

Liquid Insight

The FX implications of an early pause

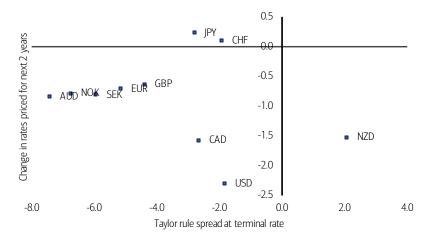
Key takeaways

- G10 policy rates may have to be high(er) for longer than markets expect, to bring inflation sufficiently down.
- However, markets are pricing aggressive cuts to start soon after central banks pause.
- Our analysis suggests that tighter-than-market pricing policies could support USD, CAD, NOK and AUD vs. the rest of G10.

By Athanasios Vamvakidis

Exhibit 1: G10 monetary policies

Markets pricing aggressive easing, although policies not tight enough at terminal rates



Source: Bloomberg and BofA Global Research.

BofA GLOBAL RESEARCH

What if interest rates remain high(er) for longer?

As G10 central banks have reached or are about to reach their terminal policy rates, the key question is whether this is enough, particularly as markets are pricing aggressive policy easing to follow soon. Although monetary policies affect the economy with a lag, measures in this report suggest that they may not be tight enough and markets may also be too optimistic on policy easing. We also repeat our concern that fiscal policies are in most cases loose, particularly in the US. Assuming central banks remain committed to their inflation targets, our analysis suggests that monetary policies may have to be tighter than current market pricing suggests—more tightening or less/later easing particularly in the case of the US, Canada, Norway and Australia, suggesting upside risks for USD, CAD, NOK and AUD vs. the rest of G10.

Global

17 May 2023

Rates and Currencies Research

Global Rates & Currencies Research

MLI (UK)

Athanasios Vamvakidis

FX Strategist MLI (UK) +44 20 7995 0279 athanasios.vamvakidis@bofa.com

Adarsh Sinha

FX Strategist Merrill Lynch (Hong Kong) +852 3508 7155 adarsh.sinha@bofa.com

Janice Xue Rates Strategist Merrill Lynch (Hong Kong) +852 3508 8587 ianice.xue@bofa.com

See Team Page for List of Analysts

Liquid Insight Recent Publications

16-May-23 AUD rates vol – Distortions on the grid Approaching the largest TLTRO

15-May-23 maturity

11-May-23 Back to basis on UST positioning

10-May-23 Bank of England preview: 25bp and risks of more hikes

The credible compression of USD 9-May-23

8-May-23 The USD at the end of hiking cycles

4-May-23 Debt limit stress is back

ECB Preview: To slow or not to 3-May-23

FOMC preview: The end of the 2-May-23 road

1-May-23 RBA preview: Biding time

BofA GLOBAL RESEARCH

Trading ideas and investment strategies discussed herein may give rise to significant risk and are not suitable for all investors. Investors should have experience in relevant markets and the financial resources to absorb any losses arising from applying these ideas or strategies.

Bof A Securities does and seeks to do business with issuers covered in its research reports. As a result, investors should be aware that the firm may have a conflict of interest that could affect the objectivity of this report. Investors should consider this report as only a single factor in making their investment decision. Refer to important disclosures on page 6 to 8.

12559663

Timestamp: 17 May 2023 12:30AM EDT

At the terminal

G10 central banks have reached or are about to reach terminal policy rates. Markets are not pricing another Fed hike. They expect two more hikes from the ECB and the BoE. If market pricing is right, by mid-summer most G10 central banks would have reached their terminal rates, after the most aggressive policy tightening cycle of the last four decades.

The key question for markets as we reach terminal rates is whether this is enough. Headline inflation has already been coming down in most of G10 this year, but core inflation remains stuck at levels well above the target. Unemployment is also at historic lows in all G10 economies and has either stabilized at low levels or in some cases continues falling. Wages are increasing at the core inflation rate across the board. All this suggests to us that central banks expect most of the impact from their policy tightening to be ahead, as monetary policies affect the economy with a lag. They may also expect some tightening of credit conditions from the recent bank turmoil. We will know in the next few months whether the terminal rate is enough or not.

However, what still concerns us is that markets are pricing a very aggressive easing cycle to start soon. Effectively, markets seem to believe that central banks have overshot in their policy rates, inflation will come down fast and that policy rates will have to start declining soon. If core inflation remains persistent and labor markets tight, we would not expect early easing from G10 central banks. Moreover, one cannot ignore the risk that they may actually have to hike even more than markets are currently pricing. Markets may be wrong to expect a pause as the last step before policy easing, as the RBA latest hike after an initial pause has shown.

Not tight enough yet

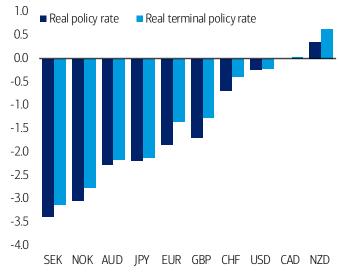
Looking at real policy rates, it is hard to argue that monetary policies are tight in G10 economies. Exhibit 2 looks at the latest policy rates and also at the terminal rates that markets are pricing, in real terms, using the latest core inflation rate. In both cases, monetary polices still look loose in most of G10. Of course, this could change soon if core inflation starts coming down as a result of the policy tightening that has already taken place. But otherwise, some G10 central banks not only will not be cutting rates in the months ahead, but they may need to start hiking again.

Using a Taylor rule leads to similar conclusions, although the ranking changes in some cases. We adjust the Bloomberg Taylor rule calculations in a number of ways: we look at core inflation; we assume the natural real rate is 1% instead of 2% in Bloomberg (because this is what markets are pricing, as we discuss below); we assume the natural rate of unemployment (NAIRU) is equal to the pre-pandemic level, rather than a much higher level in most cases in Bloomberg; and we take the terminal rates that markets are currently pricing as given. Exhibit 3 shows the results. With the exception of New Zealand, monetary policies in G10 economies at the terminal rate that markets are currently pricing are still loose. Again, this calculation does not take into account lags of the impact from monetary policy. However, they do point to a risk that at least in some cases more may need to be done, or at least it may be too early to expect policy easing, with the relative ranking also having market implications.



Exhibit 2: G10 real policy rates (using latest core inflation)

Real policy rates mostly negative in G10, both current and at terminal rate priced (using latest core inflation)

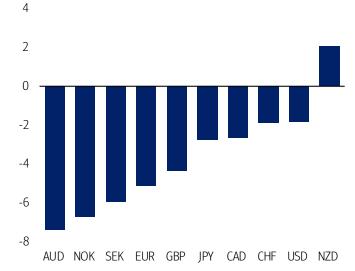


Source: Bloomberg and BofA Global Research.

BofA GLOBAL RESEARCH

Exhibit 3: Taylor rule spread at terminal rate priced

G10 monetary policies not tight enough at terminal rates priced

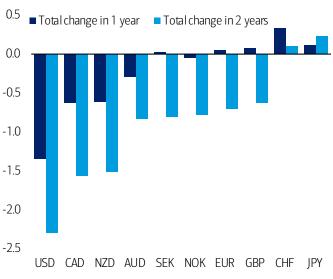


Source: Bloomberg and BofA Global Research.

BofA GLOBAL RESEARCH

Exhibit 4: Market pricing for change in G10 policy rates

Markets expect aggressive policy easing in G10

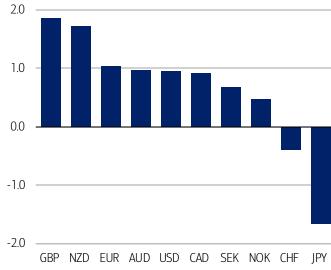


Source: Bloomberg and BofA Global Research.

BofA GLOBAL RESEARCH

Exhibit 5: R* based on latest market pricing

Markets expect return to low interest rates



Source: Bloomberg and BofA Global Research.

BofA GLOBAL RESEARCH

Easing does not automatically follow tightening

With some differences in timing, markets are pricing an aggressive easing cycle in G10 central banks to start as early as this summer. Exhibit 4 shows that markets expect the most aggressive policy easing from the Fed, followed by the Bank of Canada. Such market pricing assumes that inflation goes down to 2% and that the so called R* (natural interest rate) is 1% or even lower, with the exceptions of the UK and New Zealand where it is close to 2% (Exhibit 5). Both assumptions could prove to be wrong, suggesting later and less aggressive policy easing than markets expect.



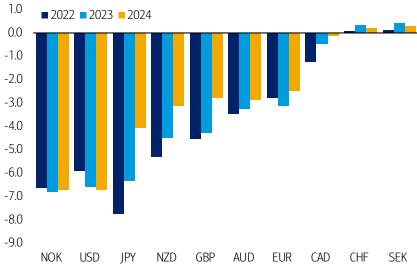
Fiscal policies loose in the meantime

We have repeatedly argued this year that loose fiscal policies are offsetting monetary policy tightening and may be responsible for the non-landing scenario so far, with sticky core inflation and tight labor markets. If our concerns are right, monetary policies will have to be tighter than otherwise and policy rates may have to be high(er) for longer. Exhibit 6 shows high structural deficits in most G10 economies—suggesting loose fiscal policies. Sweden, Switzerland and Canada are the only exceptions. Fiscal policies are the most loose in the US and in Norway.

Although fiscal policies seem to at least move in the right direction in most cases (using IMF forecasts) and are becoming less loose, the US is a notable exception. US fiscal policy is getting even more loose this year and next year—moving in the wrong direction. Indeed, according to data from the non-partisan Congressional Budget Office in the US, revenues are lower by 10% and spending is higher by 12% this fiscal year so far, with the federal deficit more than three times larger than in the same period last year. Of course, this could change depending on the current negotiations for the US debt ceiling, although could be far from the best possible way.

Exhibit 6: R G10 Structural fiscal balance





Source: IMF and BofA Global Research

BofA GLOBAL RESEARCH

FX implications of an early pause

As in FX everything is relative, what matters is for which central banks markets may be too optimistic about terminal rates being high enough and the easing cycle priced to be the most aggressive. We assume that no G10 central banks will consider giving up on their inflation target when inflation is still so high. This suggests that central banks will respond with more tightening—less easing—compared with market pricing if inflation proves to be persistent. Exhibit 1 points to upside USD and CAD risks from markets expecting too many rate cuts, and upside AUD and NOK risks from terminal rates not being high enough. Upside inflation risks from loose fiscal policies in the US and in Norway in Exhibit 6 also point to upside USD and NOK risks—a key assumption here is no fiscal dominance and that central banks remain independent.



Notable Rates and FX Research

- Global Rates, FX & EM Year Ahead 2023 Year Ahead 2023: Pivot ≠ Peak, 20 Nov 2022
- What to expect when pausing, Global FX Weekly, 12 May 2023
- The long and short of it, Global Rates Weekly, 12 May 2023
- Corporates buying USD/Asia FX, Liquid Cross Border Flows, 9 May 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: What to expect when pausing 12 May 2023

Global Rates Weekly: The long and short of it 12 May 2023



Disclosures

Important Disclosures

BofA Global Research personnel (including the analyst(s) responsible for this report) receive compensation based upon, among other factors, the overall profitability of Bank of America Corporation, including profits derived from investment banking. The analyst(s) responsible for this report may also receive compensation based upon, among other factors, the overall profitability of the Bank's sales and trading businesses relating to the class of securities or financial instruments for which such analyst is responsible.

BofA Securities fixed income analysts regularly interact with sales and trading desk personnel in connection with their research, including to ascertain pricing and liquidity in the fixed income markets

Other Important Disclosures

Prices are indicative and for information purposes only. Except as otherwise stated in the report, for any recommendation in relation to an equity security, the price referenced is the publicly traded price of the security as of close of business on the day prior to the date of the report or, if the report is published during intraday trading, the price referenced is indicative of the traded price as of the date and time of the report and in relation to a debt security (including equity preferred and CDS), prices are indicative as of the date and time of the report and are from various sources including BofA Securities trading desks.

The date and time of completion of the production of any recommendation in this report shall be the date and time of dissemination of this report as recorded in the report timestamp.

This report may refer to fixed income securities or other financial instruments that may not be offered or sold in one or more states or jurisdictions, or to certain categories of investors, including retail investors. Readers of this report are advised that any discussion, recommendation or other mention of such instruments is not a solicitation or offer to transact in such instruments. Investors should contact their BofA Securities representative or Merrill Global Wealth Management financial advisor for information relating to such instruments. Rule 144A securities may be offered or sold only to persons in the U.S. who are Qualified Institutional Buyers within the meaning of Rule 144A under the Securities Act of 1933, as amended. SECURITIES OR OTHER FINANCIAL INSTRUMENTS DISCUSSED HEREIN MAY BE RATED BELOW INVESTMENT GRADE AND SHOULD THEREFORE ONLY BE CONSIDERED FOR INCLUSION IN ACCOUNTS QUALIFIED FOR SPECULATIVE INVESTMENT.

Recipients who are not institutional investors or market professionals should seek the advice of their independent financial advisor before considering information in this report in connection with any investment decision, or for a necessary explanation of its contents.

The securities or other financial instruments discussed in this report may be traded over-the-counter. Retail sales and/or distribution of this report may be made only in states where these instruments are exempt from registration or have been qualified for sale.

Officers of BofAS or one or more of its affiliates (other than research analysts) may have a financial interest in securities of the issuer(s) or in related investments.

This report, and the securities or other financial instruments discussed herein, may not be eligible for distribution or sale in all countries or to certain categories of investors, including retail investors

Refer to BofA Global Research policies relating to conflicts of interest

"BofA Securities" includes BofA Securities, Inc. ("BofAS") and its affiliates. Investors should contact their BofA Securities representative or Merrill Global Wealth Management financial advisor if they have questions concerning this report or concerning the appropriateness of any investment idea described herein for such investor. "BofA Securities" is a global brand for BofA Global Research.

Information relating to Non-US affiliates of BofA Securities and Distribution of Affiliate Research Reports:

BofAS and/or Merrill Lynch, Pierce, Fenner & Smith Incorporated ("MLPF&S") may in the future distribute, information of the following non-US affiliates in the US (short name: legal name, regulator): Merrill Lynch (South Africa): Merrill Lynch South Africa (Pty) Ltd., regulated by The Financial Service Board; MLI (UK): Merrill Lynch International, regulated by the Financial Conduct Authority (FCA) and the Prudential Regulation Authority (PRA); BofASE (France): BofA Securities Europe SA is authorized by the Autorité de Contrôle Prudential et de Résolution (ACPR) and regulated by the ACPR and the Autorité des Marchés Financiers (AMF). BofA Securities Europe SA ("BofASE") with registered address at 51, rue La Boétie, 75008 Paris is registered under no. 842 602 690 RCS Paris. In accordance with the provisions of French Code Monétaire et Financier (Monetary and Financial Code), BofASE is an établissement de crédit et d'investissement (credit and investment institution) that is authorised and supervised by the European Central Bank and the Autorité de Contrôle Prudentiel et de Résolution (ACPR) and regulated by the ACPR and the Autorité des Marchés Financiers. BofASE's share capital can be found at www.bofaml.com/BofASEdisclaimer; BofA Europe (Milan): Bank of America Europe Designated Activity Company, Milan Branch, regulated by the Bank of Italy, the European Central Bank (ECB) and the Central Bank of Ireland (CBI); BofA Europe (Frankfurt): Bank of America Europe Designated Activity Company, Frankfurt Branch regulated by BaFin, the ECB and the CBI, BofA Europe (Madrid): Bank of America Europe Designated Activity Company, Sucursal en España, regulated by the Bank of Spain, the ECB and the CBI; Merrill Lynch (Australia): Merrill Lynch Equities (Australia) Limited, regulated by the Australian Securities and Investments Commission; Merrill Lynch (Hong Kong): Merrill Lynch (Asia Pacific) Limited, regulated by the Hong Kong Securities and Futures Commission (HKSFC); Merrill Lynch (Singapore): Merrill Lynch (Singapore) Pte Ltd, regulated by the Monetary Authority of Singapore (MAS); Merrill Lynch (Canada): Merrill Lynch (Canada Inc, regulated by the Investment Industry Regulatory Organization of Canada; Merrill Lynch (Mexico): Merrill Lynch Mexico, SA de CV, Casa de Bolsa, regulated by the Comisión Nacional Bancaria y de Valores; Merrill Lynch (Argentina): Merrill Lynch Argentina SA, regulated by Comisión Nacional de Valores; BofAS Japan: BofA Securities Japan Co., Ltd., regulated by the Financial Services Agency; Merrill Lynch (Seoul): Merrill Lynch International, LLC Seoul Branch, regulated by the Financial Supervisory Service; Merrill Lynch (Taiwan): Merrill Lynch Securities (Taiwan) Ltd., regulated by the Securities and Futures Bureau; BofAS India: BofA Securities India Limited, regulated by the Securities and Exchange Board of India (SEBI); Merrill Lynch (Israel): Merrill Lynch (Israel): Merrill Lynch (Israel) inted, regulated by Israel Securities Authority; Merrill Lynch (DIFC): Merrill Lynch International (DIFC Branch), regulated by the Dubai Financial Services Authority (DFSA); Merrill Lynch (Brazil): Merrill Lynch S.A. Corretora de Títulos e Valores Mobiliários, regulated by Comissão de Valores Mobiliários; Merrill Lynch KSA Company: Merrill Lynch Kingdom of Saudi Arabia Company, regulated by the Capital Market Authority.

This information: has been approved for publication and is distributed in the United Kingdom (UK) to professional clients and eligible counterparties (as each is defined in the rules of the FCA and the PRA) by MLI (UK), which is authorized by the PRA and regulated by the FCA and the PRA - details about the extent of our regulation by the FCA and PRA are available from us on request; has been approved for publication and is distributed in the European Economic Area (EEA) by BofASE (France), which is authorized by the ACPR and regulated by the ACPR and the AMF; has been considered and distributed in Japan by BofAS Japan, a registered securities dealer under the Financial Instruments and Exchange Act in Japan, or its permitted affiliates; is issued and distributed in Hong Kong by Merrill Lynch (Hong Kong) which is regulated by HKSFC; is issued and distributed in Taiwan); is issued and distributed in India by BofAS India; and is issued and distributed in Singapore to institutional investors and/or accredited investors (each as defined under the Financial Advisers Regulations) by Merrill Lynch (Singapore) (Company Registration No 198602883D). Merrill Lynch (Singapore) is regulated by MAS. Merrill Lynch Equities (Australia) Limited (ABN 65 006 276 795), AFS License 235132 (MLEA) distributes this information in Australia only to 'Wholesale' clients as defined by s.761G of the Corporations Act 2001. With the exception of Bank of America N.A., Australia Branch, neither MLEA nor any of its affiliates involved in preparing this information is an Authorised Deposit-Taking Institution under the Banking Act 1959 nor regulated by the Australian Prudential Regulation Authority. No approval is required for publication or distribution of this information in Brazil and its local distribution is by Merrill Lynch (Brazil) in accordance with applicable regulations. Merrill Lynch (DIFC) is authorized and regulated by the DFSA. Information in Germany and is regulated by BaFin, the ECB and the CBI. BofA Securities entities, including B

This information has been prepared and issued by BofAS and/or one or more of its non-US affiliates. The author(s) of this information may not be licensed to carry on regulated activities in your jurisdiction and, if not licensed, do not hold themselves out as being able to do so. BofAS and/or MLPF&S is the distributor of this information in the US and accepts full responsibility for information distributed to BofAS and/or MLPF&S clients in the US by its non-US affiliates. Any US person receiving this information and wishing to effect any transaction in any security



discussed herein should do so through BofAS and/or MLPF&S and not such foreign affiliates. Hong Kong recipients of this information should contact Merrill Lynch (Asia Pacific) Limited in respect of any matters relating to dealing in securities or provision of specific advice on securities or any other matters arising from, or in connection with, this information. Singapore recipients of this information should contact Merrill Lynch (Singapore) Pte Ltd in respect of any matters arising from, or in connection with, this information. For clients that are not accredited investors, expert investors or institutional investors Merrill Lynch (Singapore) Pte Ltd accepts full responsibility for the contents of this information distributed to such clients in Singapore.

General Investment Related Disclosures:

Taiwan Readers: Neither the information nor any opinion expressed herein constitutes an offer or a solicitation of an offer to transact in any securities or other financial instrument. No part of this report may be used or reproduced or quoted in any manner whatsoever in Taiwan by the press or any other person without the express written consent of BofA Securities. This document provides general information only, and has been prepared for, and is intended for general distribution to, BofA Securities clients. Neither the information nor any opinion expressed constitutes an offer or an invitation to make an offer, to buy or sell any securities or other financial instrument or any derivative related to such securities or instruments (e.g., options, futures, warrants, and contracts for differences). This document is not intended to provide personal investment advice and it does not take into account the specific investment objectives, financial situation and the particular needs of, and is not directed to, any specific person(s). This document and its content do not constitute, and should not be considered to constitute, investment advice for purposes of ERISA, the US tax code, the Investment Advisers Act or otherwise. Investors should seek financial advice regarding the appropriateness of investing in financial instruments and implementing investment strategies discussed or recommended in this document and should understand that statements regarding future prospects may not be realized. Any decision to purchase or subscribe for securities in any offering must be based solely on existing public information on such security or the information in the prospectus or other offering document issued in connection with such offering, and not on this document.

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

Futures and options are not appropriate for all investors. Such financial instruments may expire worthless. Before investing in futures or options, clients must receive the appropriate risk disclosure documents. Investment strategies explained in this report may not be appropriate at all times. Costs of such strategies do not include commission or margin expenses. BofA Securities is aware that the implementation of the ideas expressed in this report may depend upon an investor's ability to "short" securities or other financial instruments and that such action may be limited by regulations prohibiting or restricting "shortselling" in many jurisdictions. Investors are urged to seek advice regarding the applicability of such regulations prior to executing any short idea contained in this report.

This report may contain a trading idea or recommendation which highlights a specific identified near-term catalyst or event impacting a security, issuer, industry sector or the market generally that presents a transaction opportunity, but does not have any impact on the analyst's particular "Overweight" or "Underweight" rating (which is based on a three month trade horizon). Trading ideas and recommendations may differ directionally from the analyst's rating on a security or issuer because they reflect the impact of a near-term catalyst or event.

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

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

BofA Securities, through business units other than BofA Global Research, may have issued and may in the future issue trading ideas or recommendations that are inconsistent with, and reach different conclusions from, the information presented herein. Such ideas or recommendations may reflect different time frames, assumptions, views and analytical methods of the persons who prepared them, and BofA Securities is under no obligation to ensure that such other trading ideas or recommendations are brought to the attention of any recipient of this information. In the event that the recipient received this information pursuant to a contract between the recipient and BofAS for the provision of research services for a separate fee, and in connection therewith BofAS may be deemed to be acting as an investment adviser, such status relates, if at all, solely to the person with whom BofAS has contracted directly and does not extend beyond the delivery of this report (unless otherwise agreed specifically in writing by BofAS). If such recipient uses the services of BofAS in connection with the sale or purchase of a security referred to herein, BofAS may act as principal for its own account or as agent for another person. BofAS is and continues to act solely as a broker-dealer in connection with the execution of any transactions, including transactions in any securities referred to herein.

Copyright and General Information:

Copyright 2023 Bank of America Corporation. All rights reserved. iQdatabase® is a registered service mark of Bank of America Corporation. This information is prepared for the use of BofA Securities clients and may not be redistributed, retransmitted or disclosed, in whole or in part, or in any form or manner, without the express written consent of BofA Securities. BofA Global Research information is distributed simultaneously to internal and client websites and other portals by BofA Securities and is not publicly-available material. Any unauthorized use or disclosure is prohibited. Receipt and review of this information constitutes your agreement not to redistribute, retransmit, or disclose to others the contents, opinions, conclusion, or information contained herein (including any investment recommendations, estimates or price targets) without first obtaining express permission from an authorized officer of BofA Securities. Materials prepared by BofA Global Research personnel are based on public information. Facts and views presented in this material have not been reviewed by, and may not reflect information known to, professionals in other business areas of BofA Securities, including investment banking personnel. BofA Securities has established information barriers between BofA Global Research and certain business groups. As a result, BofA Securities does not disclose certain client relationships with, or compensation received from, such issuers. To the extent this material discusses any legal proceeding or issues, it has not been prepared as nor is it intended to express any legal conclusion, opinion or advice. Investors should consult their own legal advisers as to issues of law relating to the subject matter of this material. BofA Global Research personnel's knowledge of legal proceedings in which any BofA Securities entity and/or its directors, officers and employees may be plaintiffs, defendants, co-defendants or co-plaintiffs with or involving issuers mentioned in this material is based on public inform

This information has been prepared independently of any issuer of securities mentioned herein and not in connection with any proposed offering of securities or as agent of any issuer of any securities. None of BofAS any of its affiliates or their research analysts has any authority whatsoever to make any representation or warranty on behalf of the issuer(s). BofA Global Research policy prohibits research personnel from disclosing a recommendation, investment rating, or investment thesis for review by an issuer prior to the publication of a research report containing such rating, recommendation or investment thesis.

Any information relating to the tax status of financial instruments discussed herein is not intended to provide tax advice or to be used by anyone to provide tax advice. Investors are urged to seek tax advice based on their particular circumstances from an independent tax professional.

The information herein (other than disclosure information relating to BofA Securities and its affiliates) was obtained from various sources and we do not guarantee its accuracy. This information may contain links to third-party websites. BofA Securities is not responsible for the content of any third-party website or any linked content contained in a third-party website. Content contained on such third-party websites is not part of this information and is not incorporated by reference. The inclusion of a link does not imply any endorsement by or any affiliation with BofA Securities. Access to any third-party website is at your own risk, and you should always review the terms and privacy policies at third-party websites before submitting any personal information to them. BofA Securities is not responsible for such terms and privacy policies and expressly disclaims any liability for them.

All opinions, projections and estimates constitute the judgment of the author as of the date of publication and are subject to change without notice. Prices also are subject to change without notice. BofA Securities is under no obligation to update this information and BofA Securities ability to publish information on the subject issuer(s) in the future is subject to applicable quiet periods. You should therefore assume that BofA Securities will not update any fact, circumstance or opinion contained herein.

Certain outstanding reports or investment opinions relating to securities, financial instruments and/or issuers may no longer be current. Always refer to the most recent research report relating to an issuer prior to making an investment decision.

In some cases, an issuer may be classified as Restricted or may be Under Review or Extended Review. In each case, investors should consider any investment opinion relating to such issuer (or its security and/or financial instruments) to be suspended or withdrawn and should not rely on the analyses and investment opinion(s) pertaining to such issuer (or its securities and/or financial instruments) nor should the analyses or opinion(s) be considered a solicitation of any kind. Sales persons and financial advisors affiliated with BofAS or any of its affiliates may not solicit purchases of securities or financial instruments that are Restricted or Under Review and may only solicit securities under Extended Review in accordance with firm policies.



Neither BofA Securities nor any officer or employee of BofA Securities accepts any liability whatsoever for any direct, indirect or consequential damages or losses arising from any use of this information.

Research Analysts

US

Ralph Axel

Rates Strategist BofAS

+1 646 855 6226 ralph.axel@bofa.com

Paul Ciana, CMT

Technical Strategist BofAS

+1 646 855 6007

paul.ciana@bofa.com

John Shin

FX Strategist BofAS

+1 646 855 9342

joong.s.shin@bofa.com

Vadim Iaralov

FX Strategist BofAS

+1 646 855 8732

vadim.iaralov@bofa.com

Mark Cabana, CFA

Rates Strategist

BofAS

+1 646 855 9591 mark.cabana@bofa.com

Bruno Braizinha, CFA

Rates Strategist

BofAS

+1 646 855 8949 bruno.braizinha@bofa.com

Meghan Swiber, CFA

Rates Strategist

BofAS +1 646 855 9877

meghan.swiber@bofa.com

Europe

Ralf Preusser, CFA

Rates Strategist

MLI (UK) +44 20 7995 7331

ralf.preusser@bofa.com

Ruben Segura-Cayuela

Europe Economist

BofA Europe (Madrid) +34 91 514 3053

ruben.segura-cayuela@bofa.com

Mark Capleton

Rates Strategist

MLI (UK)

+44 20 7995 6118 mark.capleton@bofa.com

Athanasios Vamvakidis

FX Strategist

HLI (UK) +44 020 7995 0279

athanasios.vamvakidis@bofa.com

Sphia Salim

Rates Strategist MLI (UK)

HLI (UK) +44 20 7996 2227

sphia.salim@bofa.com

Kamal Sharma

FX Strategist

MLI (UK) +44 20 7996 4855

ksharma32@bofa.com

Ronald Man

Rates Strategist

+44 20 7995 1143

+44 20 7995 1143 ronald.man@bofa.com

Michalis Rousakis

FX Strategist

+44 20 7995 0336

michalis.rousakis@bofa.com

Pac Rim

Adarsh Sinha

FX Strategist Merrill Lynch (Hong Kong) +852 3508 7155 adarsh.sinha@bofa.com

Janice Xue

Rates Strategist Merrill Lynch (Hong Kong) +852 3508 8587 janice.xue@bofa.com

Shusuke Yamada, CFA

shusuke.yamada@bofa.com

FX/Rates Strategist BofAS Japan +81 3 6225 8515

Trading ideas and investment strategies discussed herein may give rise to significant risk and are not suitable for all investors. Investors should have experience in relevant markets and the financial

resources to absorb any losses arising from applying these ideas or strategies.

