

## Korea Watch

# BoK preview: February MPC meeting: A prolonged balancing act

## BoK likely to hold rates in 2<sup>nd</sup> meeting in 2024

The BoK is due to conduct its second MPC meeting of the year on Feb 22<sup>nd</sup> with a new member (Kunil Hwang). Ahead of the meeting, a mixed bag of external factors amid subsiding domestic inflation likely paves the way for another balanced tone in the meeting. As such, we expect a hold decision (of 3.5%) in the Feb meeting, the 13<sup>th</sup> straight month since the last pause (Exhibit 1).

## Continued disinflation, yet mixed external factors

Compared to what we observed before the previous meeting, we see a more favorable disinflation trend on the way. If there is limited upside surprise from the oil prices, headline inflation will likely stay below 3% in 1Q before falling further towards 2.5% by April. This should allow BoK to vastly ease its concern about inflation, and to further pivot towards an easing stance, in our view.

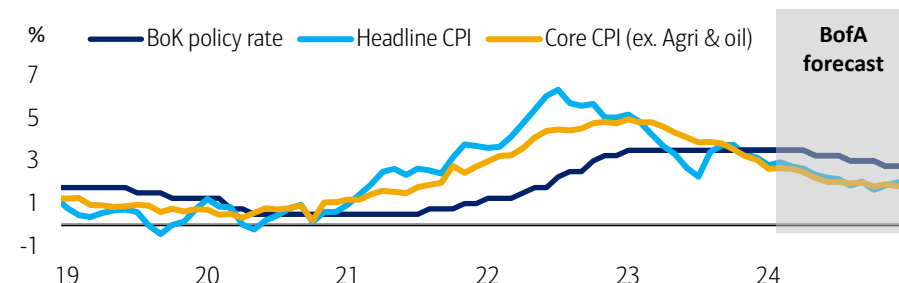
On the other hand, external conditions seem to be more mixed. The recent strong equity flow (under the stock market re-valuation story) as well as the strong current account position (thanks to the further pick-up in goods account) have certainly contributed to a more stabilized FX outlook. However, external uncertainties have also risen lately, due to 1) higher inflation in the US and the less dovish Fed accompanied by a rise in US rates; 2) continued disruption in the Red Sea and potential impact on inflation; and 3) the recent rise in the North-South Korea tensions and its impact on FX flows.

## Keys to watch for in the February meeting

1) How the BoK will assess the US monetary policy trajectory after the latest expressions from the Fed; 2) How the BoK views the current disinflationary trend especially when the core inflation has moderated to the 2.5% hurdle; 3) their assessment of the housing market and the PF loans, and consequences to financial stability; 4) how the BoK assesses the impact from introduction of Corporate Value-Up Program; and 5) The stance of all MPC members going forward.

### Exhibit 1: BoK policy rate and CPI forecast

We expect a continued disinflation trend to warrant a rate cut cycle later this year



Source: CEIC, BofA Global Research estimates

BofA GLOBAL RESEARCH

15 February 2024

GEM Economics  
Asia | Korea

**Benson Wu**  
China & Korea Economist  
Merrill Lynch (Hong Kong)  
+852 3508 5047  
benson.wu@bofa.com

**Ting Him Ho, CFA**  
Asia Economist  
Merrill Lynch (Hong Kong)  
+852 3508 8744  
tinghim.ho@bofa.com

BoK: Bank of Korea

MPC: Monetary Policy Committee

Fed: Federal Reserve

C/A: Current Account

FOMC: Federal Open Market Committee

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 7.

12659956

Timestamp: 15 February 2024 06:00PM EST

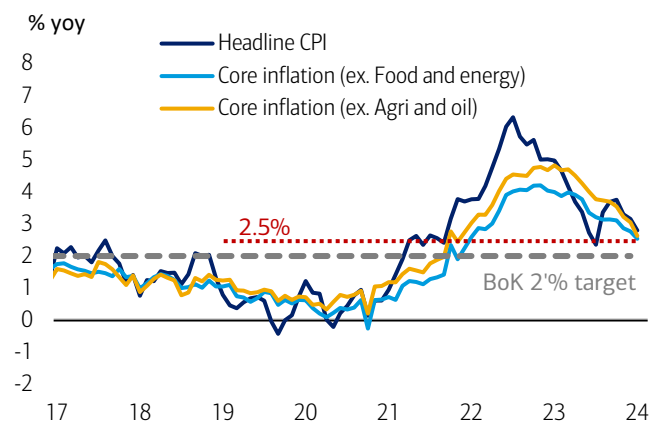
## A favorable disinflation trend ahead the February's meeting

Ahead of the BoK meeting on February 22<sup>nd</sup>, we see a more favorable disinflation trend on the way. In January, headline CPI inflation edged down to 2.8% yoy from 3.2% previously (Exhibit 2), and core inflation also moderated to 2.5%, the first time since December 2021. The disinflation was broad based across goods and services (Exhibit 3). Goods inflation inched down to 3.1% yoy, driven by lower oil prices, processed food inflation and utility inflation. Services inflation also edged down to 2.6% yoy. Dining inflation moderated to 4.3% yoy (0.3% mom s.a.) from 4.4% yoy, while the stickiest part, ex-dining personal service inflation, also dropped to 3.0% (0% m-o-m s.a. vs. 0.4% previously).

If there is limited upside surprise from oil prices, coupled with continued softening trend in services inflation, we think headline inflation is likely to remain below 3% in 1Q before falling further towards 2.5% by April, while the core inflation could drop to 2.3% by May at the earliest. This should enable BoK to vastly ease its concern about inflation, and to further pivot towards an easing stance, in our view.

### Exhibit 2: CPI inflation and core trend (% yoy)

Headline CPI now on a gradual disinflation trend

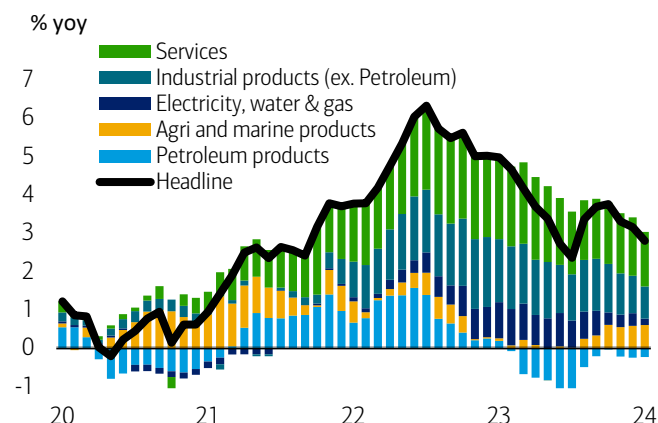


Source: Haver, BoK

BofA GLOBAL RESEARCH

### Exhibit 3: CPI inflation by key breakdown

The disinflation was broad based across goods & services



Source: Haver, BofA Global Research

BofA GLOBAL RESEARCH

## While external conditions came in mixed

Meanwhile, external conditions seem to be more mixed. On the bright side, we noted that the FX outlook is being supported by the strong equity inflow and current account position.

### Strong equity inflow triggered by Corporate Value-Up Program

Recently, foreign inflow into Korean equities has significantly risen following the announcement of the Corporate Value-Up initiative from Korea's Financial Service Commission (see also [Korea Financial Flows – Feb 2024](#)). In short, the objective of the program is to eliminate the "Korea Discount" and boost the corporate value of companies trading below book value. Although details of the plan are yet to be finalized, foreign investors have already taken measures and chased after sectors with a low P/B ratio.

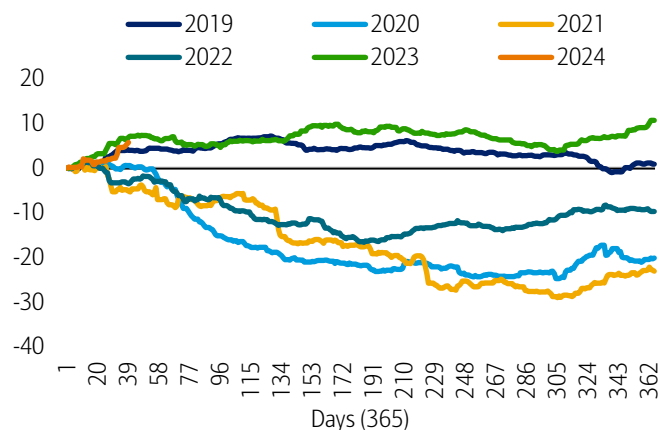
In aggregate, year-to-date net inflows in Korean equities are at a similar pace as January 2023 during the initial months of China reopening (Exhibit 4). Our FX strategist expects foreign equity inflows to be sustained, alongside multiple re-ratings on single stocks by our equity analysts.

### Strong C/A position thanks to a pick-up in trade surplus

Another supporting factor for the FX stability came from the recovery in C/A accounts. In December, C/A surplus picked up to USD7.4bn from USD3.9bn in November (Exhibit 5). This was helped by a further rise in trade surplus (USD8.0bn) and a rebound in primary income surplus (USD2.5bn). Given the robust growth in semiconductor exports, bullish guidance from key Korean exporters (See [Jan Trade: Exports rebounded on LNY effect](#)) and rising momentum in global activities (See Global Wave: Moving on up), we expect sustained export growth to be a key driver of current account and external conditions in 2024.

#### Exhibit 4: Year-to-date net inflows into Korea equities

Year-to-date net inflows in Korean equities are strong and are at a similar pace as Jan-2023 during initial months of China reopening

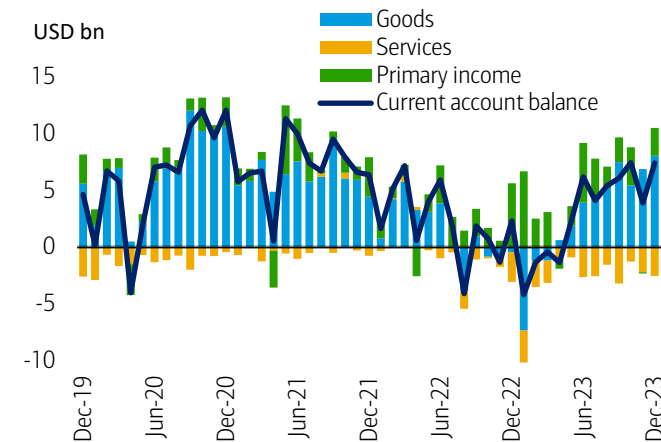


Source: CEIC, BofA Global Research

BofA GLOBAL RESEARCH

#### Exhibit 5: Current account balance

C/A surplus rose in Dec, driven by higher trade and primary income surplus



Source: Haver, BofA Global Research

BofA GLOBAL RESEARCH

### Higher inflation in the US and change in Fed pricing

That said, despite the upbeat outlook from the equity and export fronts, the BoK's decision will still be constrained by the Fed and potential upside on inflation, in our view.

Notably, the Fed is likely to remain hawkish for longer after the higher-than-expected US inflation print. In January, core CPI and headline CPI in the US rose by 0.4% and 0.3% mom, respectively, higher than the consensus of 0.3% and 0.2% mom. As a result, headline inflation moderated to 3.1% yoy but core inflation held at 3.9% yoy. In particular, core services inflation accelerated to 0.7% mom, reflecting a pickup in shelter and non-shelter services. We believe it raises concerns that the road ahead for inflation (especially services inflation) might be bumpy.

Although our US economists expect some of the inflation strength to fade, a March cut appears now firmly off the table and the likelihood of a Fed's May cut has significantly reduced (see [US Watch: January CPI Inflation: detour from disinflation](#)). Indeed, compared to the time around January BoK meeting, market consensus on Fed rate cuts has sharply reversed (Exhibit 6), from a 100%-implied probability of a cut in May to only around 30% currently.

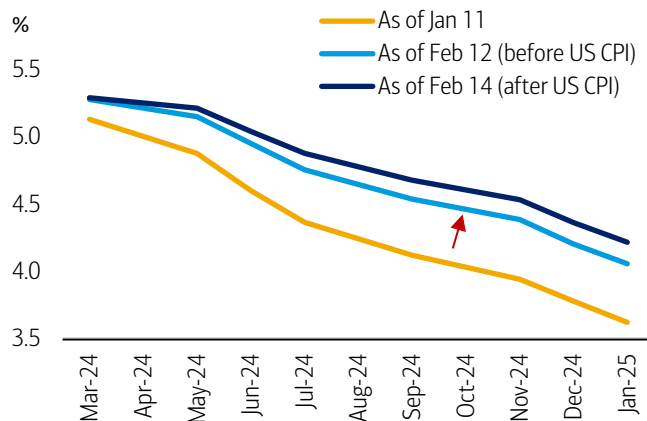
### Continued disruption at the Red Sea and potential impact on inflation

Meanwhile, disruptions around the Red Sea continue. Red Sea vessel transits have declined to less than a third of 1H December (Exhibit 7, see [Shipping & supply chain high frequency tracker #57](#)). Of which, the drop has been most notable for containers and car carriers, while crude tankers are less disrupted. As a result, our shipping analysts have moved the base case to Red Sea diversions persisting until mid- to late-2024.

Despite limited disruption on total shipments to Korea, imported inflation could accelerate with a rise in container rates (and insurance costs). Our shipping analysts have penciled in 50% QoQ average rates in 1Q24 before a gradual decline through 2024 (-10-15% QoQ).

#### Exhibit 6: Market pricing of Fed Fund Rates

Compared to Jan, market is now pricing much less Fed cuts for 2024

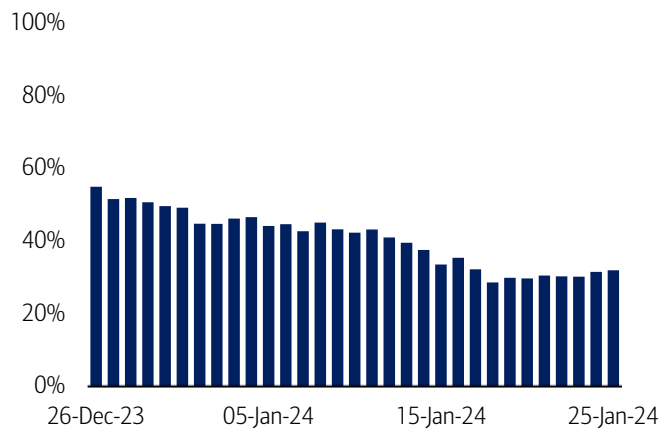


Source: Bloomberg, BofA Global Research

BofA GLOBAL RESEARCH

#### Exhibit 7: Red Sea total vessel arrivals vs 1H Dec levels (%), 7D MA

Overall arrivals are less than 1/3rd of 1H of December level in late January



Source: Clarksons, BofA Global Research

BofA GLOBAL RESEARCH

#### The recent rise in the North-South Korea tensions

Last but not least, tensions between North and South Korea have been on the rise as North Korea accelerated military demonstrations and implied threats of potential further conflict with its neighbor and the US. In our view, it could post some impact on the FX stability in the near term, though the potential escalation remained as a tail risk.

Taken together, despite domestic disinflation and external factors that support a more stable FX outlook, we note that those tail risks could weigh on the near-term BoK policy decisions, and to prevent the BoK to pivot soon, at least before the May meeting, in our view.

#### Key areas to watch for in the February meeting

In addition to the fundamental factors discussed above, the new MPC member is another key to watch, in our view. This week, the BoK appointed Kunil Hwang as a new MPC member, with tenure until Apr 2027 (Exhibit 8). This is a replacement of CS Park who left the board in December for another senior government post. Judging from the latest press conference, Hwang will likely be mildly hawkish on monetary policy, as he flags that inflation is still far exceeding the target while household-debt risks remain elevated. The market also expects Hwang to closely look after PF loan risks, given his previous work experience.

#### Exhibit 8: Background of all MPC members

This week, the BoK appointed Kunil Hwang as a new MPC member, with tenure until Apr 2027

Name	Date Appointed	Current End of term	Recommended by	Policy stance	Education
Yoon-Je Cho	21-Apr-20	20-Apr-24	Minister of Ministry of Strategy and Finance	Ultra-hawk who has voiced the need for rate hikes throughout the current rate hike cycle since early 2021	BA in Economics, Seoul National University, Korea MA and PhD in Economics at Stanford University, US
Young Kyung Suh	21-Apr-20	20-Apr-24	Chamber of Commerce and Industry	Neutral. Her experience in BoK likely highlights data dependence and focus on core monetary variables	BA in Economics at Seoul National University MA & Ph.D in Economics at George Washington University, US
<b>Chang Yong Rhee,</b> <b>Chairman/ governor</b>	<b>21-Apr-22</b>	<b>20-Apr-26</b>		<b>Innately dovish with long-term policy weight on pro-growth, pro-private sector; near-term hawkish on inflation concern</b>	<b>BA in Economics, Seoul National University, Korea</b> <b>Ph.D. in Economics, Harvard University, US</b>
Sang-dai Ryoo,	21-Aug-23	20-Aug-26			BA in Economics, Seoul National University, Korea

**Exhibit 8: Background of all MPC members**

This week, the BoK appointed Kunil Hwang as a new MPC member, with tenure until Apr 2027

Name	Date Appointed	Current End of term	Recommended by	Policy stance	Education
Senior Deputy Governor				Appears neutral in an Oct press conference which did not lean to either side of further tightening or easing	Ph.D. in Economics, State University of New York, US
Sung Hwan Shin	13-May-22	12-May-26	Federation of Banks	Innate dove who stood against rate hike in August 2022; near-term likely joins hawkish camp on inflation concern	BA in Economics at Seoul National University, Korea MA and Ph.D in Management at MIT, US
Yongsung Chang	21-Apr-23	20-Apr-27	BoK Governor	Appears as a hawk who is highly guarded against underestimating inflation. In his previous working papers, Chang pointed out the potential underestimation of inflation due to statistical methods in Korea; nominated by BoK Governor	BA and MA in Economics at Seoul National University, Korea Ph.D in Economics at University of Rochester, US
Kunil Hwang	13-Feb-24	20-Apr-27	Financial Services Commission	Appears as a hawk who is highly guarded against inflation risks and household debts, with experience of looking into real estate PF risks	BA in Economics at Yonsei University, Korea MA in Economics at University of Oregon, US

Source: BoK, BofA Global Research

BofA GLOBAL RESEARCH

Overall, we believe the continued export-led recovery will continue to support the domestic economic growth and to provide a favorable environment for the financial market. In addition to the above factors, we see below the factors that are also the key to watch for the monetary policy direction: 1) How the BoK will assess the US monetary policy trajectory after the latest expressions from the Fed; 2) How the BoK views the current disinflationary trend especially when the core inflation has moderated to the 2.5% hurdle; 3) their assessment of the housing market and the PF loans, and consequences to financial stability; 4) how the BoK assesses the impact from introduction of Corporate Value-Up Program; and 5) The stance of all MPC members going forward.

# 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.

## 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.

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.

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.

Individuals identified as economists do not function as research analysts under U.S. law and reports prepared by them are not research reports under applicable U.S. rules and regulations.

Macroeconomic analysis is considered investment research for purposes of distribution in the U.K. under the rules of the Financial Conduct Authority.

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 Canadian Investment Regulatory Organization; Merrill Lynch (Mexico): Merrill Lynch Mexico, SA de CV, Casa de Bolsa, regulated by the Comisión Nacional Bancaria y de Valores; 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 MLPF&S and not such foreign affiliates. Hong Kong recipients of this information should contact Merrill Lynch (Asia Pacific) Limited in respect of any matters relating to dealing in securities or provision of specific advice on securities or any other matters arising from, or in connection with, this information. Singapore recipients of this information should contact Merrill Lynch (Singapore) Pte Ltd in respect of any matters arising from, or in connection with, this information. For clients that are not accredited investors, expert investors or institutional investors Merrill Lynch (Singapore) Pte Ltd accepts full responsibility for the contents of this information distributed to such clients in Singapore.

### General Investment Related Disclosures:

Taiwan Readers: Neither the information nor any opinion expressed herein constitutes an offer or a solicitation of an offer to transact in any securities or other financial instrument. No part of this report may be used or reproduced or quoted in any manner whatsoever in Taiwan by the press or any other person without the express written consent of BofA Securities. This document provides general information only, and has been prepared for, and is intended for general distribution to, BofA Securities clients. Neither the information nor any opinion expressed constitutes an offer or an invitation to make an offer, to buy or sell any securities or other financial instrument or any derivative related to such securities or instruments (e.g., options, futures, warrants, and contracts for differences). This document is not intended to provide personal investment advice and it does not take into account the specific investment objectives,





financial situation and the particular needs of, and is not directed to, any specific person(s). This document and its content do not constitute, and should not be considered to constitute, investment advice for purposes of ERISA, the US tax code, the Investment Advisers Act or otherwise. Investors should seek financial advice regarding the appropriateness of investing in financial instruments and implementing investment strategies discussed or recommended in this document and should understand that statements regarding future prospects may not be realized. Any decision to purchase or subscribe for securities in any offering must be based solely on existing public information on such security or the information in the prospectus or other offering document issued in connection with such offering, and not on this document.

Securities and other financial instruments referred to herein, or recommended, offered or sold by BofA Securities, are not insured by the Federal Deposit Insurance Corporation and are not deposits or other obligations of any insured depository institution (including, Bank of America, N.A.). Investments in general and, derivatives, in particular, involve numerous risks, including, among others, market risk, counterparty default risk and liquidity risk. No security, financial instrument or derivative is suitable for all investors. Digital assets are extremely speculative, volatile and are largely unregulated. In some cases, securities and other financial instruments may be difficult to value or sell and reliable information about the value or risks related to the security or financial instrument may be difficult to obtain. Investors should note that income from such securities and other financial instruments, if any, may fluctuate and that price or value of such securities and instruments may rise or fall and, in some cases, investors may lose their entire principal investment. Past performance is not necessarily a guide to future performance. Levels and basis for taxation may change.

BofA Securities is aware that the implementation of the ideas expressed in this report may depend upon an investor's ability to "short" securities or other financial instruments and that such action may be limited by regulations prohibiting or restricting "shortselling" in many jurisdictions. Investors are urged to seek advice regarding the applicability of such regulations prior to executing any short idea contained in this report.

Certain investment strategies and financial instruments discussed herein may only be appropriate for consideration in accounts qualified for high risk investment.

Foreign currency rates of exchange may adversely affect the value, price or income of any security or financial instrument mentioned in this report. Investors in such securities and instruments effectively assume currency risk.

BofAS or one of its affiliates is a regular issuer of traded financial instruments linked to securities that may have been recommended in this report. BofAS or one of its affiliates may, at any time, hold a trading position (long or short) in the securities and financial instruments discussed in this report.

BofA Securities, through business units other than BofA Global Research, may have issued and may in the future issue trading ideas or recommendations that are inconsistent with, and reach different conclusions from, the information presented herein. Such ideas or recommendations may reflect different time frames, assumptions, views and analytical methods of the persons who prepared them, and BofA Securities is under no obligation to ensure that such other trading ideas or recommendations are brought to the attention of any recipient of this information.

In the event that the recipient received this information pursuant to a contract between the recipient and BofAS for the provision of research services for a separate fee, and in connection therewith BofAS may be deemed to be acting as an investment adviser, such status relates, if at all, solely to the person with whom BofAS has contracted directly and does not extend beyond the delivery of this report (unless otherwise agreed specifically in writing by BofAS). If such recipient uses the services of BofAS in connection with the sale or purchase of a security referred to herein, BofAS may act as principal for its own account or as agent for another person. BofAS is and continues to act solely as a broker-dealer in connection with the execution of any transactions, including transactions in any securities referred to herein.

#### Copyright and General Information:

Copyright 2024 Bank of America Corporation. All rights reserved. IQdatabase® is a registered service mark of Bank of America Corporation. This information is prepared for the use of BofA Securities clients and may not be redistributed, retransmitted or disclosed, in whole or in part, or in any form or manner, without the express written consent of BofA Securities. BofA Global Research information is distributed simultaneously to internal and client websites and other portals by BofA Securities and is not publicly-available material. Any unauthorized use or disclosure is prohibited. Receipt and review of this information constitutes your agreement not to redistribute, retransmit, or disclose to others the contents, opinions, conclusion, or information contained herein (including any investment recommendations, estimates or price targets) without first obtaining express permission from an authorized officer of BofA Securities.

Materials prepared by BofA Global Research personnel are based on public information. Facts and views presented in this material have not been reviewed by, and may not reflect information known to, professionals in other business areas of BofA Securities, including investment banking personnel. BofA Securities has established information barriers between BofA Global Research and certain business groups. As a result, BofA Securities does not disclose certain client relationships with, or compensation received from, such issuers. To the extent this material discusses any legal proceeding or issues, it has not been prepared as nor is it intended to express any legal conclusion, opinion or advice. Investors should consult their own legal advisers as to issues of law relating to the subject matter of this material. BofA Global Research personnel's knowledge of legal proceedings in which any BofA Securities entity and/or its directors, officers and employees may be plaintiffs, defendants, co-defendants or co-plaintiffs with or involving issuers mentioned in this material is based on public information. Facts and views presented in this material that relate to any such proceedings have not been reviewed by, discussed with, and may not reflect information known to, professionals in other business areas of BofA Securities in connection with the legal proceedings or matters relevant to such proceedings.

This information has been prepared independently of any issuer of securities mentioned herein and not in connection with any proposed offering of securities or as agent of any issuer of any securities. None of BofAS 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.