

Seeking Alpha^α

Assessment Of A Quantitative Strategy For Trading Inverse Volatility 15 Months Later

Jan. 11, 2016 1:52 PM ET61 comments

by: David Easter

Summary

- A quantitative strategy for trading inverse volatility was published more than one year ago.
- The strategy is both quantitative and objective, and generates impressive backtested results.
- Since publication, one cycle of the strategy has unfolded in real time and has resulted in a loss.
- The outcome of Cycle 11 is well within reasonable probability expectations of the strategy.
- Reevaluation of the strategy leads to the conclusion that changes are not warranted at this time.

Introduction

On October 10, 2014, I published my first Seeking Alpha article, entitled *A Quantitative Strategy for Trading Inverse Volatility with Impressive Backtested Results*. The article described a strategy for trading the VelocityShares Daily Inverse VIX Short-Term ETN (NASDAQ:XIV) or the ProShares Short VIX Short-Term Futures ETF (NYSEARCA:SVXY), based on historical VIX closing data, VIX Futures settlement data, historical XIV closing prices (split adjusted), and model pre-inception XIV prices.

Since that publication, a new cycle (#11) of the strategy began on October 21, 2014, and subsequently ended on January 8, 2016. This article summarizes key elements of the strategy, and provides an update that reflects upon real-time performance over the past 14 months. Details underlying the creation of the strategy were published in the 2014 article, and will not be repeated here. Although this article will refer to XIV throughout, it is equally applicable to SVXY.





Objective Trading Rules for the Model

I begin by summarizing the essential trading rules of the original strategy. The rules have not changed, but the presentation has been reorganized.

1. The *buy signal, and the beginning of a new cycle* occurs when three conditions are met, in chronological sequence. First, the previous cycle must have been closed, as described under Rule (6) below. Second, on a subsequent trading day, the front month (F1) and second month (F2) VIX futures must close and *settle* in backwardation ($F1 > F2$). Third, the F1/F2 futures must subsequently revert and *close/settle* in contango ($F1 < F2$). It is important to emphasize that only *closing/settlement prices* at 4:15 pm ET are important in the model. Neither intraday prices nor extended-hour prices are relevant, because the model was derived exclusively from verifiable historical *settlement prices*; reliable historical data were not available for intraday or extended-hour price action.
2. The *purchase price* is established as being equal to the *closing price* of XIV the same day that the buy signal is triggered. Once again, only *closing market prices* at 4:00 ET are relevant to the model, for the reason stated above under (1).
3. The *stop loss* is immediately set at 63% of the purchase price. To be activated, the *closing market price* must be less than or equal to the stop loss.
4. The *limit sell* is immediately set at 232.8% of the purchase price. To be activated, the *closing price* must be greater than or equal to the limit sell price.
5. The *trailing stop trigger* occurs when XIV closes above 138% of the purchase price. Once triggered, the *trailing stop* is set at 68% of the cycle's maximum closing price. To be activated, the *closing price* must be less than or equal to the trailing stop.
6. The *end of the cycle* occurs when one of two events occurs: either the position is sold at the limit sell price, or the closing price falls below the stop loss value. It is important to emphasize that closing a position on the basis of the trailing stop in rule (5) does *not* end the cycle. Following a trailing stop sell, the cycle remains open (but without a position in XIV) until the closing price drops below the stop loss value.

How the Trading Rules Applied to Cycle 11

The previous cycle (#10) closed with a limit sell on July 1, 2014. The F1/F2 futures moved into backwardation on October 9, and subsequently reverted into contango on October 21, 2014, signaling a buy signal for Cycle 11. The purchase price (closing price of XIV) was 32.74.

The stop loss was immediately set to 20.63, the limit sell price was set to 76.22, and the trailing stop trigger was set to 45.18.

The trailing stop trigger was activated May 21, 2015, when XIV closed at 46.18. The highest subsequent closing price was 49.68 on June 23, setting the final trailing stop at 33.78.

XIV closed below the trailing stop on August 24, 2015. The XIV position was sold at the closing price of 29.58, resulting in a loss of 9.7%. Based on Rule (6), this event did not close Cycle 11.

The closing price of XIV dropped to 20.45 on January 8, 2015, which is below the stop loss price. This event signaled the close of Cycle 11.

Before Cycle 12 can begin, F1/F2 futures must close and settle in backwardation on or after January 11, 2016. When the F1/F2 futures subsequently close and settle in contango, a new buy signal will be triggered, and Cycle 12 will begin. Historically, the *median* interval between consecutive cycles has been about 9 weeks (see below).

Historical Performance of the Strategy Through Cycle 11

The first ten cycles are theoretical in the sense that they are the product of optimized backtesting, whereas Cycle 11 unfolded in real time. The following table summarizes relevant data for the complete sequence of eleven cycles.

cycle #	buy date / cycle start	sell date	cycle end	result	cumulative balance (10.00)	max cycle drawdown	months held	Cumulative CAGR since 03/30/04
1	03/30/04	11/10/04	11/10/04	133.50%	23.35	-1.10%	7.39	296.1%
2	04/19/05	03/30/06	03/30/06	133.90%	54.62	-5.60%	11.33	133.8%
3	06/01/06	03/05/07	09/29/08	47.50%	80.56	-23.80%	9.10	59.0%
4	12/11/08	10/22/09	10/22/09	132.90%	187.62	-6.20%	10.35	69.4%
5	11/02/09	04/20/10	04/20/10	138.10%	446.72	-0.50%	5.55	87.3%
6	05/12/10	01/14/11	01/14/11	135.70%	1,052.9	-31.50%	8.11	98.5%
7	03/16/11	08/04/11	09/09/11	12.80%	1,187.7	0.00%	4.63	90.0%
8	11/16/11	03/26/12	03/26/12	153.50%	3,010.8	-6.50%	4.30	104.3%
9	05/21/12	01/22/13	01/22/13	133.20%	7,021.2	-14.00%	8.08	110.3%
10	02/26/13	07/01/14	07/01/14	137.30%	16,661	-6.50%	16.10	106.2%
11	10/21/14	08/24/15	01/08/16	-9.65%	15,054	-23.73%	10.09	86.1%

The three date columns indicate the date the cycle was opened and XIV was purchased, the date XIV was sold, and the date the cycle ended. The sell and cycle-end dates are identical when the position is sold at the limit price. When the position is sold on the basis of a trailing stop, however, the sell date always precedes the end of the cycle. Three of the cycle end dates are boldfaced to indicate when this has occurred. The *hiatus between cycles* (difference between one cycle's end and the next cycle's start date) ranges from 1.6 to 22.8 weeks, with a median of 8.8, an average of 9.7, and a standard deviation of 6.2 weeks.

The *result* column indicates the outcome of each cycle. Results range from a loss of 9.65% to a gain of 153.50%. The cells containing these two values are highlighted. The arithmetic average, over eleven cycles, is a gain of 104%, with a standard deviation of 58%. Eight cycles closed with a limit sell, with cycle results that equal or exceed the limit price. Three cycles closed subsequent to a trailing stop sell: two of the three resulted in a net trading gain, and one lost money.

The *cumulative balance* column indicates how an initial investment of \$10,000 would have theoretically grown over time. Entries represent multiples of \$1000. The results do not account for trading fees, brokerage cost, or taxes, and assume that all of the proceeds from one cycle are used for the purchase of XIV in the next cycle. 11 cycles have been completed in the 11.78 years since March 30, 2014.

The *maximum cycle drawdown* column records the worst running (daily close) value of the position, expressed as a percentage of that cycle's purchase price. In all eleven cases, the cycle's final result is better than its maximum drawdown. The worst drawdown occurred at 31.5% in Cycle 6. Cycle 7 is unique in that the price of XIV never dropped below the original purchase price prior to being sold. The relevant cells for these two cycles are highlighted.

The number of *months held* is the time between buy and sell, expressed in months. Holding periods have ranged from 4.3 to 16.1 months, with an average of 8.64 and a median of 8.11 months. Eleven cycles have been completed in the 11.78-year span since March 30, 2004. The overall average is slightly less than one complete cycle per year.

The *cumulative CAGR* column shows the *compound annual growth rate*, from March 30, 2004, through the cycle's end date. CAGR represents the average annual growth rate over the specified period. The cumulative CAGR dropped below 80% following cycles 3 and 4, but has remained higher than 80% since. The current 11.78-year CAGR, following

Cycle 11, stands at about 86%.

Reexamining the Model's Parameters

Following the completion of Cycle 11, I reexamined each of the model's four parameters to determine whether tweaking the original values would yield a final CAGR that exceeds 86.1%. To make a long story short, no changes to the parameter values were found that improve the historical result. The parameters stand, as originally published. That said, a few comments are in order.

The *stop loss*, currently 63% of the purchase price, has never yet resulted in the actual sale of a XIV position. To date, it has signaled the end of a cycle on three occasions, always subsequent to a trailing stop sell. Based on the analysis of cycles 3 and 7 only, the trailing stop could currently be set anywhere between 46.2% and 63.9% of the purchase price without affecting the results. Both of these two cycles eventually dropped to or below 46.3% before finally turning around. A value at the upper end of the range is preferable for the stop loss, to protect against the eventuality that a future position might have to be exited on the basis of the stop loss. If cycles 3 and 7 serve as any indication, it would not be surprising if the price of XIV continues dropping to somewhere near 15.13, before finally turning upward.

The *limit sell price*, currently 232.8% of the purchase price, identifies the best closing price (percentage) that is common to all eight of the successful cycles (i.e., cycles that close with a limit sell) without excluding any of those eight cycles. In other words, the limit sell must be close to, but cannot exceed 100% plus the *lowest* of the successful cycle results in the Table (132.90%). Based on current data, the limit sell can only be set within a narrow range, from 232.72% to 232.87%.

The *trailing stop trigger*, currently 138% of the purchase price, and the *trailing stop*, currently 68% of the maximum price, combine to minimize losses in unsuccessful cycles, while avoiding an unnecessary, premature sale of the XIV position when the market is weak, but likely to turn around. Based on current data, the trigger can be set within a broad range from 122.4% to 151.7%. The trailing stop must be set in a narrower range, between 67.8% and 68.0%.

Concluding Comments

The strategy is neither intended nor suitable for short-term trading. The holding period of the eleven round-trip trades (over 11.78 years) ranges from 4.3 to 16.1 months. The strategy averages slightly less than one round-trip trade per year.

Because *closing/settlement* prices were the basis for optimizing the model's four parameters, making use of automated intraday or extended-hours triggers will compromise the outcomes. Two historical examples will suffice to demonstrate this. (1) On August 21, 2015, the markets opened in a state of intense panic, with XIV opening at its low for the day, down 31% from the previous close. Eventually, the price recovered somewhat, closing down 18%. Using an automated intraday trailing stop would have resulted in a 24% loss in Cycle 11, more than 2.5 times worse than the actual loss. (2) Using an automated intraday limit sell would have capped gains for all eight of the successful cycles at or very near 132.8%. Cumulatively, over the eight successful cycles, doing this would have compromised total profits by approximately 24.6%!

The strategy will not be as effective for shorting the iPath S&P 500 VIX ST Futures ETN (NYSEARCA:VXX) or the ProShares Ultra VIX Short-Term Futures (NYSEARCA:UVXY) as it is for buying XIV or SVXY. This is transparently true because the maximum possible gain from shorting an ETP is 100% per trade, whereas, for each successful cycle that ends with a limit sell, the gain is 133% or more per trade.

One must not expect to make a profit on every trade! Three of the eleven round-trip trades resulted in a trailing stop sell, and one of the three lost money. I guarantee that there will be more future trades, based on the strategy, that will lose money. That is normal, and must be anticipated. The key is that over the long term, gains must exceed losses, preferably by a significant ratio.

Cycle 11 represents the first real-time test of a model that was empirically optimized from historical backtesting. The verifiable result of Cycle 11 was a loss of 9.65%. A setback? Definitely. But by itself, this occurrence does nothing to discredit the merits of the strategy. Note the following four comments.

1. Like Cycle 11, the XIV positions in Cycles 3 and 7 were also closed on the basis of a trailing stop. The fact that neither of the two backtested cycles incurred a trading loss is a fortuitous outcome of price action earlier in the cycle that raised the trailing stop threshold above the break-even point. There is no basis for expecting that cycles like these will never lose money.
2. Following the trailing stop sell in Cycle 11, the price of XIV eventually dropped below the stop loss threshold, closing the cycle. This action parallels the pattern observed by the model in Cycles 3 and 7, and provides additional support for the principle that a cycle is never completed and closed on the basis of a trailing stop sell.
3. Cycle 11 is an example of "stuff happens". Post-cycle analysis of the model and its

parameters confirms that the original parameters can neither be tweaked nor improved at this time to increase the 11.78-year CAGR following Cycle 11. Not even by as much as 0.0001%!

4. I would estimate that between 25% - 30% of all future cycles will involve a trailing stop sale, and that many among these will result in trading losses. The strategy cannot prevent "stuff" from happening. What it can and does do is to provide objective exit signals that are aimed at avoiding unnecessary losses while maximizing CAGR over an extended timeframe.

Neither past performance nor theoretical modeling can provide any guarantee of future performance. The strategy discussed in this article involves a high level of investment risk. The author is not responsible for losses that are incurred by individuals, groups, or other entities who base one or more trades on any of the ideas presented.

Disclosure: I/we have no positions in any stocks mentioned, and no plans to initiate any positions within the next 72 hours.

I wrote this article myself, and it expresses my own opinions. I am not receiving compensation for it (other than from Seeking Alpha). I have no business relationship with any company whose stock is mentioned in this article.

 Like this article

Comments (61)

smartestone

Buying the dip seems to be a good strategy now...long TQQQ and short ATM long-term spy strangle to take advantage of IV crush. Selling strangles may be a good move now to take advantage of inevitable IV crush . Buying TQQQ may be better than XIV since there is no decay and it seems to not fall as much. I don't think we're going to be seeing contango in VX futures for a long time.It almost seems to good to be true...a 635x return sine 2004. At that rate, you'll soon own the entire etf. But there seems to be a lot of promise here.

11 Jan 2016, 05:06 PM

smartestone

Another problem is that the stop losses/triggers may have been curve fitted . why 63% , 138%, 68%, etc. I like the idea of going long XIV in periods of strong contango like in mid-2015, 2013, 2012, and early 2014, but it drops like a strong when the market turns.

11 Jan 2016, 05:10 PM

dumbo

Maybe I'm not getting it....the trading signal is triggered at 4:15 pm and the trade occurs at 4 pm the same day??????

12 Jan 2016, 08:32 AM

David Easter, Contributor

Author's reply » Almost. The trade trigger is confirmed at 4:15, and the trade occurs at the `_PRICE_` that XIV closed 15 minutes earlier. This is an inconvenient necessity because the equity and futures markets close at different times.

You have two options. (1) If it is fairly obvious, leading up to 4 pm, that F1/F2 will close in contango, you can set a market-on-close buy order. (2) Otherwise, you can set a limit buy order after the fact, at that day's XIV closing price.

12 Jan 2016, 09:45 AM

The Protagonist, Contributor

After the sell off this week(s) and XIV trading down. What is the signal now saying?

12 Jan 2016, 10:26 AM

David Easter, Contributor

Author's reply » The first two conditions for a new buy signal have been met. (1)The previous cycle was completed 1/8/16 when XIV closed below the stop loss price of 20.63. (2) F1/F2 futures closed again in backwardation the next market day, 1/11/16.

The third and final requirement for a buy signal (not yet met) is that the F1/F2 futures must revert, and most close/settle in contango. As of this moment (1/12/16, 10:50 am ET), the F1/F2 futures are still strongly backwardated, by 4.4%.

12 Jan 2016, 10:58 AM

The Protagonist, Contributor

Interesting, keep us posted when the 3rd condition is met.

12 Jan 2016, 12:36 PM

User 10318561

David,

Will you please post here when third condition is met and there is contango again in F1/F2?

Thanks for all you do.

RV

14 Jan 2016, 12:41 PM

David Easter, Contributor

Author's reply » RV,

Yes, absolutely.

When the event is confirmed, I will also post (separately for XIV and SVXY) the purchase price, stop loss level, limit sell prices, and threshold for triggering the stop loss.

As of this moment (4:02 pm ET 1/14/06), F1/F2 is still in backwardation by about 5.3%. Based on historical precedents, the buy signal may still be several weeks out.

David

14 Jan 2016, 04:06 PM

The Protagonist, Contributor

David, Any update yet?

17 Feb 2016, 05:12 AM

David Easter, Contributor

Author's reply » Not yet -- but the signal could be today (2/17), if the markets follow through on the pre-markets. We'll know in a little over 8 hours.

17 Feb 2016, 08:02 AM

DrLucaFiorini

Very interesting David and impressive performance.

What is a bit problematic in my opinion to run this strategy in a real account is that it leaves a position which is in profit by a large percentage to turn back into a loss. In the last cycle, I see that the position reached a gain of >+55% in June before turning into red numbers in August.

Of course this is a direct consequence of the large volatility of XIV. I wonder what is the sharpe ratio that you get. I was also thinking if there will be a big degradation of the CAGR if one puts a tighter trailing stop.

It is nice to run a strategy with a CAGR close to 90%, but at the same time, it is psychologically difficult to see a position with a 50% profit turning into a 10% loss in 2 months.

13 Jan 2016, 02:17 PM

David Easter, Contributor

Author's reply » If I include all market days, even those when the strategy does not have a position in XIV, I

conservatively calculate a Sharpe ratio of 1.08. If I exclude all days when the strategy does not have a position, the ratio improves to 1.64.

Based on historical data, raising the trailing stop above 71.5% of the maximum price would have stopped out one of the successful cycles (# 10) prematurely at a gain of only 34.8% instead of 137.3%, resulting in an overall decrease of approximately 8% in long-term CAGR. Tightening the trailing stop would require the addition of a stop rebuy component and at least one additional parameter to the strategy—something I have not fully explored as of yet.

13 Jan 2016, 06:59 PM

amis1

Hi David

In this assessment of your otherwise excellent strategy I see some parameters are completely different compared to your initial article from 10/10/2014, ex:

3. The stop loss is immediately set at 63% (initially it was -37%) of the purchase price.
4. The limit sell is immediately set at 232.8% (was +132.8%) of the purchase price.
5. The trailing stop trigger occurs when XIV closes above 138% (was +38%) of the purchase price. Once triggered, the trailing stop is set at 68% (was -32%) of the cycle's maximum closing price.

Can you please explain those differences?

Again, your research and writing is proof of your rigorous scientific background.

Very impressive

Thanks a lot

amis

17 Jan 2016, 06:34 PM

Quantwerks

You should also consider backtesting your strategy with ZIV. Lower returns, but lower volatility; you might improve the sharpe ratio significantly. And your cycle 11 would have had a small positive return!

29 Mar 2016, 11:56 AM

David Easter, Contributor

Author's reply » [Quantwerks](#),

Great suggestion--and something that was already on my future "to do" list. Before that, however I hope to complete my study/discussion of Why XIV Appreciates in Value (<http://seekingalpha.co...>), undertake a similar study on ZIV, and then compare historical performance of the two over periods in which VIX reverts begins and ends at the same value.

29 Mar 2016, 01:32 PM

David Easter, Contributor

Author's reply » Amis1,

The parameters you have quoted are actually identical--just stated differently.

Using your first example, the stop loss at 63% of the purchase price is equivalent to 100% of the original purchase price minus a LOSS of 37%: $100\% - 37\% = 63\%$.

All of the other pairs of numbers follow the same pattern. In the current article, the % numbers are relative to the absolute purchase price. In the original article, they were stated in terms of percent changes (increases or decreases) from the purchase price. Mathematically, the two are equivalent. Just two different ways of saying the same thing.

Hope this helps.

17 Jan 2016, 11:39 PM

amis1

wow

David, that was worth of Agatha's misteries league.

Thanks again for your quick answer.

amis

18 Jan 2016, 12:23 AM

woody5023

Cycle 12 looks like it might begin this week. I'm eager to try it...but something looks odd with cycle 3...we go 18 months from sell to cycle close...that's a long time to sit in cash in the market. Is that cycle correctly analyzed?

17 Feb 2016, 01:08 AM

David Easter, Contributor

Author's reply » Yes it is correct. It took a long time for the market to work out its issues in the 2007-2008 timeframe.

17 Feb 2016, 08:05 AM

David Easter, Contributor

Author's reply » The buy trigger occurred today. Cycle 12 has started.

Buy prices were 35.40 for SVXY and/or 18.11 for XIV.

Later this evening (after I finish up at my day job) I hope to add one more comment that includes the cycle's price

targets and triggers.

17 Feb 2016, 04:28 PM

woody5023

Okay. Thanks for verifying. Your cycle strategy buy signal today for XIV is triggering exactly with some other strategy sites I follow as well. Here's to a promising start to Cycle 12. I wasn't able to get XIV today but my portfolio is short TVIX and Long TQQQ and TMF currently.

17 Feb 2016, 05:11 PM

David Easter, Contributor

Author's reply » Here is the summary of key levels for Cycle 12, which started on 17 Feb 2016. Remember that all levels refer to closing prices. Intraday prices are not relevant in the model.

Purchase price: 35.40 for SVXY and 18.11 for XIV.

Limit sell at 82.41 for SVXY and 42.16 for XIV.

Stop loss at 22.30 for SVXY and 11.41 for XIV.

The trailing stop is currently inactive. It will be set in motion when SVXY reaches 48.85 and XIV reaches 24.99.

Good luck to all!

18 Feb 2016, 10:40 AM

GoingLong

Hi David,

If long at \$53 how best to manage this position?

Should I have in a stop limit? Isn't \$22.30 too far away from its current level to place the stop... a long way to fall.

How about a price target to the upside?

Any way of predicting with any reasonable level of accuracy when it could get to \$82.41 price target?

Thanks,

Jerry

23 Mar 2016, 01:22 PM

David Easter, Contributor

Author's reply » Jerry,

The parameters of the model are in my comment above.

"Managing" the position (over and above what is indicated in the model) would be pure guesswork, and not based on the historical data.

The trailing stop has not yet been triggered, so the stop loss is currently at 22.30. When SVXY closes above 48.85, the trailing stop kicks in.

The price target to the upside is 82.41.

No way of telling how long it will take, and no way to guarantee success of the cycle. If it does occur, the previous cycles would suggest that it could take anywhere between 4 months to 2 years. No way to be more precise.

23 Mar 2016, 04:11 PM

David Easter, Contributor

Author's reply » Update on 29 March 2016 after market close

Both SVXY and XIV closed high enough today to trigger the trailing stop

Today's close: SVXY = 49.66; XIV = 25.44

Current trailing stop: SVXY = 33.77; XIV = 17.30

29 Mar 2016, 04:15 PM

bazooooka

Going,

Your likely best to follow David (unless you have another model you prefer); and thus you can now set you're trailing stops. And I'd advise you not consider what you paid but rather trade the model from here.

18 Apr 2016, 07:44 AM

David Easter, Contributor

Author's reply » Bazooooka,

You posted the comment below in a different article. This article seems a better place to reply.

Yes, I trade my own strategy, but with some modifications. [My modifications allow for shorter term trades within the cycles, but are too complex to explain or publish.] About 15% of my total portfolio is at stake. I'm planning to retire June 1, and I cannot risk more than 15% of "mad money" :-)

David,

Great info here. Are you trading your own strategy? And do you do so as small percentage of your portfolio?

18 Apr 2016, 06:36 PM

Ipitzalis

Thanks David, for sharing your knowledge. I've made some good trades over the past few years with XIV and SVXY, simply by staying away from backwardation. Long XIV right now, since 2/29/16. Looks like your "Cycle 12" is off to a great start. GLTA!

17 Mar 2016, 09:47 PM

MICHAEL FORTON

Hello everybody,

i check the difference of behaviour between XIV and VXX. 3 month its 29% and -29% normal, for last 6 month XIV: -6% and VXX: -20% big difference already, and for the last year XIV: -29% and VXX -37%...

What can be the explanation for this differences?

It's seems to be more intersting to sell VXX than buy XIV...

01 May 2016, 02:14 PM

The Protagonist, Contributor

Hopefully David can chime in here...I often see people say XIV decays over time....But I haven't seen the reason "why?"

02 May 2016, 07:52 AM

David Easter, Contributor

Author's reply » Protagonist,

Over long times, XIV appreciates in value, because VIX futures tend to be in contango much more than they are backwardated. However, the gains are partially eroded (decayed) by the daily rebalancing protocol of inverse ETNs, and by the ETN fees.

The daily rebalancing causes the XIV percent gains to be less than VXX percent losses over intermediate timeframes. (It would be the same if you closed, and then reopened a short VXX position of the same \$ value at the end of each day, not taking brokerage fees into account.) This is a topic that will be covered in a future article.

Of course, it is far more risky to be short VXX than to be long XIV. And if you hold a short VXX position too long, you eventually get to the point where a long XIV position held for the same time would be more profitable, in spite of the other issues.

02 May 2016, 10:56 AM

The Protagonist, Contributor

Thanks David,

Yes the compounded growth of XIV from a total \$ point of view would at some point be greater than the \$ earns in a VXX short if it is not rebalanced. Time uncertainty tilts that fulcrum.

03 May 2016, 08:25 AM

aresquared

No different than any long position vs short of the same instrument.

The long continues to leverage up in your favor, deleverage down when going against you.

The short continues to deleverage down with you, leverage up against you.

03 May 2016, 08:57 AM

aresquared

author "The daily rebalancing causes the XIV percent gains to be less than VXX percent losses over intermediate timeframes."

I contend that's irrelevant to the question of what explains the differences in the time periods in question.

The thing changing here responsible for the observed phenomenon is the volatility drag.

If all the daily moves had been in one unilateral direction the results would have demonstrated more of the expected mirror image like returns between the 2 products XIV vs VXX.

If vxx had been falling everyday the re-balance of xiv would have actually helped it not hurt it on the way up.

Conversely if vxx had been gaining every day xiv would lose money but the re-balancing would be deleveraging on the way down mitigating losses as it went.

03 May 2016, 09:12 AM

aresquared

instead of rebalancing being "irrelevant" as previously stated that's wrong , however "of secondary importance" is probably more accurate.

03 May 2016, 09:26 AM

David Easter, Contributor

Author's reply » Aresquared,

My "daily rebalancing", when understood in the context of volatility being mean-reverting over the long term, is equivalent to your volatility drag. Your special case analysis is correct. However my comments regarding the difference between XIV and short VXX performance should be interpreted in the context of

mean-reverting volatility.

For a long, 1x volatility ETN (VXX), your volatility drag is not a long-term issue, because as volatility mean reverts, so does the volatility component of VXX (See my most recent article for more information: <http://seekingalpha.co...>). In the long-term, with mean-reverting volatility, contango is the issue for VXX, with ETN fees playing a minor role.

03 May 2016, 10:07 AM

aresquared

"For a long, 1x volatility ETN (VXX), your volatility drag is not a long-term issue, because as volatility mean reverts, so does the volatility component of VXX (See my most recent article for more information: <http://seekingalpha.co...>). In the long-term, with mean-reverting volatility, contango is the issue for VXX, with ETN fees playing a minor role."

I understand the primary driver over longer time periods is going to be contango, never suggested otherwise but:

Just to be clear: just because volatility is mean reverting doesn't mean only long vxx is negatively affected by it, they both(xiv & vxx are) harmed by path dependent adverse moves of magnitude.

03 May 2016, 10:33 AM

David Easter, Contributor

Author's reply » R2,

As I mentioned earlier, I hope to publish a full article before the end of the summer, part of which will address this in detail. It will be more efficient for me to postpone additional comments on the question to that article. It is not as simple as most people think.

03 May 2016, 10:47 AM

smartestone

always better to go long vxx than buy xiv

03 May 2016, 11:27 AM

aresquared

"I often see people say XIV decays over time....But I haven't seen the reason "why?""

Seriously?

Xiv suffers from some of the same things as vxx does namely:

expenses and volatility drag (or whatever term you feel comfortable with)

02 May 2016, 08:12 AM

The Protagonist, Contributor

Expenses, sure.

But Volatility drag from my perspective is the notional value. i.e. if You have \$1000 worth of X. And X declines by 10%, X then increases by 10%. You are still net -1% i.e. \$990

But this isn't the cause of decay...unless you are saying the underlyings of XIV are dragging themselves? Then I'd agree.

02 May 2016, 10:38 AM

aresquared

But Volatility drag from my perspective is the notional value. i.e. if You have \$1000 worth of X. And X declines by 10%, X then increases by 10%. You are still net -1% i.e. \$990

But this isn't the cause of decay...

I contend that you're wrong: it is the source of decay and it is the volatility of the underlying's causing it.

02 May 2016, 10:58 AM

Quantwerks

I think you need to be careful with use of "volatility drag". The term is being used to talk about two different (though closely related) things on SA.

I think the "classic" definition is how protagonist used it. i.e. the difference between an arithmetic and geometric average.

But it's also being used in the context of leveraged etf's (as r2 has used it) to include the rebalancing effects which exacerbate the effect.

03 May 2016, 09:49 AM

The Protagonist, Contributor

^I concur with Quantwerks.

Words are being interpreted differently in different articles.

03 May 2016, 11:18 AM

smartestone

imho you can get better risk adjusted returns shorting SQQQ SPXS than shorting VXX or going long XIV. The problem is XIV has a tendency of imploding and never recovering . That's because XIV effectively simulates a credit spread , making the draw-down big and protracted

03 May 2016, 09:42 AM

capcondo

If I understand this correctly, I believe today is the day the stop loss kicks in for XIV. In this cycle, the peak closing price was 33.43 on June 7th. A 32% drop from that price is 22.73. XIV closed today at 22.00 resulting in a profit of 21.48% for this cycle from the buy price of 18.11.

Hopefully, one can get out at a price close to this on Monday.

24 Jun 2016, 04:19 PM

David Easter, Contributor

Author's reply » Capcondo,

Your numbers are spot on. Nicely done. I summarize here for both XIV and SVXY.

XIV SVXY

Peak \$33.43 (6/7) \$65.19 (6/6)

Trailing Stop \$22.73 \$44.33

Close 6/24/16 \$22.00 \$43.00

Cycle Result +21.47% +21.48%

Cycle End \$11.41 \$22.30

I had a sell at market close in place today, locking in the 21.47% gain for the trade.

Note that the future price of XIV should eventually drop below \$11.41 and the future price of SVXY should eventually drop below \$22.30 before the current cycle will end. In other words, the model predicts that the two prices will drop to about half of their current values before they turn around. Makes sense: the implications of Brexit are going to have to work themselves out.

In the meantime, the model suggests STAYING FAR AWAY from the short volatility trade.

24 Jun 2016, 05:24 PM

JohnDean

Question: If SVXY continues to rise and never drops below \$22.30 (which is conceivable) what do you do?

01 Jul 2016, 03:46 PM

The Protagonist, Contributor

He goes to retire on an island somewhere.

01 Jul 2016, 04:10 PM

David Easter, Contributor

Author's reply » JohnDean:

The short answer is that I would have to reassess my trailing stop trigger level as potentially being too high, such that I was prematurely stopped out of the trade.

Per the model, the current cycle will end either when SVXY drops and closes below \$22.30 or eventually rises and closes above the original limit sell target price of \$82.41. Until one or the other occurs, the strategy's current cycle remains open, but without a position.

For now, it's wait and see. Time and the future market will provide clarity.

Protagonist: I retired June 1, but the island is only a fantasy for the moment.

01 Jul 2016, 06:36 PM

itscalledcommonsense

So, in your analysis you posited that 25-30% of all future cycles will end in a stop loss. There has been one observation and one stop loss exit. Care to adjust your prediction a la Bayes? (I remind you that the only other live trade was also stopped out.)

You seem to still claim that your system has an ungodly CAGR yet the only 2 live trades, over almost 2 years, have produced a CAGR around 5.5% with incredible volatility. Are you prepared to renounce your claim that this system has a FORWARD expectation of CAGR similar to the backfit "test"? Are you ready to admit that the flaws I pointed out in your system ex ante are actually coming to pass? If not, how much more evidence do you need? Another 2 years? 2 more stopped out trades? 20?

I guess the main question is this: are you ready to accept evidence that this system is deeply flawed, or, are you like most humans and rejecting the evidence because it does not conform to your prior belief?

We aren't talking about just your ego here. Real people read what you have written and they invest real dollars based on your "super" system. You sound like you know what you are talking about, so they put their faith in you. But in actuality you don't know what you are doing and you are exposing everyone who follows this system to a lot of risk for very little expected reward. It might even have negative expectation.

It's OK to be wrong. It's OK to be ignorant. It's not OK to remain wrong and remain ignorant when the evidence tells you you were ignorant and wrong. Especially if you are in a position of leadership and have followers.

25 Jun 2016, 08:45 AM

David Easter, Contributor

Author's reply » ICCS wrote: "Are you prepared to renounce your claim that this system has a FORWARD expectation of CAGR similar to the backfit 'test'?" "

Response: I DO NOT RECALL EVER MAKING SUCH A CLAIM. I think you made this "claim" up. A nice straw man created in support of your criticism, but disingenuous and invalid.

If anything, I believe I have warned that past returns cannot be used to predict future returns, and I have also commented that future returns are not likely to match backfitted returns. If you can locate any place where I have actually asserted (interpreted naturally within its context) that forward CAGR is expected to match backfitted returns [and I don't believe you can], please explicitly cite the quote and its source, and—if you are able to do so—I will both renounce the concept and I will apologize for the overstatement.

ICCS wrote: "I guess the main question is this: are you ready to accept evidence that this system is deeply flawed, or, are you like most humans and rejecting the evidence because it does not conform to your prior belief?"

Response: Assuming a 30% probability of a position being stopped out, the probability of any two cycles in a row with positions being closed via a trailing stop is 9%. Nobody with a rudimentary knowledge of statistics would reject a theory on the basis of the historical occurrence of an event with 9% probability. Rolling a "4" via the single roll of two dice (1+3, 2+2, or 3+1) has a lower probability (8.3%), yet no rational person would insist that a pair of dice is loaded solely on the basis of one roll of the dice. There is no question that the outcome of the first two live cycles raises legitimate concerns, but it is statistically invalid and irresponsible to insist that the result provides proof or even compelling "evidence that the system is deeply flawed."

The occurrence of a 9% probability event is not even considered to be an "outlier" by statisticians. Infrequent? Sure. But if 9% probability events never occurred, the Cavs would not have come back from their 1-3 deficit to beat the Warriors in the 2016 NBA championships, and the Brexit vote (based on final betting odds just prior to the actual vote counting) would not have passed (and we wouldn't be having this conversation).

Do outcomes of the first two live cycles raise concerns, and even warrant some level of skepticism? Certainly, no doubt. But do they "prove" anything? No, not by any accepted standard of proof. Being one with a legal background, you would be aware of this.

I believe that in your legal world, there is a huge difference between suspicion and proof. Recent events certainly raise a suspicion that the system may be "flawed." But proof? Not yet, at least. Insufficient evidence. You have neither produced a corpse, nor a smoking gun. Only a smattering of circumstantial evidence that supports, but falls far short of proving your point.

ICCS wrote: "If not, how much more evidence do you need? Another 2 years? 2 more stopped out trades? 20?"

Response: In the original article on the strategy, one of my comments was to the effect that the validation of the system would play out over an EXTENDED period. To be statistically valid, a 95% to 99% confidence level is needed as the basis for reaching a compelling conclusion. IF the next live cycle were also to result in a trailing stop exit, the confidence (that the system is invalid) would increase to 97%; if BOTH of the next TWO live cycles were to result in a trailing stop exit, the confidence (of invalidity) would increase to 99%. A 99% verdict would certainly be sufficient for me to abandon the model beyond reasonable doubt.

ICCS wrote: "Real people read what you have written and they invest real dollars based on your 'super' system. "

Response: You are correct, and I do understand the implications. For this very reason, I have attempted to be clear in communicating that past (backfitted) results do not guarantee future results, and that the strategy carries with it a high level of investment risk. I reemphasize here: because of the real risk of investment losses, individuals should never put at risk any more capital in the strategy than they are comfortable losing (completely). Only the "mad money" portion of one's portfolio should be put at risk by one who chooses to trade the system. In addition, using leverage greatly increase the probability of significant losses, and is strongly cautioned against.

25 Jun 2016, 12:47 PM

itscalledcommonsense

Well, being a Bayesian, I need to adjust my prior belief on the level of defensiveness I would receive. I was 99% certain that you would be 100% defensive. However you were only 95% defensive. So the adjustment has been made.

Good luck maintaining your priors.

25 Jun 2016, 04:12 PM

capcondo

I believe November 21st completed cycle 12 for XIV closing up over 132.8% from the \$18.11 entry point on February 17, 2016. 132.8% increase from \$18.11 is \$42.16. The close today was \$43.74.

Even though a buy signal has no been reached for cycle 13, I'd be somewhat nervous about getting in at this level. What's your viewpoint on this?

22 Nov 2016, 02:55 AM

itscalledcommonsense

Yeah, you should be super nervous trading any system with parameters as backfit as this one.

22 Nov 2016, 07:08 AM

David Easter, Contributor

Author's reply » Capcondo,

Correct. Nov 21 closed cycle 12.

Cycle 13 will not open with a buy signal until F1/F2 close backwardated one day, and then subsequently close in contango.

I will not personally be buying XIV or SVXY before the next cycle begins.

22 Nov 2016, 08:56 AM

JohnDean

Too bad the short lived Brexit spike knocked you out of this cycle ... would have been a great run.

27 Nov 2016, 04:12 PM

David Easter, Contributor

Author's reply » JD,

Yep. In retrospect, this would seem to indicate that the published trailing stop level was too tight. More on this when I post an update on my Instablog page.

David

27 Nov 2016, 04:34 PM

David Easter, Contributor

Author's reply » All:

Cycle 12 closed on Nov 21.

Cycle 13 is awaiting its trigger, which may be weeks away.

Meanwhile the strategy has no position as of Nov 22.

Future updates to this strategy will be posted on my SA Instablog page.

Readers who are following me will be notified when they post.

Best to all,

David

22 Nov 2016, 09:02 AM

David Easter, Contributor

Author's reply » An update to the strategy has been posted: <http://seekingalpha.co...>

29 Nov 2016, 12:17 PM