

Liquid Insight

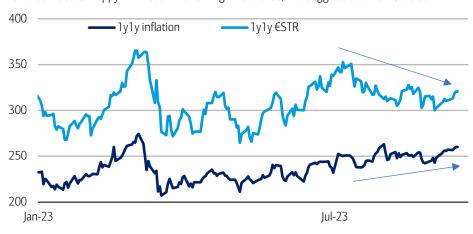
Pay 1y1y real rates in Euro – the ECB seems to agree that they're too low

Key takeaways

- ECB's Schnabel recently suggested that the fall in real rates threatened to undermine the fight against inflation.
- To us the easing of real policy rates priced sits uncomfortably with the stubborn inflation that is also priced.
- We would pay 1y1y real rates, combining positions in 1y1y EUR inflation and 1y1y

By Mark Capleton

Chart of the day: Easing 1y1y €str conflicts with firming 1y1y inflation (to well above 2%), bp ECB's Schnabel unhappy with recent narrowing in real rates; this suggests a trade idea to us.



Source: BofA Gloal Research, Bloomberg

BofA GLOBAL RESEARCH

A trade with the ECB on your side?

From time to time we've had differing views from those of the ECB's Isabel Schabel. However, her view that the recent easing in real rates might undermine the ECB's efforts to rein in inflation chimes with our own (rather simpler) view that it looks wrong.

The drop in 1y1y €str since July, coupled with the rise in 1y1y EUR inflation, means that 1y1y real rates – the difference between the two – has fallen quite sharply. The market prices both a sharp easing of real policy rates and stubbornly high above-target inflation.

Those two things sit uncomfortably together. We think they could be resolved through either the market softening its inflation profile (our most likely scenario) or having to defer policy rate cuts. We would pay 1y1y real rates. It's unlikely perhaps, but If the ECB were to voice its displeasure with real rates where they are, that would benefit the trade today.

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 6 to 8. Analyst Certification on page 5.

Timestamp: 14 September 2023 12:30AM EDT

14 September 2023

Rates and Currencies Research Global

Global Rates & Currencies Research

MLI (UK)

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

13-Sep-23	ECB Preview: One more and
	<u>done</u>
12-Sep-23	Short JGB, not USD/JPY
11-Sep-23	At the terminal and beyond,
	and the great dilemma ahead
7-Sep-23	G10 FX RV to end the year
6-Sep-23	UST curve steepening: not so
	fast
5-Sep-23	Bank of Canada preview – on
	hold; 5.0% is likely the termina
	<u>rate</u>
4-Sep-23	Better keep a hawkish bias
31-Aug-23	2Q EPS was all about margins,
_	demand now in focus
30-Aug-23	Navigating FX by the R-stars
29-Aug-23	China clouds USD outlook

BofA GLOBAL RESEARCH

Hawkish spin from ECB today could hint at displeasure with softer real rates

"Real risk-free rates have fallen recently, counteracting efforts to restore price stability"

The title of the final slide of Isabel Schnabel's 31 August speech: "Disinflation and the Phillps Curve".

We don't always agree with ECB board member Isabel Schnabel's perspective on the Euro area's inflation outlook, but we now firmly align with her in the view that the market has got ahead of itself in pricing a material early easing of real policy rates. Below, we explain why, and discuss how we would oppose market pricing.

Real rates are the true measure of effective policy tightness, so the fall in real policy rates that is priced doesn't square with the stubbornly above-target inflation that is also priced.

We may be extrapolating here, but since Schnabel chose to make that the main conclusion of her final slide in her 31 August speech, we wonder whether this framing of the rates market may find its way into the ECB's message today, particularly if it wants to deliver a hawkish spin.

Core inflation - less than meets the eye

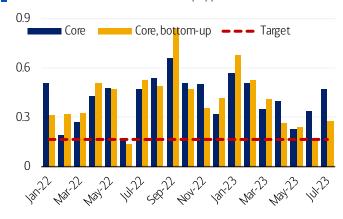
Our European economics team has a profile for Euro inflation that slides comfortably below market pricing (and, by 2025, below the ECB's target - Exhibit 1). A recent weekly report of theirs (see 'Not as gloomy as the headlines', 1 September 2023) contained a striking chart which we have shamelessly stolen (Exhibit 2).

It uses a "bottom up" approach to seasonally adjusting monthly inflation – adjusting the individual components before aggregation, rather than adjusting the aggregate index – and it suggests much slower monthly goods inflation over the past two months. An earlier piece of theirs showed a similar story for services inflation.

Exhibit 1: Euro area inflation – BofA versus market, %We see a return to target that the market remains sceptical of.



Exhibit 2: Seasonal adjustments matter (core goods, sa mom) Much more disinflation with a bottom-up approach



Source: BofA Global Research, Eurostat, Haver

BofA GLOBAL RESEARCH

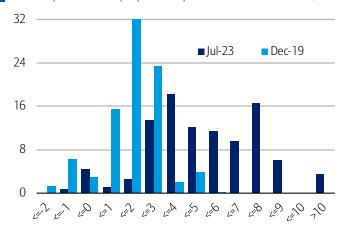
In the past we have talked about a broad dispersion of core component inflation rates as a sign that inflation is in flux. That's certainly true of the Eurozone now, compared to the pre-pandemic situation, although the proportion of the core index reading below 2% fails to hint at what we see in the monthly annualized pattern. It's also interesting to note how country headline inflation rates remain broadly dispersed, as they fall (hinting that there's a lot more to go for).

BofA GLOBAL RESEARCH

2

Exhibit 3: Dispersion of Euro core inflation component inflation rates

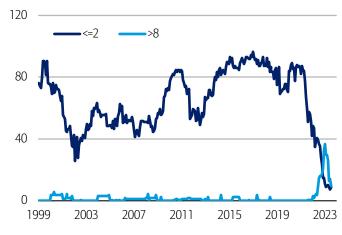
Broad dispersion versus pre-pandemic pattern means inflation in flux, %



Source: BofA Global Research, Refinitiv

BofA GLOBAL RESEARCH

Exhibit 4: Proportions of core inflation below 2% and above 8%, % Mild moderation thus far is about the long upside tail starting to shrink.

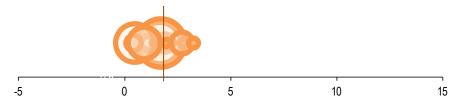


Source: BofA Global Research, Refinitiv

BofA GLOBAL RESEARCH

Exhibit 5: Euro member headline inflation rates in December 2019

Narrow dispersion tells us Euro inflation was anchored at 2%. Bubble size in proportion to country weights

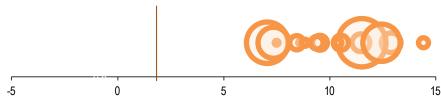


Source: BofA Global Research, Haver

BofA GLOBAL RESEARCH

Exhibit 6: Euro member headline inflation rates at the October 2022 peak

All rates high, but very dispersed.

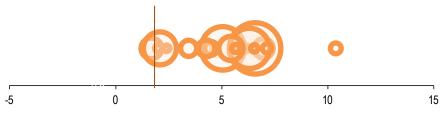


Source: BofA Global Research, Haver

BofA GLOBAL RESEARCH

Exhibit 7: Euro member headline inflation rates in December 2019

A substantial fall, but still very dispersed, suggesting a lot more to go for?



Source: BofA Global Research, Haver

BofA GLOBAL RESEARCH

Exhibit 8: 1y1y EUR inflation and 1y1y €STR, bp

Since July, 1y1y inflation has firmed but this hasn't hampered softening rate expectations.



Exhibit 9: 1y1y "real" €STR, bp

Real rate expectations have therefore fallen substantially, and are now close to their 2023 lows.



Source: BofA Global Research, Bloomberg

BofA GLOBAL RESEARCH

Notwithstanding the prospect of a return to target for inflation, in our view (but not the market's) and a subdued-but-still-positive growth path, we still see the ECB hiking today – although it's finely balanced - with no policy rate cuts until June 2024.

Taking all of that into consideration should mean a much higher path for real rates than the market prices. Indeed, the market seems happy to price cuts with no return to inflation in prospect – something we would regard as a macro inconsistency (although not on the scale seen in 2022, with hindsight).

With 1y1y inflation at 260bp and 1y1y €STR at 321bp, 1y1y "real €STR" has narrowed to 61bp from almost 100bp in July. We would oppose this recent narrowing, and we think the ECB may lean against it too. Indeed, as Isabel Schnabel said on 31 August:

"Real risk-free rates have declined across the maturity spectrum and are now back to the level observed at the February Governing Council meeting, as investors have revised their expectations for economic growth, inflation and monetary policy. This decline could counteract our efforts to bring inflation back to target in a timely manner."

In last Friday's Global Rates Weekly, we recommended combining 1y1y inflation and 1y1y €STR positions to pay this 1y1y real €STR rate at a then prevailing spread of 54bp (currently 61bp), setting a target of 95bp and a stop-loss at 35bp. Risk to the trade is an ECB that doesn't hike and is interpreted dovishly, unable to (or choosing not to) oppose a market pricing.

Footnote - Shrinkflation in Italy. 13% of BTPei market extinguished on Friday

Summer in Euro linkers is a two act play. France's index events in July, an August interval with light or no supply, then Italy's events in September. For linker portfolio managers, what matters most now might be the BTPei Sep-24s index exit (with a value of €16.7bn), adding 0.21 to the modified duration of the Euro linker index at month end, by our calculations. The rebalancing associated with the extension will be augmented by €1.3bn in coupons from the six issues with a 15 September anniversary.

But that might not be the main event. It might easily go unnoticed but the BTPei market will shrink by 13% on Friday (tomorrow). The maturing Sep-23s will depart with an uplifted par value of €25bn, representing 13% of the Italian segment of the Euro linker market. To the extent that the maturing issue is asset-swapped, the extinguishing of these exposures should free-up capacity for new BTPei longs on asset swap, we argue.



Notable Rates and FX Research

- Global Rates, FX & EM Year Ahead 2023 Year Ahead 2023: Pivot ≠ Peak, 20 Nov 2022
- <u>Christmas will not likely come early this year</u> **Global FX Weekly**, 8 Sep 2023
- The beginning of the end Global Rates Weekly, 8 Sep 2023
- August flows, Liquid Cross Border Flows, 4 Sep 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: Christmas will not likely come early this year 08 September 2023

Global Rates Weekly: The beginning of the end 08 September 2023

Analyst Certification

I, Mark Capleton, 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 Prudential 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 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 (Israel): Merrill Lynch (Israel): Merrill Lynch (Israel) imited, 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 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 in Germany and is regulated by BaFin, the ECB and the CBI. BofA Securit

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

US

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

+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

MLI (UK) +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

+44 20 7996 4855 ksharma32@bofa.com

Ronald Man

Rates Strategist

+44 20 7995 1143

+44 20 /995 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

shusuke.yamada@bofa.com

these ideas or strategies.

FX/Rates Strategist BofAS Japan +81 3 6225 8515

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

