

US Rates Watch

Trading US fiscal worries

Trading the most obvious theme in fixed income

Clients have increasingly questioned the US Treasury supply / demand outlook and asked how best to trade risks of a brewing imbalance. We offer ideas below.

We have written extensively on the outlook for UST supply (see: [UST deficits & supply: up, up and away](#)), UST demand (see: [basics of UST supply & demand](#)), and financing of dealer UST positions (see: [repo rumblings](#)). We see risks to UST supply / demand balance but do not believe an issue is imminent. Supply / demand trade timing and exact catalyst is difficult; risks are most acute around risk-off de-leveraging events (i.e., March '20).

Our preferred trade for UST supply / demand imbalance is short 30Y swap spreads. We believe this trade is superior in terms of risk/reward and carry/roll vs other alternatives (including UST curve steepeners, long forward vol, short TIPS). We acknowledge there are other cross market trades on this theme (deep OTM VIX calls, long Bunds vs USTs, US CDS, long IG vs UST, etc.) but focus only on US rate expressions in this note. We also encourage clients to think about UST supply / demand risks outside of the Fed's term premium framework. Details below.

UST supply / demand trade menu: short 30Y spreads

We offer thoughts on common ways clients have flagged to trade UST supply / demand:

Short 30Y SOFR swap spreads: Historically, 30Y swap spreads correlated well with the US fiscal outlook. This relationship broke down in '08 potentially due to Fed QE (Quantitative Easing) and slow growth amidst post GFC (Global Financial Crisis) de-leveraging. More recently, there has been a better relationship between UST supply ex Fed holdings and 30y SOFR swap spreads (Exhibit 1).

We think tighter back-end spreads are a better way to play supply / demand concerns vs bear steepening. 30y swap spreads do not have large carry/roll – we estimate about +3bp per six months for a long 30y spread position. This implies that holding a short 30y spread position is a relatively low-cost option to position for a buildup into a fiscal crunch, where the spread can move 25bp relatively quickly. For more detail see: [US swap spreads update](#). We do not worry about current 30y spreads – now at the tightness of the past seven years after tightening this year. Short 30y spreads also offer upside against black swan events that may be unrelated to US debt. We see little reason for 30y spreads to widen materially yet potential to gap tighter in uncertainty shocks.

UST 2-30 steepener vs SOFR 2-30 flattener: We would also expect UST curve steepening relative to the swaps curve – which is equivalent to buying 2y spreads against shorting 30y spreads. This relative curve position immunizes against changes in Fed pricing that impact both curves and should be less exposed to overall spread movements outside of fiscal worries. 2y spreads have more carry, and so the relative curve slope is a compelling positive carry/roll expression. One downside risk is that 30y USTs may not cheapen as expected vs 2y USTs in a fiscal scare.

... see pages 2 & 3 for more detail ...

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.

BofA 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 5 to 7. Analyst Certification on page 4. 12710074

Timestamp: 03 July 2024 07:00AM EDT

03 July 2024

Rates Research
United States

US Rates Research
BofAS
+1 646 855 8846

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

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

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

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

[See Team Page for List of Analysts](#)

For a list of our open trades and trades closed within the past 12 months, please see the [Global Rates Weekly](#).

UST curve steepeners: We would expect outright UST curve steepening as supply / demand imbalances grow. Steepening would likely be driven by a rise in long-term yields and possibly increased expectations of near-term Fed easing if inflation is benign.

A problem with the fiscal trade is that it might take many months to materialize (and may not happen at all), and the negative carry/roll of outright steepeners is less compelling for an open-ended trade horizon. The 2-30 steepener, for example, has about 80bp of negative carry/roll over a year. While other curve combinations can offer better carry, there is little free lunch, in our view, given that better carry curve combinations typically have similar carry when adjusted for overall volatility or can have changing correlations. The 10-30 steepener, for example, has much better carry/roll than any of 2-10, 2-30, 5-10, 5-30, but we worry about how it would perform in a fiscal-led steepening where the 20y could lead. 5-30 is a reasonable compromise but is still exposed to declining correlation vs 2-30. In the last three months, for example, the correlation between 5-30 and 2-30 was just 54%.

Another problem with an outright steepener is that an unlikely string of upside surprises in the inflation data could generate a hawkish Fed pivot and drive a flatter curve. Overall, we worry that the UST curve can move for a variety of reasons unrelated to UST supply / demand. This makes it a less attractive trade for a US fiscal concern focus.

Long forward vol: Being long forward vol is another way to hedge against the risk of UST supply / demand imbalance + protect against US macroeconomic re-acceleration risks. A portfolio that is long carry and long intermediate vols on the right side of the grid (2y10y or 2y30y vol) is implicitly long forward vol (short gamma implicitly in carry strategies, and long intermediate vega outright). We favor this type of profile.

Directionally, our preferred expression would be to sell 4m10y payers at ATM+30 (timing is pre-election) and buy 1y10y payers ATM+30bps. The cost is 17bps, so a sell-off beyond 47bps from current levels (c.4.9% 10y) at a 1y horizon has unlimited upside. A costless structure could be created by selling 1y10y payers ATM+80bps, although this would cap upside gain potential. The key risk for these positions comes from scenarios where rates sell off near term and rally medium term, with potentially unlimited downside.

We think these positions may perform both in scenarios of increased fiscal deterioration concerns post-election + and scenarios of US macro re-acceleration. We previously discussed some of these supply / demand & US re-acceleration risks in [Range of outcomes and likelihoods \(see report\)](#).

Short TIPS: Being short 30y TIPS is another way to position for a liquidity and risk-off event that could see breakevens collapse alongside supply/ demand fears. During the March 2020 deleveraging event, TIPS sold off materially, driven by collapsing breakevens and a rise in the illiquidity discount that TIPS trade with vs nominals. We would expect that the 30y point on the curve would be most vulnerable to supply / demand fears and that 30y real yields could cheapen more than nominals. Using CPI fixings, carry on a 30y TIPS is negligible over a one-year holding period, but the big risk to the position would be repricing lower of longer-term neutral rates.

Other cross market trades: We strongly suspect that any acute UST supply / demand imbalance will result in market functioning issues and see risk off. If the US Treasury market doesn't work, then most other financial markets aren't likely to work. We think sovereign debt in Germany, Canada, Japan and Australia could greatly outperform USTs. In case of downgrade risk, we would not be surprised to see US sovereign CDS widen out. Dollar weakness can also materialize versus EUR, CAD, JPY, etc.

Timing is hard, but end game is clear: it ends with the Fed

We have very low confidence about the timing when market sentiment will shift to price in greater UST supply / demand risks. Catalysts for a panic episode could include a poor UST auction, fiscal development within Congress, or other developments. A risk-off



deleveraging event could exacerbate UST supply / demand dynamics akin to March '20.

We are not sure of the timing or catalysts for UST supply / demand concerns, but we are very confident in how it will end: the Fed. The Fed will ultimately be the force to balance UST supply / demand because a sharp rise in rates could create market functioning issues that might lead to de-risking and slow the economy below acceptable levels.

Fed intervention risks implies UST supply / demand concerns would have two distinct phases: (1) the build-up to peak panic; and (2) Fed lowering rates via lowering target range or QE. The Fed does not provide parameters for thresholds for intervention in Treasury markets, but smooth market functioning is key for Fed financial stability. The key is to close out trades before the Fed intervenes or enter fading trades before the Fed becomes active.

Fed term premium: its largely 2s10s

Many clients think of UST supply / demand risks via a term premium (TP) framework. This framework suggests that interest rates should represent the expected overnight policy path + TP. The TP should reflect additional compensation investors receive for extending out the curve and locking in a fixed rate over time. In theory, TP should be related to interest rate uncertainty and supply demand considerations.

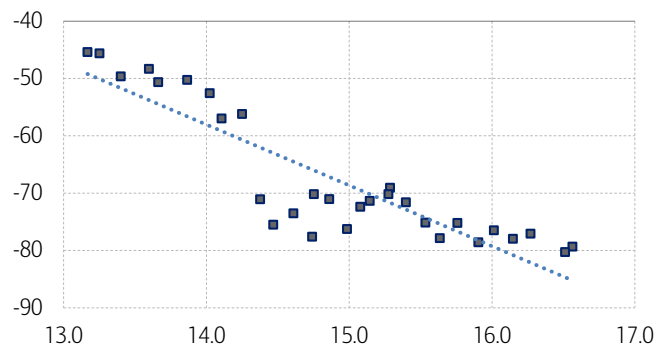
We are sympathetic to longer-term supply / demand considerations but do not place much stock in academic model measures of term premium (TP). TP measures are constructed using the difference between actual and modeled rate levels. We find popular TP metrics are just linear combinations of 2y and 10y rates (Exhibit 2). We don't need a TP model to tell us the 2s10s curve slope. For detail see [Global Rates Weekly](#).

Today's inflation risk and fiscal sustainability risk are very high relative to the past 30Y, yet TP metrics are near their lows because the curve is inverted. TP was 100-150bp higher in '97-'00 with US federal surplus and stable CPI because future Fed hikes were expected. In this context, the Fed's term premium models don't pass the deficit "smell test".

Our guidance to clients: don't focus on central bank models of term premium and instead focus on more liquidity and tradeable measure of supply / demand differences. We think swap spreads are the best way to position for shifts in UST supply / demand and liquidity preferences between UST cash and derivative instruments.

Exhibit 1: 30Y OIS – 30Y UST yield (bps) vs coupon supply ex Fed (\$tn)

30Y UST cheapens vs OIS (y-axis) as UST coupon supply ex Fed grows (x-axis)

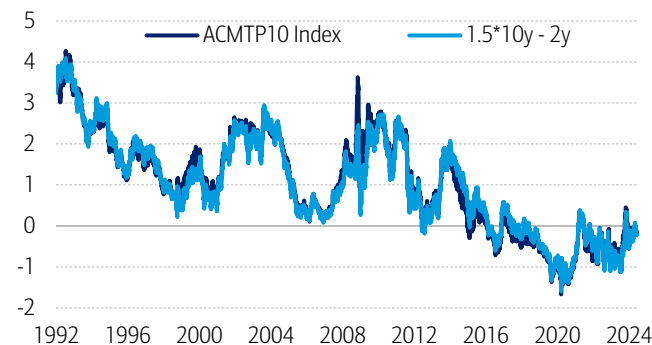


Source: Bloomberg, BofA Global Research

BofA GLOBAL RESEARCH

Exhibit 2: Fed ACM 10Y term premium vs weighted 2s10s curve (%)

Fed term premium models correlate very closely to a weighted 2s10s curve



Source: Bloomberg, BofA Global Research

BofA GLOBAL RESEARCH

Bottom line: UST supply / demand risks are in client focus. Our preferred position for a further worsening of UST supply / demand is being short 30Y swap spreads. We prefer this expression over alternative trades (UST curve steepeners, long forward vol, short TIPS) since it is a low-cost option for a slow developing theme. We have minimal confidence in timing UST supply / demand risks & prefer expressions that have longer



runways. UST supply / demand issues will eventually be solved by the Fed and market participants should exit any positions for this theme before they act to lower rates.

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 BofA 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.bofam.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 (HKSF); 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 Canadian Investment Regulatory Organization; Merrill Lynch (Mexico): Merrill Lynch Mexico, SA de CV, Casa de Bolsa, regulated by the Comisión Nacional Bancaria y 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 HKSF; 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:

Copyright 2024 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 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 sustainability in this material is limited as discussed herein and is not intended to provide a comprehensive view on any sustainability claim with respect to any issuer or security.

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

US

Mark Cabana, CFA

Rates Strategist
BofAS
+1 646 743 7013
mark.cabana@bofa.com

Ralph Axel

Rates Strategist
BofAS
+1 646 743 7011
ralph.axel@bofa.com

Bruno Braizinha, CFA

Rates Strategist
BofAS
+1 646 743 7012
bruno.braizinha@bofa.com

Katie Craig

Rates Strategist
BofAS
+1 646 743 7016
katie.craig@bofa.com

Meghan Swiber, CFA

Rates Strategist
BofAS
+1 646 743 7020
meghan.swiber@bofa.com

Anna (Caiyi) Zhang

Rates Strategist
BofAS
+1 646 743 7021
cai yi.zhang@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.

