

Sent: Tuesday, August 9, 2016 3:42:46 PM
From: "Ens, Amanda" <[REDACTED]>
Subject: RE: GEVI Highlights: Understanding when risk parity risk increases / buy the seasonal oil dip / own NKY calendar call
To: "jeffrey E." <jeevacation@gmail.com>

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Of course

From: jeffrey E. [mailto:jeevacation@gmail.com]
Sent: Tuesday, August 09, 2016 11:42 AM
To: Ens, Amanda
Subject: Re: GEVI Highlights: Understanding when risk parity risk increases / buy the seasonal oil dip / own NKY calendar call

Take me off wide email

On Tuesday, 9 August 2016, Ens, Amanda <[REDACTED]> wrote:

Highlights from this week's Global Equity Volatility Insights

US: Quantifying the (bond-equity correlation) risks to risk parity

- Last week's sharp sell-off in JGBs renewed fears of forced selling by risk parity funds [Chart 1]
- While the drawdowns in US Treasuries, US equities, and ultimately risk parity portfolios were small and short-lived [Chart 2], the latent risk remains worth monitoring, as
 - (i) leverage is still near max levels across a variety of risk parity parametrizations [Chart 3],
 - (ii) bond allocations are historically elevated, and

○ (iii) markets continue to be skeptical of a 2016 Fed hike

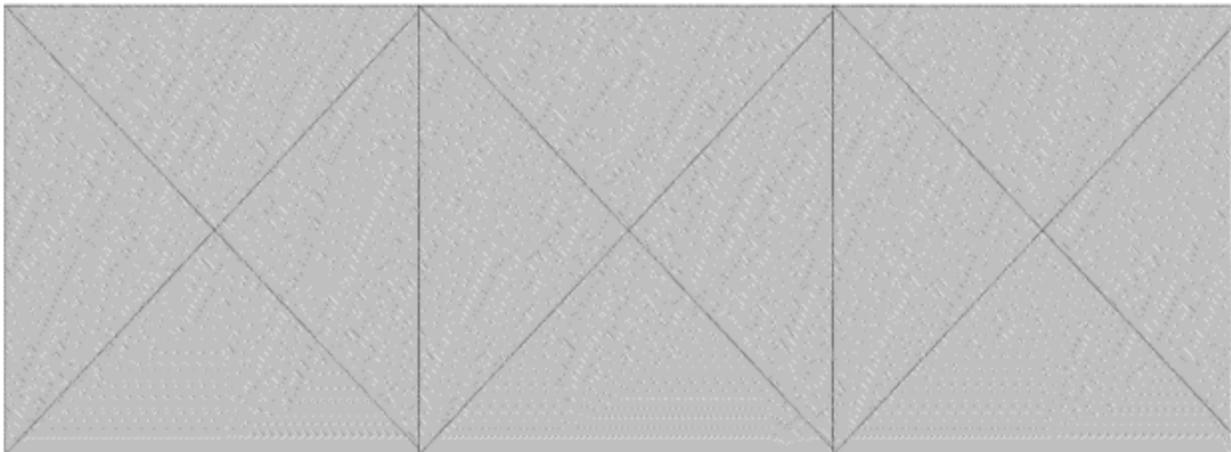
• Hence we provide a simple scenario tool to help investors assess what relative moves in bonds & equities could catalyze significant deleveraging by rules-based risk parity funds [Chart 4]

• For example, a -2% daily decline in the S&P 500 coupled with a -0.6% fall in 10y Treasury prices (poor diversification) could trigger a 25% deleveraging (of unlevered notional) today, whereas a -4% SPX drop and +1% Treasury rally (good diversification) would generate no selling pressure, underscoring the critical role played by bond-equity correlation in governing the severity of potential risk parity unwinds.

Last week's sharp sell-off in JGBs did not spill-over into US Treasuries

Consequently, risk parity portfolio volatility remained quite muted

Hence risk parity funds did not de-lever materially and remain highly levered



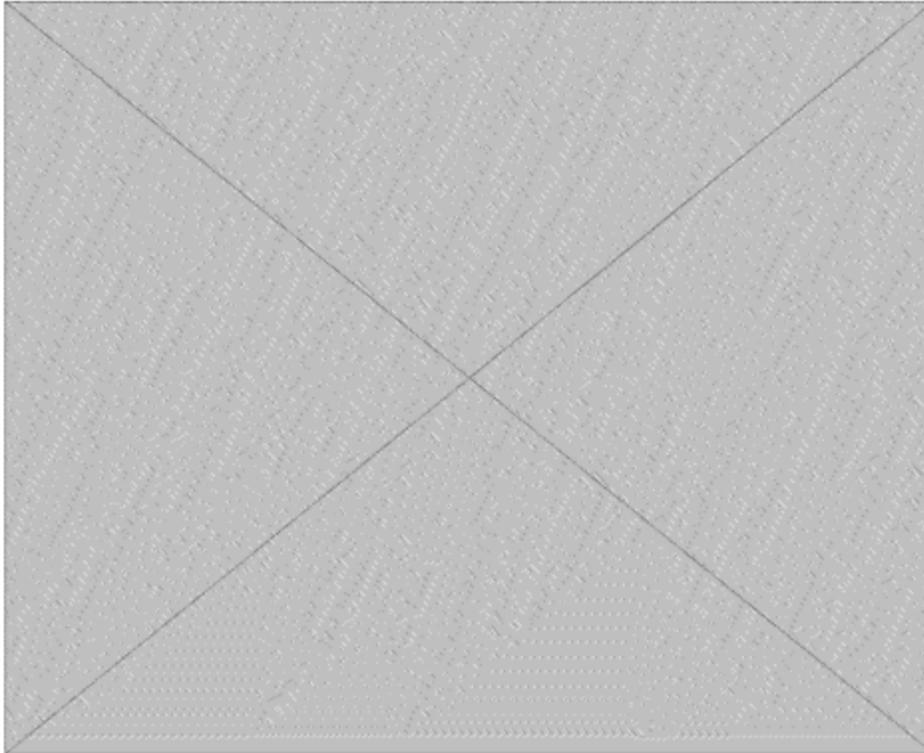
Source: BofA Merrill Lynch Global Research. Daily data from 4-Jan-16 through 5-Aug-16.

Source: BofA Merrill Lynch Global Research. Equity, fixed income, and commodity components within the hypothetical risk parity investment are represented by the S&P500, 10-Year US Treasury Bonds, and the S&P GSCI Index respectively. Risk parity allocations are determined and rebalanced monthly using prior 12-month realized volatility and correlations. Historical volatility calculated using EWMA with a lambda equal to 0.94.

Source: BofA Merrill Lynch Global Research. Daily data from 31-Dec-12 through 27-Jun-16. Equity, fixed income, and commodity components within the hypothetical risk parity investment are represented by the S&P500, 10-Year US Treasury Bonds, and the S&P GSCI Index, respectively. Risk parity allocations are determined and rebalanced monthly using prior 12-month realized volatility and correlations.

Current theoretical deleveraging amounts (of unlevered notional) for an equity/fixed income risk parity portfolio with an 8% target volatility overlay and 2x max leverage cap

Assumes a trailing unlevered volatility of 3.1%, unlevered equity and fixed income weights of 22% and 78% respectively, and leverage at a maximum of 2.0 times



Source: BofA Merrill Lynch Global Research. Data as of 5-Aug-16. Equity and fixed income components within the theoretical risk parity investment are represented by S&P 500 total return and 10-Year US Treasury Futures total return. Risk parity allocations are determined monthly and rebalanced using prior 12-month realized volatility. Unlevered portfolio volatility for determining target volatility leverage measured using EWMA with lambda equal to 0.94.

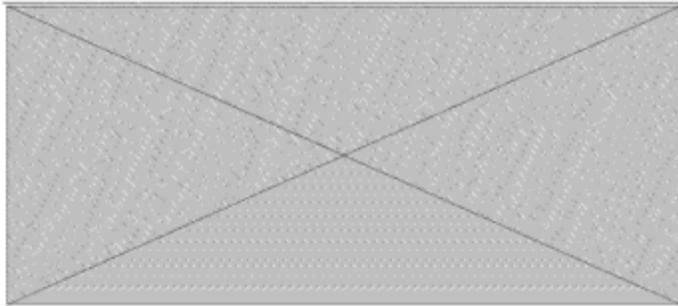
Europe: Buy the seasonal oil dip via bullish X-market risk reversals

Levered X-market risk reversal: Sell 1x USO 3M 25d (~88% strike) puts to fully fund 2.1x SXEP (Oil & Gas equity) 25d (~106% strike) calls (indic.)

- **The seasonal sell-off in oil presents a ‘buy the dip’ opportunity** according to our commodity strategists who expect prices to rebound to \$55/bbl by year end
- **BofAML strategists have turned bullish Oil & Gas equities** given more CB (BoE) easing, attractive div yields and exposure to the EM recovery narrative
- **SXEP has been the worst performing SXXP sector over the last 1M**, suggesting it has ample scope to rally if it is to catch up to the broader equity market (**1st chart**)
- **USO puts are rich vs. SXEP calls**: The number of long SXEP 25d calls that can be fully funded by selling 1 short USO 25d put is near historical highs (90th %ile since '08, **2nd chart**)
- **SXEP calls would have offered better value than USO calls** at current levels in terms of average historical payoffs as well as the frequency of positive returns (**3rd chart**)
- **CSPP has purchased an outsized proportion of Energy corporate bonds and this has yet to feed through to equities** according to our credit strategists (**4th chart**)

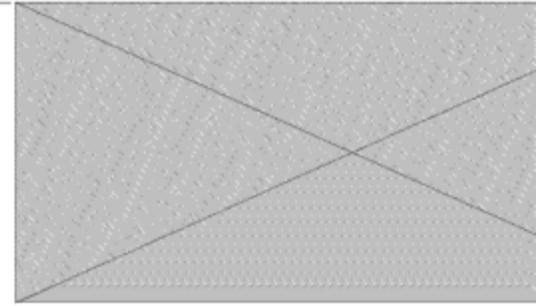
- **Potential USO losses may be dampened if the recent S/Oil correlation persists:** Since mid-2015 oil drawdowns have largely coincided with USD weakening (**5th chart**)
- **Alternative (unlevered) implementation:** Sell USO 25d puts to fund fully fund closer to the money SXEP calls for early participation in any potential SXEP rally (**6th chart**)

SXEP (Oil & Gas equity) has been the worst performing Stoxx 600 sector over the last 1M



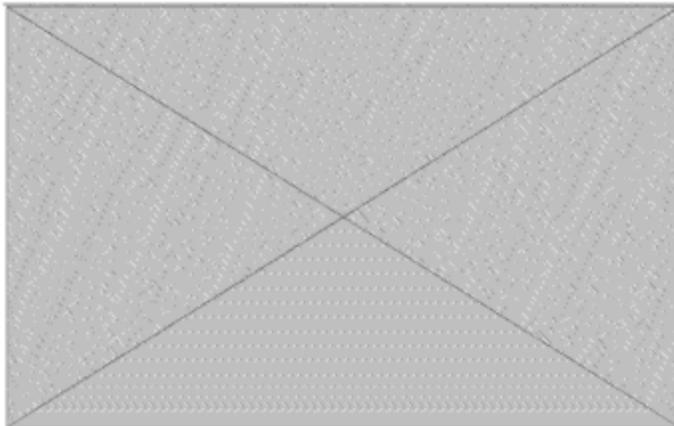
Source: BofA Merrill Lynch Global Research. Data from 7-Jul-16 to 5-Aug-16.

The leverage provided by the X-market risk reversal (SXEP call / short USO put) is attractive from a historical standpoint



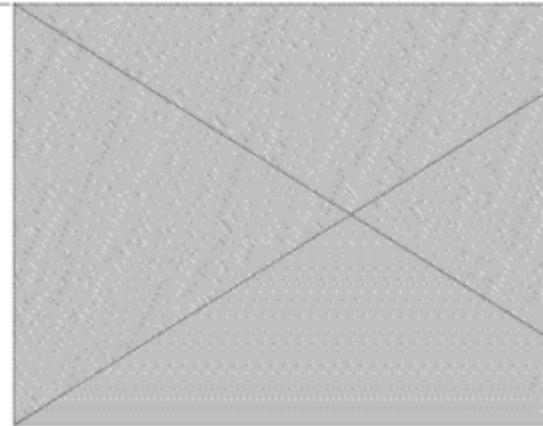
Source: BofA Merrill Lynch Global Research. Data as of 5-Aug-16, using indicative prices. *Percentiles since Jan-08.

Number of bonds purchased by the ECB in their CSPP programme by sector



Source: BofA Merrill Lynch Global Research.

Oil drawdowns have recently coincided with S weakening



Source: BofA Merrill Lynch Global Research. Data from 18-Apr-07 to 5-Aug-16.

Asia Pacific: Own NKY calendar call going into the uncertainty Sep BOJ

- Trade update: Closing the NKY Aug/Sep put calendar trade opened on 25-Jul
- NKY & USDJPY 1Mth vols are down to YTD low: Pricing in a slow summer
- USDJPY 2M-1M term structure at its steepest & NKY's in its 98th %-ile since 2011
- BofA ML: BoJ plans for Sep16 'comprehensive assessment' create uncertainty
- Market expectation for the Sep BOJ in terms of fwd vol is the near its lows YTD
- A further squeeze in US and Japanese yields is most positive Japan in Asia
- Buy 1x NKY Oct 17500 call, short 0.65x Sep 17250 call: Gamma neutral, long vol
Indicative pricing (as of 1-Aug-16, ref: 9120):

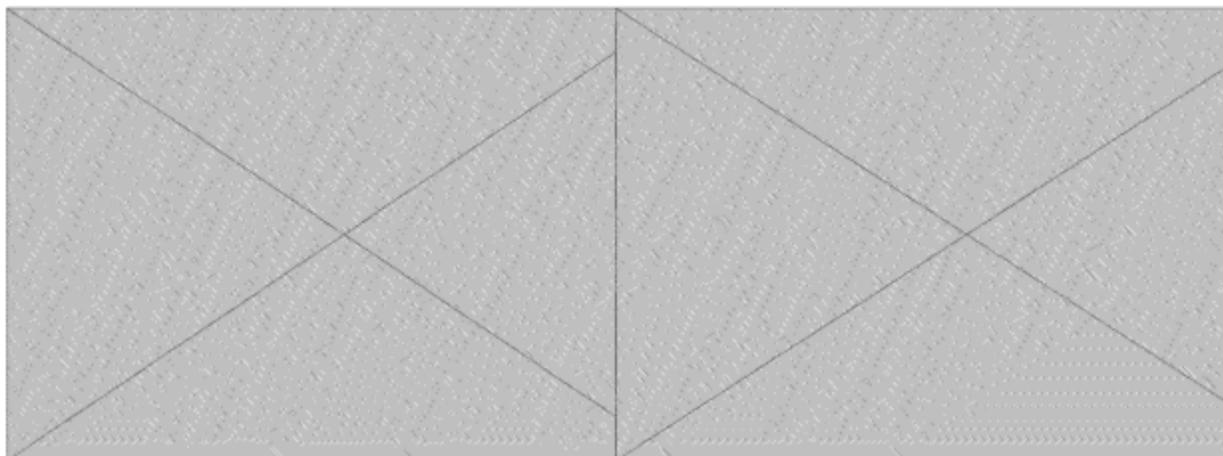
➤ Buy 1x NKY Oct 17500 call: 1.13% (¥187) (iv: 19.2, delta: 24%, gamma: 3.8%)

➤ Sell 0.65x NKY Sep 17250 call: 0.66% (¥110) (iv: 16.9, delta: 23%,
gamma: 5.9%)

➤ Net: 0.70% (¥116) (delta: +9, vega:
0.08%)

Japanese equity volatility has dropped to YTD lows; USDJPY short-dated vol also retraced to near YTD low levels

USDJPY 2M-1M ATM term structure (1.7%) is at its 5-year high while the NKY 2M-1M term structure (1.5%) is at its 98th percentile

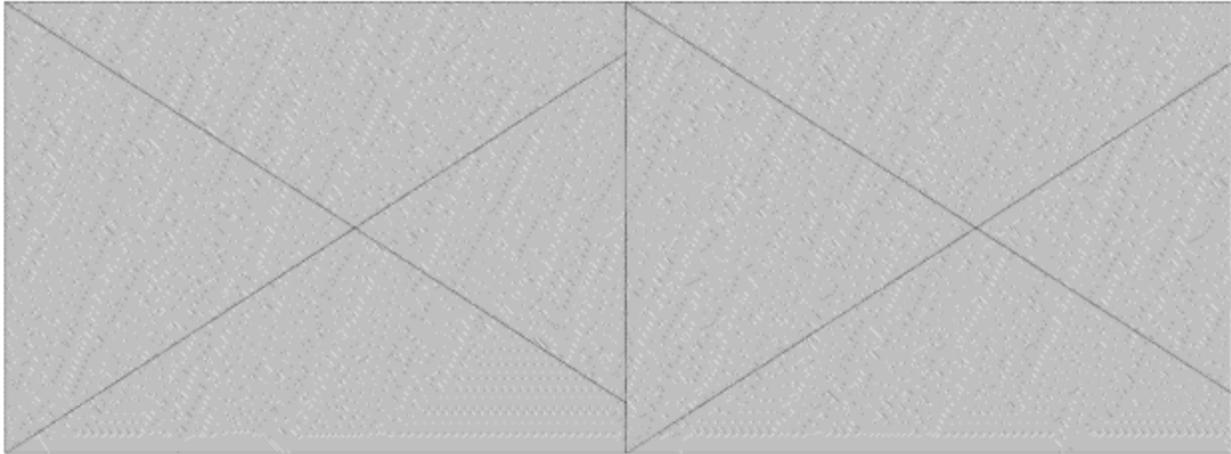


Source: BofA Merrill Lynch Global Research. Daily data from 5-Jan-16 to 5-Aug-16

Source: BofA Merrill Lynch Global Research.

Current NKY Sep-Oct ATM volatility is cheap relative to implied volatility going into previous BOJ meetings in 2016

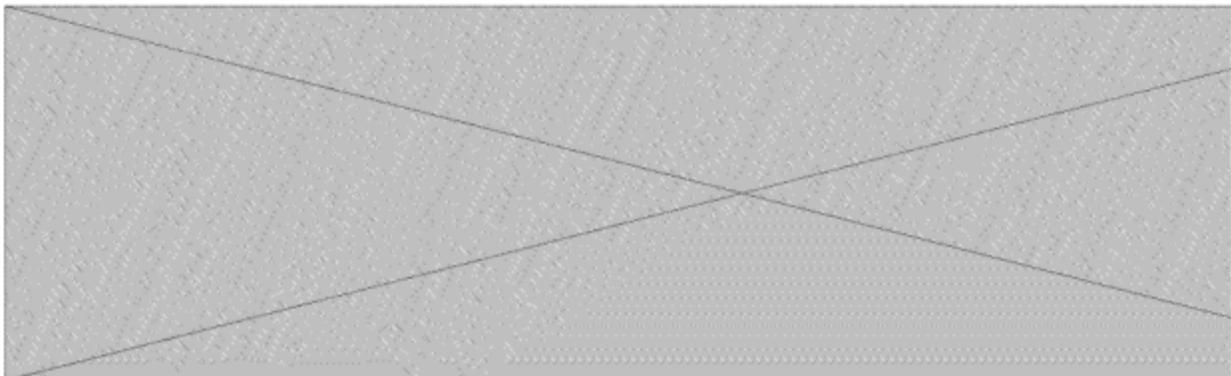
The Nikkei is the most sensitive to rising USD and JPY rates among Asian indices



Source: BofA Merrill Lynch Global Research.

Source: BofA Merrill Lynch Global Research. Weekly correlation since 2010

Mark-to-Market of the long 1x NKY Oct 17500 call, short NKY Sep 17250 call structure



Source: BofA Merrill Lynch Global Research. Assume volatility stays constant

Week in Review: US equities at new all-time highs on upbeat employment report

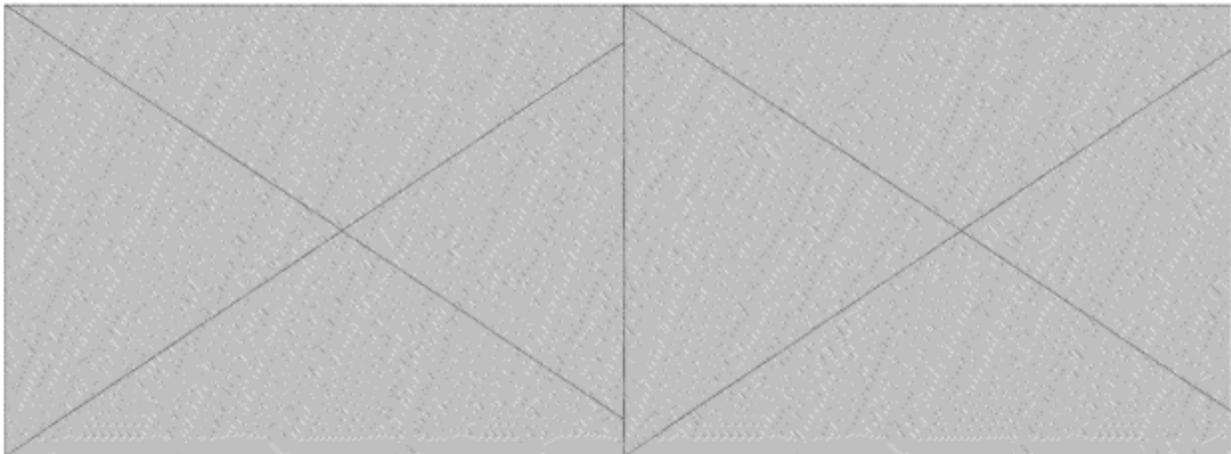
- The SPX vol term-structure steepened materially on lower shorter dated implied vol with the 1yr-1m ATMf implied vol spread reaching its highest level in almost 4 years [Chart 1]
- Near multi-year flat call skew on Biotech (IBB) makes long call spreads an attractive option strategy to initiate or replace long positions to lock-in profits from the recent strong

rally [Chart 2]

- The 2016 election move implied by the VIX term structure is, in our estimate*, approx. 1.4%... [Chart 3]
- ...which is notably very close to the typical SPX daily realized move post-elections since 1928 [Chart 4]

The SPX vol term-structure steepened materially on lower shorter dated implied vol with the 1yr-1m ATMf implied vol spread reaching its highest level in almost 4 years

Near multi-year flat call skew on Biotech (IBB) makes long call spreads an attractive option strategy to initiate or replace long positions to lock-in profits from the recent strong rally

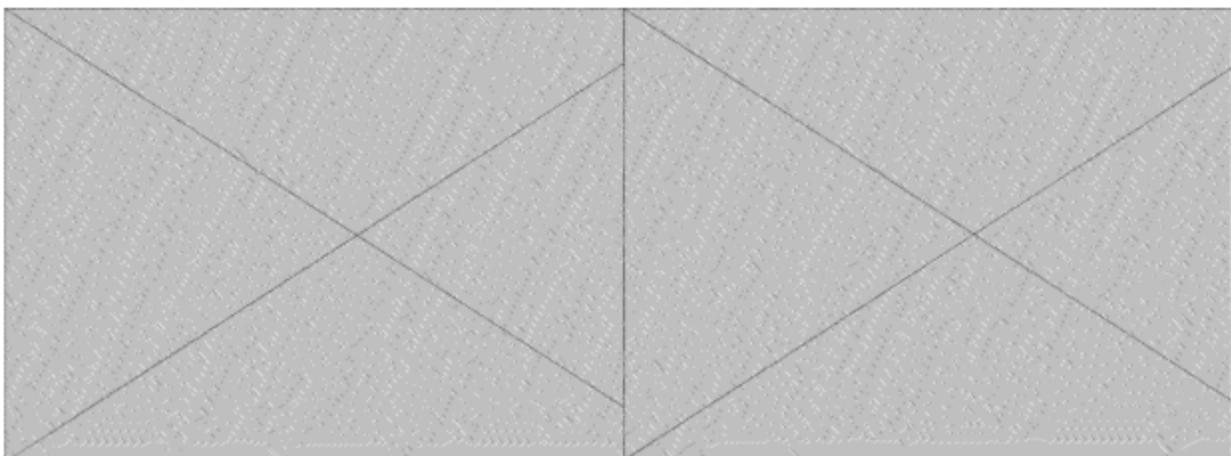


Source: BofA Merrill Lynch Global Research. Daily data from 8-Aug-12 to 8-Aug-16.

Source: BofA Merrill Lynch Global Research. Daily data from 5-Aug-11 to 5-Aug-16.

The 2016 election move implied by the VIX term structure is, in our estimate, approx. 1.4%...

...which is notably very close to the typical SPX daily realized move post-elections since 1928



Source: BofA Merrill Lynch Global Research. Daily data from 2-Jun-09 to 5-Aug-16.

Source: BofA Merrill Lynch Global Research. Data from Nov-28 to Aug-16.

US Equity Derivatives Research | BofA Merrill Lynch | Merrill Lynch, Pierce, Fenner & Smith Incorporated | +1 646-855-5480 [REDACTED] dg.rsch_americas_equity_derivatives@baml.com
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