Rates and Currencies Research | Global
07 July 2014

Bank of America Merrill Lynch

A message from the rates skew

By Ruslan Bikbov

Global Rates & Currencies Research
MLPF&S

Ruslan Bikbov +1 646 855 9770
Rates Strategist
MLPF&S
ruslan.bikbov@baml.com

Adarsh Sinha +852 2161 7155
FX Strategist
Merrill Lynch (Hong Kong)
adarsh.sinha@baml.com

Yang Chen +852 3602 1695
Rates Strategist
Merrill Lynch (Hong Kong)
ychen8@baml.com

See Team Page for Full List of Contributors

Chart of the Day: The skew surface has flattened

Note: The chart shows 3m10y risk reversal defined as the spread between 3m10y 25bp-high and 25bp-low normal volatilities.
Source: BofA Merrill Lynch Global Research

Why Treasury investors should watch the skew

Implied swaption skew contains important information about the future direction of interest rates. Historically, a steeper skew surface tended to predict a greater likelihood of a subsequent market selloff and smaller returns on bonds, on average. A flatter skew surface tended to predict a higher likelihood of a subsequent market rally and greater returns on bonds, on average. This is opposite to what should be expected if the skew market was “efficient”. We believe the reason for this negative correlation between implied skew and subsequent bond returns is that the skew contains important information about market positioning. A flatter skew surface may indicate an increased demand for low strikes to hedge core shorts, and vice versa.

These observations have important implications for rates in the current environment, in our view. The skew has notably flattened since last year, which may indicate still elevated core short positions in the US rates markets (see Chart of the Day). Investors, therefore, should be cautious when establishing new shorts.

Recent Liquid Insight Publications

Refer to important disclosures on page 8 to 10. Analyst Certification on Page 7. Link to Definitions on page 7.

Skew in theory…

When high strike volatility trades above low strikes, the implied distribution of rates is skewed toward higher rates. Therefore, assuming efficient markets and no risk premiums, future rates should typically realize below forwards, but the average size of a market selloff should exceed the average size of a market rally, so that the average return on a bond should be zero. This is because the mean of such a distribution, equal to the forward rate, should be above its median. If the implied skew surface steepens, i.e., high strikes richen to low strikes, we should expect fewer market selloffs (relative to forwards), with the average size of a selloff increasing relative to the average size of a market rally. The opposite should be the case if the skew flattens.

…and skew in practice

However, the empirical relationship between implied skews and subsequent returns on rates reveals a very different story. Historically, a steeper skew surface indicated a greater likelihood of a subsequent market selloff, so rates tended to realize above forwards, on average, while the opposite tended to be the case when the skew surface flattened.

In Table 1 we analyze historical percentiles of the 3m change in the 3m10y risk reversal. For each such percentile we compute average and median returns on a long 10y position in the following 1m. Returns on the 10y are calculated simply as the spread between 1m10y forward and spot 10y rate 1m later. We also report the frequency of subsequent negative returns on the 10y, i.e., months where the 10y rate was realized above the corresponding forward rate, in each of the percentile analyzed.

Table 1 clearly demonstrates that a steeper implied skew was followed by a greater likelihood of a subsequent market selloff. The frequency of subsequent market selloffs in the top percentile of the skew (54%) was greater than that in the middle percentile (50%). Further, subsequent returns were not skewed toward higher rates in the top percentile of the implied skew, which is evident from the fact the average return at -1.41bp was greater than the median return at -5.3bp in this percentile. As a result, a steeper skew was followed by negative bond returns, on average. These findings are exactly opposite to what we could expect if implied skews presented unbiased ex-ante distribution of rates.

Table 1: Steeper skew is followed by more frequent market selloffs

	subsequent 1m returns on 10y		
percentile of 3m chg in 3m10y RR	avg return, bp	median return, bp	frequency of -ve returns, %
<33	12.40	10.15	0.28
33-66	1.96	-0.65	0.50
>66	-1.41	-5.30	0.54
unconditional	4.27	3.50	0.44

Note: We analyze three historical percentiles of 3m changes in the 3m10y risk reversal of equal size. For each percentile we computed average and median returns on the 10y in the following month, calculated as the spread between current 1m fwd 10y rate and spot 10y rate 1m later. We also report the frequency of subsequent negative returns in each percentile. The same statistics are also reported unconditionally. We use monthly observations for this analysis. Sample: 2004-2014.
Source: BofA Merrill Lynch Global Research

Table 2: Skew is a significant predictor of bond returns

betas (t-stats) from the predictive regression of 1m bond returns			
const	3m chg in RR	1m chg in 10y rate	R2, %
2004-2014 sample			
4.29 (1.86)	-2.14 (-2.86)		6.5
4.11 (1.78)	-2.01 (-2.65)	-0.09 (-0.97)	7.1
2010-2014 sample			
4.53 (1.56)	-2.59 (-2.63)		12.4
4.06 (1.42)	-2.13 (-2.12)	-0.23 (-1.66)	17.1

Note: The table shows betas and t-stats from predictive regressions of 1m bond returns. Explanatory variables are 3m change in 3m10y 25-out risk reversal and 1m change in the 10y rate. The left hand side in the regressions is a return on the 10y in the following month, defined as the spread between 1m fwd 10y rate in the current month and spot 10y rate 1m later. T-stats are reported in parentheses. We use monthly observations for these regressions.
Source: BofA Merrill Lynch Global Research

Similarly, a flatter implied skew tended to indicate a greater likelihood of a subsequent market rally. The frequency of subsequent bond market rallies in the bottom percentile of historical skew changes was greater than that in the middle percentile by as much as 22%. As a result, a flatter skew was followed by positive bond returns, on average (Table 1).

The predictive ability of the skew for future bond returns is statistically significant. T-stats from a simple linear regression of subsequent 1m bond returns on the change in the skew in the last 3m are significant at conventional levels (Table 2). This predictive ability remained significant after the financial crisis of 2008, so it is not just due to the period of high rates volatility in 2008-09, which could potentially bias our regressions (Table 2).

Does the skew capture momentum?

What could explain the negative correlation between implied skews and subsequent bond returns? One potential explanation is that the skew may be capturing the momentum effect in the rates market. Perhaps, investors could be buying high strikes when rates trend up and buying low strikes when rates are on a downward trend. However, Table 2 shows that the skew remains a significant predictor of interest rates even if controlled for the change in the 10y rate in the previous month. Other momentum indicators we have tried cannot explain the predictive ability of the skew either.

Skew as an indicator of positioning

We believe a more plausible explanation for the apparent predictive ability of the skew for bond returns is that it contains important information about duration positioning. Core short positions could be hedged with OTM receivers, which should increase the price of low strikes to high strikes, all else being equal. As a result, a flatter skew surface could indicate short duration positions. Similarly, a steeper skew surface may indicate a build-up of core longs hedged with OTM payers.

We have found a positive correlation of about 25% between monthly changes in the price of the 3m10y risk reversal and the average duration allocation target from the SMR survey of portfolio managers. This supports our conjecture. We have also found that the SMR survey is not significant if added to the predictive regression in Table 2. This may imply the skew is a cleaner measure of positioning than surveys.

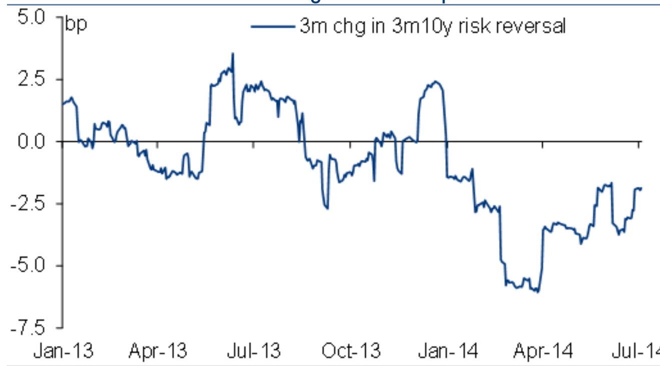
Flattening skew may point to still elevated core shorts

The dynamics of the skew surface and the rates market this year has been broadly consistent with the historical experience discussed above. The skew surface sharply flattened by the end of December 2013 and has continued to flatten since then (see Chart of the Day). Rates have declined since the beginning of the year.

The skew has been flattening in the last three months, although the pace of this flattening has declined since March (Chart 1). As explained above, one interpretation of this price action is that core short positions continue to build up, although at a smaller pace.

If history is any guide, the analysis presented in Tables 1 and 2 suggests that continuing flattening of the swaption skew may indicate that a market rally is more likely to realize than a selloff in the near term, even though the risk of a rally could be smaller now given lower pace of skew flattening. We therefore believe that investors should be cautious when establishing new shorts in this market.

Chart 1: Skew has been flattening at a smaller pace



Note: The chart shows 3m change in the 3m10y risk reversal defined as the spread between 3m10y 25bp-high and 25bp-low normal volatilities.
Source: BofA Merrill Lynch Global Research

Notable Rates and FX research

* Rates and Currencies 2014 Year Ahead, 24 November 2013.
* USDJPY taking a dive, FX Quant Trader, 30 June 2014.
* The US is back…, Global Rates and FX Weekly, 3 July 2014.
* Still in the game, US Rates Weekly, 3 July 2014.
* Carry, high beta and contrarian trades, Liquid Cross Border Flows, 7 July 2014.

Key trade ideas

Top Rates and FX trades for 2014

For rationale and details, refer to Global Rates & Currencies 2014 Year Ahead: Divergence and Volatility, 24 November, 2013

Rates:

Closed at 2.4%: Short 10y Treasuries, entry: 2.78%, target: 3.5%, stop: 2.4%

Buy a USD 6m10y straddle for 433bp, selling a 6m10y CAD straddle for 379bp

Buy UKT 3Q 44 on ASW, entry: -26bp, target: -15bp, stop: -32bp

Buy 2y2y US inflation swap rate (at 2.31%) and sell 5y2y EZ inflation swap rate (at 1.93%), entry: 38bp, target: 70bp, stop: 15bp

Closed at 101bp: Buy Nov16 BTP vs Oct16 OBL, entry: 159bp, target: 27bp roll-down, stop: 185bp

Closed at 130bp: Buy JGBi 10y BEI, entry: 98bp, target: 130bp

Closed at 217bp: Receive AUD 1y2y against USD 1y2y, entry: 274bp, target: 200bp, stop: 300bp

FX:

Closed at 0bp: Buy a 6m ATM EUR put/USD call, with strike at 1.3465, entry: 2.13%

Buy 2y AUD/USD volatility, entry: 10.8%, target: 15%

Closed at 0bp: Buy a GBP/CHF 3m call fly (1×2×1, strikes 1.4950, 1.54, 1.5850), entry: 39bp

Closed at 0%: Buy a 6m EUR/GBP digital put option, with strike at 0.80 (spot: 0.8344), entry: 16.5%

Closed at 7.80: Buy MXN/JPY, entry: 7.68, target: 8.40, stop: 7.80 (previous 7.38)

Existing open trades

Rates:

Buy $200mm T1.5% 5/31/19 vs selling duration weighted T3.375% 5/15/44 (5s-30s curve steepener), Entry: 175.25bp, target: 200bp, stop-loss: 160bp

* Increasing inflation risks versus a Fed on hold. We see more balanced positioning, the end of QE, and the reduction of foreign official purchases as favorable to the trade

Long Italian 5y2y via the May 19 and May21 BTPS, entry: 4.23%, target: 3.1%, stop-loss: 4.85%

* To position for our long bias in peripherals and especially in Italy. 5y2y looks attractive given solid demand for the new 7y at the Italian auction and highest 1y roll at almost 1%.

Short 50mn 10y Treasuries (2.5% 5/15/2014), entry: 2.55% target: 2.9%, stop-loss: 2.35%

* we re-initiate our short duration view on rebound in 2Q growth, tick up in inflation, discussion on the exit strategy and the eventual hike in June FOMC, better positioning and technical reasons

Closed at 145bp: Pay 5y5y USD vs 5y5y EUR, entry: 136bp, target: 147bp, stop: 131bp

* To position for structural divergence between the two economies. 5y5y spread offers more attractive level, better roll and cleaner positioning

Buy $100mn 3m10y ATMF-1bp receivers vs $45.5mn 3m30y receivers, Entry cost: 0, target: P&L of +$250K, stop-loss: loss of $125K

* The trade has attractive carry with a limited downside in a market selloff scenario. We expect the curve to steepen in a market rally driven by either weak economic data or dovish Fed communication

Closed at $950K at Buy 4,000 Sep-2014 expiry 98.25 mid-curve puts vs sell 98.00 puts on EDU6, and sell 4,000 98.75 Sep-2014 expiry calls on EDU6. Premium paid: $400k, target: $1.5mm; stop loss: -$750k

* We favor short duration positions after the recent decline in rates but prefer to express our short position in the front end of the curve given that rate hikes are still likely in 2015 despite increased uncertainty about the longer-term neutral policy rate

Buy ¥5bn of 3m10y ATM (0.82%) straddle holding to expiry, cost: ¥52.6mn, terminal breakeven: 11bp (spot: 0.78%), Stop-loss: loss of ¥20mn

* Implied vol is at record low. We recommend long volatility to position for risks of volatility events such as geopolitical risk, TPP, GPIF, fiscal policy and monetary policy.

Buy ¥5bn 2y20y payer @1.85% (ATM+6bp) vs sell ¥9.2bn 2y10y payer ATM (1.14%). Entry cost: 0, target: P&L ¥10mn, stop-loss: loss of ¥5mn

* We recommend conditional bear steepener as BoJ accounts for large share of JGB purchases up to the 10yr sector, while in the over-10yr sectors, there are increased issuance and tapered purchases. 2y20y volatility also looks cheap.

Buy $100mn ATM 1m10y payers, Premium: $680K, target: 1.4mn, stop-loss: entire premium

* Economic data in coming weeks could further strengthen as we get payback from the extreme winter weather. Carry is less punitive in being short 10s

Short 5y10y EUR inflation, entry: 2.26%, target: 2.06%, stop: 2.36%

* A disinflationary trade on EUR inflation. Historical metrics, roll-down and new 2030 issuance from Germany are key supporting arguments

Buy the ERU6 (Sep16) 99.125/99.00 Jul put spread for 3.5 ticks, target: 5 ticks

* We favor downside positions in futures rather than OIS ahead of the ECB meeting and express this view via options as the probability of imminent ECB action is low but not zero

Enter a 1y1y vs 3y1y Eonia steepener, current: 68.5bp, target: 84bp, stop: 63bp

* With the ECB expected to remain on hold, we expect a bear steepening of the curve. Should the ECB surprise markets, we see a simple refi rate cut as the most likely step, which would also steepen the 1y1y-3y1y curve

Buy $125.87mn 1y2y ATM payers, sell $125.87mn 1y2y ATM+25bp payers vs sell $250mn 1y1y ATM+68bp payers, target: P&L $125K, stop-loss: loss of $60K

* Monetizes the richness of vols and payer skews and should benefit from a steeper Reds/Greens curve

Buy $100mm T1.5% 2/28/19 vs paying in a matched-maturing swap, Entry cost: 8.1bp, target: 12bp, stop-loss: 6bp

* Hedge a flight-to-quality event with a relatively low cost long spread position

Buying EUR100mm 1m1y ATM vs selling 1m1y ATM+10bp payers. Entry cost: 3bp, target: maturity, maximum 7bp gain.

* Market pricing in too aggressive ECB easing. This trade is a short term technical positioning for ECB disappointment.

Buying $100mm 3m5y ATMF (1.77%) receivers vs selling $26mm 3m30y ATMF (3.71%) receivers. Entry cost: 0, Stop-loss: -$100K, target: +$200K.

* To position for continuing data weakness while been protected against a market selloff

FX:

Sell AUD/JPY ATM straddle at 11.10 (8th May) and buying AUD/JPY ATM straddle at 11.40 (9th July) with delta-hedge

* Flat volatility curve is underpricing risk from Japan data and further BoJ induced volatility over the summer

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 the risks involved with investing in listed options: http://www.theocc.com/about/publications/character-risks.jsp

Link to Definitions

Macro

Click here for definitions of commonly used terms.

Analyst Certification

We, David Woo, Adarsh Sinha and Yang Chen, hereby certify that the views expressed in this research report about securities and issuers accurately reflect our respective models applied in the analysis. 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.

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 revenues.

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

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.

From time to time research analysts conduct site visits of covered companies. BofA Merrill Lynch policies prohibit research analysts from accepting payment or reimbursement for travel expenses from the company for such visits.

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://www.ml.com/media/43347.pdf.

"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): Merrill Lynch (France): Merrill Lynch Capital Markets (France) SAS; Merrill Lynch (Frankfurt): Merrill Lynch International Bank Ltd., Frankfurt Branch; Merrill Lynch (South Africa): Merrill Lynch South Africa (Pty) Ltd.; Merrill Lynch (Milan): Merrill Lynch International Bank Limited; MLI (UK): Merrill Lynch International; Merrill Lynch (Australia): Merrill Lynch Equities (Australia) Limited; Merrill Lynch (Hong Kong): Merrill Lynch (Asia Pacific) Limited; Merrill Lynch (Singapore): Merrill Lynch (Singapore) Pte Ltd.; Merrill Lynch (Canada): Merrill Lynch Canada Inc; Merrill Lynch (Mexico): Merrill Lynch Mexico, SA de CV, Casa de Bolsa; Merrill Lynch (Argentina): Merrill Lynch Argentina SA; Merrill Lynch (Japan): Merrill Lynch Japan Securities Co., Ltd.; Merrill Lynch (Seoul): Merrill Lynch International Incorporated (Seoul Branch); Merrill Lynch (Taiwan): Merrill Lynch Securities (Taiwan) Ltd.; DSP Merrill Lynch (India): DSP Merrill Lynch Limited; PT Merrill Lynch (Indonesia): PT Merrill Lynch Indonesia; Merrill Lynch (Israel): Merrill Lynch Israel Limited; Merrill Lynch (Russia): OOO Merrill Lynch Securities, Moscow; Merrill Lynch (Turkey I.B.): Merrill Lynch Yatirim Bank A.S.; Merrill Lynch (Turkey Broker): Merrill Lynch Menkul Değerler A.Ş.; Merrill Lynch (Dubai): Merrill Lynch International, Dubai Branch; MLPF&S (Zurich rep. office): MLPF&S Incorporated Zurich representative office; Merrill Lynch (Spain): Merrill Lynch Capital Markets Espana, S.A.S.V.; Merrill Lynch (Brazil): Bank of America Merrill Lynch Banco Multiplo S.A.; Merrill Lynch KSA Company, Merrill Lynch Kingdom of Saudi Arabia Company.

This research report has been approved for publication and is distributed in the United Kingdom to professional clients and eligible counterparties (as each is defined in the rules of the Financial Conduct Authority and the Prudential Regulation Authority) by Merrill Lynch International and Bank of America Merrill Lynch International Limited, which are authorized by the Prudential Regulation Authority and regulated by the Financial Conduct Authority and the Prudential Regulation Authority, and is distributed in the United Kingdom to retail clients (as defined in the rules of the Financial Conduct Authority and the Prudential Regulation Authority) by Merrill Lynch International Bank Limited, London Branch, which is authorised by the Central Bank of Ireland and subject to limited regulation by the Financial Conduct Authority and Prudential Regulation Authority - details about the extent of our regulation by the Financial Conduct Authority and Prudential Regulation Authority are available from us on request; has been considered and distributed in Japan by Merrill Lynch Japan Securities Co., Ltd., a registered securities dealer under the Financial Instruments and Exchange Act in Japan; is distributed in Hong Kong by Merrill Lynch (Asia Pacific) Limited, which is regulated by the Hong Kong SFC and the Hong Kong Monetary Authority (note that 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); is issued and distributed in Taiwan by Merrill Lynch Securities (Taiwan) Ltd.; is issued and distributed in India by DSP Merrill Lynch Limited; 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) and Merrill Lynch (Singapore) Pte Ltd. (Company Registration No.'s F 06872E and 198602883D respectively). Merrill Lynch International Bank Limited (Merchant Bank) and Merrill Lynch (Singapore) Pte Ltd. are regulated by the Monetary Authority of Singapore. 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) distributes 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 made by Bank of America Merrill Lynch Banco Múltiplo S.A. in accordance with applicable regulations. Merrill Lynch (Dubai) is authorized and regulated by the Dubai Financial Services Authority (DFSA). Research reports prepared and issued by Merrill Lynch (Dubai) are prepared and issued in accordance with the requirements of the DFSA conduct of business rules.

Merrill Lynch (Frankfurt) distributes this report in Germany. Merrill Lynch (Frankfurt) 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.

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. 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 any specific person. 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://www.ml.com/media/43347.pdf.

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.

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 companies 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 companies 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 company(ies) 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.

Team Page

US

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

Priya Misra +1 646 855 6467
Rates Strategist
MLPF&S
p.misra@baml.com

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

Ruslan Bikbov +1 646 855 9770
Rates Strategist
MLPF&S
ruslan.bikbov@baml.com

Brian Smedley +1 646 855 9809
Rates Strategist
MLPF&S
brian.smedley@baml.com

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

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

Marcus Huie +1 646 855 6389
Rates Strategist
MLPF&S
marcus.huie@baml.com

MacNeil Curry, CFA, CMT +1 646 855 6781
Technical Strategist
MLPF&S
macneil.curry@baml.com

John Hopkinson +1 646 855 6246
FX Strategist
MLPF&S
john.hopkinson@baml.com

Ankur Singh +1 646 855 9699
FX Strategist
MLPF&S
ankur.singh@baml.com

Ian Gordon +1 646 855 8749
FX Strategist
MLPF&S
ian.gordon@baml.com

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

Europe

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

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

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

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

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

Pac Rim

Shogo Fujita +81 3 6225 6684
Rates Strategist
Merrill Lynch (Japan)
shogo.fujita@baml.com

Adarsh Sinha +852 2161 7155
FX Strategist
Merrill Lynch (Hong Kong)
adarsh.sinha@baml.com

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

Yang Chen +852 3602 1695
Rates Strategist
Merrill Lynch (Hong Kong)
ychen8@baml.com

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

Global Emerging Markets

Alberto Ades +1 646 855 4044
GEM FI/FX Strategy, Economist
MLPF&S
alberto.ades@baml.com

Claudio Irigoyen +1 646 855 1734
LatAm FI/FX Strategist
MLPF&S
claudio.irigoyen@baml.com

David Hauner, CFA +44 20 7996 1241
EEMEA Strategist & Economist
MLI (UK)
david.hauner@baml.com

Claudio Piron +65 6591 0401
Emerging Asia FI/FX Strategist
Merrill Lynch (Singapore)
claudio.piron@baml.com

Isidore Smart +1 646 855 8083
GEM Economist
MLPF&S
isidore.smart@baml.com