From: Paul Morris [redacted]
Sent: 2/5/2015 6:13:49 PM
To: Stewart Oldfield [redacted]
Subject: Fw: short crude vol strategy - follow-up analysis [I]

Classification: For Internal Use Only

From: Daniel Sabba
Sent: Thursday, February 05, 2015 05:49 PM
To: jeffrey E. <jeevacation@gmail.com>
Cc: Paul Morris; Vahe Stepanian; Richard Kahn <[redacted]>
Subject: RE: short crude vol strategy - follow-up analysis

Classification: **Public**

Jeffrey,

Our structuring desk did further analysis on the transaction – please see below. As discussed, let's speak further tomorrow morning.

Below numbers are still as of EOD yesterday:
Here is the same table as earlier and additional explanation regarding what it means.

Contract	Vol strike	Strike Date	Realized vol	Implied - Realized	Current Implied
CLH5	60%	13-Jan-15	79%	-19%	84%
CLJ5	43%	13-Jan-15	77%	-33%	56%
CLK5	42%	14-Jan-15	73%	-31%	54%

Let's focus on CLJ5 (April15) and similar applies to the other nodes. Vol strike was 43% and realized vol has been 77%. If the index had exposure only to this contract and not at all to the other contracts, and if realized vol *up to expiry* of this contract were also 77% then the implied-realized diff is 43%-77% = -34%. That is massive. This does not mean that you would lose 34% of the notional, but at least illustrates that you should expect the loss to be big. How much you actually lose is a daily path dependent calculation and cannot be summarized in a few sentences. If realized vol was EXACTLY same as implied vol also, the gain/loss would not be zero, but is a path dependent function.

Back of the envelope, with a 34% implied-realized difference, one can expect a loss of 17% because the index has a vega of, on *average* 0.5% of index notional; but at any given point in time even with vols unchanged, the vega could be anywhere between 0.33% and 0.67% (this is in steady state with vols unchanged, with changing vols, it could be a wider range).

As we know, the strategy of the index is to sell 3 straddles (collecting premium); and delta hedges daily at the close (in other words, trades the gamma). One would expect to lose money trading the gamma and the thesis behind the index is that generally the money you lose trading the gamma < the premium collected. Since 13 Jan, on average the opposite has been true. Trading the gamma has been expensive because the underlying futures prices have moved a lot day to day, which is what we are trying to capture in the realized vol numbers shown above. The straddles are also marked to market daily using settlement prices; if implied vol has increased, there is a further loss on the mtm. The last column in the table above shows where current implied vol is.

From: Daniel Sabba
Sent: Thursday, February 05, 2015 1:30 PM