

## Liquid Insight

## Phase 3 of JPY's structural decline in 2024?

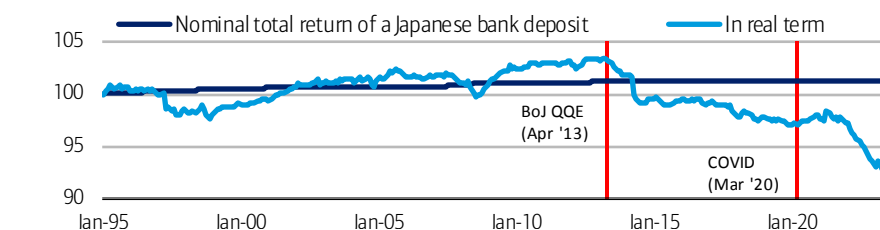
## Key takeaways

- We explore scenario B for USD/JPY. What if no rate cuts by Fed through 2024? This may lead to 3rd phase of JPY sell-off
- 1st phase = policy divergence (2022); 2nd phase = yen carry trade (2023); 3rd phase = households' rebalancing (2024)
- If households lose faith in JPY's value, offshore investment can accelerate, challenging policymakers.

## By Shusuke Yamada and Izumi Devalier

## Chart of the day: Total return of Japan's ordinary bank deposit in nominal and real terms

Yen deposit has loosing purchasing power since BoJ's QQE and after COVID



Source: BofA Global Research, Haver, Total return in real term is adjusted after CPI

BofA GLOBAL RESEARCH

Risk of JPY's 3<sup>rd</sup> phase of weakening in 2024

We have been bearish on the yen and expect USD/JPY to stay high for long on carry-trade (147 by Sep vs 134 consensus; see report: [JPY: no news is bad news 22 June 2023](#)). That said, we agree with consensus on USD/JPY's correction in 2024 on policy convergence as our economists expect the Fed to start cutting rates in May 2024 and the BoJ to remove NIRP in mid-2024.

However, we think the yen's downside risk in 2024 cannot be ignored. The market prices in around 170bp rate cut from the peak Fed policy rate in the fall 2023 to end-2024. At 3.7%, the Dec '24 OIS forward (1m) is notably lower than the Fed's dot (4.6%) and BofA's forecast (4.1%). Uncertainty remains high as to whether US inflation will slow sufficiently over the medium term, allowing the Fed to start cutting rates.

In particular, in a risk scenario where the Fed does not cut rates in 2024, (1) how would Japanese retail investors react? and (2) how would the BoJ's policy normalization proceed? We address these two questions in this note. Our conclusion is that the yen weakness can enter the third phase if the Fed does not cut rates in 2024: 1<sup>st</sup> phase = policy divergence (2022); 2<sup>nd</sup> phase = carry trade (2023); 3<sup>rd</sup> phase = households' rebalancing to offshore assets to protect purchasing power (2024).

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 7 to 9.

12573682

Timestamp: 28 June 2023 02:26AM EDT

28 June 2023

Rates and Currencies Research  
Global

Global Rates & Currencies Research  
MLI (UK)

**Shusuke Yamada, CFA**  
FX/Rates Strategist  
BofA Japan  
+81 3 6225 8515  
[shusuke.yamada@bofa.com](mailto:shusuke.yamada@bofa.com)

**Izumi Devalier**  
Japan and Asia Economist  
BofA Japan  
+81 3 6225 6257  
[izumi.devalier@bofa.com](mailto:izumi.devalier@bofa.com)

**Adarsh Sinha**  
FX Strategist  
Merrill Lynch (Hong Kong)  
+852 3508 7155  
[adarsh.sinha@bofa.com](mailto:adarsh.sinha@bofa.com)

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

See Team Page for List of Analysts

## Liquid Insight

Recent Publications

- 27-Jun-23 [Vol vacuum favors summer carry](#)
- 26-Jun-23 [Do rates still matter for FX?](#)
- 22-Jun-23 [Halftime for G10 FX](#)
- 21-Jun-23 [Norges & Riksbank previews: Norges has more work left, but may take its time](#)
- 20-Jun-23 [Too much Goldilocks for comfort](#)
- 19-Jun-23 [Bank of England preview: lots to do](#)
- 15-Jun-23 [US rates, softer landing, & hawkish Fed](#)
- 14-Jun-23 [The clock is ticking](#)
- 13-Jun-23 [ECB Preview: still ground to cover](#)
- 12-Jun-23 [June FOMC Meeting: Skip to assess lags](#)

BofA GLOBAL RESEARCH

## Japanese households have held cash, but their faith in the yen is not a given

An extended period of elevated global inflation and a wide US-JP interest rate gap could change Japanese households' behavior. Japanese households have allocated more than half of financial assets to cash in recent decades (Exhibit 1). Today, they hold ¥1,107tn in currency and deposits or 54% of total gross financial assets. This compares to 14% in the US and 35% in the Euro Area.

One key factor behind the difference between Japanese households and Americans may be purchasing power of cash. In Japan, due to the lack of inflation for most of the past 30 years, cash had been able to maintain purchasing power until the pandemic without efforts for yield-enhancement (Chart of the day). The strength in equity market may have also played a role. While the S&P500 index has returned 9.6% annually from 1992 to 2022, the TOPIX index has returned only 2.8%.

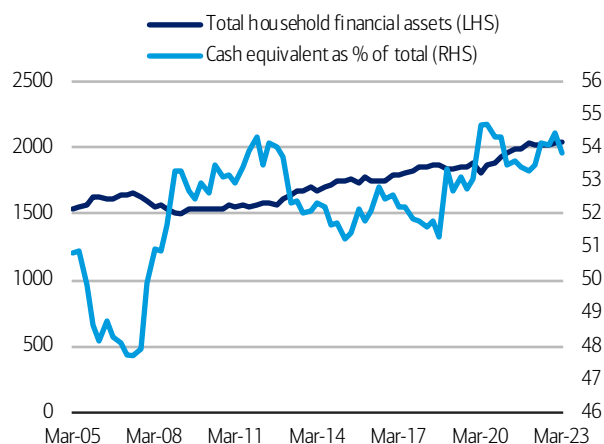
Now, as inflation has started to rise in Japan, bank deposits in Japan have lost 5.5% in real term over the last two years. The domestic equity market has also seen a notable rise in 2023. The hurdle may be high for most households to start investing in risk assets. But if inflation becomes the norm, there is significant scope for rebalancing out of cash/deposits to risk assets, including foreign assets. Our economists expect Japan's inflation to be stickier than the BoJ expects (see report: [Japan Watch: May CPI: Acceleration eases, but high inflation to persist 26 May 2023](#)).

## BofA survey hints at potential reallocation

Our proprietary monthly Japan Consumer Survey also found that, of those who currently do not invest in risk assets, 37% intend to start investing in order to protect their incomes amidst a weak yen and rising inflation (see report: [Japan Watch: Japan Consumer Survey \(May 23\): Are households losing faith in cash? 15 June 2023](#)).

### Exhibit 1: Japan's households' gross financial assets (¥tn) and cash %

Japanese households hold over ¥2000tn in financial assets 54% of which stays in cash equivalents

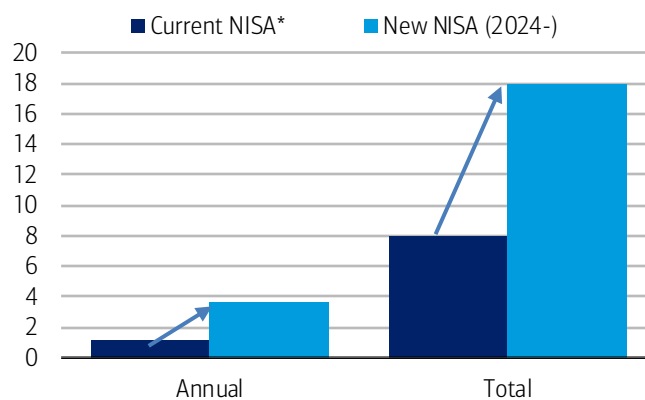


Source: BofA Global Research, Haver

BofA GLOBAL RESEARCH

### Exhibit 2: Max investable amount in current and new NISA accounts (¥mn) per year and total

Annual bracket would rise to ¥3.6mn (¥2.4 regular + ¥1.2 DCA) from current ¥1.2mn regular or ¥0.4mn DCA and maximum balance to ¥18mn (¥12mn regular + ¥6mn DCA) from current ¥6mn regular or ¥8mn DCA



Source: BofA Global Research

DCA: Dollar-Cost-Averaging (Tsumitate in Japanese)

BofA GLOBAL RESEARCH

## Expanded NISA to begin in 2024, likely boosting retail investors' risk-taking

We think the expansion of the NISA program (Nippon Individual Savigns Account), effective in January 2024, can also impact households' asset allocation. NISA's tax-exempt bracket will expand from ¥1.2mn (regular NISA) to ¥3.6mn per year and from ¥8mn (in case of DCA (Dollar-Cost-Averaging)-NISA) to ¥18mn total. The exemption period will also be made permanent. For the detail, see report: [Japan's push for retail investments – risk or opportunity for JPY? 16 December 2022](#).

The existent NISA program has already had a noticeable impact on households' behavior. The number of brokerage account has risen since NISA started in 2014. There has also been a steady increase in households' investment in investment trusts since the pandemic started and a good portion of it may have been through or influenced by NISA's dollar-cost-averaging accounts (Exhibit 3).

For the FX market, it is important that Japan's investment trusts have been buying foreign equities and have not added Japanese equities in recent years. The expansion of NISA may lead to more offshore investments by households amidst signs that they are growing more worried about the diminishing purchasing power of yen cash.

### Annual retail flow to risk assets via NISA can rise by at least a few trillion JPY

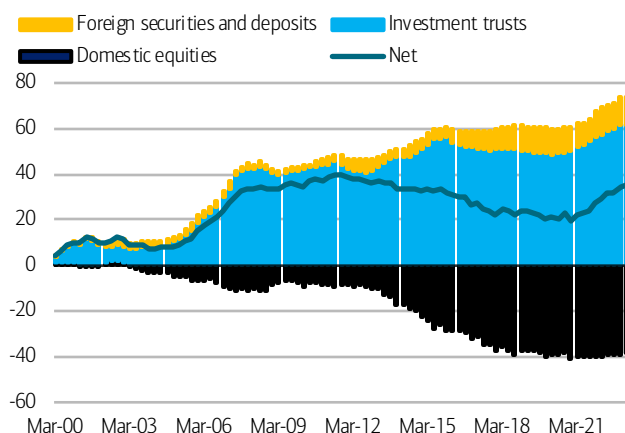
How much could the size of retail flow increase? In 2021, NISA accounts made ¥4.2tn purchases (¥3.3tn through regular NISA and ¥0.8tn through DCA NISA). There were 12.5mn regular NISA accounts of which 10.4mn still had not filled the maximum investable bracket and 5.2mn DCA NISA accounts. The simple average of purchase volume per account was ¥320K for regular NISA, 27% of the max investable amount, and ¥160K for DCA-NISA, 41% of the max investable amount.

The annual bracket will triple in 2024 but we do not think investment volumes will rise by the full amount of the expansion, as many accounts' utilization rates have been low. However, it is not unreasonable to expect a doubling of the investment volume from current levels since some wealthy accounts' have already filled up the tax-exempt bracket. The attractive tax benefit of the newly-expanded NISA program is also likely to attract new investors. In such a scenario, we can assume an increase of at least a few trillion yen in risk asset investments by retail investors just through NISA accounts.

Longer-term, the expansion of NISA can broaden the retail investor base and lead to households rebalancing away from cash-equivalent to risk assets. Note that a 1% change in asset reallocation among Japanese households, away from cash, amounts to ¥20tn (\$138bn). In 2022, Japan's Ministry of Finance (MoF) spent ¥9.2tn to shore up JPY and it currently has \$1.3tn (¥183tn) in foreign reserves.

### Exhibit 3: Cumulative flow to risk assets by households (flow of funds statistics, ¥tn)

Households have increased investment in investment trusts and stopped selling Japanese equities since 2021

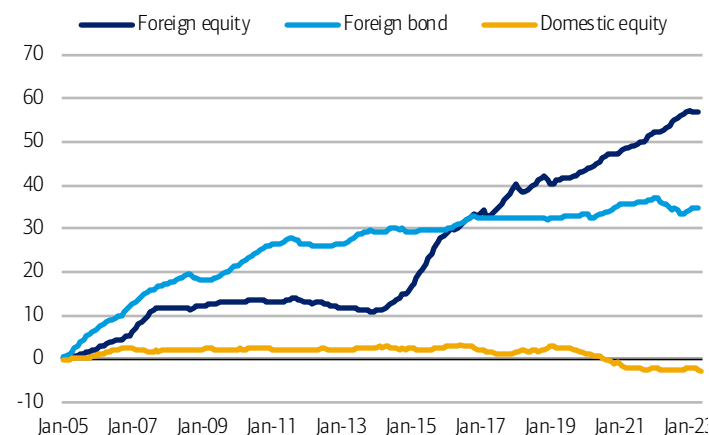


Source: BofA Global Research, Haver

BofA GLOBAL RESEARCH

### Exhibit 4: Cumulative flow by Japanese investment trusts by asset class (¥tn)

Japanese investment trusts have been buying foreign equities



Source: BofA Global Research, Haver

BofA GLOBAL RESEARCH

### BoJ dovishness risks fuelling yen sell-off

The BoJ's slow response to rising inflation may also add to pressures for the yen to weaken.

The Bank of Japan already stands as a dovish outlier among major DM central banks: it is the only central bank still sticking to negative interest rate policy (NIRP) and continues to engage in active bond purchases (via yield curve control).

This stance was understandable when inflation was running low. However, underlying inflation has been rising steadily over the past year. We believe the inflation on the cusp of a structural regime shift, and expect Japan's inflation to be sticky and persistent, with ex-energy core BoJ-style core inflation remaining above 3% for the rest of 2023, and at or above 2% through 2024/25 (see report: [Global Economic Weekly: Mid-year review: Incomplete 15 June 2023](#)).

We think that the BoJ is also growing more atune to the risk of a persistent inflation overshoot, despite its on-going communications that the current inflation pick-up is transitory (see report: [Liquid Insight: BoJ preview: The clock is ticking 14 June 2023](#)). But the BoJ seems much more willing to face the risk of falling behind the curve as it seeks to reanchor inflation expectations after years of static prices and wages.

Increased prospects for an on hold Fed in 2024 will likely increase the incentives for the BoJ to loosen yield curve control sooner, or even abolish it in 2023 (our base case is for some modest adjustments at the 28 July MPM). It also raises the risks that the BoJ may need to raise the short-term policy rate into slightly positive territory in 2024, instead of merely returning to zero, as we currently expect. However, we think the BoJ will remain cautious and behind the curve with respect to front-end hikes, leaving real interest rates in firmly negative territory.

### How far can JPY fall?

Given the yen's sell-off from 2022 up until now, JPY appears undervalued in many models. For example, the Economist's Big Mac index puts the JPY as 41% undervalued vs USD in January 2023 and USD/JPY has risen around 10% since then.

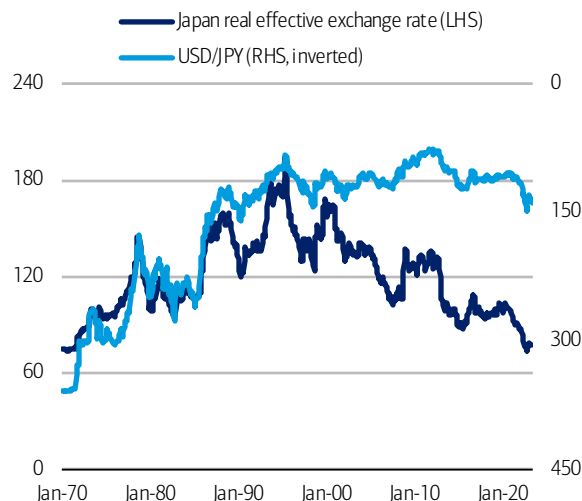
However, in the past two decades, JPY has structurally fallen in the real effective terms (Exhibit 5). We find three factors behind the yen's structural decline, especially over the last 10 years: (1) structural outward FDI due to demographic constraints (see report: [Liquid Insight: Japan's outward FDI behind yen's sticky weakness 22 May 2023](#)); (2) the BoJ's dovish monetary policy; and more recently, (3) higher interest rates abroad.

The longer the weak yen trend persists, USD/JPY at 140 may not be perceived as expensive and may be justified by the structural changes. If we focus on USD/JPY's recent relationship with the US-JP interest rate gap, USD/JPY currently appears fair (Exhibit 6).

The longer the Fed holds, USD/JPY can stabilize at a high level and is likely to exceed the level implied by the interest rate spread, as carry-trade accelerates and households increase offshore investments. The 2-year swap rate spread implies USD/JPY at around 150 in Exhibit 6. The interest rate gap could widen further if the Fed does not cut rates in 2024 and USD/JPY can overshoot that interest rate gap on carry trade, eyeing 160.

**Exhibit 5: Japan's real effective exchange rate and USD/JPY**

JPY-REER in a structural decline

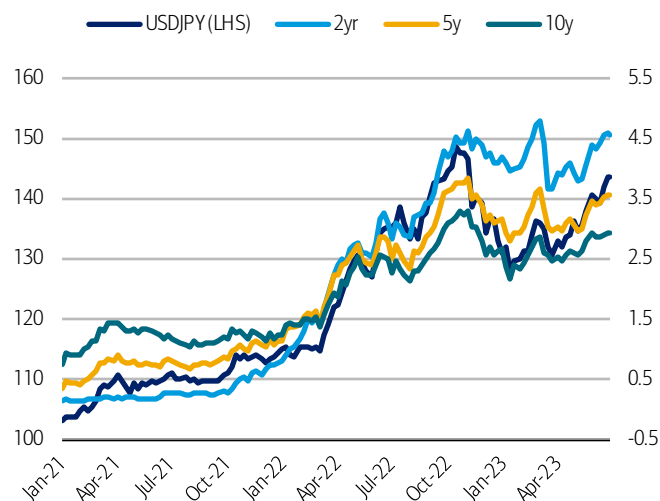


Source: BofA Global Research, Haver

BofA GLOBAL RESEARCH

**Exhibit 6: USD/JPY vs US-JP swap rate spreads**

USD/JPY is not expensive relative to interest rate differences



Source: BofA Global Research, Bloomberg

BofA GLOBAL RESEARCH

**Ultimate risk of capital flight**

The ultimate risk for policymakers is the weak JPY trend lowers the faith of households in the yen, which could lead to more rapid reallocation of their assets from yen deposits to risk assets and in particular, foreign assets.

If a rotation takes the form of capital flight, the risk of a sell-off in JGBs, JPY, and Japanese equities increases as banks lose deposits, which have historically been funnelled into JGBs. This is not our base case, but a prolonged hold by the Fed amidst structurally elevated US inflation may increase the probabilities of such a tail risk if JPY's structural headwinds are left unsolved.

**Market implications**

- Beware of JPY's further decline if the Fed does not cut rate in 2024 as it will coincide with the expansion of NISA program, which could encourage households to diversify their investments away from yen deposits and into foreign assets, in order to protect purchasing power.
- In that scenario, the MoF FX intervention may be necessary to slow the yen's decline as BoJ policy normalization is likely to be gradual and measured. But intervention may not be enough to stabilize JPY as long as the Fed does not cut rates. USD/JPY could reach 160 in 1H24 if the market comes to assume the Fed will not cut rates in 2024.
- Halting JPY's long-term decline requires policy reform and initiatives to promote domestic investment, raise productivity, and attract inward investment.
- Considering uncertainties around the US' inflation outlook, JPY's medium-term risk appears more balanced than priced by the options market (USD/JPY 1y risk reversal at -1.26).

## Notable Rates and FX Research

- **Global Rates, FX & EM Year Ahead 2023 – [Year Ahead 2023: Pivot ≠ Peak](#)**, 20 Nov 2022
- [The curious case of r\\*\\*](#) **Global FX Weekly**, 23 June 2023
- [High hurdles](#) **Global Rates Weekly**, 23 June 2023
- [USD under pressure again](#), **Liquid Cross Border Flows**, 19 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: The curious case of r\\*\\* 23 June 2023](#)

[Global Rates Weekly: High hurdles 23 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 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](http://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 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 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 MLF&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 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 or 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](mailto:ralph.axel@bofa.com)

**Paul Ciana, CMT**  
Technical Strategist  
BofAS  
+1 646 855 6007  
[paul.ciana@bofa.com](mailto:paul.ciana@bofa.com)

**John Shin**  
FX Strategist  
BofAS  
+1 646 855 9342  
[joong.s.shin@bofa.com](mailto:joong.s.shin@bofa.com)

**Vadim Iaralov**  
FX Strategist  
BofAS  
+1 646 855 8732  
[vadim.iaralov@bofa.com](mailto:vadim.iaralov@bofa.com)

**Mark Cabana, CFA**  
Rates Strategist  
BofAS  
+1 646 855 9591  
[mark.cabana@bofa.com](mailto:mark.cabana@bofa.com)

**Bruno Braizinha, CFA**  
Rates Strategist  
BofAS  
+1 646 855 8949  
[bruno.braizinha@bofa.com](mailto:bruno.braizinha@bofa.com)

**Meghan Swiber, CFA**  
Rates Strategist  
BofAS  
+1 646 855 9877  
[meghan.swiber@bofa.com](mailto:meghan.swiber@bofa.com)

## Europe

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

**Ruben Segura-Cayuela**  
Europe Economist  
BoFA Europe (Madrid)  
+34 91 514 3053  
[ruben.segura-cayuela@bofa.com](mailto:ruben.segura-cayuela@bofa.com)

**Mark Capleton**  
Rates Strategist  
MLI (UK)  
+44 20 7995 6118  
[mark.capleton@bofa.com](mailto:mark.capleton@bofa.com)

**Athanasios Vamvakidis**  
FX Strategist  
MLI (UK)  
+44 020 7995 0279  
[athanasios.vamvakidis@bofa.com](mailto:athanasios.vamvakidis@bofa.com)

**Sphia Salim**  
Rates Strategist  
MLI (UK)  
+44 20 7996 2227  
[sphia.salim@bofa.com](mailto:sphia.salim@bofa.com)

**Kamal Sharma**  
FX Strategist  
MLI (UK)  
+44 20 7996 4855  
[ksharma32@bofa.com](mailto:ksharma32@bofa.com)

**Ronald Man**  
Rates Strategist  
MLI (UK)  
+44 20 7995 1143  
[ronald.man@bofa.com](mailto:ronald.man@bofa.com)

**Michalis Rousakis**  
FX Strategist  
MLI (UK)  
+44 20 7995 0336  
[michalis.rousakis@bofa.com](mailto:michalis.rousakis@bofa.com)

## Pac Rim

**Adarsh Sinha**  
FX Strategist  
Merrill Lynch (Hong Kong)  
+852 3508 7155  
[adarsh.sinha@bofa.com](mailto:adarsh.sinha@bofa.com)

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

**Shusuke Yamada, CFA**  
FX/Rates Strategist  
BofAS Japan  
+81 3 6225 8515  
[shusuke.yamada@bofa.com](mailto: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.