

# LatAm Equity Strategy

## What it takes to get Ibov to 135k

Investment Strategy

### History suggests 10y real rates could continue to fall

Market rates generally decline before and after selic cuts start. (see: [What happens during selic cuts in 9 charts](#)). In the last three easing cycles, for every 100bp cut in the selic we saw a 40bp decline in 10y market real rates. In 2023, real rates fell 124bp. This represents only 30bp for every 100bp expected selic cut (according to BofAe, see details on page 2). Thus, in our view, real rates could decline an additional 50bp (with upside risks) to put this easing cycle in line with historicals (Exhibit 2).

### Current level of real rates allows for Ibov upside

Historical P/E for Ibov ex-commodities associated with 5.2% (current) real rates is 18% higher than current 2024E P/E (Exhibit 1). On top of that, an extra 50bp decline in 10y real rates (to 4.7%) could potentially justify another 3% higher valuation by the end of the year. All in, we can rationalize 21% upside and P/E at 4% above hist avg (in term of 2024E) for Ibov ex-commodities by year-end. We expect the re-rating to be steeper for growth names, high beta and bond proxies (Exhibit 5). 2024 EPS estimates are a key risk. This supports our Ibov 2023 year-end target of 135k (13% upside from current levels).

### Looking for accommodative valuations, not value traps

Despite the rally of the last 3M, some industries/names have accommodative valuations, especially if rates continue to fall (Exhibit 6). Malls have discounted valuations for the current level of rates with little earnings risk. Utilities are relatively more expensive but is one of the rate sectors with upside earnings risk. Retail offers wide discounts which in our view already offset the risk of downwards earnings revisions. More volatile eCommerce/tech, education and toll roads show wide discounts that could not be enough to compensate earnings risk. **See sector details on page 4.**

### Prefer selected financials, bond proxies, quality growth

We like exposure to lower rates through malls and selected utilities, quality tech and financials with bottom line directly related to the capital markets. We also have exposure to high beta names in transportation and health care. Traditional banks' valuations are not as sensitive to rates, but banks are trading 20% below hist avg (Exhibit 7).

### The elephant in the room: commodities

If the entire Ibov ex-commodities rallies as much as 20%, that means Ibov at our target of 135k by year-end, assuming no price movements for commodity sectors. A stronger upside will likely be dependent on the performance of commodities. We have a positive view on oil names but have a more cautious view for iron ore and pulp for this year. Petrobras dividend yield alone could allow for another 600 points for the Ibov. If Vale's local share price were to increase 14% it would add 2k points to Ibov.

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.

>> Employed by a non-US affiliate of BofA and is not registered/qualified as a research analyst under the FINRA rules.

Refer to "Other Important Disclosures" for information on certain BofA Securities entities that take responsibility for the information herein in particular jurisdictions.

**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 8 to 9.**

12575477

Timestamp: 05 July 2023 07:00AM EDT

05 July 2023

Investment Strategy  
Latin America

**Paula Andrea Soto, CFA** >>  
LatAm Equity Strategist  
Merrill Lynch (Brazil)  
+55 11 2188 4226  
[paula.soto@bofa.com](mailto:paula.soto@bofa.com)

**David Beker** >>  
Bz Econ/FI & LatAm EQ Strategy  
Merrill Lynch (Brazil)  
+55 11 2188 4371  
[david.beker@bofa.com](mailto:david.beker@bofa.com)

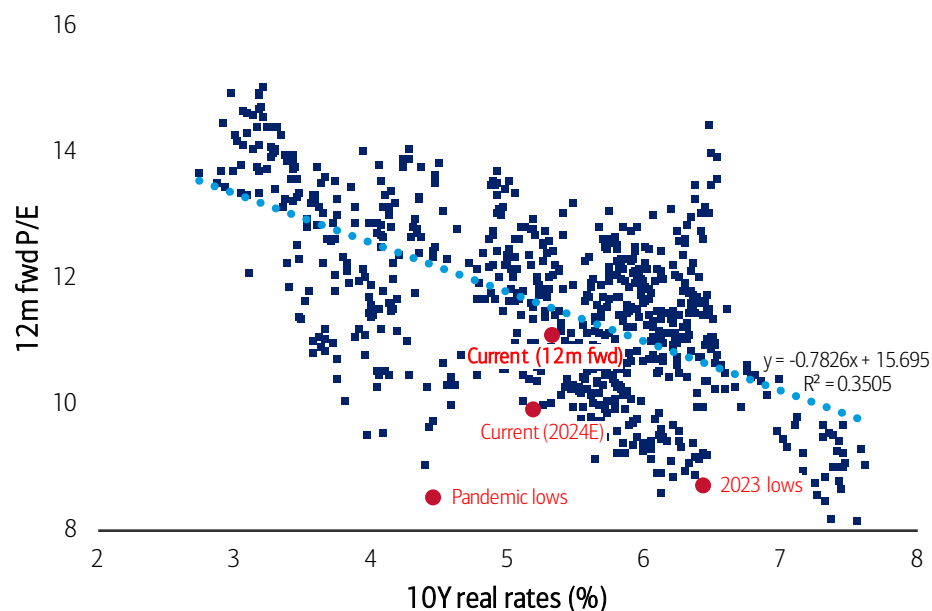
**Mateus Conceicao** >>  
LatAm Equity Strategist  
Merrill Lynch (Brazil)  
+55 11 2188 4201  
[mateus.conceicao@bofa.com](mailto:mateus.conceicao@bofa.com)

## Current level of real rates allows for Ibov upside

Historical P/E for Ibov ex-commodities associated with 5.2% real rates (current level) is 7% higher than current 12m fwd P/E and 18% higher than current 2024E P/E.

### Exhibit 1: Ibov ex-commodities 12m fwd P/E (Y-axis) vs Brazil 10y real rates (X-axis)

Valuation back to historical levels (given the level of rates) plus a 50bp decline in long term real rates can justify 21% upside and P/E 4% above hist avg (in term of 2024E P/E) for Ibov ex-commodities.



Source: BofA Global Research, Bloomberg Consensus estimates.

BofA GLOBAL RESEARCH

## Long-term market real rates could continue to fall

We forecast terminal selic at 9.5% in July 2024, which means 425bp selic cuts in total. So far, market real rates declined 124bp from the peak in March. That represents only 30bp decline for every 100bp selic cut we expect.

Historically, market long-term real rates fall more than that: 40bp for every 100bp selic cut (see summary in Exhibit 2). If real rates fall an additional 50bp from here (from 5.2% today down to 4.7%), the decline per 100bp selic cut would be in line with past easing cycles. But we think that part of the move this year was just risk premia decompression, and rates could decline more than that.

### Exhibit 2: Size of past easing cycles in terms of selic cuts and market rate declines (bp)

In the last three easing cycles, market 10y real rates declined 40bp for every 100bp selic cut.

Date			Total decline (bp)			Decline per 100bp selic cut (bp)	
Market rates start to decline	First selic cut	Last selic cut	Selic	Market 10y nominal rates	Market 10y real rates	Market 10y nominal rates	Market 10y real rates
Aug-11	Aug-11	Oct-12	525	308	281	59	54
Mar-16	Oct-16	Mar-18	775	527	189	68	24
Oct-18	Jul-19	Aug-20	450	345	196	77	43
Mar-23	Aug-23*	Jul-24*	425*	304**	124**	72**	29**
Average of the last three cycles						68	40

Note: (\*) BofA Forecast, (\*\*) Up to current date. Market rates may continue to decline as the easing cycle moves forward.

Source: BofA Global Research, Bloomberg

BofA GLOBAL RESEARCH

## Risks are for a bigger decline in real rates

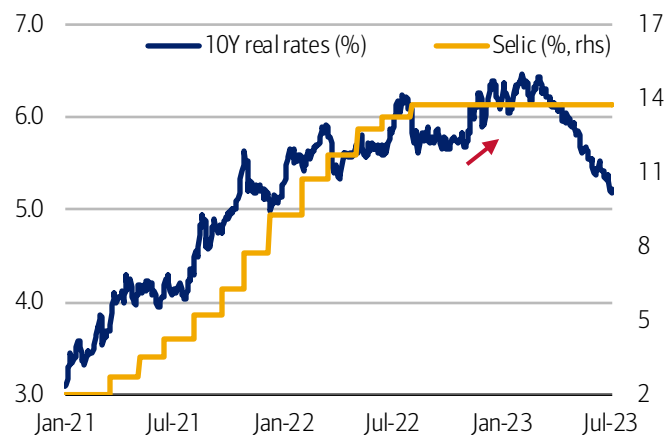
We think that real rates could decline more than 50bp. In our view, at least part of the decline in real rates we saw this year can be attributed to risk premia decompression and not exclusively to an anticipation of selic cuts.

The peak of real rates in 2023 happened during heightened political noise, which has significantly lessened since then. Discussions at the time revolved around the inflation target and the fiscal framework. Exhibit 3 shows the increase in real rates even after selic hikes ended. Exhibit 4 shows the level of Brazil CDS at the time.

Finally, there is also a risk that the market starts to price in even more cuts (i.e, terminal selic below 9.5%) as we move forward with the easing cycle.

#### Exhibit 3: Brazil market 10y rates vs selic (rhs)

We saw an increase in real rates even after selic hikes ended.

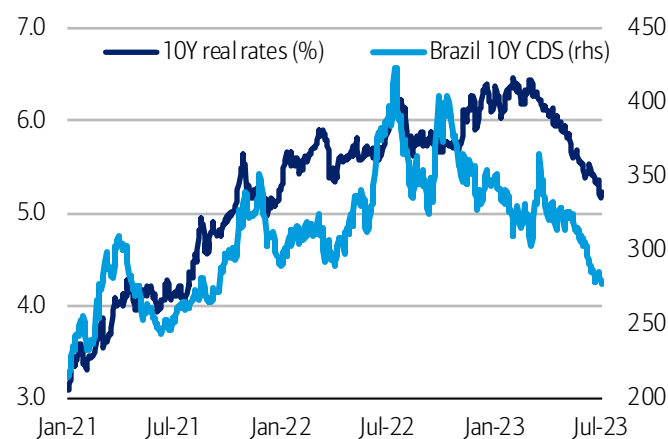


Source: BofA Global Research, Bloomberg

BofA GLOBAL RESEARCH

#### Exhibit 4: Brazil market 10y rates vs Brazil CDS (rhs)

A portion of the decline in real rates we saw this year can be attributed to risk premia decompression



Source: BofA Global Research, Bloomberg

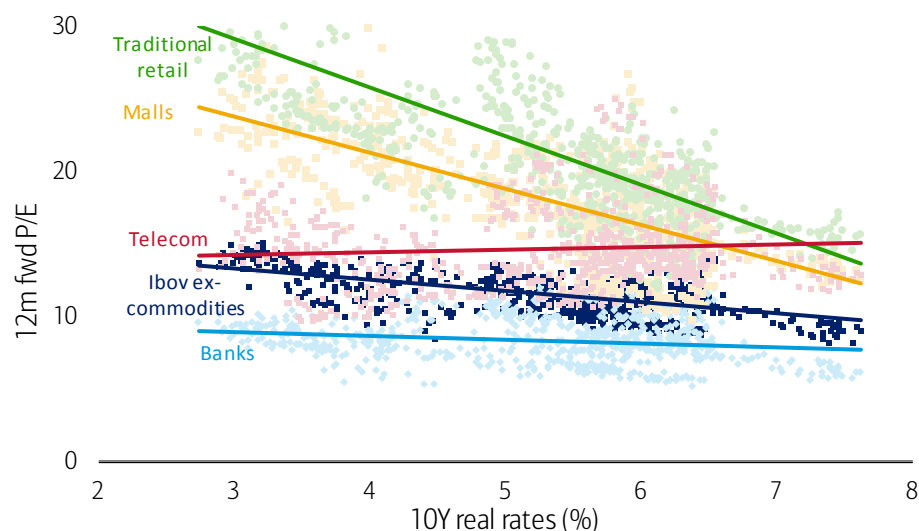
BofA GLOBAL RESEARCH

## Sector views

We expect a re-rating process driven by lower long-term real rates to be steeper for growth names, high beta and bond proxies (Exhibit 5). Valuation for defensive sectors and banks have the least sensitivity to a change in market real rates.

### Exhibit 5: Sector valuation (Y-axis) vs Brazil 10y real rates (X-axis)

Bond proxies (malls) and higher beta names (retail) are more strongly correlated to the change in market 10y real rates compared to low beta names (telecom) and banks (beta close to 1 and counter-cyclical earnings).



(\*) P/FFO (12m fwd) for malls. P/E (12m forward) for the rest. Consensus estimates.

Group details - Malls: Multiplan, Iguatemi. Toll roads: CCR, Ecorodovias. Traditional retail: Renner, Arezzo. Utilities: Eletrobras, Equatorial, Copel, Cemig, Engie, Taesa. Banks: Itau, Bradesco, Santander Brasil, Banco do Brasil. Telecom: Vivo (Telefonica Brasil), TIM.

Source: BofA Global Research, Bloomberg

BofA GLOBAL RESEARCH

## Banks: counter-cyclical trading at discount

### Large banks: Counter-cyclical trading at discount.

Banks' valuations in terms of P/E are not meaningfully sensitive to the level of rates (as evidenced in Exhibit 2), and neither are P/Book ratios (as shown in Exhibit 5). Yet, we see room for rerating as large banks are trading today at 1.1 P/Book (trailing), 20% below historical average of 1.4 P/Book.

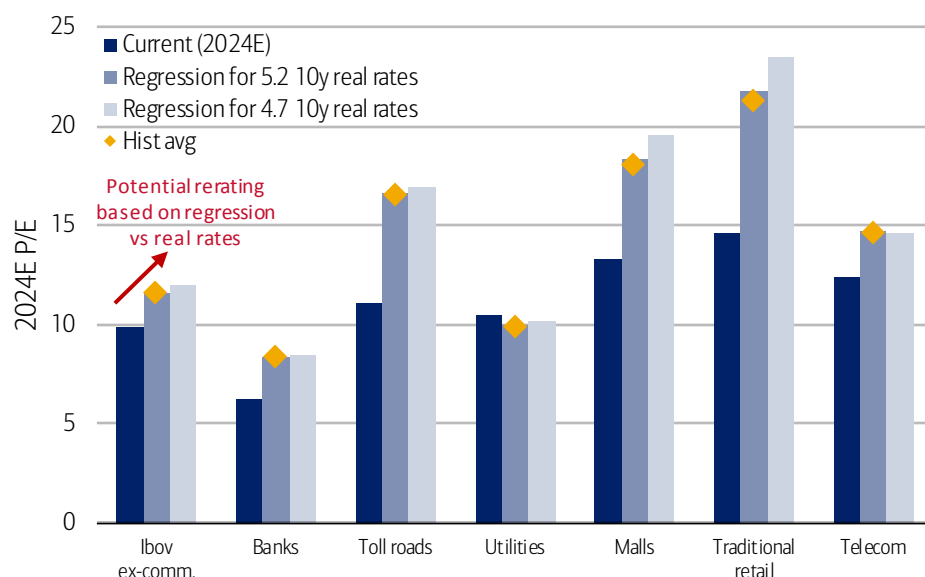
Positive drivers for banks would be earnings momentum in 2024 given improving economic activity and normalization of the asset quality cycle.

### Non-banks: Prefer top-line growth linked to rates

Payment processors' valuations are attractive, but we see tougher than expected competition and decelerating industry growth (see Electronic Payments – Brazil: Encouraged but not yet convinced). Insurers' operating trends are positive, but we see lower rates as potentially negative for financial results (see Insurance – Brazil:

**Exhibit 6: Valuation levels according to the level of rates**

Toll roads and traditional retail show the biggest rerating potential given the current level of rates, but they also have the biggest earning risk.



(\*) P/FFO (12m fwd) for malls. P/E (12m forward) for the rest. Consensus estimates.

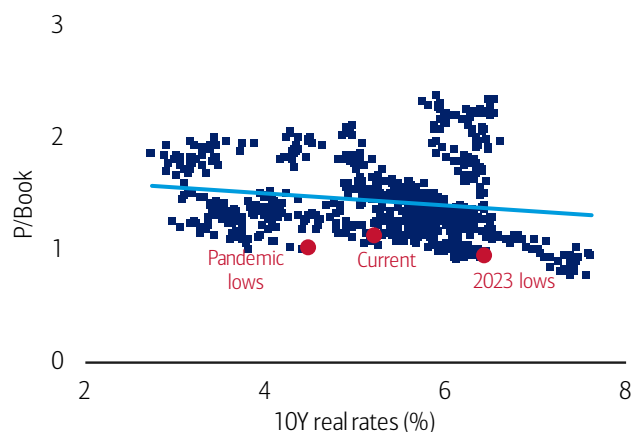
Group details - Malls: Multiplan, Iguatemi. Toll roads: CCR, Ecorodovias. Traditional retail: Renner, Arezzo. Utilities: Eletrobras, Equatorial, Copel, Cemig, Engie, Taesa. Banks: Itau, Bradesco, Santander Brasil, Banco do Brasil. Telecom: Vivo (Telefonica Brasil), TIM.

Source: BofA Global Research, Bloomberg

BofA GLOBAL RESEARCH

**Exhibit 7: Banks P/Book (trailing, Y-axis) vs Brazil 10y real rates (X-axis)**

Banks P/Book value are not meaningfully correlated to the level of rates.



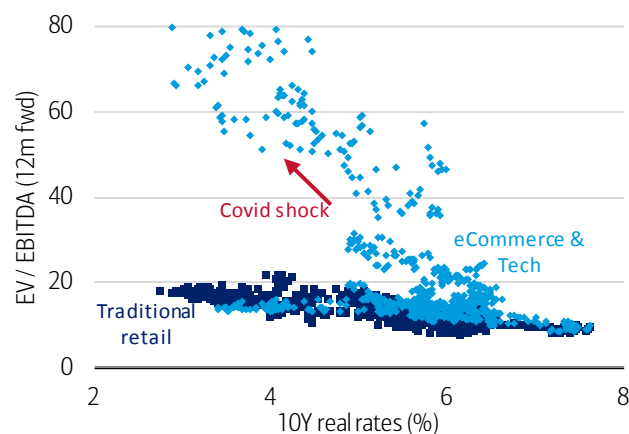
Banks: Itau, Bradesco, Santander Brasil, Banco do Brasil.

Source: BofA Global Research, Bloomberg

BofA GLOBAL RESEARCH

**Exhibit 8: Sector 12m fwd EV/EBITDA (Y-axis) vs Brazil 10y real rates (X-axis)**

The valuation gap between traditional retail and eCommerce+Tech widened the most during the Covid shock.



Traditional retail: Renner, Arezzo. eCommerce + Tech: Magazine Luiza, Via, MercadoLibre, Totvs. Consensus estimates. Source: BofA Global Research, Bloomberg

BofA GLOBAL RESEARCH

**Retail & high beta: watch for EPS risk**

Retail poses one of the biggest discounts vs historicals, even after adjusting for the level of rates (Exhibit 6). In fact, the current level of rates historically would have granted close to 50% higher valuations vs today (2024E). This is even more apparent for eCommerce and tech, due to the surge in valuations during the Covid shock (Exhibit 8).

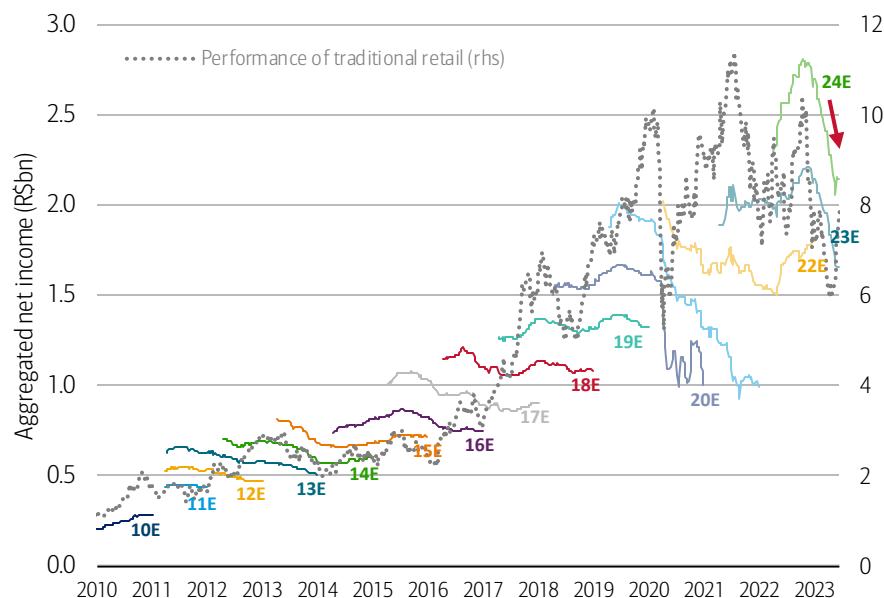


We acknowledge that downwards earnings revisions are a key risk for 2024. Still, wide discounts would still allow for sizeable earnings revisions. Plus, consensus earnings revisions appear to have stabilized. (Exhibit 9)

Other high beta sectors with high earnings risk are homebuilders, leveraged healthcare and transportation, education, and small cap tech.

#### Exhibit 9: Traditional retail (Renner & Arezzo) aggregated consensus earnings estimates

2024 earnings estimates declined sharply in 2023



Consensus estimates. Traditional retail includes Renner and Arezzo. Performance calculated using equal weights. Total returns in BRL.

Source: BofA Global Research, Bloomberg.

BofA GLOBAL RESEARCH

## Bond proxies: Malls offer best mix of re-rating potential & little earnings risk

We discussed the main beneficiaries of the rate cuts ahead in Brazil Bond Proxies:  
Further and faster rate cuts: shifting preference to Malls.

Malls still trade at spreads from rates 130bps above historical, which could provide additional upside once the cycle begins. They offer one of the biggest reaction functions to lower rates, whilst offering little earnings risk. See [Not late for the party: why we still like malls post-rates rally in 5 charts](#).

Utilities screen as relatively expensive compared to other bond proxies (current valuations closely resemble historicals for the current level of rates, Exhibit 6). Still, we stick to our more optimistic view that Utilities (namely power distributors) could still benefit from regulatory de-risking (albeit facing volatility, see [Brazilian Utilities: DisCo renewal: negative surprises & pushbacks – a lot to be discussed](#)). Upside risk for earnings revisions for the sector arise from turnaround stories, growth, and regulatory reviews.

We see transportation as the least attractive in terms of risk-return after recent outperformance.

## Staples & essential services

Lower beta names are, by definition, less exposed to a re-rating driven by lower rates. Industries such as telecom, supermarkets, food and agri could underperform in a

continuation of the bull cycle, but we expect positive returns. Plus, industries have positive drivers that could help performance.

Positive drivers for protein processors are rising beef prices and lower cattle costs, mainly in Brazil.

Brazil supermarkets are leveraged and could benefit from lower rates, but unlikely to offset declining food inflation and operational headwinds.

## **The elephant in the room: commodities**

### **Iron ore and pulp cycles are not supportive of higher valuations**

We have a more cautious view on iron ore and see some downside for the commodity for end of the year. On the other hand, supply/demand dynamics could improve into 1Q24 on better seasonality (rain season hurting production in Brazil and Australia).

If Vale increases 14% that alone would translate into additional 2k points for Ibov. News around China stimulus would be the main trigger for iron ore prices bottoming sooner than expected, in our view.

We are also wary of pulp prices going forward, expecting prices to remain sideways over the next quarters as substantial new capacity hits the market.

See more details in Mining, Steel, Pulp & Paper – LatAm: 2Q23 Preview – one for the Bears.

### **Oil: Petrobras' dividend yield most relevant for Ibov**

We have a house view for oil that is more constructive than the Street. We expect BofA's latest forecast for oil prices in 2023 US\$80/bbl (compared to US\$73/bbl market prices for the next 12 months).

Petrobras dividend yield alone (18% for 2024) represents 600 additional Ibov points. We highlight, however, that a new dividend policy is expected to be announced this month. As announced in the 1Q23 result, Petrobras's Board of Directors instructed the executive board to prepare a proposal to "improve" the current Shareholders' Remuneration Policy, including the possibility of repurchasing shares, and submit it for deliberation by the Board before the end of July.

# 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.

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. 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 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.

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 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.

This report may contain a short-term trading idea or recommendation, which highlights a specific near-term catalyst or event impacting the issuer or the market that is anticipated to have a short-term price impact on the equity securities of the issuer. Short-term trading ideas and recommendations are different from and do not affect a stock's fundamental equity rating, which reflects both a longer term total return expectation and attractiveness for investment relative to other stocks within its Coverage Cluster. Short-term trading ideas and recommendations may be more or less positive than a stock's fundamental equity rating.

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.

Foreign currency rates of exchange may adversely affect the value, price or income of any security or financial instrument mentioned herein. Investors in such securities and instruments, including ADRs, 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 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.