GLOBAL VOLATILITY SUMMIT 2014

November 2013 Newsletter

2014 Event Details

Date. April 3rd, 2014

Location. 82 Mercer, SoHo, New York City

Managers. The following managers will be participating in 2014:

BlueMountain Capital
Capstone Investment Advisors
Capula Investment Management
Fortress Investment Group
Forty4 Asset Management
Ionic Capital Management
JD Capital Management
Parallax Volatility Advisors
Pine River Capital Management
Saiers Capital

Please continue to check the website for registration information and updates on the 2014 Global Volatility Summit
www.globalvolatilitysummit.com

2013 Event Recap

The fourth annual Global Volatility Summit ("GVS") took place on February 25th in New York City. Ten volatility and tail hedge managers hosted an audience of over 350 people.

Keynote speaker. Sal Khan, founder of The Khan Academy and author of *The One World Schoolhouse* gave an insightful presentation on using technology to innovate the way education is provided across the globe.

Questions?
Please contact info@globalvolatilitysummit.com

2013 November research piece

The Global Volatility Summit is a dynamic community of managers, investors, and industry experts, with the focused goal of educating the investment community about volatility strategies, and the roles they can play in institutional investment portfolios. Plans are underway for the 2014 event, so please let us know if you have any feedback on the topics you would like covered.

Amid the rapid growth of ETFs across global asset classes, it has become increasingly important to monitor the use of exchange traded products (ETPs), including those linked to volatility. Additionally, it is helpful to understand how growth in the use of these products impacts the derivatives market as a whole. Many of the sweeping changes in the volatility market are attributable to the growth of ETFs and volatility linked ETPs.

Dean Curnutt and Danny Kirsch of Macro Risk Advisors have shared their research on the growth and risk impact of VIX Exchange traded products. We think you will find their piece valuable and informative.

Cheers,
Global Volatility Summit

VIX Exchange Traded Products...Growth and Risk Impact

The growth of ETFs has been nothing short of tremendous. What started as a product designed to provide investors with broad equity or sector exposure in the US, the ETF landscape now includes a myriad of geographies (Europe, Asia) and asset classes (FX, rates, credit, commodities). Research consultancy firm EFTGI estimates that there are almost 5,000 ETFs globally with total AUM in excess of $2 trillion. This compares to less than 300 ETFs with total assets of just $168 billion 10 years prior. Amidst this impressive growth in products and assets under management, the increasing popularity of volatility linked exchange traded products (ETPs) stands out. In this note, we explore this growth and discuss the implications for this growth on the dynamics of the US equity derivatives market. We conclude that "this is not your father's vol market".

In January 2009, the VXX was launched. This exchange traded note provides exposure to SPX volatility through a mechanical strategy of owning a combination of the 1st and 2nd month VIX futures. Over time, the market for volatility ETPs has grown in complexity and is now comprised of leveraged, inverse, and curve focused volatility products. In fact, there are now even options on some of these leveraged volatility products creating leveraged volatility on leveraged volatility products! We provide a summary of the product set in the table below.

Summary of VIX ETNs and ETFs

Ticker	Price	Total Vega ($mm)	Term in Months	$ Vega / Share*	% Vega / Share**	Description	Avg Daily $ Traded ($mm)
VXX	**12.93**	**79.2**	**1m**	**0.86**	**6.7%**	**Rolling 1st and 2nd month VIX futures, constant 1m maturity**	**867**
VIXY	**34.61**	**15.2**	**1m**	**2.30**	**6.7%**	**Similar to VXX, but an ETF with a fungible creation basket**	**49**
VIIX	**69.88**	**0.8**	**1m**	**4.64**	**6.7%**	**Similar to VXX**	**20**
TVIX	11.29	20.1	1m	1.44	13.4%	ETN 2x daily return of VXX	81
UVXY	**25.19**	**36.2**	**1m**	**3.33**	**13.4%**	**ETF 2x daily return of VXX**	**315**
XIV	29.00	-33.3	1m	-1.95	-6.7%	ETN -1x daily return of VXX	462
SVXY	**113.99**	**-8.0**	**1m**	**-7.65**	**-6.7%**	**ETF -1x daily return of VXX**	**84**
VQT	141.40	n/a	1m	n/a	n/a	A managed portfolio of SPX and VXX (weights vary as volatilty moves)	3
CVOL	5.50	0.5	3m	0.65	11.6%	2x rolling 3rd and 4th month futures, and varying SPX short (0-2.5x)	0.4
VXZ	**18.06**	**2.8**	**5m**	**0.98**	**5.4%**	**Rolling 4th thru 7th month VIX futures**	**18**
VIXM	**22.13**	**4.2**	**5m**	**1.20**	**5.4%**	**Similar to VXZ, but an ETF with a fungible creation basket**	**5**
VIIZ	25.04	0.1	5m	1.36	5.4%	Similar to VXZ	0.6
TVIZ	45.18	0.2	5m	4.98	10.9%	ETN 2x daily return of VXZ	0.7
ZIV	34.09	-3.2	5m	-1.84	-5.4%	ETN -1x daily return of VXZ	4
XVIX	18.11	0.8	1m,5m	-.62 , 1.***	-3.4%,5.5%***	Equivalent of short 50% VXX and long 100% VXZ	0.1
XVZ	35.96	5.6	1m,5m	-.72 , 1.37***	-2.%,3.8%***	Dynamic Allocation of VXX (-30%-50%) and VXZ (50-100%)	2

*change in stock price for a 1 point change in the reference f ** % change in stock price for a 1 point change in the reference futures

*** short the constant 1m VIX and long the constant 5m VIX (assuming 30%/70% for XVZ)

Most Liquid (trades >$100mm/ day)

Moderately Liquid (trades >$1mm/ day)

Bold Font if options available

Source: Macro Risk Advisors, Bloomberg

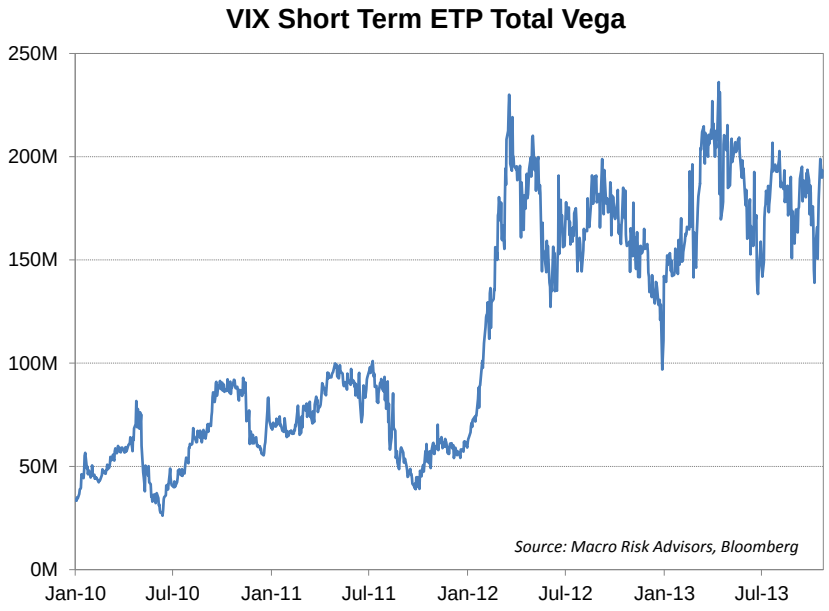
All told, the aggregate AUM for the VIX ETP universe is roughly $3.6 billion. Importantly, this constitutes approximately $200 million in option vega. The size, scope and impact of these new products came into focus in February 2012 as the shares outstanding of the TVIX (a 2x levered VXX) exploded in a short period of time. These inflows were substantial enough to cause a surge in VIX futures volume and to meaningfully move SPX implied volatility up and down. The table below illustrates this surge in volume.

	VIX Future and VIX ETN Vega Volume				
	VIX Feb Future	VIX Mar Future	VXX	TVIX	Total
2/6/2012	15,868,000	13,362,000	19,951,000	12,815,000	**61,996,000**
2/7/2012	19,726,000	17,685,000	23,296,000	15,066,000	**75,773,000**
2/8/2012	19,481,000	21,207,000	26,083,000	14,255,000	**81,026,000**
2/9/2012	23,886,000	24,031,000	32,947,000	21,177,000	**102,041,000**
2/10/2012	32,905,000	40,207,000	57,220,000	48,371,000	**178,703,000**
2/13/2012	33,179,000	43,996,000	39,015,000	31,529,000	**147,719,000**
2/14/2012	31,597,000	48,051,000	54,399,000	57,890,000	**191,937,000**

Source: Macro Risk Advisors, Bloomberg

Over time, as the market for VIX futures has continued to deepen, the US volatility market has adapted to the changing landscape of products and their implications. Accordingly, investors should be very cognizant of how volatility ETPs can influence pricing dynamics in the derivatives market.

In the graph below, we show the vega of the 1st and 2nd month VIX future being indexed by large short-term VIX ETPs. These include the VXX, VIXY, TVIX, UVXY, XIV, SVXY and the front month weightings of XVZ. Notice the large jump in Jan/February of 2012 as a result of the TVIX growth. Interestingly, the assets under management have been pretty consistent over the past year and a half as investors have been more prone to trade these products on a daily basis and high frequency trading operations have become a larger part of the market.

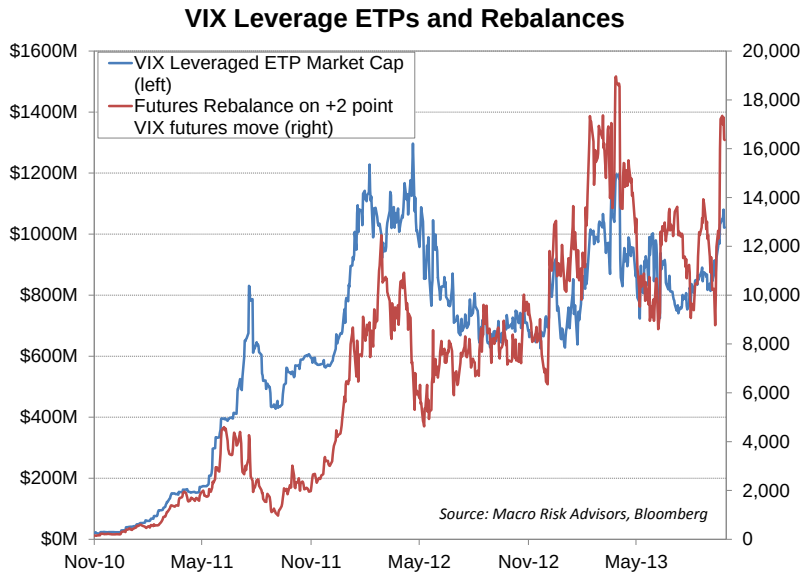


These ETPs account for more than 1/3 of the net vega open interest of the front two months of VIX futures. One point to note is that some of the products are ETNs as opposed to ETFs and thus need only replicate the performance of the respective underlying index. Due to this distinction, ETNs do not necessarily need to hold the VIX futures, maintaining the flexibility to replicate the futures via SPX options or through OTC means like variance swaps.

VXX, XIV, UVXY, TVIX, SVXY Total VIX Futures Exposure (as of 10/24/2013)									
	VXX	XIV	UVXY	TVIX	SVXY	Net ETN Vega	Abs ETN Vega	Futures Open Int	Net Vega (% of OI)
Nov VIX Future	60,873	-24,954	22,236	12,524	-7,588	63,091	128,175	161,379	36%
Dec VIX Future	23,673	-9,704	8,647	4,870	-2,951	24,535	49,846	82,009	28%
Total	84,546	-34,658	30,883	17,395	-10,538	87,627	178,020		

An important lesson from the February 2012 experience for the TVIX is around rebalancing of hedges for leveraged ETPs. The daily effort to rebalance near the end of trading can serve to accelerate the moves in implied volatility in the broader market. These leveraged products are forced to buy VIX futures when volatility is increasing and sell VIX futures when volatility is declining. In times of uncertainty when volatility is rising, the hedging requirements for leveraged ETPs can be substantial, potentially climbing in the face of an ever growing rebalance. Below we provide an illustration of how the rebalance can create a self-reinforcing demand for volatility. While US volatility levels are currently well behaved, this dynamic is certainly a factor to understand and watch for.

In the chart we show the market cap of the leveraged ETPs (TVIX, UVXY, XIV, and SVXY) and the total theoretical end of day rebalance required for +2 point move up in the 1st and 2nd VIX futures basket. If the futures are up on the day, the leveraged ETPs will need to buy futures to rebalance and the opposite if futures are down. The red line shows that currently a +2 point move in the front month future would necessitate the buying of 16,000 VIX futures to the close.



VIX Leverage ETPs and Rebalances

This clearly can have large effects on the market, especially on risk off days that result in huge end of day vega to buy. Conversely, the VIX has exhibited a tendency to drop much faster than had been the case prior to the introduction of leveraged volatility ETPs. For example, the volatility market experienced extreme moves to the downside following the resolution of the "fiscal cliff" in December of 2012. At that time, the front month VIX future fell by 4.65 points on 12/31 and a further 2.10 points the next trading day. On 12/31, VIX leveraged ETPs needed to sell 13,400 futures followed by 8,200 futures the next trading day compared to an average daily volume of 50,000 contracts for the front month VIX future contract.

In these large risk on/risk off events, we can quickly see how volatility markets are impacted by end of day rebalancing. To see this more clearly, we can utilize the consistently strong negative correlation between the VIX and the SPX to translate moves up in the SPX to moves down in the VIX. Based on regression analysis, a given 1% increase in the front month SPX futures was associated with a 1 vol point decline in the front month VIX future (based on the 252 trading days prior to 12/28). Using this beta, increases in the front month SPX future of 1.7% on 12/28/12 and 2.5% on 1/2/13, implied a move downward in the front month VIX future of 1.7, and 2.5, respectively. The move that actually materialized was far greater than predicted, supporting the notion that the substantial rebalancing requirements of leveraged ETPs that needed sell futures had impact.

To be sure, the growth of volatility based ETPs has complicated the world of hedging for investors. Much education remains necessary for users of these complex products. As the academic founder of the VIX, Robert Whaley recently said, ETFs on the VIX are "virtually guaranteed to lose money through time". Such is a mathematical certainty in a persistently upward sloping implied volatility term structure. The flip side of this is that carry strategies that harvest the volatility risk premium have grown in prominence and been an important source of return in a low yielding environment. While these trades are certainly crowded, opportunities remain. However, they must be implemented with careful attention to risk control. The preceding discussion and analysis illustrates that in a substantial risk off event a large spike in volatility would create huge demand for VIX futures as leveraged VIX ETPs rebalance exposures.

Dean Curnutt is CEO and Danny Kirsch is Strategist at Macro Risk Advisors

www.macroriskadvisors.com MRAD <go> on Bloomberg