

# Liquid Insight

# Six landing scenarios

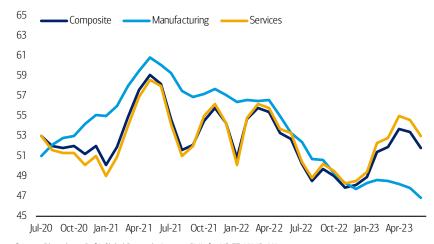
## Key takeaways

- We discuss six landing scenarios and FX market implications in G10 economies for the second half of the year.
- We remain concerned that markets are too optimistic on what it will take to bring
- FX will depend on which scenario we will see in each G10 economy and how the central bank will react in each case.

## By Athanaslos Vamvakidis

## Chart of the Day: Average PMIs in Advanced Economies

Landing could be about to start; it took longer due to strong services



Source: Bloomberg, BofA Global Research. Average PMIs for US, EZ, UK, JP, AU.

BofA GLOBAL RESEARCH

## Six landing scenarios

We discuss six landing scenarios and FX market implications in G10 economies for the second half of the year: 1/non-landing: scenario so far, not sustainable, but could take longer; 2/ soft landing: still the consensus, still unlikely; 3/ a harder landing: our baseline; 4/ hard landing: something may break, an increasing risk; 5/ stagflation: the worst case scenario, not as unlikely as you may think; 6/ central banks blink: postponing inevitable landing, increasing hard landing risks. One size does not fit all, and FX implications will depend on which scenario we will see in each G10 economy and how the central bank will react in each case.

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 6 to 8.

12575242

05 July 2023

Rates and Currencies Research Global

Global Rates & Currencies Research

MLI (UK)

Athanasios Vamvakidis

FX Strategist +44 20 7995 0279 athanasios.vamvakidis@bofa.com

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 ianice.xue@bofa.com

See Team Page for List of Analysts

## **Liquid Insight**

Recent Publications

4-Jul-23 3-Jul-23	Three stories, same price action Bank bill issuance is surging – why is bills-OIS not shifting?
29-Jun-23	RBA preview: an uncomfortable
28-Jun-23	Phase 3 of JPY's structural
27-Jun-23	decline in 2024? Vol vacuum favors summer carry
26-Jun-23 22-Jun-23 21-Jun-23	Do rates still matter for FX? Halftime for G10 FX Norges & Riksbank previews:
20-Jun-23	Norges has more work left, but may take its time Too much Goldilocks for
19-Jun-23	comfort  Bank of England preview: lots to

BofA GLOBAL RESEARCH

### Non-landing: scenario so far, not sustainable, but could take longer

The data so far in this year in G10 economies has been consistent with a non-landing scenario. Headline inflation has come down, while the economy has been resilient and the labor market stretched. This is even better than the optimistic consensus for a soft landing (see below). It is also consistent with the argument that inflation was transitory after all and is falling on its own. Monetary policies have been tightened, but either had no impact on the economy, or somehow have only affected inflation and not the real economy.

We strongly believe that the non-landing scenario is not sustainable. The part of inflation that has come down so far was the easy part in our view, the one that had to do with energy prices and the pandemic related supply bottlenecks. This was indeed transitory. We have been arguing that the part that remains has to do with the stretched labor markets and will be much more difficult to bring down. Indeed, core inflation, and particularly in services, has been sticky.

However, we may stay in a non-landing scenario for longer. In our year ahead report we had expected the landing to take place in the first half of the year; we then moved it to the second half; and we now expect it by the end of the year or early next year. The resilience of the labor market is particularly surprising, with unemployment at multidecade lows in every single G10 economy, almost regardless of anything else.

It is all a matter of time, in our view. The market pricing of rate cuts by early next year would once again prove to be wrong in a non-landing scenario—as was the case with market pricing of cuts in the second half of this year in spring. The longer it takes to land, the longer interest rates will have to be high, or even higher, forcing a landing at some point.

The Chart of the Day shows that we have been in a non-landing scenario this year because of strong services. Services is usually a much larger share of the economy in G10. As a result, although manufacturing has been weakening, strong services have kept the overall economy resilient. The two were weakening together last year, but services got stronger since Q4 last year. However, services has now started to weaken.

As long as the non-landing scenario continues, we would expect FX to remain in the current tight ranges. Low vol should support carry trades, as has been the case this year so far. The USD should continue doing well against JPY, particularly if the market prices out Fed cuts for next year.

### Soft landing: still the consensus, still unlikely

The consensus has consistently been expecting inflation to drop back to 2% in about a year, without unemployment increasing by much, with central banks cutting rates in 6 months. This has been the case in the last two years, as inflation first kept rising and as it has now proved to be sticky on the way down. The market keeps shifting the timing of this soft landing to six months ahead, despite having proven wrong so far.

Rates and equities are also consistent with a soft landing scenario. It seems inconsistent that rates are pricing cuts in 6 months, while equities are performing so well. However, this would be exactly the case in a scenario in which inflation comes down on its own, without the economy weakening much, and central banks realize that they don't need high interest rates any more.

Again, although focusing on the drop in headline inflation so far this year would be consistent with the soft landing scenario, the sitcky core inflation suggests otherwise. As we argued above, the data so far has been consistent with a non-landing scenario that is not sustainable. We just don't see how inflation can come anywhere close to the 2% target in the foreseeable future, with unemployment being so much lower than the natural rate and wages already increasing at the core inflation rate.



If we are wrong, then selling the USD would be the trade, almost across the board. A soft landing is negative for the USD both because of early Fed cuts and risk-off. The market bias to sell USD rallies this year is consistent with this view. High beta G10 currencies, as well as the EUR should perform well. USDJPY should also see a correction lower.

#### A harder landing: our baseline

We have consistently been expecting to take about 6 months to a year longer than the consensus for central banks to to bring inflation down to the target and to start cutting rates. We have also been forecasting a sharper increase of unemployment, to at least the natural rate. This harder landing, vs. the consensus has taken longer than we had expected, but remains our baseline.

This is consistent with our view that the remaining part of inflation has to do with the stretched labor market and will be much more difficult to reduce. Our reading of the data so far is that we are converging to a scenario of headline inflation, core inflation and wages all increasing but about 5%, still well above the comfort zone for inflation-targeting central banks. We don't see how we can get much lower inflation without higher unemployment.

In FX, this is consistent with a resilient USD for now, a stronger USD when the landing takes place, and a weaker USD after the landing. We don't expect the USD to get as strong as last year, when a perfect storm of negative shocks pushed it to historic extremes. However, as the market prices high(er) rates for longer and risk-off from landing, we would expect some more USD strength. Indeed we forecast EURUSD at 1.05 for the second half of this year and UDJPY at 147 in Q3. After the landing, we would expect a more consistent weakening of the USD towards it longer equilibrium, as the Fed starts to cut rates in the second half of -next year, with EURUSD at 1.15 and USDJPY 125 by the end of 2024.

### Hard landing: something may break, an increasing risk

Doves were arguing against central bank policy tightening as inflation kept rising in the last two years, concerned that something could break. We had argued that it was too late and something had already broken, which was inflation. Central banks should had never allowed inflation to increase by so much in the first place; after it did, they had no choice. Still, nothing has broken so far, despite the most aggressive monetary policy tigheting in advanced economies in the last 40 years. Or at least, nothing has broken that is severe enough to suggest policy tightening was a mistake.

However, something can still break. As we argued recently, the interest rate high enough to bring inflation down to the target may be too high for financial stability (see <u>The curious case of r\*\* 23 June 2023</u>). The longer it takes to bring inflation down, the longer we remain in a non-landing scenario, the longer interest rates have to remain high or get even higher, the more likely that only a hard landing will bring inflation down, as the risk increases that something does break.

The market implications of a hard landing are not straightforward. In theory we could see short-term USD strength on risk-off, followed very soon by USD weakness as the Fed pivots to rate cuts. FX vol will increase, from currently very low levels. It will all depend on how bad things will get and how long it will take for the Fed and other central banks to calm markets down.

## Stagflation: the worst case scenario, not as unlikely as one may think

This has always been our key risk scenario. It is likely at least for few months, once the economy starts weakening. Imagine few months of rising unemployment and sticky, or even rising inflation. In any case, with unemployment so much lower than the natural rate, it will take some time for a weakening labor market to help bring inflation down.



This scenario is the most negative for risk and the most positive for the USD. Central banks will have to stick with high rates despite a weakening economy. The longer this goes, the higher also the risk of something breaking and eventually getting out of stagflatio scenario as something breaks. EURUSD could go back to parity in such a scenario.

### Central banks blink: postponing inevitable landing, increasing hard landing risks

We have been arguing that central banks will face difficult policy dilemmas ahead, as their three mandates of price stability, employment and financial stability could be in conflict. So far, their job was easier, as employment has been strong and markets have taken policy tightening well—the bank shocks in March were successfully contained.

Some central banks may blink. At some point soon, we should start getting negative labor market data. Will central banks appear even more determined, as their policies will finally be working, and stick to their inflation commitment? Or will they call victory too early and prevent the economy from landing just as it has started descending? The latter would be a policy mistake in our view, will end up with a stop-and-go path and would hurt central bank credibility.

Any central bank that blinks will see its currency weakening in the short-term, and possibly in the long-term if damage control fails to restore credibility. Preventing a landing could eventually increase hard landing risks, as interest rates would have to be high, or even higher, for longer. The worst for a currency would be if a central bank gives up on its inflation target, just because it is difficult to reach it. As we have argued before, regardless of whether a 2% target is right or not, giving up now when above, while doing so much in previous years when below would make it almost impossible to commit to any new, higher target.

#### One size does not fit all

We have discussed the above six scenarios as if they apply equally to all G10 economies, but this may not necessarily be the case. The truth is that inflation has increased in all G10 economies in the last two years, labor markets are stretched in all of them, and all central banks, with the exception of the BoJ, have tightened policies aggressively. However, we may see more differentiation during landing, both in terms of economic performance and policy responses, which in turn will affect markets accordingly.

We assume that central banks remain committed to their inflation target, in which case the positive correlation between FX and inflation holds, unless something breaks. Indeed, a higher risk of a hard landing in the UK, as core inflation has started increasing again and the market is pricing aggressive further BoE policy tightening has been negative for GBP. However, as central banks react differently to policy dilemmas from sticky inflation, the FX market would respond accordingly. We just don't know yet which central banks will remain the most committed to their inflation target and what shocks they will have to deal with in the process.



## **Notable Rates and FX Research**

- Global Rates, FX & EM Year Ahead 2023 Year Ahead 2023: Pivot ≠ Peak, 20 Nov 2022
- When carry rules Global FX Weekly, 30 June 2023
- <u>In data denial</u> **Global Rates Weekly**, 30 June 2023
- Change of heart, Liquid Cross Border Flows, 26 June 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: When carry rules 30 June 2023

Global Rates Weekly: In data denial 30 June 2023



## **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.

RofAS or one of its affiliates is a regular issuer of traded financial instruments linked to securities that may have been recommended in this report. RofA

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 BofAS

BofAS +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

+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

HLI (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 MLI (UK)

+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.

