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**From:** jeffrey E. <jeevacation@gmail.com>  
**Sent:** Tuesday, August 9, 2016 3:42 PM  
**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:  
<mailto:[REDACTED]>

Highlights from this week's Global Equity Volatility Insights<=u>

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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
  - o (i) leverage is still near max levels across a variety of risk parity parametrizations [Chart 3],
  - o (ii) bond allocations are historically elevated, and
  - o (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]<=p>
- \* 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.

Consequently, risk parity portfolio volatility remained quite muted

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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.

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Current theoretical deleveraging amounts (of unlevered notionals) 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

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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 <a href="http://rsch.baml.com/r?q=E5QZt35kk=kdKaOOwNxYqA&e=amanda.ens%40baml.com&h=17nHwQ">http://rsch.baml.com/r?q=E5QZt35kk=kdKaOOwNxYqA&e=amanda.ens%40baml.com&h=17nHwQ</a> who expect prices to rebound to \$55/bbl by year end

BAML strategists have turned bullish Oil & Gas equities <a href="http://rsch.baml.com/r?q=b5eXX=e-1PQdKaOOwNxYqA&e=amanda.ens%40baml.com&h=Eyhodw">http://rsch.baml.com/r?q=b5eXX=e-1PQdKaOOwNxYqA&e=amanda.ens%40baml.com&h=Eyhodw</a> 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)

CPP has purchased an outsized proportion of Energy corporate bonds and this has yet to feed through to equities according to our credit strategists <a href="http://rsch.baml.com/r?q=TZqUvbXCm=2ZLdmoUdWKDg&e=amanda.ens%40baml.com&h=V3m8UA">http://rsch.baml.com/r?q=TZqUvbXCm=2ZLdmoUdWKDg&e=amanda.ens%40baml.com&h=V3m8UA</a> (4th chart)

=C2\* =C2\* Potential USO losses may be dampened if the recent \$/Oil correlation persists: Since mid-2015 oil drawdowns have largely coincided with USD weakening (5th chart)

=C2\* =C2\* 6th chart)

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

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

SXEP calls would have generated a higher average payoff and more frequent positive returns vs. USO calls (when sized for an upfront cost equal to the current price of the USO 3M 25d put) <=u>

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

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

Source: BofA Merrill Lynch Global Research. Data from 1-Jan-16 to 5-Aug-16. Backtesting is hypothetical in nature and reflects application of the screen prior to its introduction. It is not intended to be indicative of future performance.

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

Oil drawdowns have recently coincided with \$ weakening

Selling the USO 25d put (~8.7 strike as of 5-Aug) to buy the SXEP 42d call (~280 strike as of 5-Aug) for ~0 provides early upside participation and a ~12% downside buffer on the short USO put leg

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Source: BofA Merrill Lynch Global Resear=h.

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

Source: BofA Merrill Lynch Global Resear=h. Data from 1-Jan-16 to 5-Aug-16. Backtesting is hypothetical in nature a=d reflects application of the screen prior to its introduction. It is not =tended to be indicative of future performance.

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Asia Pacifi=: Own NKY calendar =all going into the uncertainty Sep BOJ

- \* \*=A0 Trade update: Closing the NKY Aug/Sep put calen=ar trade opened on 25-Jul
- \* \*=A0 NKY & USDJPY 1Mth vols are down to YTD low:=Pricing in a slow summer
- \* \*=A0 USDJPY 2M-1M term structure at its steepest &am=; NKY's in its 98th %-ile since 2011
- \* \*=A0 BofA ML: BoJ plans for Sep16 'comprehensive=assessment' create uncertainty
- \* \*=A0 Market expectation for the Sep BOJ in terms of =wd vol is the near its lows YTD
- \* \*=A0 A further squeeze in US and Japanese yields is =ost positive Japan in Asia
- \* \*=A0 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% (¥=87) (iv: 19.2, delta: 24%, gamma: 3.8%)
  - \* Sell 0.65x NKY Sep 17250 call: =A0 0.66% (¥110) (iv: =6.9, delta: 23%, gamma: 5.9%)
  - \* Net: =C2 =A0 =C2 =A0 =wbr> 0.70% (¥116) (delta: +9, veg=: 0.08%)

Japanese equity volatility has dropped =o YTD lows; USDJPY short-dated vol also retraced to near YTD low levels=/u>

USDJPY 2M-1M ATM term structure (1.7%) =s at its 5-year high while the NKY 2M-1M term structure (1.5%) is at its 9=th percentile

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

Source: BofA Merrill Lynch Global Research.

Current NKY Sep-Oct ATM volatility is cheap relatively to implied volatility going into previous BOJ meetings in 2=16

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

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Source: BofA Merrill Lynch Global Research.

Source: BofA Merrill Lynch Global Research.=C2 Weekly correlation since 2010

Mark-to-Market of the long 1x NKY Oct 1=500 call, short NKY Sep 17250 call structure

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

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

\* =C2\* The SPX vol term-structure=steepened materially on lower shorter dated implied vol with the 1yr-1m ATM implied vol spread reaching its highest level in almost 4 years [Chart 1]

\* =C2\* 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]<=span>

\* =C2\* The 2016 election move implied by the VIX term structure is, in our estimate\*, approx. 1.4%... [Chart 3]

\* =C2\* ...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 ATM 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.

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