Liquid Insight

Can vol smile?

Bank of America Merrill Lynch

06 July 2017

Rates and Currencies Research
Global

Global Rates & Currencies Research
MLI (UK)

Carol Zhang
Rates Strategist
MLPF&S
+1 646 855 8311
carol.zhang@baml.com

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

Yang Chen
Rates Strategist
Merrill Lynch (Hong Kong)
+852 3508 8695
ychen8@baml.com

See Team Page for List of Analysts

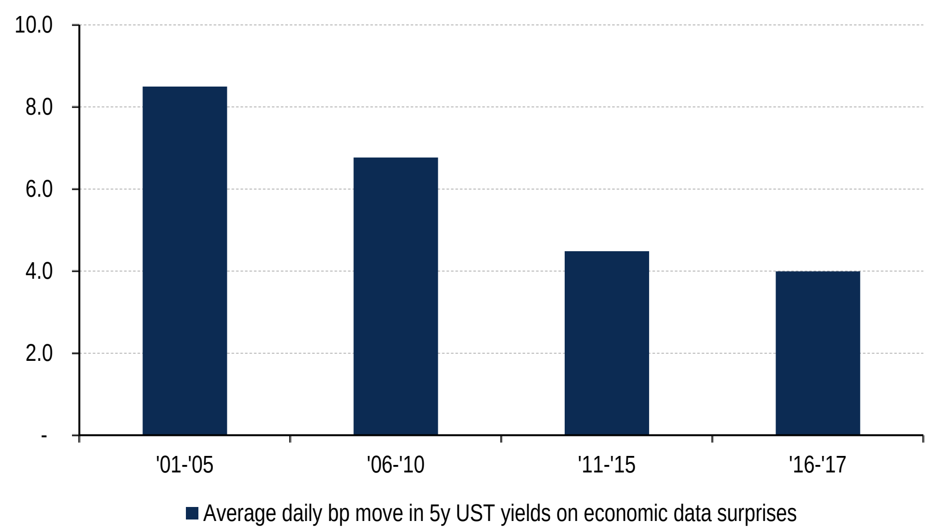
Recent Liquid Insight Publications

Key takeaways

- Low US rates volatility is being driven by lower economic data volatility and a smaller reaction to data surprises
- Despite popular belief, history suggests that US economic data surprises still move markets more than geopolitical events
- Record hard/soft data divergence, a fading central bank put and focus on financial conditions set the stage for higher vol

By Carol Zhang

Chart of the day: Rates sensitivity to economic data shocks near all-time lows



Note: We choose five key economic indicators (including NFP, ISM, Retail sales, core CPI and PCE) and isolate dates where the data surprised by one standard deviation or greater. We then show average moves of 5y interest rates on these dates.
Source: BofA Merrill Lynch Global Research

The data dependency of rates volatility

It is no news that volatility is at historically low levels across asset classes for some time now. However, with focus shifting to financial conditions, understanding the key drivers of interest rate volatility now takes special focus. After all, as Chart 1 shows lower interest rate volatility is closely linked with easier financial conditions.

There are several schools of thoughts exploring the drivers of cross-asset volatility (see The Death of Volatility – please email for detailed report). Here, we focus on US rates volatility through a macro lens. In particular, we address three questions: 1) how has the volatility of economic data evolved over the years; 2) how has the reaction function of market moves to economic data surprises changed; and 3) do geopolitical events drive more market moves than economic events?

The delta and the beta

From a high level, interest-rate moves are typically driven by price action on key economic data days. These days in turn drive the average level of volatility – for market makers to price in a high level of implied volatility, event days need to be perceived to deliver large moves with the rest of the calendar showing below-average daily changes.

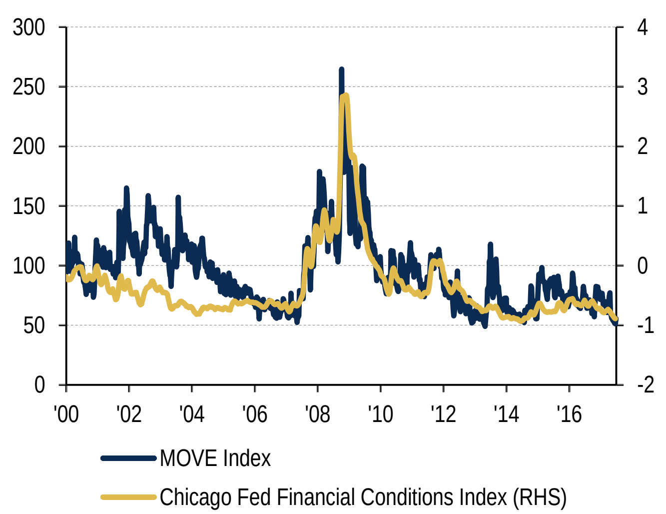
To answer our first two questions, we choose five most-watched economic indicators encompassing growth and inflation in a calendar month – nonfarm payrolls, ISM, retail sales, core CPI, and PCE. We then see both the trends in surprises and how 5y yields move on the days when the actual prints surprised consensus estimates. We define large surprises as prints that saw actual vs. consensus differences exceed rolling 1y standard deviation.

The exercise shows two clear results.

- **The diminishing delta**. First, as discussed in detail in The Death of Volatility and illustrated in Chart 2, economic data themselves do not move around as much now as they used to be. Chart 2 shows a long-term downward trend of rolling 12m standard deviation of average normalized economic monthly changes. Simply said, the data have not been that volatile.
- **The fading beta.** Second, given a level of economic data surprise, the rates market is no longer responding with the same vigor to economic data shocks relative to the past. Our Chart of the day shows that 5y yields now barely move 4bp on key days with a 1 standard deviation surprise. With the most meaningful days delivering 4bp on average, it is understandable why the level of implied volatility over a calendar month has to average lesser.

While the former could be a function of a mature business cycle (2006-07 also saw low economic data volatility), the latter is likely attributable to the global central bank put after the financial crisis.

Chart 1: Interest rate volatility has been closely linked with easier financial conditions



Source: BofA Merrill Lynch Global Research, Chicago Fed

Chart 2: The diminishing econ data volatility has been a long-term trend

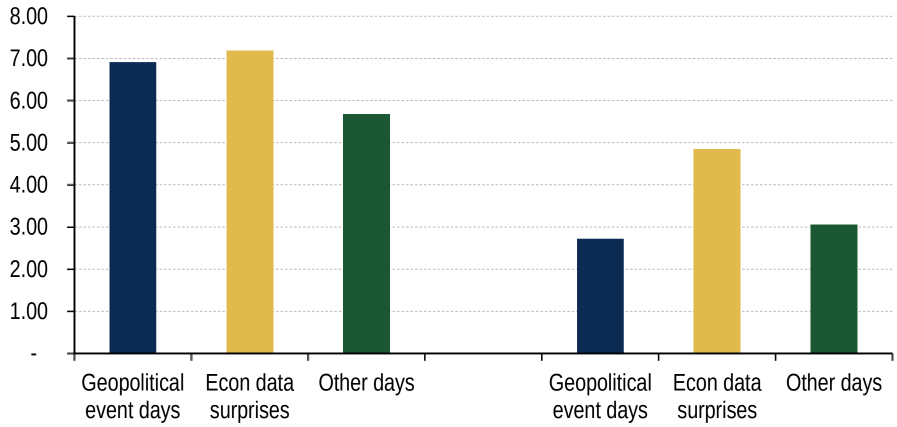
Note: the data is constructed as the average of rolling 12m standard deviation of normalized five economic indicators (including NFP, ISM, Retail sales, core CPI and PCE).
Source: BofA Merrill Lynch Global Research

What about other event risks?

One argument market participants tend to use is the potential for geopolitical events to dominate market action, as opposed to events impacting economic growth or monetary policy. To assess this statement, we sift through a number of impactful geopolitical events over recent decades and chose two main episodes (before and after the financial crisis) and the events leading up to them – Iraq war in 2003 and Crimea crisis in 2014. In particular, we choose 17 critical days between 9/11/2001 and 12/13/2003 for the Afghanistan/Iraq episode and 26 such days between 11/21/2013 and 6/25/2014 for the Crimea episode.

In Chart 3, we plot the average absolute 10yr rate moves on significant event days during each geopolitical episode, as well as 10yr moves on economic data surprises and other days during the same period. It is still clear that economic data surprises mean more than geopolitical shocks for the rates market.

Chart 3: Data surprise days still deliver more volatility than geo-political surprise days



Note: We choose 17 critical days between 9/11/01 and- 12/13/03 for the Afg/Irag episode and 26 such days between 11/21/2013 - 6/25/2014 for the Crimea episode. .. Source: BofA Merrill Lynch Global Research

What does volatility need?

The above in our view leaves some good and bad news for volatility bulls. The bad news is volatility is still heavily data dependent and higher geopolitical risk is not a long-term answer. The good news is that with a record divergence between hard and soft data, economic data volatility could pick up (higher delta of surprises). Also, with the gradual removal of global central bank accommodation and possibly a more explicit targeting of financial conditions by the Fed, the sensitivity to economic surprises should eventually go back to pre-crisis norms (higher beta to surprises).

Notable Rates and FX Research

* Global Rates, FX & EM 2017 Year Ahead, 16 November 2016

* Central banks play offense, USD defense, **Global Liquid Markets Weekly**, 3 Jul 2017

* So much for the summer lull, **Global FX Weekly**, 30 Jun 2017

*Breaking bonds, **Global Rates Weekly**, 30 Jun 2017

* The flows of the hawkish turn, **Liquid Cross Border Flows**, 3 July 2017

* CAD celebration, **FX Quant Trader**, 3 July 2017

Key trade ideas - top Rates and FX trades for 2017

For rationale and details, refer to Global Rates, FX & EM 2017 Year Ahead: Tectonic shifts, 16 November, 2016

Rates:

Short US 5y rates
*Two-and-a-half Fed hikes priced by the rates market for 2017-18 are not consistent with aggressive fiscal easing promised by Trump.

Short US 10y real rates
*After the violent repricing of inflation breakevens, we believe real rates offer better risk-reward to position for higher rates.

Sell Eurozone 30y inflation breakevens
*We think investors should take advantage of the recent rally to sell into the December ECB meeting, which could disappoint.

FX:

Buy USD call/CNH put
*President Trump will need a weak USD, but President Xi needs a weak CNY. We believe risk premium for a collision course is too low.

Buy USD/JPY
*With the BOJ pegging 10y JGB yields at zero, we expect this highly interest rate sensitive USD cross will continue to be the biggest beneficiary of the Trump win.

Sell EUR/GBP
*Brexit and Trump could bolster the anti-globalization parties in Europe ahead of key elections next year.

Sell EUR/RUB
*Likely OPEC production cuts on 30 November and possible sanction relief for Russia are bullish for the RUB, in our view.

Buy NZD/USD put spread
*Spot NZD/USD is forming a head-and-shoulders top pattern, which suggests a decline will follow in 2017.

EM:

Sell a basket of Brazilian, Mexican, and Colombian long bonds
*Positioning in EM fixed income market remains crowded, while liquidity is poor.

Sell BRL/MXN
*MXN is oversold, but BRL will likely be vulnerable to the divergent paths between Brazil’s easing and the Fed’s tightening cycles.

Existing open/closed trades

For a complete list of our open trade recommendations, as well as our trade recommendations closed over the last 12 months, see:

Global FX weekly: So much for the summer lull, 30 Jun 2017

Global Rates Weekly: Breaking bonds, 30 Jun 2017

Options Risk Statement

Potential Risk at Expiry & Options Limited Duration Risk

Unlike owning or shorting a stock, employing any listed options strategy is by definition governed by a finite duration. The most severe risks associated with general options trading are total loss of capital invested and delivery/assignment risk... all of which can occur in a short period.

Investor suitability

The use of standardized options and other related derivatives instruments are considered unsuitable for many investors. Investors considering such strategies are encouraged to become familiar with the "Characteristics and Risks of Standardized Options" (an OCC authored white paper on options risks). U.S. investors should consult with a FINRA Registered Options Principal.

For detailed information regarding risks involved with investing in listed options:

http://www.theocc.com/about/publications/character-risks.jsp

Analyst Certification

We, Athanasios Vamvakidis, Adarsh Sinha and Yang Chen, hereby certify that the views each of us has expressed in this research report accurately reflect each of our respective personal views about the subject securities and issuers. We also certify that no part of our respective compensation was, is, or will be, directly or indirectly, related to the specific recommendations or view expressed in this research report.

Disclosures

Important Disclosures

BofA Merrill Lynch 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 Merrill Lynch Global Credit Research 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 the purpose of any recommendation in relation to: (i) 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; or (ii) 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 Bank of America Merrill Lynch 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 that may not be offered or sold in one or more states or jurisdictions. Readers of this report are advised that any discussion, recommendation or other mention of such securities is not a solicitation or offer to transact in such securities. Investors should contact their BofA Merrill Lynch representative or Merrill Lynch Financial Global Wealth Management financial advisor for information relating to fixed income securities
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 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 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 securities are exempt from registration or have been qualified for sale.
Officers of MLPF&S 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 discussed herein, may not be eligible for distribution or sale in all countries or to certain categories of investors.
BofA Merrill Lynch Global Research policies relating to conflicts of interest are described at http://go.bofa.com/coi.
"BofA Merrill Lynch" includes Merrill Lynch, Pierce, Fenner & Smith Incorporated ("MLPF&S") and its affiliates. Investors should contact their BofA Merrill Lynch representative or Merrill Lynch Global Wealth Management financial advisor if they have questions concerning this report. "BofA Merrill Lynch" and "Merrill Lynch" are each global brands for BofA Merrill Lynch Global Research.
Information relating to Non-US affiliates of BofA Merrill Lynch and Distribution of Affiliate Research Reports:
MLPF&S distributes, or may in the future distribute, research reports 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); 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; Merrill Lynch (Japan): Merrill Lynch Japan Securities Co., Ltd., regulated by the Financial Services Agency; Merrill Lynch (Seoul): Merrill Lynch International Incorporated (Seoul Branch) regulated by the Financial Supervisory Service; Merrill Lynch (Taiwan): Merrill Lynch Securities (Taiwan) Ltd., regulated by the Securities and Futures Bureau; DSP Merrill Lynch (India): DSP Merrill Lynch Limited, regulated by the Securities and Exchange Board of India; Merrill Lynch (Indonesia): PT Merrill Lynch Sekuritas Indonesia, regulated by Otoritas Jasa Keuangan (OJK); Merrill Lynch (Israel): Merrill Lynch Israel Limited, regulated by Israel Securities Authority; Merrill Lynch (Russia): OOO Merrill Lynch Securities, Moscow, regulated by the Central Bank of the Russian Federation; Merrill Lynch (DIFC): Merrill Lynch International (DIFC Branch), regulated by the Dubai Financial Services Authority (DFSA); Merrill Lynch (Spain): Merrill Lynch Capital Markets Espana, S.A.S.V., regulated by Comisión Nacional del Mercado De Valores; Merrill Lynch (Brazil): Bank of America Merrill Lynch Banco Multiplo S.A., regulated by Comissão de Valores Mobiliários; Merrill Lynch KSA Company, Merrill Lynch Kingdom of Saudi Arabia Company, regulated by the Capital Market Authority.
This research report: 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) and Bank of America Merrill Lynch International Limited, which are authorized by the PRA and regulated by the FCA and the PRA, and is distributed in the UK to retail clients (as defined in the rules of the FCA and the PRA) by Merrill Lynch International Bank Limited, London Branch, which is authorized by the Central Bank of Ireland and subject to limited regulation by the FCA and PRA - details about the extent of our regulation by the FCA and PRA are available from us on request; has been considered and distributed in Japan by Merrill Lynch (Japan), a registered securities dealer under the Financial Instruments and Exchange Act in Japan; is issued and distributed in Hong Kong by Merrill Lynch (Hong Kong) which is regulated by HKSFC is issued and distributed in Taiwan by Merrill Lynch (Taiwan); is issued and distributed in India by DSP Merrill Lynch (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 International Bank Limited (Merchant Bank) (MLIBLMB) and Merrill Lynch (Singapore) (Company Registration Nos F 06872E and 198602883D respectively). MLIBLMB and Merrill Lynch (Singapore) are regulated by MAS. Bank of America N.A., Australian Branch (ARBN 064 874 531), AFS License 412901 (BANA Australia) and Merrill Lynch Equities (Australia) Limited (ABN 65 006 276 795), AFS License 235132 (MLEA) distribute this report in Australia only to 'Wholesale' clients as defined by s.761G of the Corporations Act 2001. With the exception of BANA Australia, neither MLEA nor any of its affiliates involved in preparing this research report 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 report 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. Research reports prepared and issued by Merrill Lynch (DIFC) are done so in accordance with the requirements of the DFSA conduct of business rules. Bank of America Merrill Lynch International Limited, Frankfurt Branch (BAMLI Frankfurt) distributes this report in Germany and is regulated by BaFin.
This research report has been prepared and issued by MLPF&S and/or one or more of its non-US affiliates. MLPF&S is the distributor of this research report in the US and accepts full responsibility for research reports of its non-US affiliates distributed to MLPF&S clients in the US. Any US person receiving this research report and wishing to effect any transaction in any security discussed in the report should do so through MLPF&S and not such foreign affiliates. Hong Kong recipients of this research report 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 report. Singapore recipients of this research report should contact Merrill Lynch International Bank Limited (Merchant Bank) and/or Merrill Lynch (Singapore) Pte Ltd in respect of any matters arising from, or in connection with, this research report.
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 Merrill Lynch.
This research report provides general information only, and has been prepared for, and is intended for general distribution to, BofA Merrill Lynch 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 report 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 report 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 report 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 report.

Securities and other financial instruments discussed in this report, or recommended, offered or sold by Merrill Lynch, 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. 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 Merrill Lynch 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.

UK Readers: The protections provided by the U.K. regulatory regime, including the Financial Services Scheme, do not apply in general to business coordinated by BofA Merrill Lynch entities located outside of the United Kingdom. BofA Merrill Lynch Global Research policies relating to conflicts of interest are described at http://go.bofa.com/coi.

MLPF&S or one of its affiliates is a regular issuer of traded financial instruments linked to securities that may have been recommended in this report. MLPF&S 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 Merrill Lynch, through business units other than BofA Merrill Lynch 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 in this report. Such ideas or recommendations reflect the different time frames, assumptions, views and analytical methods of the persons who prepared them, and BofA Merrill Lynch is under no obligation to ensure that such other trading ideas or recommendations are brought to the attention of any recipient of this report.

In the event that the recipient received this report pursuant to a contract between the recipient and MLPF&S for the provision of research services for a separate fee, and in connection therewith MLPF&S may be deemed to be acting as an investment adviser, such status relates, if at all, solely to the person with whom MLPF&S has contracted directly and does not extend beyond the delivery of this report (unless otherwise agreed specifically in writing by MLPF&S). MLPF&S is and continues to act solely as a broker-dealer in connection with the execution of any transactions, including transactions in any securities mentioned in this report.

Copyright and General Information regarding Research Reports:

Materials prepared by BofA Merrill Lynch 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 Merrill Lynch, including investment banking personnel. BofA Merrill Lynch has established information barriers between BofA Merrill Lynch Global Research and certain business groups. As a result, BofA Merrill Lynch does not disclose certain client relationships with, or compensation received from, such issuers in research reports. To the extent this report 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 report. BofA Merrill Lynch Global Research personnel's knowledge of legal proceedings in which any BofA Merrill Lynch entity and/or its directors, officers and employees may be plaintiffs, defendants, co-defendants or co-plaintiffs with or involving issuers mentioned in this report 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 Merrill Lynch in connection with the legal proceedings or matters relevant to such proceedings.

This report 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 MLPF&S, 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 Merrill Lynch 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 Merrill Lynch and its affiliates) was obtained from various sources and we do not guarantee its accuracy. This report may contain links to third-party websites. BofA Merrill Lynch 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 report and is not incorporated by reference into this report. The inclusion of a link in this report does not imply any endorsement by or any affiliation with BofA Merrill Lynch. 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 Merrill Lynch 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 the report and are subject to change without notice. Prices also are subject to change without notice. BofA Merrill Lynch is under no obligation to update this report and BofA Merrill Lynch's ability to publish research on the subject issuer(s) in the future is subject to applicable quiet periods. You should therefore assume that BofA Merrill Lynch will not update any fact, circumstance or opinion contained in this report.

Certain outstanding reports may contain discussions and/or investment opinions relating to securities, financial instruments and/or issuers that are no longer 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 MLPF&S 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 Merrill Lynch nor any officer or employee of BofA Merrill Lynch accepts any liability whatsoever for any direct, indirect or consequential damages or losses arising from any use of this report or its contents.

Research Analysts

US

David Woo
FX, Rates & EM Strategist
MLPF&S
+1 646 855 5442
david.woo@baml.com

Ralph Axel
Rates Strategist
MLPF&S
+1 646 855 6226
ralph.axel@baml.com

Paul Ciana, CMT
Technical Strategist
MLPF&S
+1 646 855 6007
paul.ciana@baml.com

Shyam S.Rajan
Rates Strategist
MLPF&S
+1 646 855 9808
shyam.rajan@baml.com

John Shin
FX Strategist
MLPF&S
+1 646 855 9342
joong.s.shin@baml.com

Vadim Iaralov
FX Strategist
MLPF&S
+1 646 855 8732
vadim.iaralov@baml.com

Carol Zhang
Rates Strategist
MLPF&S
+1 646 855 8311
carol.zhang@baml.com

Europe

Ralf Preusser, CFA
Rates Strategist
MLI (UK)
+44 20 7995 7331
ralf.preusser@baml.com

Ruben Segura-Cayuela
Europe Economist
MLI (UK)
+44 20 7995 2102
ruben.segura-cayuela@baml.com

Mark Capleton
Rates Strategist
MLI (UK)
+44 20 7995 6118
mark.capleton@baml.com

Athanasios Vamvakidis
FX Strategist
MLI (UK)
+44 20 7995 0790
athanasios.vamvakidis@baml.com

Sphia Salim
Rates Strategist
MLI (UK)
+44 20 7996 2227
sphia.salim@baml.com

Kamal Sharma
FX Strategist
MLI (UK)
+44 20 7996 4855
ksharma32@baml.com

Myria Kyriacou
FX Strategist
MLI (UK)
+44 20 7996 1728
myria.kyriacou@baml.com

Ruairi Hourihane
Rates Strategist
MLI (UK)
+44 20 7995 9531
ruairi.hourihane@baml.com

Sebastien Cross
Rates Strategist
MLI (UK)
+44 20 7996 7561
sebastien.cross@baml.com

Pac Rim

Tony Morriss
Rates Strategist/Economist
Merrill Lynch (Australia)
+61 2 9226 5023
tony.morriss@baml.com

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

Shuichi Ohsaki
Rates Strategist
Merrill Lynch (Japan)
+81 3 6225 7747
shuichi.ohsaki@baml.com

Yang Chen
Rates Strategist
Merrill Lynch (Hong Kong)
+852 3508 8695
ychen8@baml.com

Shusuke Yamada, CFA >>
FX/Equity Strategist
Merrill Lynch (Japan)
+81 3 6225 8515
shusuke.yamada@baml.com

Phear Sam
Rates Strategist
Merrill Lynch (Australia)
+61 2 9226 5773
phear.sam@baml.com

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

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

Refer to "Other Important Disclosures" for information on certain BofA Merrill Lynch entities that take responsibility for this report in particular jurisdictions.