

Liquid Insight

US rate shock FAQ

Key takeaways

- US rates: you ask, we answer. Top Q: Why are rates rising? A: (1) US resilience (2) supply / demand (3) challenged positions
- Next Q: When does it stop? A: (1) slower growth / risk off (2) cuts priced out (3) Fed shift. Risk-off has been driving.
- Other Qs: Who is selling? Who will buy the bonds? Does Fed care? Geopolitical risks? US fiscal sustainability? We answer...

By M. Cabana, M. Swiber, R. Axel, & B. Braizinha

Exhibit 1: 10Y UST decomposed between real rate & breakeven inflation rate (%)

10Y rate rise all in real rates



BofA GLOBAL RESEARCH

US sharp rate rise: you ask, we answer

We address FAQs on the sharp US real rate increase. Our summary:

Q: Why are rates rising? A: (1) US growth (2) supply / demand (3) challenged positions.

Q: What will stop it? A: (1) macro slowdown / risk-off (2) cuts taken out (3) Fed shift.

Q: How many cuts can come out? We think at least 100bp of cuts remain over '24-25

Q: Where will rates peak? A: We think 5% 10y is near the top, assuming Fed on hold.

Q: Who is selling? A: Fast money, banks, foreign official. Buyers currently insufficient.

Q: Who will buy the bonds? A: Today = domestic asset managers; in future = Fed.

Q: Is **US** fiscal policy sustainable? A: No. However, fiscal policy unlikely to change.

Q: Does Fed care? A: Yes, deeply. Higher rates = slower growth & fin stability risks.

Q: How to factor geopolitical risk? A: Lower rates with flight to quality.

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

Bof A Securities does and seeks to do business with issuers covered in its research reports. As a result, investors should be aware that the firm may have a conflict of interest that could affect the objectivity of this report. Investors should consider this report as only a single factor in making their investment decision.

Refer to important disclosures on page 8 to 10. Analyst Certification on page 7.

Timestamp: 11 October 2023 12:30AM EDT

11 October 2023

Rates and Currencies Research Global

Global Rates & Currencies Research MLI (UK)

Mark Cabana, CFA Rates Strategist **BofAS** +1 646 855 9591

mark.cabana@bofa.com Meghan Swiber, CFA

Rates Strategist BofAS +1 646 855 9877 meghan.swiber@bofa.com

Bruno Braizinha, CFA Rates Strategist BofAS +1 646 855 8949 bruno.braizinha@bofa.com

Ralph Axel Rates Strategist **BofAS** +1 646 855 6226 ralph.axel@bofa.com

Adarsh Sinha FX Strategist

Merrill Lynch (Hong Kong) +852 3508 7155 adarsh.sinha@bofa.com

Janice Xue

Emerging Asia FI/FX Strategist Merrill Lynch (Hong Kong) +852 3508 8587 janice.xue@bofa.com

See Team Page for List of Analysts

Liquid Insight

25-Sep-23

Recent Publications

10-Oct-23	USD and risk-off – under the
	<u>hood</u>
9-Oct-23	EUR vs US: Cross market trade
	<u>opportunities</u>
5-Oct-23	<u>Japan's policy challenge –</u>
	defend JPY or JGB?
4-Oct-23	FX: A check in on consensus
3-Oct-23	Oil supply shock and FX
29-Sep-23	RBA and RBNZ: a hawkish hold
28-Sep-23	Shutdown concerns in G10 FX
27-Sep-23	Insufficiently restrictive =
	higher rates
26-Sep-23	Real complacency in FX

Cross-market at crossroads

BofA GLOBAL RESEARCH

US interest rates have risen sharply since mid-July. The 10y UST yield is higher by nearly 90bps, with almost all the move in real rates (Exhibit 1). Below we address recently asked questions on the move & offer thoughts on where rates are likely headed.

Why are US rates rising so quickly?

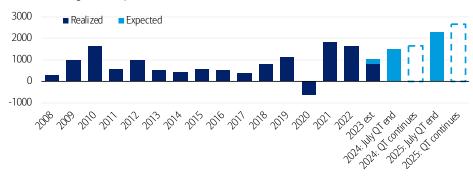
The US rate selloff has been driven by 3 fundamental factors: (1) strong US data (2) daunting supply / demand imbalance (3) challenged asset manager positioning. The move was exacerbated by the September FOMC meeting. A bit of perspective on each.

Strong US data: US data has printed stronger than expected for most of '23, pushing consensus to revise higher their GDP expectations. Many economist recession forecasts were tabled after very strong 2QGDP data in July. Indeed, our US economists also dropped their recession in favor of a soft landing in July (see US economic viewpoint). 3QGDP is now tracking around 3.5% which represents a strong upside surprise.

<u>Daunting UST supply / demand mix</u>: US deficits have been larger than expected, which resulted in larger UST supply to the private sector (Exhibit 2). UST demand is also sidelined: banks are shrinking their holdings, overseas investors have better options at home, pensions / insurers are buying but in limited size, & asset managers are bruised by recent losses & weary of catching the falling knife. Loosening of BoJ YCC & US debt downgrade has not helped to support UST demand.

Exhibit 2: Net coupon supply ex Fed purchases and including Fed QT impact by FY

Net coupon supply to the public after accounting for Fed will increase in coming years with upside risk if QT continues for longer than expected



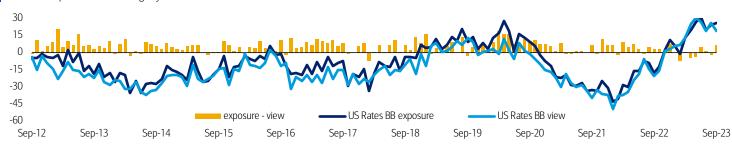
Source: BofA Global Research, US Treasury, FRBNY, alternate assumption for longer QT period assumes that it continues through mid '25

BofA GLOBAL RESEARCH

Offside asset manager positioning: Our monthly FX & rate sentiment survey suggests asset managers have been biased long (Exhibit 3). Recent domestic total return fixed income fund performance has been mixed (see: Foreign official selling, Pension fund demand cooling) though the community reflects frustration by ongoing rate rise even with yields at optically attractive level.

Exhibit 3: Duration exposure and view: USD

Duration exposures extend slightly even as sentiment deteriorates



Source: BofA Global Research FX and Rates Sentiment Survey

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. See appendix for formulas.

BofA GLOBAL RESEARCH



<u>September FOMC meeting</u>: not only were the dots and forecasts hawkish but Powell reflected limited confidence that rates are sufficiently restrictive. Despite insufficiently restrictive rates, the Fed has signaled few, if any, additional hikes. If rates are not restrictive but the Fed is not hiking, future cuts need to be priced out. Since mid-July, the majority of the rate rise can be explained by fewer cuts in '24-'25 or a higher trough in the Fed cutting cycle (Exhibit 4, Exhibit 5).

Exhibit 4: UST curve in mid-July vs today (%)

USTs shifted higher largely driven by moves in the 2-5Y part of curve

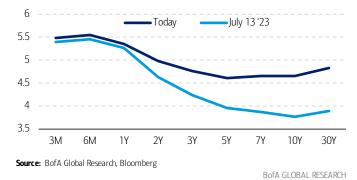


Exhibit 5: Spread of Dec '23 - Dec '25 SOFR futures (bps) Fed cuts between end '23-'25 have been pared back by 60bps



BofA GLOBAL RESEARCH

A higher trough for Fed cuts corresponds to expectations of a softer landing. It is difficult to distinguish between whether the neutral rate or term premium is higher, but these 2 factors are likely somewhat reflected in the rate move. Models suggest much of the rate move is due to higher term premium, but these models tend to be highly correlated with the shape of the 2s10s curve and may discount the extent to which Fed cuts have been pared back over the next few years. We have been expecting higher term premium via UST cheapening vs SOFR or FF swaps. There has been some UST-SOFR cheapening in the sharp re-pricing but it is relatively modest (Exhibit 6).

When does US rate rise stop?

US rates will stop rising once there are clearer signs that they are becoming sufficiently restrictive via (1) economic moderation (2) risk asset struggles (3) Fed shift. The rate rise can also stop if a soft landing is priced with minimal cuts in '24 - '25. The Fed will likely prioritize more balanced economic data, but data is lagged. Risk assets may provide a better real-time indicator of restrictive rates. In essence, rates stop rising when risk assets struggle / financial conditions tighten or Fed cuts are priced out.

Recent Fed commentary suggests concern over financial conditions; we suspect the Fed would judge another 10% decline in risk assets reflects sufficiently restrictive rates.

Where will rates peak?

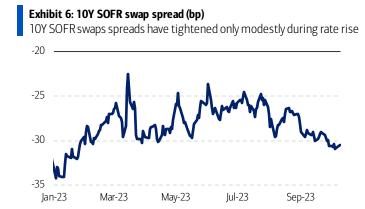
We don't know but can't rule out 10y rates at or above 5% (see Are 10yT cheap?). We suspect the 10y rate rise will be slower in the range of 4.75-5% or above due to (1) increased negative feedback from risk assets (2) market desire to still hold some Fed rate cuts. Thoughts on each.

ERP: We expect increased negative feedback from risk assets due to a rapidly compressing equity risk premium (ERP – Exhibit 7). ERP reflects excess return investors should expect from owning equities above the risk-free rate. Higher rates with stable earnings mean lower ERP. Falling ERP will likely mean increased risk asset headwinds. The simplest measure of ERP implies a current earnings yield of 5%, which means risk asset investors are receiving an increasingly narrow range of compensation for owning risk over safe assets. This suggests increased risk asset headwinds as rates rise.

Minimum Fed cuts: the market will likely want to retain some Fed rate cuts over the next few years due to lingering recession & financial stability concerns. We assume the market will want to hold around 100-125bps of cuts. This range is determined by observing that in other "soft landings" (such as '94, '06, & '18) the Fed cut 75bps after



reaching terminal in the subsequent 3-15 months ('94 & '18) or stayed on hold ('06). We expect the market will want to hold at least 75bps of cuts + 25-50bps of premium due to recession / financial stability risks. The extent of these cuts would imply 10y topping out around 5%. 10y rates could rise further with a further increase in term premium.







Source: BofA Global Research

BofA GLOBAL RESEARCH

Who is selling?

Source: BofA Global Research, Bloomberg

We believe the most likely rate sellers are fast money, banks, & foreign official entities. Fast money or trend following market participants have likely set speculative positions to position for higher rates or steeper curves (see weekly positioning report). We continue to see leveraged hedge funds add to shorts alongside asset manager longs. Our CTA models suggest extent of shorts may be bottoming given extent of the already stretched position observed in recent weeks.

BofA GLOBAL RESEARCH

Banks have also likely been rate payers due to ongoing hedging needs resulting from higher rates. Foreign official portfolios have also likely been UST sellers to fund FX intervention activity, though most concentrated at the UST front end.

We also believe many rate investors remain sidelined due to the sharp rate rise. Some real money investors have been long & their positions are offsides. These investors continue to see inflows, but the extent of these flows is either not strong enough to counteract the selling pressure or they remain cautious to add longs with rates volatile.

Who will buy the bonds?

Domestic asset managers are the most likely source of UST demand today. These investors seem most likely because other investor demand is expected to be weak: banks are net sellers & overseas investors have better alternatives at home. Pensions & insurers have been buying but not as substantial as we expected. Domestic asset managers will likely be buyers with ongoing inflows & potential de-risking activity.

In the future, the most likely demand source will ultimately be from the Fed. The Fed has a 3-part mandate from Congress: (1) stable prices (2) full employment (3) moderate long term interest rates. If rates rise too high and threaten prices or employment to the downside, the Fed can absorb the excess supply. The Fed is very unlikely to act this way today but may be required to do so in the future with unsustainable fiscal deficits.

Is US fiscal policy sustainable?

No, US fiscal policy is not sustainable. However, debt/GDP >100% is not a crisis and can be manageable, especially if the govt spending increases productivity. Fiscal policy is unlikely to materially change in the near or medium term. When either party achieves a sweep of White House & Congress, they have recently proven a desire to either cut taxes or increase spending. We suspect this trend may hold if there is a '24 sweep.

Elevated deficits will mean elevated UST supply. Elevated UST supply will limit the capacity for rates to fall sharply without economic deterioration.



Does the Fed care about recent sharp rate rise?

Yes, the Fed cares deeply about the recent rate rise. The real rate increase represents a potential tightening of financial conditions that could threaten US economic growth. Several Fed officials have suggested the real rate increase could justify a slower pace of rate increases or pause at the November FOMC meeting.

The sharp rate rise has also rekindled banking system concerns. The rate rise has further depleted bank security holding values, which reduce bank HQLA books & hurts LCR ratios via a lower numerator. Lower bank LCR & risks of higher liability costs may increase bank liquidity and profitability risks. The Fed is likely aware of these risks.

How do geopolitical risks factor into the rate outlook?

A sustained increase in geopolitical risk will help moderate the recent rate rise via flight to quality. The ultimate rate impact will be a function of how geopolitical risks evolve. At a minimum, we might expect some sustained oil price pressure, which will widen inflation breakevens & should support our 2s5s real rate curve steepener (see: <u>US Rates Alpha</u>) and receiver spreads in the belly (see <u>Data resilience and volatility</u>).

What else should investors focus on?

The relative dynamic of the term structure of rates and equity volatility (Exhibit 8 and Exhibit 9, respectively) has reflected different macro regimes over the last year:

- Soft landing regime where the term structure of equity vol stays steep (as there is limited pressure on earnings in soft-landing scenarios) but the term structure of rates volatility is inverted, i.e., a context where rates are the main shock absorber as the Fed potentially cuts rates in response to negative shocks, protecting risky assets (from late '22 to early '23 & from mid-April to early June '23).
- Risk off regime or high vol regime where the term structure of both rates and equity vol inverts (September/October '22 and mid-March '23).
- Risk on regime where the term structure of both rates and equity vol steepens back to positive (from early June to mid-September '23), as an upgrade to fundamentals fades the significance of the Fed put
- And ... a re-acceleration regime where the US resilience to tightening drives
 neutral rate expectations higher, steepens the curve, and creates scope for further
 tightening. Rates stop being a shock absorber for the dynamic or risk, and negative
 feedback between higher bond yields and risky assets drives the equity vol term
 structure flatter as the rates vol term structure inverts (from mid-September '23).

Exhibit 8: Term structure of rates volatilitySpread to 1m10y vs 1y10y vol back to inverted



Exhibit 9: Term structure of equity volatilitySpread of 1m expiry to 1y expiry vol on the S&P



BofA GLOBAL RESEARCH

The last shift in the dynamic over September seems to reflect a context where rate expectations and volatility become a drag for the dynamic of risky assets (instead of a shock absorber as it seems to be the case in soft landing scenarios). To a large extent, this type of context caps the potential for more significant selloffs from here.



Bottom line: US rate sell off driven by 3 fundamental factors: (1) strong US data (2) supply / demand imbalance (3) challenged asset manager positioning. The move was exacerbated by the Sep FOMC meeting. Rate rise may continue until data softens, risk-off, cuts are priced out, or a Fed policy shift. We recommend clients nibble on duration longs if 10y >4.75%, stay in steepeners (we recommend nominal 5s30s & real 2s5s steepeners), 6m10y payer ladders, & expect tighter back-end swap spreads. For more detail on our US rates recommendation trades see our most recent Global Rates Weekly.



Notable Rates and FX Research

- Global Rates, FX & EM Year Ahead 2023 Year Ahead 2023: Pivot ≠ Peak, 20 Nov 2022
- The rates sell-off Global FX Weekly, 06 Oct 2023
- As the dust settles after the USD rally, Liquid Cross Border Flows, 02 Oct 2023

Rates, FX & EM trades for 2023

For a complete list of our open trade recommendations, as well as our trade recommendations closed over the past 12 months, see the reports below:

Global FX weekly: The rates sell-off 06 October 2023

Global Rates Weekly: Yield or fight on 06 October 2023

Analyst Certification

I, Mark Cabana, 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

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). BofA Securities Europe SA ("BofASE") with registered address at 51, rue La Boétie, 75008 Paris is registered under no. 842 602 690 RCS Paris. In accordance with the provisions of French Code Monétaire et Financier (Monetary and Financial Code), BofASE is an établissement de crédit et d'investissement (credit and investment institution) that is authorised and supervised by the European Central Bank and the Autorité de Contrôle Prudentiel et de Résolution (ACPR) and regulated by the ACPR and the Autorité des Marchés Financiers. BofASE's share capital can be found at www.bofaml.com/BofASEdisclaimer; 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): Merrill Lynch (Canada): Merrill Lynch (Mexico): Merrill Lynch (Mexico): Merrill Lynch (Mexico) (Mexico): Merrill Lynch (Mexico): M 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 (Israel): Merrill Lynch Israel Limited, regulated by Israel Securities Authority; 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); is issued and distributed in 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 in Germany and is regulated by BaFin, the ECB and the CBI. BofA Securities entities, including BofA Securities

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.

Futures and options are not appropriate for all investors. Such financial instruments may expire worthless. Before investing in futures or options, clients must receive the appropriate risk disclosure documents. Investment strategies explained in this report may not be appropriate at all times. Costs of such strategies do not include commission or margin expenses. 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:

Copyright 2023 Bank of America Corporation. All rights reserved. iQdatabase® is a registered service mark of Bank of America Corporation. This information is prepared for the use of BofA Securities clients and may not be redistributed, retransmitted or disclosed, in whole or in part, or in any form or manner, without the express written consent of BofA Securities. BofA Global Research information is distributed simultaneously to internal and client websites and other portals by BofA Securities and is not publicly-available material. Any unauthorized use or disclosure is prohibited. Receipt and review of this information constitutes your agreement not to redistribute, retransmit, or disclose to others the contents, opinions, conclusion, or information contained herein (including any investment recommendations, estimates or price targets) without first obtaining express permission from an authorized officer of BofA Securities. 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 inform

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

Ralph Axel Rates Strategist

BofAS +1 646 855 6226 ralph.axel@bofa.com

Paul Ciana, CMT Technical Strategist

+1 646 855 6007 paul.ciana@bofa.com

John Shin FX Strategist **BofAS** +1 646 855 9342 joong.s.shin@bofa.com

Vadim Iaralov FX Strategist **BofAS** +1 646 855 8732

vadim.iaralov@bofa.com

Mark Cabana, CFA Rates Strategist BofAS +1 646 855 9591 mark.cabana@bofa.com

Bruno Braizinha, CFA Rates Strategist BofAS +1 646 855 8949 bruno.braizinha@bofa.com

Meghan Swiber, CFA Rates Strategist BofAS +1 646 855 9877 meghan.swiber@bofa.com

Europe

Ralf Preusser, CFA Rates Strategist MLI (UK) +44 20 7995 7331 ralf.preusser@bofa.com

Ruben Segura-Cayuela Europe Economist BofA Europe (Madrid) +34 91 514 3053 ruben.segura-cayuela@bofa.com

Mark Capleton Rates Strategist MLI (UK) +44 20 7995 6118 mark.capleton@bofa.com

Athanasios Vamvakidis FX Strategist +44 020 7995 0279 athanasios.vamvakidis@bofa.com

Sphia Salim Rates Strategist MLI (UK) +44 20 7996 2227 sphia.salim@bofa.com

Kamal Sharma FX Strategist MLI (UK) +44 20 7996 4855 ksharma32@bofa.com

Ronald Man Rates Strategist +44 20 7995 1143 ronald.man@bofa.com

Michalis Rousakis FX Strategist +44 20 7995 0336 michalis.rousakis@bofa.com

Pac Rim

Adarsh Sinha FX Strategist Merrill Lynch (Hong Kong)

+852 3508 7155 adarsh.sinha@bofa.com

Janice Xue Rates Strategist Merrill Lynch (Hong Kong) +852 3508 8587 janice.xue@bofa.com

Shusuke Yamada, CFA FX/Rates Strategist BofAS Japan +81 3 6225 8515 shusuke.yamada@bofa.com

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

