over-the-counter. Retail sales and/or distribution of this report may be made only in states where these instruments are exempt from registration or have been qualified for sale.
Officers of BofAS or one or more of its affiliates (other than research analysts) may have a financial interest in securities of the issuer(s) or in related investments.
This report, and the securities or other financial instruments discussed herein, may not be eligible for distribution or sale in all countries or to certain categories of investors, including retail investors.
Refer to BofA Global Research policies relating to conflicts of interest.
"BofA Securities" includes BofA Securities, Inc. ("BofAS") and its affiliates. Investors should contact their BofA Securities representative or Merrill Global Wealth Management financial advisor if they have questions concerning this report or concerning the appropriateness of any investment idea described herein for such investor. "BofA Securities" is a global brand for BofA Global Research.
Information relating to Non-US affiliates of BofA Securities and Distribution of Affiliate Research Reports:
BofAS and/or Merrill Lynch, Pierce, Fenner & Smith Incorporated ("MLPF&S") may in the future distribute, information of the following non-US affiliates in the US (short name: legal name, regulator): Merrill Lynch (South Africa): Merrill Lynch South Africa (Pty) Ltd., regulated by The Financial Service Board; MLI (UK): Merrill Lynch International, regulated by the Financial Conduct Authority (FCA) and the Prudential Regulation Authority (PRA); BofASE (France): BofA Securities Europe SA is authorized by the Autorité de Contrôle Prudentiel et de Résolution (ACPR) and regulated by the ACPR and the Autorité des Marchés Financiers (AMF). Note that BofA Securities Europe SA has registered address at 51 rue la Boétie, 75008 Paris, is registered under no. 842 602 690 RCS Paris, and its share capital can be found on BofASE's disclaimer webpage; BofA Europe (Milan): Bank of America Europe Designated Activity Company, Milan Branch, regulated by the Bank of Italy, the European Central Bank (ECB) and the Central Bank of Ireland (CBI); BofA Europe (Frankfurt): Bank of America Europe Designated Activity Company, Frankfurt Branch regulated by BaFin, the ECB and the CBI; BofA Europe (Madrid): Bank of America Europe Designated Activity Company, Sucursal en España, regulated by the Bank of Spain, the ECB and the CBI; Merrill Lynch (Australia): Merrill Lynch Equities (Australia) Limited, regulated by the Australian Securities and Investments Commission; Merrill Lynch (Hong Kong): Merrill Lynch (Asia Pacific) Limited, regulated by the Hong Kong Securities and Futures Commission (HKSFC); Merrill Lynch (Singapore): Merrill Lynch (Singapore) Pte Ltd, regulated by the Monetary Authority of Singapore (MAS); Merrill Lynch (Canada): Merrill Lynch Canada Inc, regulated by the Investment Industry Regulatory Organization of Canada; Merrill Lynch (Mexico): Merrill Lynch Mexico, SA de CV, Casa de Bolsa, regulated by the Comisión Nacional Bancaria y de Valores; Merrill Lynch (Argentina): Merrill Lynch Argentina SA, regulated by Comisión Nacional de Valores; BofAS Japan: BofA Securities Japan Co., Ltd., regulated by the Financial Services Agency; Merrill Lynch (Seoul): Merrill Lynch International, LLC Seoul Branch, regulated by the Financial Supervisory Service; Merrill Lynch (Taiwan): Merrill Lynch Securities (Taiwan) Ltd., regulated by the Securities and Futures Bureau; BofAS India: BofA Securities India Limited, regulated by the Securities and Exchange Board of India (SEBI); Merrill Lynch (Indonesia): PT Merrill Lynch Sekuritas Indonesia, regulated by Otoritas Jasa Keuangan (OJK); Merrill Lynch (Israel): Merrill Lynch Israel Limited, regulated by Israel Securities Authority; Merrill Lynch (Russia): OOO Merrill Lynch Securities, Moscow, regulated by the Central Bank of the Russian Federation; Merrill Lynch (DIFC): Merrill Lynch International (DIFC Branch), regulated by the Dubai Financial Services Authority (DFSA); Merrill Lynch (Brazil): Merrill Lynch S.A. Corretora de Títulos e Valores Mobiliários, regulated by Comissão de Valores Mobiliários; Merrill Lynch KSA Company: Merrill Lynch Kingdom of Saudi Arabia Company, regulated by the Capital Market Authority.
This information: has been approved for publication and is distributed in the United Kingdom (UK) to professional clients and eligible counterparties (as each is defined in the rules of the FCA and the PRA) by MLI (UK), which is authorized by the PRA and regulated by the FCA and the PRA - details about the extent of our regulation by the FCA and PRA are available from us on request; has been approved for publication and is distributed in the European Economic Area (EEA) by BofASE (France), which is authorized by the ACPR and regulated by the ACPR and the AMF; has been considered and distributed in Japan by BofAS Japan, a registered securities dealer under the Financial Instruments and Exchange Act in Japan, or its permitted affiliates; is issued and distributed in Hong Kong by Merrill Lynch (Hong Kong) which is regulated by HKSFC; is issued and distributed in Taiwan by Merrill Lynch (Taiwan); is issued and distributed in India by BofAS India; and is issued and distributed in Singapore to institutional investors and/or accredited investors (each as defined under the Financial Advisers Regulations) by Merrill Lynch (Singapore) (Company Registration No 198602883D). Merrill Lynch (Singapore) is regulated by MAS. Merrill Lynch Equities (Australia) Limited (ABN 65 006 276 795), AFS License 235132 (MLEA) distributes

this information in Australia only to 'Wholesale' clients as defined by s.761G of the Corporations Act 2001. With the exception of Bank of America N.A., Australia Branch, neither MLEA nor any of its affiliates involved in preparing this information is an Authorised Deposit-Taking Institution under the Banking Act 1959 nor regulated by the Australian Prudential Regulation Authority. No approval is required for publication or distribution of this information in Brazil and its local distribution is by Merrill Lynch (Brazil) in accordance with applicable regulations. Merrill Lynch (DIFC) is authorized and regulated by the DFSA. Information prepared and issued by Merrill Lynch (DIFC) is done so in accordance with the requirements of the DFSA conduct of business rules. BofA Europe (Frankfurt) distributes this information in Germany and is regulated by BaFin, the ECB and the CBI. BofA Securities entities, including BofA Europe and BofASE (France), may outsource/delegate the marketing and/or provision of certain research services or aspects of research services to other branches or members of the BofA Securities group. You may be contacted by a different BofA Securities entity acting for and on behalf of your service provider where permitted by applicable law. This does not change your service provider. Please refer to the [Electronic Communications Disclaimers] for further information.

This information has been prepared and issued by BofAS and/or one or more of its non-US affiliates. The author(s) of this information may not be licensed to carry on regulated activities in your jurisdiction and, if not licensed, do not hold themselves out as being able to do so. BofAS and/or MLPF&S is the distributor of this information in the US and accepts full responsibility for information distributed to BofAS and/or MLPF&S clients in the US by its non-US affiliates. Any US person receiving this information and wishing to effect any transaction in any security discussed herein should do so through BofAS and/or MLPF&S and not such foreign affiliates. Hong Kong recipients of this information should contact Merrill Lynch (Asia Pacific) Limited in respect of any matters relating to dealing in securities or provision of specific advice on securities or any other matters arising from, or in connection with, this information. Singapore recipients of this information should contact Merrill Lynch (Singapore) Pte Ltd in respect of any matters arising from, or in connection with, this information. For clients that are not accredited investors, expert investors or institutional investors Merrill Lynch (Singapore) Pte Ltd accepts full responsibility for the contents of this information distributed to such clients in Singapore.

General Investment Related Disclosures:

Taiwan Readers: Neither the information nor any opinion expressed herein constitutes an offer or a solicitation of an offer to transact in any securities or other financial instrument. No part of this report may be used or reproduced or quoted in any manner whatsoever in Taiwan by the press or any other person without the express written consent of BofA Securities.

This document provides general information only, and has been prepared for, and is intended for general distribution to, BofA Securities clients. Neither the information nor any opinion expressed constitutes an offer or an invitation to make an offer, to buy or sell any securities or other financial instrument or any derivative related to such securities or instruments (e.g., options, futures, warrants, and contracts for differences). This document is not intended to provide personal investment advice and it does not take into account the specific investment objectives, financial situation and the particular needs of, and is not directed to, any specific person(s). This document and its content do not constitute, and should not be considered to constitute, investment advice for purposes of ERISA, the US tax code, the Investment Advisers Act or otherwise. Investors should seek financial advice regarding the appropriateness of investing in financial instruments and implementing investment strategies discussed or recommended in this document and should understand that statements regarding future prospects may not be realized. Any decision to purchase or subscribe for securities in any offering must be based solely on existing public information on such security or the information in the prospectus or other offering document issued in connection with such offering, and not on this document.

Securities and other financial instruments referred to herein, or recommended, offered or sold by BofA Securities, are not insured by the Federal Deposit Insurance Corporation and are not deposits or other obligations of any insured depository institution (including, Bank of America, N.A.). Investments in general and, derivatives, in particular, involve numerous risks, including, among others, market risk, counterparty default risk and liquidity risk. No security, financial instrument or derivative is suitable for all investors. Digital assets are extremely speculative, volatile and are largely unregulated. In some cases, securities and other financial instruments may be difficult to value or sell and reliable information about the value or risks related to the security or financial instrument may be difficult to obtain. Investors should note that income from such securities and other financial instruments, if any, may fluctuate and that price or value of such securities and instruments may rise or fall and, in some cases, investors may lose their entire principal investment. Past performance is not necessarily a guide to future performance. Levels and basis for taxation may change.

BofA Securities is aware that the implementation of the ideas expressed in this report may depend upon an investor's ability to "short" securities or other financial instruments and that such action may be limited by regulations prohibiting or restricting "shortselling" in many jurisdictions. Investors are urged to seek advice regarding the applicability of such regulations prior to executing any short idea contained in this report.

This report may contain a trading idea or recommendation which highlights a specific identified near-term catalyst or event impacting a security, issuer, industry sector or the market generally that presents a transaction opportunity, but does not have any impact on the analyst's particular "Overweight" or "Underweight" rating (which is based on a three month trade horizon). Trading ideas and recommendations may differ directionally from the analyst's rating on a security or issuer because they reflect the impact of a near-term catalyst or event.

Foreign currency rates of exchange may adversely affect the value, price or income of any security or financial instrument mentioned in this report. Investors in such securities and instruments effectively assume currency risk.

BofAS or one of its affiliates is a regular issuer of traded financial instruments linked to securities that may have been recommended in this report. BofAS or one of its affiliates may, at any time, hold a trading position (long or short) in the securities and financial instruments discussed in this report.

BofA Securities, through business units other than BofA Global Research, may have issued and may in the future issue trading ideas or recommendations that are inconsistent with, and reach different conclusions from, the information presented herein. Such ideas or recommendations may reflect different time frames, assumptions, views and analytical methods of the persons who prepared them, and BofA Securities is under no obligation to ensure that such other trading ideas or recommendations are brought to the attention of any recipient of this information.

In the event that the recipient received this information pursuant to a contract between the recipient and BofAS for the provision of research services for a separate fee, and in connection therewith BofAS may be deemed to be acting as an investment adviser, such status relates, if at all, solely to the person with whom BofAS has contracted directly and does not extend beyond the delivery of this report (unless otherwise agreed specifically in writing by BofAS). If such recipient uses the services of BofAS in connection with the sale or purchase of a security referred to herein, BofAS may act as principal for its own account or as agent for another person. BofAS is and continues to act solely as a broker-dealer in connection with the execution of any transactions, including transactions in any securities referred to herein.

Copyright and General Information:

Materials prepared by BofA Global Research personnel are based on public information. Facts and views presented in this material have not been reviewed by, and may not reflect information known to, professionals in other business areas of BofA Securities, including investment banking personnel. BofA Securities has established information barriers between BofA Global Research and certain business groups. As a result, BofA Securities does not disclose certain client relationships with, or compensation received from, such issuers. To the extent this material discusses any legal proceeding or issues, it has not been prepared as nor is it intended to express any legal conclusion, opinion or advice. Investors should consult their own legal advisers as to issues of law relating to the subject matter of this material. BofA Global Research personnel's knowledge of legal proceedings in which any BofA Securities entity and/or its directors, officers and employees may be plaintiffs, defendants, co-defendants or co-plaintiffs with or involving issuers mentioned in this material is based on public information. Facts and views presented in this material that relate to any such proceedings have not been reviewed by, discussed with, and may not reflect information known to, professionals in other business areas of BofA Securities in connection with the legal proceedings or matters relevant to such proceedings.

This information has been prepared independently of any issuer of securities mentioned herein and not in connection with any proposed offering of securities or as agent of any issuer of any securities. None of BofAS any of its affiliates or their research analysts has any authority whatsoever to make any representation or warranty on behalf of the issuer(s). BofA Global Research policy prohibits research personnel from disclosing a recommendation, investment rating, or investment thesis for review by an issuer prior to the publication of a research report containing such rating, recommendation or investment thesis.

Any information relating to the tax status of financial instruments discussed herein is not intended to provide tax advice or to be used by anyone to provide tax advice. Investors are urged to seek tax advice based on their particular circumstances from an independent tax professional.

The information herein (other than disclosure information relating to BofA Securities and its affiliates) was obtained from various sources and we do not guarantee its accuracy. This information may contain links to third-party websites. BofA Securities is not responsible for the content of any third-party website or any linked content contained in a third-party website. Content contained on such third-party websites is not part of this information and is not incorporated by reference. The inclusion of a link does not imply any endorsement by or any affiliation with BofA Securities. Access to any third-party website is at your own risk, and you should always review the terms and privacy policies at third-party websites before submitting any personal information to them. BofA Securities is not responsible for such terms and privacy policies and expressly disclaims any liability for them.

All opinions, projections and estimates constitute the judgment of the author as of the date of publication and are subject to change without notice. Prices also are subject to change without notice. BofA Securities is under no obligation to update this information and BofA Securities ability to publish information on the subject issuer(s) in the future is subject to applicable quiet periods. You should therefore assume that BofA Securities will not update any fact, circumstance or opinion contained herein.

Certain outstanding reports or investment opinions relating to securities, financial instruments and/or issuers may no longer be current. Always refer to the most recent research report relating to an issuer prior to making an investment decision.

In some cases, an issuer may be classified as Restricted or may be Under Review or Extended Review. In each case, investors should consider any investment opinion relating to such issuer (or its security and/or financial instruments) to be suspended or withdrawn and should not rely on the analyses and investment opinion(s) pertaining to such issuer (or its securities and/or financial instruments) nor should the analyses or opinion(s) be considered a solicitation of any kind. Sales persons and financial advisors affiliated with BofAS or any of its affiliates may not solicit purchases of securities or financial instruments that are Restricted or Under Review and may only solicit securities under Extended Review in accordance with firm policies.

Neither BofA Securities nor any officer or employee of BofA Securities accepts any liability whatsoever for any direct, indirect or consequential damages or losses arising from any use of this information.

Research Analysts

Europe

Ralf Preusser, CFA
Rates Strategist
MLI (UK)
ralf.preusser@bofa.com

Mark Capleton
Rates Strategist
MLI (UK)
mark.capleton@bofa.com

Sphia Salim
Rates Strategist
MLI (UK)
sphia.salim@bofa.com

Ronald Man
Rates Strategist
MLI (UK)
ronald.man@bofa.com

Erjon Satko
Rates Strategist
BofASE (France)
erjon.satko@bofa.com

Agne Stengeryte
Rates Strategist
MLI (UK)
agne.stengeryte@bofa.com

US

Ralph Axel
Rates Strategist
BofAS
ralph.axel@bofa.com

Bruno Braizinha, CFA
Rates Strategist
BofAS
bruno.braizinha@bofa.com

Mark Cabana, CFA
Rates Strategist
BofAS
mark.cabana@bofa.com

Paul Ciana, CMT
Technical Strategist
BofAS
paul.ciana@bofa.com

Katie Craig
Rates Strategist
BofAS
katie.craig@bofa.com

Meghan Swiber, CFA
Rates Strategist
BofAS
meghan.swiber@bofa.com

Anna (Caiyi) Zhang
Rates Strategist
BofAS
caiyi.zhang@bofa.com

Pac Rim

Oliver Levingston
Rates Strategist
Merrill Lynch (Australia)
oliverllewellyn.levingston@bofa.com

Shusuke Yamada, CFA
FX/Rates Strategist
BofAS Japan
shusuke.yamada@bofa.com

Tomonobu Yamashita
Rates Strategist
BofAS Japan
tomonobu.yamashita@bofa.com