

Seeking Alpha<sup>α</sup>

## A Quantitative Strategy For Trading Inverse Volatility With Impressive Backtested Results

Oct. 10, 2014 10:24 AM ET 176 comments

by: David Easter

### Summary

- Historical backtesting calculates impressive hypothetical gains.
- Objective buy and sell triggers eliminate most of the guesswork.
- Individual judgment must still be exercised whenever a volatility spike is known to be imminent.

This article is an expansion and extension of a comment that I initially posted here on Seeking Alpha in response to an article by Nathan Buehler. My comment summarized the results of quantitatively backtesting Buehler's backwardation/contango trigger strategy for shorting volatility, but I added my own objective exit strategy.

### Principles of the Backtesting Model

I applied the following rules in backtesting analysis. These rules are objective and quantitative; therefore the reported results can be verified independently by anyone who is up to the challenge of writing the appropriate Excel code.

1) I based my evaluation on the (theoretical) purchase of VelocityShares Daily Inverse VIX ST ETN (NASDAQ:XIV) long, an inverse VIX futures ETN, at the market closing price. The returns of ProShares Short VIX Short-Term Futures (NYSEARCA:SVXY) are indistinguishable from those of XIV, but XIV was created first, so its real prices go back earlier in time.

2) Real XIV closing prices, adjusted for splits, were used back to the ETN inception date of Nov. 30, 2010, available here from Yahoo Finance. For theoretical XIV prices prior to inception, I used the calculated/modeled prices of XIV back to March 26, 2004, posted here at the Intelligent Investor Blog. When downloaded, the data set was current through Sept. 26, 2014. The same spreadsheet was the source of my front-month and second-month VIX futures closing prices.

3) I define the *backwardation* of VIX futures as being when the second month futures price is less than the front month futures price at close of trading (4:15 p.m. ET); I define

*contango* in VIX futures as being the reverse situation at close of futures trading. Only *closing* prices are considered in this analysis.

4) I define a "buy signal" for XIV as being when the VIX futures first move into backwardation (based on closing price) one day, and subsequently move back into contango one or more days later, following the model developed by Nathan Buehler. A "buy" signal is generated the *first* day that the futures prices reverted to contango as defined above, and XIV is (theoretically) purchased at its closing price the same day.

5) No exceptions were made in the analysis for subjective economic or geopolitical considerations. By nature, such exceptions can neither be objectively nor quantitatively backtested.

6) I tested to determine the optimal limit sell price to maximize overall gains. I also tested to determine the optimal stop sell price for losing trades. Finally, in order to avoid unnecessary losses during major spikes in volatility (as in 2008 and 2011), I tested to determine an optimal trailing stop strategy. The results are all summarized below.

7) XIV was theoretically bought/sold at the market close price the same day that the buy/sell signal was triggered.

8) The model assumes that 100% of the account balance is committed to each trade. All gains or losses are parlayed into the next trade. Results are reported based on an initial investment of \$25K.

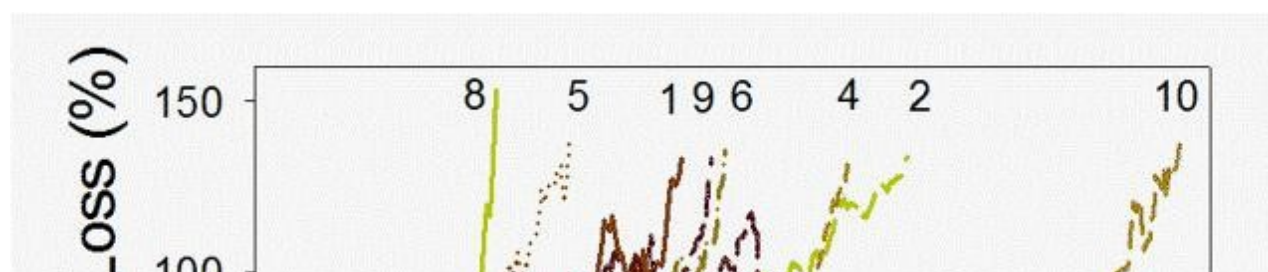
9) Theoretical gains calculated by the model are pre-tax, and do not account for brokerage fees or margin interest charges. Real gains would have been less after these expenses were paid.

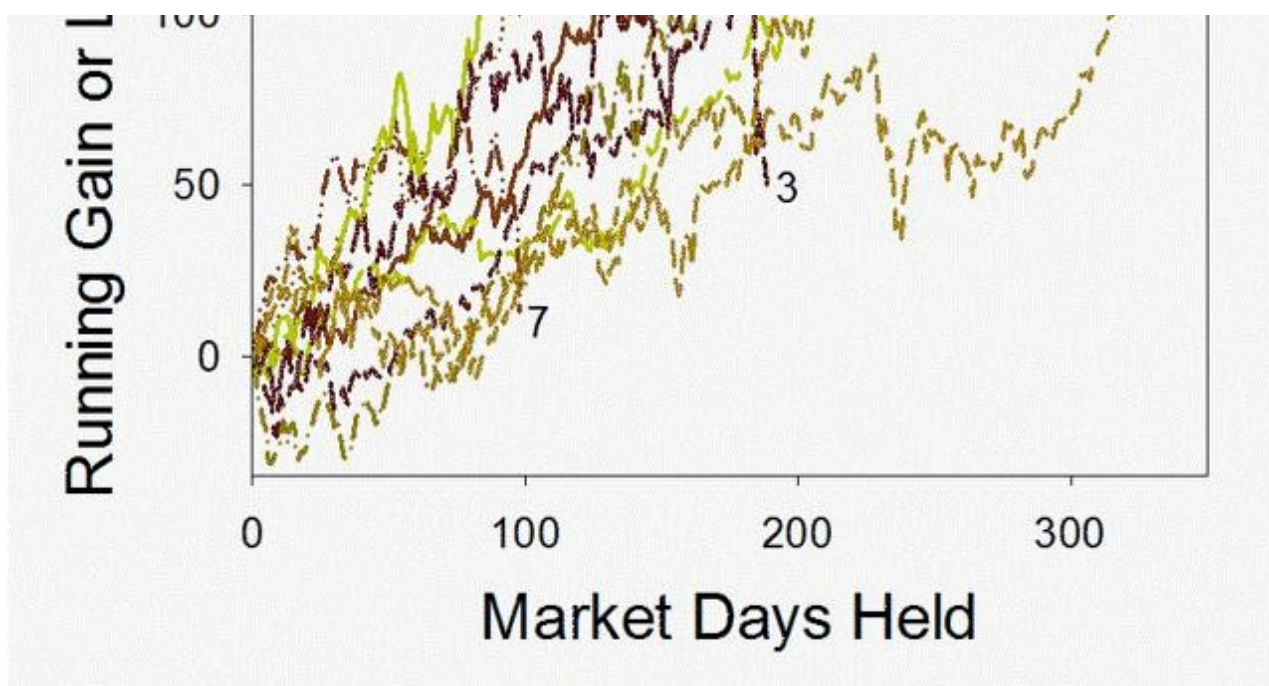
## Results of the Modeling

1. *The Buy Cycle*. After the previous buy cycle has been completed, a new buy cycle begins when the VIX futures enter backwardation at close one day and then revert to contango one or more days later. The buy signal is immediately triggered, resulting in the purchase of XIV (inverse volatility) at the market closing price the same day. A buy cycle ends when either, based on the initial trade price, (1A) the closing price of XIV drops below its stop loss price (see 2A below); or (1B) the price of XIV exceeds its limit sell price (see 2C below). Although the position may be sold based on a trailing stop as described in (2B) below, this event does *not* end the buy cycle. A new buy signal cannot be generated until the previous buy cycle has been closed.

**2. The Exit Strategy.** The exit (selling) strategy has three considerations, presented *in order of priority*. (2A) The optimal stop loss limit was determined to be -37% relative to the original purchase price. Absorbing this large of a loss will be uncomfortable to many investors. (2B) Once the investment gains surpass a defined threshold, a trailing stop is implemented. Modeling identifies the threshold limit as +38% gain relative to the original purchase price, and the trailing limit as a loss of -32% relative to the highest closing price prior to any downturn. (2C) The position is closed when the share price exceeds the established limit sell price on market close. The optimal limit price was identified as +132.8% relative to the initial purchase price.

cycle	buy date	sell date	cycle end	result	balance / \$M	max loss	days held
1	3/30/04	11/10/04	11/10/04	133.5%	0.058	-1.1%	225
2	4/19/05	3/30/06	3/30/06	133.9%	0.137	-5.6%	345
3	6/1/06	3/5/07	9/29/08	47.5%	0.201	-23.8%	277
4	12/11/08	10/22/09	10/22/09	132.9%	0.469	-6.2%	315
5	11/2/09	4/20/10	4/20/10	138.1%	1.12	-0.5%	169
6	5/12/10	1/14/11	1/14/11	135.7%	2.63	-31.5%	247
7	3/16/11	8/4/11	9/9/11	12.8%	2.97	0	141
8	11/16/11	3/26/12	3/26/12	153.5%	7.53	-6.5%	131
9	5/21/12	1/22/13	1/22/13	133.2%	17.6	-14.0%	246
10	2/26/13	7/1/14	7/1/14	137.3%	41.7	-6.5%	490





Source: Created by author.

Results of backtesting are collected in the table. The end date differs from the sell date for cycles 3 and 7, when the trailing stop was triggered. The maximum running loss that would have been experienced in each cycle is also shown. The graph shows the running gain or loss (%) for each cycle vs. the number of market days the position is held. The cycle number is indicated at the end of each cycle. It should be clear from the graph that downturns are typical within each cycle.

Over the 10.5 year period since March 26, 2004, this backtested strategy would have resulted in only 10 round-trip trades. All 10 of the trades would have been profitable, with a median holding period of 247 (calendar) days and a median profit of +134%. Without the trailing stop strategy, two trades (cycles 3 and 7) would have been stopped out at a -37% loss. There were ten periods when no position would have been held (including the present), with a median duration of 61 days. Overall, the backtested strategy would have theoretically increased an initial balance of \$25K to \$41.7M, for an annualized percentage gain of 102% over 10.5 years. For comparison, buying and holding XIV for the entire 10.5-year period would have increased the same \$25K balance to \$496K, for an annualized percentage gain just under 33% over 10.5 years.

### Future Adjustment of Parameters

Although this model would have resulted in impressive returns over the past 10 years, the four parameters were optimized with the specific goal of maximizing backtested performance. The parameter values will have to be reevaluated and tweaked as additional

data are added with the passing of time.

The *upper sell limit* was set with the goal of capturing maximum gains. Setting the limit higher than 132.8% would have missed the completion of cycle 4. Setting the limit too low, however, would systematically diminish gains from all eight cycles that were sold at the upper limit price. Future market realities are likely to warrant setting a limit price lower than 132.8%.

The *stop-loss limit* was set to avoid being stopped out of a profitable cycle, while avoiding unnecessary losses. Importantly, it also triggers the signal for the end of a buy cycle in the event that a trailing stop has been activated (cycles 3 and 7). For example, if the stop loss were tighter than -31.5%, cycle 6 would have stopped out before reversing and making a big run.

The *trailing stop threshold* (+38%) was set to activate during cycles 3 and 7 before those trades turned downward. The trailing stop of -32% was set wide enough to avoid stopping out any of the other (profitable) cycles, while simultaneously exiting cycles 3 and 7 with maximum overall profit. The downturns during cycles 3 and 7 correspond to major spikes in market volatility. Whenever a major volatility spike is reasonably certain, investors would be wise to exercise their own discretion by exiting a long XIV position early.

## Conclusions

This analysis confirms that the qualitative trigger signal for shorting ProShares Ultra VIX Short-Term Futures (NYSEARCA:UVXY) presented by Nathan Buehler has merit and can be applied quantitatively. Including objective limit sell, stop loss, and trailing stop parameters produce impressive backtested returns. This strategy is not suitable for day- or short-term trading. The holding period for the 10 round-trip trades over the 10.5 years of backtesting ranged from a minimum of 131 days to a maximum of 490 days. The strategy averages only one round-trip trade per year.

One cannot expect to make a profit on every trade. Although the 10 round-trip trades in this analysis all resulted in backtested gains, the same results cannot be expected in live trading. Short-term results can differ significantly from long term expectations. This strategy will not be as effective shorting UVXY or iPath S&P 500 VIX ST Futures ETN (NYSEARCA:VXX) as it will be for buying XIV or SVXY long. This is primarily because the maximum possible theoretical gain from shorting an ETF or an ETN is 100% per trade, whereas, for each cycle that ends by selling at the high limit, this exit strategy results in a backtested gain of 133% or more per trade. This strategy has not been evaluated for

options trading.


As of this writing on Oct. 9, 2014, the last trade by this strategy would have been a sell on July 1, 2014, with a gain of 137.3% after holding the position for 16 months. The strategy would have had no open position for the last three months. However, VIX futures closed Oct. 9 in backwardation. Therefore, the strategy will signal a buy signal the next trading day the VIX futures revert, and close in contango.

Note: The long SVXY position that I currently hold was opened prior to the beginning of my analysis and development of the trading model presented in this article. I wish to thank Nathan Buehler and ianxpotent for their comments and for their encouragement.

**Disclaimer:** Past performance, including theoretically modeled performance based on backtesting, is *no* guarantee of future performance. The strategy involves a high level of investment risk. The author is not responsible for losses incurred by individuals who base their trades on any of these ideas.

**Disclosure:** The author is long SVXY.

The author wrote this article themselves, and it expresses their own opinions. The author is not receiving compensation for it. The author has no business relationship with any company whose stock is mentioned in this article.

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## Comments (176)

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### Nathan Buehler, Contributor

Thank you David!

10 Oct 2014, 01:40 PM

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### David Easter, Contributor

Author's reply » Nathan,

Over and above an ethical responsibility to acknowledge and give credit to sources of data and ideas, I really appreciate that you have published a trading idea worth pursuing.

All the best!

10 Oct 2014, 03:35 PM

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### Learner16

Thank you, David. Do you think a rebalancing strategy with defined profit and stop loss would be similar but more robust?

10 Oct 2014, 04:02 PM

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**David Easter, Contributor**

Author's reply » Learner,

I'm not sure I understand what you mean by a re-balancing strategy. My model includes a defined maximum profit and stop loss. Perhaps if you gave me an example of what you mean by re-balancing I could give a better answer.

10 Oct 2014, 04:26 PM

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**Learner16**

What I mean is, for example, starting with 10000\$ in SVXY and then selling a third when you get a 50% profit, thus keeping the 10000\$ exposure constant. Of course, if you get a 50% loss you would need a cash reserve to double up your exposure to 10000\$ again.

The overall effect would be rebalancing your exposure at predetermined profit or loss points.

10 Oct 2014, 06:34 PM

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**David Easter, Contributor**

Author's reply » The model assumed a single initial purchase held throughout the cycle. Investors will have to make individual choices regarding when to add to, or when to reduce exposure. Rebalancing as you describe it is not too much different from taking dividends from a generic stock in cash, vs. putting the dividends back to work by adding more shares of the same stock. If the trend is up, leaving everything in the account results in better overall returns. If the trend is down, however, you stand to lose more by doing so. Withdrawing funds from a single ETF in order to rebalance a diversified portfolio is consistent with a good balanced investment strategy, which this article does not address.

11 Oct 2014, 02:12 AM

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**itscalledcommonsense**

These ETPs are so exciting to research and fantasize about. However these "backtests" all suffer from some major flaws:

- 1) Data snooping bias
- 2) The VX futures market has changed dramatically since 2004-2008. You simply can't execute the trades in the future the same way you "could have" in the past.

And I leave you with this question, for all the people who think you can sell vol and compound @ 40% pa from now until infinity: Who is going to take the other side of these trades? There aren't naturals for x trillion \$ in VX futures, sorry. There aren't enough sheep out there. Well, maybe the sheep are long SVXY right now.

10 Oct 2014, 05:10 PM

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**ianxponent**

Great points. My understanding is that these volatility vehicles were mostly created as forms of insurance for the big money folks who wanted protection against sudden large drops in the markets. They are not going anywhere soon. What might happen is that over time, the cost of this insurance may decline as more players get in and so the profitability of the inverse vix vehicle strategies will decline. In the meantime why not commit some small portion of funds to such strategies?

I would also say that a strategy that results in only about one trade annually is not going to get an active trader very excited so im not sure how well the typical impatient investors are liable to do with it.

10 Oct 2014, 11:51 PM

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**ikkyu**

Ok, i will bite...

Short vola is not a market inefficiency, it is a risk premium. That has been established by several economists. People pay others to reduce their exposure to market uncertainty. Likewise, it is the spot SPX option market that ultimately decides settlement prices and that is much bigger than the VX futures market.

11 Oct 2014, 01:26 AM

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**David Easter, Contributor**

Author's reply » If by "data snooping bias" you mean that parameters are intentionally optimized to calculate the best possible result based on pure historical data, I agree completely. The four numerical parameters (stop loss, trailing stop trigger, trailing stop loss, and limit sell price) were certainly optimized to fit the past and, as pointed out in the article, will certainly have to be adjusted in the future. Also the caveat stands, backtested results are no guarantee of future results.

The important distinction I see between 2004-2008 vs. 2009- is that QE gave a boost to equities and inverse volatility from 2009 on. If you compare results from cycles 1-3 vs. 4-10, you will see that the latter are better on an APR basis. For me, it is difficult to infer additional distinctions based on the data that would point to a significant difference rooted in how futures were traded during the two periods of time.

I wouldn't worry about trillions being poured into the market at the same time to buy the same ETF. Most people who commit their own money are, and should be cautious and will test a new idea before they jump in. Most would also set an upper limit to how much they risk in any single EFT. And most, if they are fortunate enough to make a decent profit, would spread it to other assets in their portfolio.

11 Oct 2014, 02:58 AM

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**David Easter, Contributor**

Author's reply » Great points. As you suggest, it can be one among many strategies implemented in a



larger approach.

11 Oct 2014, 03:11 AM

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**itscalledcommonsense**

ikkyu, Yeah, there has been a premium paid to index option sellers in the past. That is fact, a backward looking fact. Risk premia change. Something like XIV captures both the volatility risk premium and the equity risk premium. Both of these premia can go negative, esp over the short term.

A thought experiment: Let's be "conservative" (according to SA contributors) and estimate 40% per annum return in XIV. The front 2 month VX futures market is let's say \$10B notional right now. If it doubles every 2 years (40% pa) that means in 20 years the notional is  $\sim \$10B * 2^{10}$ , or \$10T. There simply is not enough money to get there, sorry.

11 Oct 2014, 10:43 AM

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**itscalledcommonsense**

David,

To add a little color to how things have changed: I simply frontrun you and gain a huge return with minimal risk by trading intraday.

You are going to get absolutely destroyed on your sells, look at the last 2 days trading as example.

11 Oct 2014, 10:51 AM

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**olmendreef**

can you elaborate on your intraday startegy?

11 Oct 2014, 11:37 AM

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**David Easter, Contributor**

Author's reply » ICCS: If I understand your thought experiment correctly, it appears to be based on the assumption that actual VIX futures are being bought and sold. This is true for ETFs (SVXY), which are backed by the purchase/sale of actual underlying assets, but not for ETNs (XIV), which are basically IOU notes backed solely by the credit of the issuer (VelocityShares).

As I understand it, the XIV ETN price is mathematically tied, via a well-defined formula, to the trading price of the relevant futures. Because it is a note, however, it does not require the actual purchase or sale of those futures. So the availability of futures contracts at their market price in real time is less important for ETNs. New shares are created or destroyed by the issuer to meet the demand of traders who are willing to buy or sell at the share price determined by the mathematical formula.

If my understanding is correct as to how the ETN is structured, the market cap of the ETN is not theoretically limited by the trading \$ volume of the VIX futures. That said, there are a number of

hypothetical future events that could change everything, among which include: (1) a decision by the issuer to discontinue the creation/destruction of new shares; (2) unwillingness by the issuer to issue new notes once a predetermined maximum market cap has been reached; (3) bankruptcy of the issuer; (4) new government regulation; and/or (5) a major change in the ETN's fee structure.

11 Oct 2014, 12:35 PM

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**David Easter, Contributor**

Author's reply » ICCS,

Your intraday strategy would certainly produce a better profit, provided that the XIV price drops following your sell into market close, and not vice-versa. It is probable that such exit points will exist for most trades, but your timing has to be right.

My metric for evaluating the success of a trade boils down to the total profit or loss since the position was opened. Thinking about how much more I hypothetically might have made by executing the trade earlier in the day is normal, but not generally productive. That said, individuals are certainly welcome to exercise their own discretion and exit trades intraday!

I'm not sure that your example related to the last two trading days is to the point for a sell. The sell signal would typically be triggered after a fall in spot VIX and VIX futures, and a corresponding rise in XIV price. More often than not, the XIV price would be expected to rise into the close of trading, not drop. The last two trading days have had exactly the opposite characteristics.

11 Oct 2014, 01:33 PM

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**itscalledcommonsense**

olmendreef,

A very simple intraday strategy that frontruns this would be to simply buy XIV as soon as we go to contango intraday after at least one day of backwardation.

If you want to add some bells and whistles: You could hedge with short e-mini or not. You could put a stop on. You could put a small cushion to give better odds of closing in contango. There are lots of things you can do.

Volatility is both mean reverting and susceptible to strong momentum, so if market was backward and is going to contango then there is a lot of money on the table. The race is on to get it. Everyone knows the returns of a system like the one posited here. There are huge amounts of money frontrunning guys who trade at the end of the day.

11 Oct 2014, 02:30 PM

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**tmdoherty**

ICCS, this sounds good in the telling, but it would be nice if you could provide some detail.

I am guessing you mean that once a backwardated term structure becomes contangoed, then you would buy up XIV with the idea of selling to an anticipated surge of buyers into the close.

That might be a risk-free trade if you could freeze-frame the markets, but markets are dynamic, and much can happen between the time you buy up inverse volatility and the time the demand for that inverse volatility materializes.

You are not the only market participant offering shares. What happens if 10 seconds (or even 10 microseconds) after you offer your shares, another participant offers twice as many shares at a cheaper price? Now you no longer have the best offer, and the market will just pass you buy. YOU have just been front-run, and there's plenty of HFTs out there that could and would do so in a New York nanosecond. So much for your minimal risk.

Consider this as well. There are lots of big market participants who routinely move the volatility markets fleetingly, but very effectively. For example, algos may lie in wait to bang the close in the equities markets (SPX) by suddenly dumping trainloads of VIX futures 30 seconds before the bell. This causes dramatic (and fully intentional) drops in the spot (along with a corresponding spike in SPX, which is of course part of the objective). Here's the time/sales of one such close, that saw the spot driven down more than 1% in just 30 seconds---with an even more sudden spike of equal magnitude as MOC orders were filled:

<http://bit.ly/ZUJ5nh>

Now THAT'S what I call front-running, even though that wasn't the primary objective.

There's even a clever term for this journeyman sort of algo/HFT SOP: it's called "Vixtermination." Of course, these sorts of things are hardly limited to the volatility markets, but they tend to be a frequent site of feeding frenzies by the ever-voracious algos.

So my friend, I would think twice about deploying your "minimal risk" strategy attempting to front-run anticipated demand for short volatility products. You just might get Vixterminated.

11 Oct 2014, 04:01 PM

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### **tmdoherty**

ICCS, I see a presumption in your logic that I do not think is true.

You say "who is going to take the other side of these trades?"

Correct me if this was not what you intended, but this implies that for every trade there is a winner and a loser. That's a common misconception. It CAN be true that there is a winner and a loser, but it is also very possible that there are two winners or two losers on opposite sides of the trade.

The point is that the outcome experienced by one trader in a given trade is totally independent of the outcome experienced by another trader. Their trades begin and end at different points, and in between these the market continues to move.

11 Oct 2014, 05:15 PM

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**tmdoherty**

DE, I believe that is only true for uncollateralized ETNs. Most ETNs are collateralized using futures, forwards, swaps, and counterparty arrangements.

That said, it IS true that you can be exposed to the full risk of the issuers. And, it is possible to lose every penny of your investment. This has happened before, for example those holding ETNs issued by Lehman lost everything when Lehman went insolvent and the ETNs were suddenly delisted.

Also, issuers can create new units, but might elect not to. This also can be a problem for ETNs, and expose holders of these instruments to a unique sort of risk that is not trivial. That's because failure or refusal to create new units can create sudden and very sharp discordance between indicative value and market value.

For example, TVIX is a 2x ETN that tracks the short-term futures. On March 22 and 23 of 2012, TVIX plunged 50%, despite the fact that the futures contracts it tracks actually went UP in value. The reason was that for internal reasons, the issuer stopped creating new units. Relative supply and demand then distorted the relationship between indicative value and market value, and traders fled the ETN as the squeeze became acute.

Just something else to be aware of when trading ETNs.

11 Oct 2014, 06:06 PM

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**David Easter, Contributor**

Author's reply » TMD,

Thank you for contributing insightful comments and clarifications. Adds a lot to an open discussion....

11 Oct 2014, 06:21 PM

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**itscalledcommonsense**

"You say "who is going to take the other side of these trades?""

I don't know why it is hard to understand. In every futures transaction there is a buyer and a seller. If you are selling VX future someone is buying. If the market compounds at 40% pa for 20 years then the notional of the market will be \$10T. That is equivalent to a \$10T in VXX and \$10T in XIV. So, who are all these fools that are going to take the other side of all the genius vol short sellers?

tm, sorry I won't elaborate in any further detail on my strategies. I make too much money to give them up.

12 Oct 2014, 07:28 PM

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**David Easter, Contributor**

Author's reply » ICCS,

Your comment implies that you view the "genius vol short sellers" as fools. You have also communicated in previous comments that you can easily front-run and make a lot of money off of these "geniuses."

I perceive that your comments answer your own question. It is the skeptics, i.e., those who view these people as idiots, who will take the other side of each trade--because they believe that they can make money by doing so. And maybe they can!!!

That is why markets work. People don't agree 100% Some people think that other peoples' strategies are foolish. Sometimes they are. But, as a result, there is no shortage of individuals who will be being willing to take the other side of the trade, at least not any time in the near future.

You frequently mention your view of the VIX Future ETP "end-of-the-world" scenario 20 years from now. Personally, I am not, at the moment, terribly concerned about 20 years from now. That is well beyond the time horizon that is relevant to my investment/saving for retirement. Let me make some money over the next five years. I will deal with changes in the market in real time when they occur, but I refuse to limit my current profit potential based on what might hypothetically happen in the year 2034.

12 Oct 2014, 08:45 PM

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**itscalledcommonsense**

I was trying to help. The 20 years was a thought experiment, not something to plan for. Short vol absolutely CANNOT provide 40% pa compound growth. That is only point I was trying to make with the thought experiment. I failed, it happens.

Look your system is halfway decent. It's a lot better than the buy XIV and keep it forever comments I read here. But you snooped for your parameters and it's going to cause you trouble if you use them going forward. Think how the VX market has changed over the sample, think of how the players have changed, think of how it is going to change in the future and adjust the strategy accordingly. That's my advice. Good luck to you, I hope you make a bundle over the next 5 years.

12 Oct 2014, 11:18 PM

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**tmdoherty**

ICCS:

1) The ability to buy or sell a security depends on liquidity, but liquidity (or lack thereof) can also impact the trend. This is really very simple: more buying pressure than selling pressure tends to force market price upwards, while more selling pressure than buying pressure does the opposite. As long as there is liquidity, there will by definition be others on the opposite side of the trade. In liquid markets, buyers step up and bid even during downtrends, and sellers dump securities even during uptrends.

2) The short volatility trade is making a LOT of money for traders and has been for a long time. But that says nothing about the notional value of the market, nor does it speak to the annual returns of the market.

These are not necessarily connected at all. If a market rises by, say, 20%, then drops 16.7%, it will have not changed in value. But a trader who went long then flipped short at the peak and covered when the market returns back to where it started has just made 40%, even though the market returns are zero and the notional value hasn't changed at all.

3) I have zero interest in any strategies you actually deploy and didn't ask about those. Rather, I asked about a hypothetical strategy that you did not articulate clearly, and frankly seems not well thought-through: "[When the futures term structure reverts to contango]...I simply front-run you and gain a huge return with minimal risk by trading intraday." This is not a strategy you now deploy, it is a strategy that you imply you would or could deploy in response to traders following the strategy detailed by this author (and Nathan Buehler).

4) Here's why the strategy above that you propose is flawed: it is definitely NOT "minimal risk" and there is no reason to presume that you will necessarily make a profit. In fact, you might well have a catastrophic loss with a ton of realized risk. For example, let's say you are following the VIX term structure as the market trades during the day. You note the term structure reverting to contango, and you back up the truck and load up on XIV or ZIV, planning to front-run David Easter, Nathan Buehler, and all their disciples deploying the strategy detailed here, who will be buying at the end of the day. But 5 minutes after your buy order executes, Russia invades Europe, the VIX spikes to 50, the term structure flips right back into deep backwardation, and XIV and ZIV go into free fall. Somebody might well take the other side of your trade as you try to unwind your position, but that only ensures that a paper loss becomes a realized loss.

5) There is no obligatory connection between the notional value of a market and the profits (or losses) incurred by those following a particular trading strategy in that market. If I take a long position in the S&P500 in March 2009 and close that position tomorrow, the notional value of the market is unaffected. Conversely, if I took a short position in the S&P500 in March 2009 and cover that position now, again: the notional value of the market is unaffected.

13 Oct 2014, 02:32 AM

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### **ikkyu**

Clearly ICCS's understanding is totally flawed, despite his handle.

Open interest in VX futures has been roughly flat since mid-august 2012, while XIV rocketed nearly 270%! Doesn't look like we are headed to \$10T anytime soon....

<http://bit.ly/1szi1WI>

13 Oct 2014, 04:03 AM

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### **itscalledcommonsense**

So many fallacies, so little time.

13 Oct 2014, 06:58 PM

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**Hardog**

David:

Interesting presentation , one would have to be nimble to succeed in this practice I think.

14 Oct 2014, 10:31 PM

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**Nader Khattab**

itscalledcommonsense,

Mate, you need to dig deeper into the fundamentals of VIX and Volatility in general and understand how those things are calculated & how they really work.

Ultimately and what a lot of people fail to understand when talking about VXX/UVXY/SVXY/XIV, etc...is that those ETPs are derivatives of derivatives of derivatives of derivatives, so the math is not at all easy.

The VX futures has changed dramatically since 2004-2008, not really, it did change indeed for obvious reasons but not dramatically. VIX roughly tries to measure the SPX options Implied volatility for around 30 days in the future (including the weeklies). The introduction of weekly options for SPX was one factor which contributed to the change in VIX and VIX Futures.

The other factor which contributed to changes in VIX and VIX Futures is INTEREST RATES. Back in 2004-2008, interest rates were high, much higher indeed than now. This affects option premiums and although higher interest rates are not directly correlated with volatility, higher interest rates mean higher call options premiums and lower put options premiums. When premiums change because of interest rates, implied volatility experiences regime changes, all other things being equal.

When interest rates go higher again (As they started to do), you would expect to see another regime shift in implied volatility and thus in VIX and thus in VIX futures.

What I mean by regime changes/shifts is that during certain periods of interest rate levels (2004-2008, 2009-2016), implied volatility tends to move around a certain average, this average changes as the interest rate regime changes (Because of the reasons mentioned, i.e. premiums adjusting and thus affecting implied volatility).

The change in interest rates also affects longer dated options and hence the effect on longer term indices (VXV and VXMT) is much higher than VIX.

Secondly, about the sheep who are on the other side of the trade. First off, they are not sheep, they are investors, fund managers, hedge funds, traders/speculators, etc...This is not a complicated arbitrage trading idea which will eventually get arbitrated away and returns disappear, this trade in reality is an insurance business, a risk insurance business in fact. So the returns mentioned are the premiums of that insurance business. The storm eventually will come to wipe out those who are highly leveraged or those who are into that risk insurance trade but do not understand the dynamics of it, how it works or how it should work.

Along the way, a lot of traders/speculators who try to use the long Volatility ETPs to take advantage of anticipated spikes in Volatility and make a killing also get burned out. You buy insurance because you need it, not because you expect to make money out of it. No one speculates on insurance, usually. Warren Buffet is not an idiot.

29 Jan 2017, 02:03 AM

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**ikkyu**

ICCS has taught me a lot, since the above exchange. I never understood his point here, but I have gained considerable respect for his opinions.

29 Jan 2017, 03:48 AM

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**Nader Khattab**

ikkyu,

No disrespect to ICCS and his opinions here. A lot of the pros on Wall Street working for top notch Investment Banks do not really fully understand the products we are talking about here.

I don't claim that I fully know them either, but what I know is that I have done a lot of extensive research and readings about them besides trading.

29 Jan 2017, 02:35 PM

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**aresquared**

Umm I have no doubt that iccs knows what he's doing but resting one's case on a front running strategy sounds too much like :

The blind leading the blind or:

Two blind swordsmen:

He who Unscabbards first reveals both position and intent.

02 Feb 2017, 03:05 PM

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**itscalledcommonsense**

Ever heard of the 330 ramp?

There are so many other issues with this strategy, as I have pointed out. People frontrunning you is just but one.

02 Feb 2017, 04:45 PM

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**aresquared**

iccs you can't be serious here.



Front running is done on by 2 sets of people:

- 1) When the front runner has no clue but believes his mark does.
- 2) When the front runners think they know in advance when & what huge market players are about to do.

Which scenario are you claiming would be at work here?

02 Feb 2017, 05:39 PM

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### **itscalledcommonsense**

#2

With the 330 ramp it is easy. The mark is price insensitive index fund and levered ETF sponsor. This phenomenon is in the market, look at the data.

In any strategy that enters on switch from backwardation to contango once per day then frontrunning is also easy. My argument re the frontrunning wrt to this strategy was that the strategy would underperform significantly vs. the backtest and part of that underperformance would be due to people frontrunning on those days where the curve went to contango from backwardation. Of course the main issue is the overfitting, but that is not what we are talking here. I believe if you look at the history my predictions have been born out.

02 Feb 2017, 06:40 PM

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### **aresquared**

I agree with the overfitting part, frontrunning of backwardation to contango not so much.

02 Feb 2017, 07:43 PM

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### **Nader Khattab**

Just one thought as well on your assumption that a 40% pa will turn each instrument (VXX/XIV) into a \$10T equivalent in 20 years time, so essentially what you are saying is that those instruments are not sustainable and can't continue to sustain such returns.

I fully agree with you in that point in that at some point those instruments will grow extremely big (If they sustain such returns) that they will find extreme difficulty because of their size.

However, the ETN/ETF issuer can destroy notes/shares, right? If those instruments grew that large enough, they will simply call in some notes/shares and destroy them and thus shrink the overall size to a more manageable one.

Think Mutual Funds & Hedge Funds. At a certain point in time they need to stop taking money from clients (And in some cases actually they need to return money back to investors). Why? Because if they grew beyond a certain size in AUMs it will hurt their returns and they will not be able to sustain it (Because they grew to be a very big shark for the markets they are trading).

As of today, XIV has around 8.22 M notes/shares outstanding. Multiply this by the latest price and you get around \$510M. It's still a baby. Even if it went to \$5B (10 times), it will still be a baby.

Needles to say that VIX Futures don't need to grow in order for SVXY and XIV to grow, just the contango effect will do the job.

02 Feb 2017, 08:43 PM

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**itscalledcommonsense**

Nader, thanks for the tips. Some questions:

- 1) If VX market doesn't grow how can all the short investors compound their money @ 40% pa?
- 2) This thread that was brought back from the dead, with these outlandish claims of 40% pa returns, from early October 2014. From 9/30/2014 to 12/31/2016 SVXY return ~9% pa (with over 50% drawdown). We have just finished one of the biggest bull runs for short vol in history and VIX is at 12. How are we going to get the returns in the near term to get our return up to 40% pa? If the annualized return gets there soon then is VIX never going to go up ever again?

Before you answer let me remind you, since I am sure you already know this but it may not be forefront on your mind, that since 12/31/2006 a hypothetical/actual combo of XIV has returned ~10% pa.

PS, I have been trading volatility since the 20th century and I have been trading VIX futures since they launched. I definitely don't think I know everything about them and I try to keep learning as the game changes constantly, but I do know this: short vol won't make 40% pa for 10 years running.

I also know that most of the people shorting vol will tire of it way before 10 years. Since you know everything about shorting vol already I am sure you won't be one of those who fades away.

02 Feb 2017, 11:14 PM

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**itscalledcommonsense**

LOL, I just calculated what XIV would need to be for it to have made 40% over last 10 years: ~500. I know contango is super special and magical and the best thing ever, but I doubt even it can get XIV to 500 in short order.

02 Feb 2017, 11:33 PM

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**Nader Khattab**

ICCS, I fully agree with you, %40 pa is not sustainable (on a buy and hold basis), at all...It doesn't work and will not work like this...

What I am referring to is that XIV/SVXY can grow in size without the need of VX futures to grow, however, at some point in time, SVXY/XIV issuers will need to shrink it and bring it's size down, because if they leave it at a large size which will be a large fraction of the VX futures, they will not be able to easily roll over their

positions and investors/traders will flee them and eventually they will die out (As liquidity leaves and price discovery becomes more difficult).

Remember that the original article was about a certain strategy for XIV not a Buy and Hold, so there is a difference here between growing a portfolio using that strategy @%40 pa and the underlying itself growing at %40 pa.

I do agree with you also about the over fitting done in the strategy test and the author admitted it himself.

03 Feb 2017, 11:58 AM

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**Coitelada**

Please, can you explain why a new buy signal cannot be generated whenever the previous position has been closed instead of only when the previous buy cycle ends? I don't understand the reason for delaying a new signal when the position is closed based on a trailing stop, so that it cannot be generated until the end of the current buy cycle.

10 Oct 2014, 05:32 PM

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**David Easter, Contributor**

Author's reply » During the 2007 and 2011 volatility spikes, the trailing stop would have taken you out of the trade with a profit. In both cases XIV prices continued to drop a long, long way until they finally fell below the stop loss limit. Waiting until the drop worked itself out would have saved a lot of money because those trades would have been losers.

11 Oct 2014, 03:24 AM

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**bobtcat2**

The only problem with these products is they've mostly existed during the Fed intervention in the markets. If the Fed is now serious about stopping their juicing of the markets, we have no idea what the result could be. Maybe con tango narrows completely, maybe we see backwardation, who knows? John Hussman, who called the last two crashes, is calling for a third crash. So is Jeremy Grantham. I would be much more inclined to buy ZIV than XIV since XIV can lose incredibly fast if this is indeed "the big one".

10 Oct 2014, 05:37 PM

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**itscalledcommonsense**

Buy more today? LOL

10 Oct 2014, 10:11 PM

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**bobtcat2**

Yes.

10 Oct 2014, 10:48 PM

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**David Easter, Contributor**

Author's reply » Excellent point. In the backtesting, cycles 1-3 (pre QE) did not do as well overall as cycles 4-10 on an annual percentage basis. What will happen post QE is a big unknown and is definitely work keeping a close watch on.

11 Oct 2014, 03:32 AM

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**tmdoherty**

@bobtcat2,

It is true that all the volatility-linked ETPs have only been in existence for a relatively short period of time (I believe the first was VXX in Jan 2009). But the VIX futures have been trading longer than 10 years. During much of that time, QE was not occurring. Most of the time (roughly 80 to 85% of the time) the term structure was contangoed.

We therefore know that in general, the term structure is in contango because the longer out the contract, the greater the uncertainty as to what the spot VIX might be. Traders demand correspondingly greater compensation for taking on that risk, which is why the later month contracts normally are priced higher than the near-term contracts.

The only way I can imagine that changing is if market expectations are fundamentally altered. One way that can occur is if we enter a period where very high spot VIX values become common, and traders don't believe that will last. Right now, that is the case (since we are backwardated at the moment), but there's no law that says that cannot be sustained indefinitely. That could happen, because the market knows that the knee-jerk response to spiking spot VIX values is to short (and sell) volatility. If that trade were to expand markedly, then this would tend to promote backwardation as a new norm.

This would have nothing to do with the Fed. QE has obviously impacted the markets, but just the same, the Fed's influence on market trends is grossly overestimated in my opinion.

A typical example occurred last week, when the Fed minutes were issued. That drove market trends for only 120 minutes. That's it. After that, the market just picked up where it left off, and where it left off was a downtrend.

If you carefully look at Fed days, I think you will find this is the rule rather than the exception, and has been for many years. It is irrelevant what the announcement actually is. Whatever the subsequent reaction, it is always totally forgotten the next day, and instead the market just resumes doing what it was doing prior to the announcement.

11 Oct 2014, 06:26 PM

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**tmdoherty**

@bobcat2,

Well here we are 2 years and 4 months later, and still, no crash.

Hard to take a permabear like Hussman or Grantham seriously. He might have called the last two crashes, but that is expected if you perennially calls crashes. But, permabears call lots of crashes that never occur. So their predictive accuracy is actually quite poor; a broken clock gives correct time twice a day.

Hussman's funds have performed miserably. Two of them have negative CAGRs since inception.

TMD

01 Feb 2017, 11:01 PM

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**ikkyu**

Nice post. Thanks.

10 Oct 2014, 09:03 PM

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**ianxponent**

Thanks for this effort David! Although your approach specifically and on purpose does not factor external events in, I do think there are occasions where it might be prudent to do so. The whole debt ceiling spectacle comes to mind in that regard.

10 Oct 2014, 11:55 PM

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**David Easter, Contributor**

Author's reply » I agree. Any time a savvy investor foresees a downturn, they should certainly exercise their judgment in order to minimize short term losses.

11 Oct 2014, 03:43 AM

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**ikkyu**

My guess is you could make money trading XIV by simply entering the market randomly with a profit taking limit order that was 3-4 times your stop loss. Your research seems to suggest that.

Nonetheless, taking into account contango cycles seems to increase the odds in your favor.

11 Oct 2014, 02:31 AM

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**David Easter, Contributor**

Author's reply » I agree with your hypothesis. XIV and SVXY, as inverse volatility products, benefit from contango in the VIX futures market, which is the normal condition. Enough so, that even after management fees are deducted, the overall price bias is upward. My estimate is that if both spot VIX and VIX future prices were hypothetically completely unchanged over a long period of time, XIV would still gain an average of perhaps 0.1%

per trading day, provided that the futures were in contango. That said, these instruments can lose a lot, and very quickly when there is a volatility spike so you definitely would want to have a good stop loss in place.

11 Oct 2014, 04:05 AM

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**olmendreef**

loved the article. Took a big loss with XIV last week and closed it out.

Will step back in when in contango again.

May I suggest this paper:

<http://bit.ly/1qwo11E>

Best regards

11 Oct 2014, 08:43 AM

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**David Easter, Contributor**

Author's reply » Thanks. I will definitely take a look at the paper.

11 Oct 2014, 11:01 AM

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**kg**

I agree with several comments. I think the results in this backtest are definitely over optimized/data snooped; however, the existence of a risk premium as mentioned is a real phenomena that is highly likely going to persist into the future. I believe the main issue going forward is given the popularity of the VIXsphere will it be as profitable? One can geek out on VIX and VIX ETF stuff to an incredible degree but ultimately it is really nothing more (or less) than selling insurance. If you do it long enough you are going to pay out from time to time and many VIX ETF timing articles notwithstanding, is probably unavoidable. Or, if you try to make losses avoidable then it is not a compelling trade any longer. However, insurance companies with good risk management and adequate reserves can do quite nicely. If I were to invest/trade in the VIXsphere I would spend much more time focused on how large of a position size I am comfortable with and how large my reserve needs to be to stay the course as the inevitable reversals occur.

11 Oct 2014, 12:20 PM

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**David Easter, Contributor**

Author's reply » KG. Good points. Thanks for contributing your input.

11 Oct 2014, 12:46 PM

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**John008**

Nice article, thanks.

Could someone please provide info on how to check to see if VIX is in contango or backwardation on a daily basis? Is there a quick way to get this info?

11 Oct 2014, 09:42 PM

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**David Easter, Contributor**

Author's reply » You can get VIX futures prices, delayed by 15 min, at <http://bit.ly/v8FEJ5>.

11 Oct 2014, 09:55 PM

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**ursmax**

You'll probably want to bookmark [vixcentral.com](http://vixcentral.com) as well. Very compact indispensable info.

13 Oct 2014, 02:58 PM

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**smartestone**

SVXY investment idea <http://bit.ly/1vUuvXj>

11 Oct 2014, 09:46 PM

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**EventTrader, Contributor**

David, I enjoyed your article very much. It certainly stimulates ideas around how to time the short volatility ETFs. Just curious, which websites do you use to keep track of VIX? Is there a service which emails you daily views or do you just check [vixcentral](http://vixcentral.com) daily? Thanks.

12 Oct 2014, 02:06 AM

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**David Easter, Contributor**

Author's reply » ET2M, I don't subscribe to a service. You can track spot vix prices on Google Finance <http://bit.ly/1qghqTL>. You can track VIX futures with a 15-min delay at the CBOE web site <http://bit.ly/v8FEJ5>. VixCentral <http://vixcentral.com> can also be used for delayed futures quotes, historical prices, and a graphic that shows historical contango/backwardation. Other readers may be able to recommend additional sources.

12 Oct 2014, 02:52 PM

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**Vineet Bhatia**

This is one of those meaning full analysis which resonates with my thoughts on VIX futures and their correlation with Contango and backwardation - but the target to 130%-133% is based on backtesting - which i feel - should be dependant on actual scenarios - for example - if china real estate bubble filters out - we might enter into a longer backwardation - and hence when we come back to contango again - that entry point might give us close to 400% gain...but i loved the way you think :)

12 Oct 2014, 03:09 AM

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**David Easter, Contributor**

Author's reply » Vineet, Thank your for your contribution. As you noted, the target does not account for actual scenarios. If an investor's read on conditions warrants, he/she could tighten up the trailing stop once the target is reached, and let it run.

12 Oct 2014, 03:08 PM

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**tmdoherty**

VB, note that the backtesting spanned many different scenarios, including one of the biggest market crashes we have seen in a long time (SPX losing 55% in about 9 months).

I agree that does not mean that this is an "all-weather" strategy. There will be times when the strategy doesn't work well for various reasons, for example whipsaws.

When the Chinese RE finally collapses, that will affect world markets to a degree, but mostly it will effect China's economy and stock market. The Chinese stock market does not have a significant effect on other markets. That market has gone nowhere for years because it is in the post-bubble phase and will continue in that phase for many years to come. That has had no effect on the US markets, which have been in a very strong uptrend for years.

Even if that RE collapse causes China to go into deep recession (very likely, in my view), I don't see that this will have a big effect outside China for a number of reasons.

12 Oct 2014, 04:00 PM

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**foxyindy**

John008,

VixCentral.com click on Contango, highlight towards the end of the graph, if the blue line is below the Red Line 0%, it's in backwardation.

12 Oct 2014, 03:15 AM

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**John008**

This is very helpful, thanks!

12 Oct 2014, 03:56 AM

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**Undervalued\_stocks**

Sorry, what do F1-2 & F4-F7 mean? thanks.

13 Oct 2014, 12:15 PM

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**tmdoherty**

@ocls:



Those abbreviations refer to futures contract months in a general way (as opposed to Sept, Oct, etc.). Specifically, the F1 month is the front month futures contract that will expire soonest. The F2 month is the contract after that, and so forth.

F1-F2 and F4-F7 are ways of judging the degree of contango/backwardation in a futures term structure (in this case, the VIX futures). They mean that you subtract the current quote for the F2 contract from the current quote for the F1 contract. If the result is negative, the term structure is said to be in contango. If the result is positive, the term structure is said to be in backwardation.

The same calculation is performed for the F4 and F7 months contracts.

Note that it is possible that one calculation might not agree with the other. There is no consensus view on what defines contango/backwardation. Some use the F1-F2 difference, others use the F4-F7 difference. For the purposes of this particular strategy, I personally think it is preferable to use the F1-F2 difference as the starting point. If F1-F2 indicates backwardation, and in addition the F1 is trading below the spot VIX and the F4-F7 difference also indicates backwardation, that is a consensus confirmation that the term structure is in solid (albeit very likely temporary) backwardation.

Hope this helps.

TMD

13 Oct 2014, 03:03 PM

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### **Undervalued\_stocks**

TMD, Thanks for the explanation. It looks like VIX is still in backwardation as of today 10/14 and has not returned to contango yet as Dec/Jan quotes are still less than that of Nov. Not a buy signal yet according to the model built by the author in this article.

14 Oct 2014, 12:02 PM

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**tmdoherty**

@ocls\_pk,

Right, still solidly in backwardation. Now the F3 is less than the F1 (and F2), and every contract is significantly less than the spot.

Obviously that's unstable. Eventually the spot and at least the front month have to converge, but of course that can happen in a variety of ways. As the spot begins to drop, then the term structure will usually tend to revert fairly quickly to contango. But the other possibility is that the VIX stays elevated and the futures contracts eventually rise to exceed the spot VIX. At face value, that's what the futures market has priced in, at least for now.

15 Oct 2014, 03:27 AM

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**ssmi**

David,

Thanks for an excellent article. I downloaded the spreadsheet from Intelligent Investor blog to understand the trades. After the sell on 3/5/2007 based on trailing stop sell, why did you not buy on the following backwardation reversals on 3/9, 3/19/ 4/2 and several more during 2007. Per your rules, buy cycle ended with the sell on 3/5. But your trades list indicates 9/29/08 as the buy cycle end date. Perhaps I am not applying one of the other rules? Thanks again for sharing your knowledge.

12 Oct 2014, 01:31 PM

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**David Easter, Contributor**

Author's reply » 7831631, Thanks for doing independent testing! One rule you may have overlooked is that the cycle does not end with a trailing stop sell. After the trailing stop, the cycle continues (with no open position) until the share price drops below the original stop loss limit (which occurred on 9/29/08). If the cycle had ended with the trailing stop sell on 3/5/07, while VIX was still very elevated and [calculated] XIV prices continued dropping, you would have lost a lot on trades the following 18 months. Over that time period, XIV dropped by more than 60%, relative to the trailing stop price.

12 Oct 2014, 02:29 PM

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**floote**

Did you test this strategy with:

-buy/sell at open, day after the signal?

12 Oct 2014, 01:34 PM

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**David Easter, Contributor**

Author's reply » Floote, Not for this strategy. I have done so in the past for other strategies, and the results have never been as good as when executing the trades at market close the same day.

12 Oct 2014, 02:33 PM

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**algochris**

Could you explain the rule for exiting trade number 7, initiated 3/16/11?

12 Oct 2014, 07:12 PM

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**David Easter, Contributor**

Author's reply » Once the running profit exceeded the 38% limit, it triggered a trailing stop. Trade 7 was exited when the XIV price dropped below the trailing stop limit. See 2B under "Exit Strategy".

12 Oct 2014, 10:23 PM

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**D White**

I like the analysis and strategy as a concept and believe over time buying inverse VIX ETPs when VIX spikes is a profitable idea. I'd like more analysis if possible of the returns for all possible entry points since the data is available.

The problem I see with this analysis is it's based on the first entry point in the available data and each subsequent buy cycle/exit point. But those are arbitrary points which result in only this set of data that can be replicated only if you begin trading on March 30, 2004. I wonder what would have happened on any number of other entry points. For instance the most recent buy cycle began on 2/26/13 and ended on 7/1/14, but that is only predicated on beginning your backtesting on 3/30/04 and having these exact 10 cycles. What if one began this strategy in an intercycle period when VIX futures went from backwardation to contango - for instance a number of times in 2009 and even 2014? Then your cycles would be different and potentially your results. And what if the data went back further and you realized 3/30/04 wasn't a buy point, but in fact a data between cycles.

Anyway, interesting food for thought. Appreciate the article and any other comments you have.

14 Oct 2014, 10:10 PM

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**David Easter, Contributor**

Author's reply » Because of its length and detail, I have posted my response to your questions at <http://seekingalpha.co....> Let me know if I have addressed the issues you raised.

17 Oct 2014, 11:09 PM

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**David Easter, Contributor**

Author's reply » DW,

Thanks for the comment and your suggestion for further analysis. I will definitely examine the possibility that Mar 2004 may have been a mid-cycle event, and will explore how that possibility might have affected the timing and outcomes of the cycles that followed. I will let you know if/when I have an answer.

15 Oct 2014, 10:25 AM

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**ursmax**

Nice work. Unfortunately you're just data mining.

18 Oct 2014, 12:13 PM

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**David Easter, Contributor**

Author's reply » ursmax,

Exactly the same criticism (data mining/"snooping") that is common to EVERY quantitative model derived from historical data. The value of a strategy lies in its utility going forward in real time. Over the next ten years, will following the strategy result in gains that are superior, compared to the gains derived from following a simple buy-and-hold strategy? For now, the jury is out. The true test will likely begin soon, however, once VIX short-term futures move back into contango.

18 Oct 2014, 01:07 PM

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**tmdoherty**

@ursmax:

What exactly is wrong with that?

This might seem heretical, but I maintain you can't dismiss a strategy out of hand just because data mining has been performed. The notion that data mining is always worthless or negative makes a presumption: that future conditions WILL diverge significantly from past conditions, and that history will not repeat itself.

That COULD be true, but there is zero reason to a priori assume it WILL be true. Despite standard legalese that "past performance is no guarantee of future performance," the fact is that past performance is the best (and really the ONLY) rational guide we have to future performance.

Data mining and curve fitting will actually work very well just to the extent that history repeats itself (and indeed, it does tend to do exactly that). I assert that history IS a guide to the future, with the caveat that things can and likely will change, sometimes with little or no warning, and sometimes inexplicably and irrationally.

19 Oct 2014, 01:59 AM

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**ursmax**

I'm not arguing that being long XIV/SVXY yielded excellent returns in the past, and probably will for the time being.

What I do say is that these parameter values have been retrospectively optimized for a given data set. And any set of parameter values that had you avoid 2nd half of 2008 and the Euro crisis would have had a very positive effect, obviously.

Since next time around will probably look different your set of parameter values may be helpful, not helpful, or even be harmful. And you won't even know why.

19 Oct 2014, 12:49 PM

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**David Easter, Contributor**

Author's reply » ursmax,

I agree with 95% of what you say. The major difference between my clear caveats/disclaimers and what you have said is in the TONE of presentation, not in the substance itself. My caveats/disclaimers are more positive in tone, and are presented as a realistic warning of what could go wrong. Your comments repeat the same warnings, but in a more negative tone.

I do have issues with your last sentence, however. You wrote, "... you won't even know why."

A fair reading of the article, my comments, and the associated InstaBlog, should make it clear (1) that the parameters are not set in stone, and (2) that future market conditions will require adjustment of the parameters. I have also communicated that (3) in the event that a major market disruption were predictable, prudent investors would be wise to wait it out on the sidelines.

I find it difficult to comprehend how a person, who is fully cognizant of the above three points, could be completely oblivious as to why XIV prices had tanked in the event of an economic catastrophe. I give myself and the readers more credit than that.

19 Oct 2014, 03:58 PM

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**tmdoherty**

I agree that any data set that includes only a limited array of market environments is always suspect.

For the volatility-linked ETPs, synthetic price data are available back to March 2004, and testing of strategies needs to involve these data.

But my main point is this: just because backtesting is not ideal, or has been curve-fitted, does not necessarily allow you to conclude that the strategy is worthless and can not possibly work. It just means there is a much greater degree of uncertainty as to how it might perform.

The same standards of rigor apply to hypothesis testing, whether you are testing a negative hypothesis (this strategy will not work) or an affirmative hypothesis (this strategy will work).

19 Oct 2014, 08:15 PM

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**David Easter, Contributor**

Author's reply »

**A GENERAL COMMENT REGARDING DATA MODELING**

By including a large-enough set of adjustable parameters, any model can be "forced" to fit a given data set, regardless of the model's viability. As a general principle, a model that requires a large number of parameters is more likely to be impractical than one that requires only a few parameters.

Identification of the cycles in my strategy depend on only three adjustable parameters: (1) the upper sell limit determines the end of a profitable cycle; (2) the stop loss limit determines the end of a losing cycle; and (3) the buy signal triggers the beginning of a new cycle, once the previous cycle has been completed. The data set consists of more than 2650 independent historical values. It is difficult to envision any successful model that would require fewer than these three parameters.

In addition to the three parameters that identify the cycles, there are only two other parameters in the published model: (4) the trailing-stop trigger, and (5) the trailing stop limit. These were added to minimize losses in cycles 3 and 7. As such, they are more susceptible to the criticism of "data snooping." In the absence of the trailing stop strategy (eliminating the last two parameters), the three-parameter model identified in the preceding paragraph would still have resulted in an annualized percentage gain of 74% over the 10.5 year period—which is 2.25 times

better than the annualized percentage gain corresponding to a simple buy-and-hold strategy over the same time period.

If the trailing stop trigger (parameter 4) were completely eliminated, i.e., if the trailing stop were immediately established on the first day of the new cycle, the outcomes would have been identical to those of the original model. Therefore, based solely on historical data, the trailing stop trigger is potentially extraneous and can be eliminated from the model.

As a result, the model relies on only four parameters: limit sell target, stop loss limit, buy signal, and trailing stop limit. Because these four parameters are common to almost all trading strategies, the model is clearly not over-parameterized.

A model that successfully accounts for 2650 independent data points, using a minimalist set of only four parameters, may or may not be successful in the future. There are no guarantees. In addition, I reiterate a disclaimer published in the article: "..., the [four] parameters were optimized with the specific goal of maximizing backtested performance. The parameter values will have to be reevaluated and tweaked as additional data are added with the passing of time."

18 Oct 2014, 04:02 PM

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**olmendreef**

Do we have a buy signal today? 1h before close  $F2 > F1$ .  $F3$  still lower though.

20 Oct 2014, 03:03 PM

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**Vineet Bhatia**

Also one more point to add here David - considering your model - it takes into consideration the closing price for VIX futures - i.e. on a closing basis if they move to contango - then you take a buy position - but in actual market scenario - you would always (and i mean ALWAYS) miss 3-5% on the next opening day on SVXY. Can we cover this in any case? would love to hear :)

20 Oct 2014, 03:04 PM

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**olmendreef**

do we have a buy signal today? I guess so since  $F2 > F1$ .

20 Oct 2014, 03:16 PM

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**David Easter, Contributor**

Author's reply » olmendreef and Vineet,

The model will trigger a buy signal if  $F1 < F2$  at trading close of futures. We won't know officially until after 4:15 ET. At the moment, it appears that will be the case.

As VB points out, the trade trigger will not be official until at least 15 minutes after the equity markets close. There

are a few ways to deal with this, none of which are perfect. (1) If the trigger appears "certain", trade the same day at close. (2) Or wait, and then try to get the posted closing price (or better) with a limit buy price after hours. (3) My third (last) choice would be wait and take the next day's opening price.

Good luck!

20 Oct 2014, 03:42 PM

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**tmdoherty**

@DE:

I have wrestled with another irksome problem: what happens if global events cause a huge move overnight in the VIX, then a gap up at the open, which could put your short volatility position in a world of hurt that no stop loss could protect you from? After all, there are 168 hours in a week, and the market is only open at most 19% of the time (32.5 hours per week or less). So this would seem to be a significant risk.

That is my major concern with this whole strategy. But how realistic is this concern?

Although rare, there have been a few occasions in the past when the VIX has gapped up 50% or more at the open.

The probability that the VIX will gap up by 5% or more is considerably more real: specifically, the probability is 10% based on historical analysis of all VIX prices dating back to Jan 1990. For a gap up of 10% or more, the probability is 2.1%.

I guess it is possible that one could try to hedge a position in short volatility ETPs with a long position in the VIX futures. That is the only way I know of to guard against the possibility of a monster gap up move in the VIX because of a strong move in the VIX during the overnight session. Probably you would have to exit the hedge each day at the open if there was no gap up, because if the trade moves your way and the prices of the futures contracts fall (and UVXY along with it), the huge leverage of the long volatility position could devastate you.

So what's a mother to do?

I see only two viable options: 1) Exit each short position each day with a MOC order, and re-open the position at the market open the next day; or 2) use a stop loss of something like 5%, and just accept that occasionally, you might get stopped out at significantly greater than a 5% loss.

Maybe you could test and compare these strategies?

Thanks,

TMD

20 Oct 2014, 07:44 PM

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**David Easter, Contributor**

Author's reply » TMD,

Thank you for the constructive suggestions.

Because my current strategy's trailing stop trigger is based only on the closing price, it could be even worse than you suggest, in the event that VIX were to gap up by 50% at open, and continued to deteriorate through the trading day--assuming that futures followed.

I will definitely take a look at these ideas, although it will take some time. (1) My intuition tells me that exiting at MOC daily and re-entering the next day would eat up gains due to a significant increase in trading fees. These fees would have to be considered in a frequent-trading model. (It would also tag the investor as a day trader by the IRS.) (2) Instituting a much tighter stop loss (5%?) would also require defining a re-entry point.

Thanks again for the suggestions. I will get back to you if my analysis finds anything promising along these lines.

20 Oct 2014, 08:35 PM

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**ikkyu**

Just trade the futures. You are right that there is real gap risk with a market that trades nearly around the clock. Trading the futures directly is superior in every way. Knock on wood; my stops have always held on futures. They eliminate overnight gap risk and fund termination risk.

Likewise, I think the notion of hedging a short vola trade is bogus. You are being compensated for taking on risk. If you want to take on less risk, sell less. But money is made by exposing oneself to market forces.

21 Oct 2014, 12:44 AM

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**tmdoherty**

@ikkyu:

I have been thinking that futures trading might offer certain advantages, as you suggest.

What sort of strategy do you use with VIX futures? How do you define entries, price targets, and stops? What sort of stops do you use, and how do you calculate position size and risk?

21 Oct 2014, 02:29 AM

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**ikkyu**

Greetings tmdoherty:

I trade the futures almost exactly as I would the ETF, using a simple momentum system. I put a 10% disaster stop-loss on for a system that trades bi-monthly. Position size is easy: the futures are simply  $1000 \times \text{price}$ , so you can just match the nominal \$ amount.

Choice of month requires some thought, depending on where you want to be on the curve.



Cheers from Osaka,  
john

24 Oct 2014, 11:34 PM

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**itscalledcommonsense**

Trading the futures opens you up to a lot more possibilities. I have been trading the futures since inception. You can mimic the ETFs as ikkyu says, but there are also a zillion other possibilities, most notably futures spreads and delta hedged VIX options.

Trading VX Friday was just easy easy money.

14 Dec 2014, 10:17 AM

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**ursmax**

@tmd

From what I've seen you say previously I thought you'd read what's actually written, with (reasonably) little interpretation:

I don't say the strategy is worthless (quite the contrary, actually), nor do I say this particular set of parameters won't work going forward. What I do say is, they lack predictive power. One could of course use them, and one may get lucky, but that's just that: luck (plus the HUGE backwind of roll gains).

What's more, they haven't been tested using out-of-sample data and thus they're worthless.

@DE

You are of course free to pretty paint. I however prefer to tell it like it is, and that's what I do. I honestly don't know about you, but personally I don't give a rats ass about any legal mumbo jumbo, which is what your disclaimers are, basically.

I'm not commenting on your whole blog but rather, on this particular article. Since you don't refer to any other of your posts (your reply on Nathans' basically is what you say here) they are irrelevant.

As for your 2650 data points (mentioned somewhere else): You could use one-minute instead of daily entries and thereby easily bloat them up to much more than a million data points and still have no more of a valid claim.

The disclaimers basically say:

Look at this GARGANTUOUS performance(which it truly is). But you'd better not read much into it because the parameters may need adjustment by a completely unknown amount in any coming scenario. Or maybe they won't coz they're perfect already, or maybe just a little, only God knows and I can't give you any hints, give you any parameters, from which you may get any clues as to if you should change them, or by what amount, let alone when and in which direction.

So yes, you are very much saying your particular set of parameter values is useless because how you arrive at them has zero predictive power - at least you don't even try to prove it does. You could just as well have a chimp throw darts for your parameter values. It's like predicting future lottery numbers based on past outcomes.

What you should do instead is try to test them against an independent, comparable set of out-of-sample data. They may need to be adjusted and interpreted (aka mumbo-jumbo), but anything would be better than nothing at all. Even though VIX futures would have to be guessed at in any case (or maybe, not guessing them at all and simply using your replacement-VIX altogether would be a much better idea), you still might arrive at some interesting conclusions. These could range from "How could I be so lazy" to "I don't know so let's be a some more aggressive" or "Oops, this was some hell of a lucky streak".

\$VXO, the precursor of VIX, would be an excellent candidate for this endeavour. Yahoo data start 2/1/86 (1985 or '84 would be much better, but you gotta take what you can get).

I think this would also be an excellent way to try for the effects of different entry points: assume you start on the first of every quarter for ten years, and see what pops up. If you'd found some "golden rule" the different starting points should even themselves out and, in the longer run, end at comparable entry/exit points a few years down the road.

But I suspect you'll see outcomes jump all over the board, subject to your entry point - I'd love(!) to be proven wrong on this point.

20 Oct 2014, 05:11 PM

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**David Easter, Contributor**

Author's reply » ursmax,

Probably best to table this line of discussion for ten years. Then we can have a retrospective evaluation and dialog base on verifiable facts instead of hypotheticals.

20 Oct 2014, 06:31 PM

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**tmdoherty**

@ursmax:

<< thought you'd read what's actually written...What I do say is, they lack predictive power.>>

Thanks for your comments.

I did in fact read what was actually written, but evidently you did not----you never said anything about predictive power or anything remotely equivalent to that. The words prediction, power, or predictive do not appear in any of your previous posts.

Your suggestion to perform out-of-sample testing is a good one (albeit obvious), but your proposal as to how one might do so is absurd:

<<Even though VIX futures would have to be guessed at in any case>>

Indeed. How might guessing at the out-of-sample data set impact "predictive power?"

The problem is there is no valid way to perform any further out-of-sample testing. Your suggestions are completely untenable. You can't just make up futures data out of thin air, and you can presume any relationship with hypothetical futures and either the VIX or the VXO. As recent sessions make it clear, there

are times (not infrequent) when the futures and the spot VIX diverge tremendously and unpredictably. So you can't reconstruct volatility ETP data with anything other than historical futures prices, and the data in this article use exactly that: all possible ETP data reconstructed from all possible futures data. Sorry, but there just ain't no more---aside from "guessing" at VIX or VXO futures data in an era when volatility futures markets didn't even exist.

You cannot derive prices for volatility-linked ETPs from the VIX or the VXO because these ETPs are not linked to these indices in the first place.

20 Oct 2014, 07:05 PM

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### **Undervalued\_stocks**

Hi David,

Is the difference  $F2-F1$  ( $18.25-18.29$ )= $-0.04$  enough to trigger the buy signal now? It is still negative. So, want sure what your interpretation would be on this. Thanks.

20 Oct 2014, 08:02 PM

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### **tmdoherty**

@ DE:

Interesting development now:

I believe the futures closed the regular session with  $F1 = F2 = F3$ . So since we no longer have backwardation, I believe that is the signal, correct?

But now in the overnight session, the futures have slipped back into backwardation.

So what does the strategy say to do in such a circumstance?

20 Oct 2014, 08:24 PM

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### **David Easter, Contributor**

Author's reply » TMD and OCLS,

If my reading of the data on CBOE.com is correct, the  $F1-F2$  futures actually closed today still in backwardation by \$0.20. The strategy would say wait until tomorrow.

That's not what I actually did, however, as you can read here, along with my justification:

<http://seekingalpha.co....>

20 Oct 2014, 09:21 PM

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### **ursmax**

@tmd

As for VXO:

I'm not the one claiming to have found what amounts to the Holy Grail of the financial world, so I'm not the one who has to prove any claim. As a matter of fact, I was merely offering a way out. Because, you see:

A model's core purpose, possibly among other things, is to enable predictions, this requisite applies to each and every model and should be understood without saying (but apparently I was expecting too much scientific literacy). Again, failing that makes it basically useless.

Good luck to all of you with your endeavor.

21 Oct 2014, 05:53 PM

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**ganswijkw**

F1 was Monday (yesterday) very close to VIX (F1 was only one more trading day from expiration on Wednesday)

Today F1 = VIX Today is the last day of trading of F1 and F1 expires tomorrow.

Should we consider a new contango of F2/F3 (sic) instead, as entry point these LAST DAYS BEFORE expiration of F1 ?

21 Oct 2014, 09:11 AM

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**David Easter, Contributor**

Author's reply » ganswijkw,

To your question, the mathematical model only considered F1 and F2; the model did not evaluate F3 over the final days leading up to an expiration date.

As of 11 am ET Tue Oct 21,  $F1 < F2 < F3$ . It appears these relationships may hold through the day. If that happens, the entire term structure will be back in contango, resulting in a buy signal for the strategy.

21 Oct 2014, 11:04 AM

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**David Easter, Contributor**

Author's reply » Tue, October 21, 2014.

VIX futures closed trading in contango, signaling the strategy's buy signal.

Closing prices for XIV and SVXY were 32.74 and 64.23 respectively.

21 Oct 2014, 05:20 PM

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**MobilePreacher, Contributor**

Testing this strategy as we speak with a small 2k share lot. Went long at 3:30 on Monday as contango came back into the 1/2 spread. So far we are up 10% and our 38% trail is now up to 22.27. Will keep you posted.

22 Oct 2014, 10:16 AM

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**Vineet Bhatia**

Wham Baam...and here we are back again.....are we hitting the stop loss with SVXY at 59?????

Thankfully when Oil started falling...I exited SVXY when volatility was around 11.8-12....

Lets hope for a 24- 25 Vix so that we enter around 30 ;) ;) ...just kidding...no offence to all Longs in SVXY...

but i guess the first trade in the strategy about to hit a stop loss....

13 Dec 2014, 11:46 PM

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**MobilePreacher, Contributor**

we took profits at 37 bucks. looking for the re-entry once backwardation leaves the 1/2

14 Dec 2014, 06:20 PM

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**Undervalued\_stocks**

Looks like it VIX is in backwardation again. Should we wait for contango and buy signal again?

I was waiting for 40% from the last buy signal (\$32+40%) on XIV to sell. However, before the sell, XVI fell again. :-)

What is the risk I am looking at if I don't wait for the buy signal? Market has got to be stable some time and get back to these levels eventually. right?? Please correct me if my logic is wrong. Thanks.

15 Dec 2014, 09:22 PM

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**tmdoherty**

@ocls,

<< Market has got to be stable some time and get back to these levels eventually. right?? >>

Lately that has been the pattern. It might work, but keep in mind volatility has been at rather extreme lows for quite a while. This is NOT representative of how volatility operates. Just have a look at a chart of the VIX over the years 2008 thru 2009, for just one example:

<http://bit.ly/1vUETv7>

If you had gotten short volatility in mid-Sept 2008 when the VIX was subsiding from a spike up to about 33 or so, you would have gotten barbecued over the next few weeks. You would have not just gone broke, you would have gone into deep debt, except for the fact that your broker would have thankfully put your account out of its misery long before the VIX shot above 80.

Can this happen again? Not a reason in the world I can think of why this couldn't happen again. Actually, it pretty much did in the latter half of 2011 and into 2012.

Personally, I won't fire until I see the whites of their eyes, i.e., the term structure reverts to clear contango. If that means I miss some of the trend, so be it. The VIX and the related ETPs can move extremely fast, and can do so overnight when all the stops in the world won't save you (which is not to say you can't hedge your position, just that risk mitigation it is not so simple as setting stops).

TMD

16 Dec 2014, 03:25 AM

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**ianxponent**

TMD, absent using margin and/or investing everything, anyone going short volatility simply by buying something like SVXY is not going broke or into debt no matter how high VIX goes.

16 Dec 2014, 11:17 AM

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**Undervalued\_stocks**

TMD, Thanks for the inputs.

one thing I didn't understand is " You would have not just gone broke, you would have gone into deep debt, except for the fact that your broker would have thankfully put your account out of its misery long before the VIX shot above 80. "

If I buy XIV, how I can I go into debt? Isn't the maximum loss capped when xiv hits 0?

16 Dec 2014, 11:36 AM

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**tmdoherty**

@ianxponent and ocls:

Correct, you cannot go broke investing in ETPs, although there is the possibility that you could lose everything. (BTW, this is more than just a theoretical risk, and has in fact happened in the past, in 2008).

Practically speaking, it is unlikely that you could go into debt no matter how much leverage you use. The reason is that your broker will liquidate your account first. But to the best of my knowledge this is not impossible (e.g., if some overnight Black Swan event causes the VIX to spike to very high levels and you have a leveraged short position in the VIX, I know of no way that your broker could liquidate your account until the markets open).

But anyhow, you are right: you can't go into debt buying XIV (or any other ETP). Sorry, I admit my comment was over the top and not even correct. My main point is that VIX-related ETPs can be highly volatile, and anticipating moves before they actually begin on more or less speculative grounds is a very dangerous game indeed.

TMD

16 Dec 2014, 02:08 PM

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**Undervalued\_stocks**

TMD, Looks like we are back in contango. Clear buy signal??

17 Dec 2014, 03:27 PM

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**tmdoherty**

Yes.

Also, there are technical sell signals in place for both VIX and VXX, which corroborate the signal from the now contangoed term structure.

HOWEVER, I still have some remaining concerns, which I posted elsewhere. Namely:

1) This all seems suspiciously too well-timed and neatly packaged. Could it be a trap? Too many people, including me, expect that the market will now reverse, and that the VIX will behave itself and act exactly like it has been acting for the past year or two. I am wary that this is exactly the sort of situation that Mr. Market likes to use to put us all in our place, and reiterate that he is much more clever and faster on his feet than any of us (except the HFT money printing piranhas, of course).

2) On the day following a Fed announcement, the market almost always just picks up where it left off as if the Fed announcement never happened. Where was the market before it was so rudely interrupted by Janet? Aye, there's the rub! Was it headed down, or was it trying to bottom and reverse? I think the latter. Part of the evidence arguing that it was bottoming and reversing is technical, and part is that the term structure was clearly trying to twist itself back into its preferred contangoed condition. Another reason I think this is because there was nothing in the Fed announcement to justify the strength of the move today. Virtually everything was well known and had been repeated again and again. So I can't imagine that the markets moved so strongly only because of the Fed; rather, I think it would have happened anyway, but the Fed announcement just gave the move a bit of a push. But then again, I am one who believes the Fed almost never impacts market trend, except for between 2pm and 4pm on Fed day.

If I am wrong about the reversal that I think was developing yesterday, and in fact the market was just pausing before the next step down, then that's where we are headed tomorrow (I realize this is a bit circular).

Bottom line: I am cautiously optimistic that the market will continue up from here, and that yesterday was the beginnings of reversal. FWIW, that's how I am positioned here.

TMD

17 Dec 2014, 07:31 PM

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**Undervalued\_stocks**

TMD, Interesting logic. I can see you are indeed cautiously optimistic from your explanation. Keeping my fingers crossed and hope it follows the pattern & that Janet didn't jinx it.

18 Dec 2014, 01:16 AM

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**User 10318561**

Hello David,

I wanted to congratulate you on coming up with a rules based system for trading XIV. Also wanted to pass along my gratitude for your generosity in sharing your system with Seeking Alpha readers. I have already started

following you on SA.

Can I request you to please provide an update to me as to how the trades have gone after the exit on July 1, 2014? Has the system been able to beat buy and hold XIV during this extremely tricky period? Can you please provide the buy and sell signals during this period?

Also I have some confusion yet about closing out a trade and the ending date of the cycle. Through your trades that I am requesting above I maybe able to learn some more about these differences, but any commentary you can provide would be greatly appreciated.

Once again a heartfelt thank you.

RV

02 Aug 2015, 03:18 PM

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**David Easter, Contributor**

Author's reply » RV,

Here is an update of the strategy's status since last fall.

The previous cycle (#10) ended 7/1/14, with a XIV sell at 46.14.

The current cycle (#11) started 10/21/14 with a XIV buy at 32.74. The stop loss was then set at 20.63, and the limit sell was set at 76.22.

The trailing stop strategy was not set in motion until the price went above 45.18 (1/15/15). The highest closing price has been 49.68 (6/23/15), so the current trailing stop is 33.78 and the current limit sell remains at 76.22.

If the position is sold at the limit sell price, the current cycle will immediately end. If the position is sold at or below the trailing stop, the current cycle will not end until either the price drops below 20.63 or rises above 76.22.

The difference between the previous sell (46.14) and the most recent buy (32.74) represents the gain above a simple buy-and-hold strategy. The close Friday (7/31/15) was 48.04. Not selling on 7/1/14 and holding would have netted a 4% gain over 13 months. Following the cycle strategy in the article, the gain would have been 46% over the same time period. Keep in mind that the results are specific to the current cycle, and do not guarantee future performance.

Hope this helps.

03 Aug 2015, 12:16 PM

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**User 10318561**

David,

Thanks for the update. Your quantitative strategy (derived from Nathan's work) is truly outstanding.



I subscribe to a couple of services, which have done extremely well compared to the XIV buy and hold, but this strategy is beating the results of those as well, specially during this difficult period of last 12 months for XIV.

May I suggest you come up with an email subscription service? I for one would sign up for such a monthly subscription service. Even if you want to come up first with a free service for 90 days and then make it paid, I think you should attract attention. Now Seeking Alpha has also made it easy for authors to offer these subscriptions right here. Please give it some thought.

Thanks again for such great service to those of us that are interested in trading inverse volatility. Look forward to your future articles.

Best Regards,

RV

03 Aug 2015, 12:33 PM

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**User 10318561**

Hello David,

I wanted to clarify a few tactical aspects of your excellent strategy.

In the current cycle No. 11, if the trailing stop of 33.78 is hit over the next few weeks, the strategy would exit XIV but the cycle would not end. So let's take a scenario where XIV goes down to 32 and we exit, and then it keeps going down to 20.63 when the cycle ends. We would save ourselves a lot of grief and wait to re-enter when cycle no. 12 is triggered. So far so good.

But it gets tricky under a different scenario, if XIV hits 32 and then starts to reverse upwards. Does one allow XIV to go all the way up to 76.22 and stay out of XIV till the cycle ends? I am sure I am missing something and that is why I am seeking your help and advice.

Thanks as always for your insights.

RV

12 Aug 2015, 11:15 AM

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**David Easter, Contributor**

Author's reply » An excellent question, RV.

Only two of the ten historical cycles have resulted in a trailing stop sell. Both times, the price continued to drop below the original stop loss price (your first scenario). The second scenario you describe has never occurred (since 2004, when the model data starts), so there is no data that can provide backtested guidance.

You did not miss something. The model's existing price limits are derived from historical data. Creating a

new rule to address your second scenario, absent historical data, would require pure guesswork. Sorry I can't be more helpful here. If/when your scenario does transpire at some point in the future, it will certainly provide data that can be used to tweak the rules for subsequent cycles.

13 Aug 2015, 11:55 AM

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**User 10318561**

Thank you so much David. It was great to get the data points from you, that during the last 2 trailing stop loss exit cycles, one would've cut further losses by exiting when the trailing stop loss was triggered.

Let's hope we do not get the other scenario :-) But I think we are in good hands with you at the helm.....you will analyze it and come up with a solution.

I again repeat the fact that your system is doing better than XIV Buy and Hold on both an absolute and risk-adjusted basis says a lot about its design. Additionally, your system is accomplishing this with pretty much one entry and exit per year on average for the last 11 years. Most systems that I am looking at that are able to produce the kind of returns your system generates, are trading XIV and VXX both and are getting in and out 2 times per month on average.

Truly outstanding discovery David.

Thanks as always,

RV

13 Aug 2015, 06:34 PM

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**tmdoherty**

@David Easter,

The term structure went into backwardation on July 8 and 9, then reverted to contango on July 10.

I realize the current cycle had not yet ended, since the sell limit had not been hit yet. But how do you handle these situations? Just ignore them if the current cycle is still open?

If one had entered XIV at the close on 7/10, the entry would have been \$39.91, the stop loss would have been \$25.14, the first target for instituting the trailing stop would have been \$55.08, and the sell limit would have been \$92.91. Right now, the trade would be up 19.7%.

Maybe all such backwardation/contango shifts should be traded. One approach would be to allocate half the portfolio to the first trade, and keep the rest in something liquid (SHY or VFISX or BIL or something) in case there is a new signal before the current cycle ends.

TMD

13 Aug 2015, 11:59 PM

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**tmdoherty**

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**David Easter, Contributor**

Author's reply » TMD,

That strategy would have eaten your lunch during cycles 3 (2007-08) and 7 (2011). It would have increased your total number of trades during these periods, and the additional trades would have been losers.

14 Aug 2015, 11:13 AM

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**David Easter, Contributor**

Author's reply » TMD,

The published strategy does indeed ignore situations like the one you have described. It is based on longer trade cycles, and does not address situations and opportunities that may occur in the middle of those cycles.

As always, individual investors are free to experiment with and to implement their own modifications with the goal of improving their overall return. I admit to doing this myself in my own brokerage account.

However, I will not publish my experimental trades as a modification to the published strategy, unless/until I have first verified its effectiveness via rigorous backtesting.

Your example is a good one, but represents a single data point. I would need many more such data points.

To be redundant, the published model does not, and was never intended, to address the question of subcycles within the larger cycles. I will personally avoid publishing "improvements" that involve subcycles absent convincing backtested benefits.

By the way, the practice of trading all such backwardations/contango shifts per your suggestion would have caused you a great deal of grief in 2007-2008 and in 2011.

14 Aug 2015, 11:53 AM

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**User 10318561**

David,

I call your strategy "Sophisticated Simplicity". There are a lot of ideas of trading volatility that involve frequently getting in and out of XIV and VXX, and I call those "Advanced Complexity".

On a risk-adjusted basis i.e., MAR Ratio (CAGR/Max. drawdown), I have yet to come across a strategy that beats yours.

Agreed past is not predictor of future, but I consider a strategy successful if 65 to 70% of periods provide positive returns and 30-35% of periods provide smaller average negative returns, provided all annual returns are positive.

Other 4 salient features of your strategy:

1. 11 trades (entry-exits) in 11 years
2. No losing trade so far.
3. Sitting out of XIV on average only 3 months per year during bull markets
4. Staying completely out of XIV during a bear market.

Truly amazing.

RV

14 Aug 2015, 12:09 PM

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**User 10318561**

@TMD

You said "Maybe all such backwardation/contango shifts should be traded."

David's strategy has remained out of XIV only about 3 months every year, except the Bear market in 2007-2008.

Do you believe the overall results would have been hurt or improved by taking all the backwardation/contango trades during those "Out of XIV" periods?

Intuitively it seems the results would have been hurt by overtrading. But may be you could back-test and results may end up being counterintuitive and surprisingly positive. :-)

RV

14 Aug 2015, 12:27 PM

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**tmdoherty**

@User 10318561,

"Do you believe the overall results would have been hurt or improved by taking all the backwardation/contango trades during those "Out of XIV" periods?"

Dunno, I haven't done the testing. I believe that if one had traded every single backwardation/contango shift using leverage (options or futures) and a relatively modest price target in terms of the percentage change in the inverse volatility ETPs (say 5% - 10% or so), then that would be a very high probability strategy that would have few or no losing trades, and would keep you out of the market most of the time. Again, I haven't tested this notion in any sort of comprehensive fashion, but I'd be willing to suggest that buying ATM options with expiries 3 or 4 weeks out with a trailing stop loss of 25% and a sell limit of 30% that gets moved to 50% if/when the trailing stop reaches breakeven would be pretty effective.

So, taking the most recent backwardation/contango reversion, one would have entered on July 10, and two sessions later (July 14), XIV rose 15%, and by that time you'd be out. I don't have the historical prices to know for sure, but I would estimate that using ATM options 3 or 4 weeks out, that probably would have been good for at least a 40% profit. I doubt the stop loss would get hit very often, and if that is correct, then this should be an overall profitable strategy that incurs lesser risk simply by virtue of the fact that time in the market would tend to be quite limited.

I do this sort of "sandwiching" of trailing stop/sell limit orders with another unrelated strategy I trade that involves options, and it has worked out very well so far, so that's why I thought of this in relation to trading volatility.

TMD

14 Aug 2015, 07:11 PM

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**itscalledcommonsense**

Got my popcorn ready for the stop loss watching party.

21 Aug 2015, 06:35 PM

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**bobtcat2**

XIV target is \$150000 per share. Stocks will never correct again.

02 Aug 2015, 06:46 PM

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**olmendreef**

There are many ways to trade XIV (VXX) and this is certainly one of them. Thank you David.

Some others also rely mostly on contango:  $>$  or  $<$  0, 5d mean VIX/VXV  $>1.02$  or  $<0.92$  (cash in between) i.e. godotfinance strat, etc. Others rely on the VRP (difference of implied vs realized volatility) i.e. TTOs strategy. Others rely on mean reverting properties of the VIX.

All have stellar profits and some painful DDs.

Personally I follow a VRP strat since a few months.

I'll sit it out and hope for the best.

03 Aug 2015, 03:47 PM

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**User 10318561**

**olmendreef**

volatilitymadesimple lists a bunch of strats including TTOs VRP (tradingtheodds) and their own paid service.

But don't pay for anything, you can build your own excel table ;)

On my Instablog I post updates of my strat (VRP + a contango rule) if I have the time.

03 Aug 2015, 03:58 PM

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**User 10318561**

olmendreef,

Thanks. I will check out your Instablog and updates.

In measuring a strategy's effectiveness I like to use the MAR Ratio. This is simply the CAGR(Average Annual Return)/Max. Drawdown. Based on this measure I find what David has come up with beats all the strategies listed on Vol made simple web site including their paid subscription. :-) Do you agree?

The beauty of David (and Nathan's) strategy is that the stop loss of 37% is implemented. Agreed sometimes you can overshoot that by a percent or two. But still 102% average return per year with a max. drawdown of 31.5% over 10 years is a phenomenal MAR Ratio of 3.24. Compare this with the MAR Ratio of any other volatility strategies.

Additionally, David's Quantitative strategy did not have a negative year over the last 10 years. On the Vol made simple web site the best track record is indeed the one you follow i.e., TTO's Optimized VRP strategy, but even this one had a negative year in 2007. You can compute its MAR ratio when you get a chance, I do not have the max. drawdown, I suspect it went down more than 70% in 2007 or 2008, but I maybe wrong. Its average annual return is awesome so you never know it may end up having a better MAR Ratio.

Please correct me if I am not reading the numbers right in my excitement about David's strategy. :-)

Keep in touch.

RV

03 Aug 2015, 04:24 PM

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**User 10318561**

olmendreef,

By the way Buy and Hold XIV MAR Ratio over the 10 years is less than 0.3

Buy and Hold SPY MAR Ratio is less than 0.17

It is tough to find good strategies that have MAR Ratio above 1.0

TTO's VRP strategy and David's quantitative rules based strategy with stop loss mechanism are just phenomenal.

RV

03 Aug 2015, 04:31 PM

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**olmendreef**

Thanks 10318561 for the info. I checked the MAR for the strat I follow (based on data since 2004). It was a parameter I did not calculate yet.

CAGR is 129.9 and maxDD 43.3 (Feb-2009). This makes the MAR 3, not including transaction costs... Still not too bad.

David's system might be somewhat better.

Yet, I feel uncomfortable holding a XIV position when backwardation is strong just because I'm not yet hitting the trailing stop. VRP and contango are parameters that 'make sense'.

But this is a personal choice of course.

In the long run I expect them to perform more or less equally.

03 Aug 2015, 04:58 PM

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**tmdoherty**

@user 10318561,

I agree that the MAR ratio is an excellent overall metric of risk-adjusted performance, but it must be interpreted in conjunction with the absolute CAGR. All MARs are not created equal. One strategy might have a CAGR of 3% and a MAR of 1.0, but that is not comparable to another strategy with a CAGR of 15% and a MAR of 1.0. (in general, a MAR ratio of 1.0 or greater gets increasingly rare as the CAGR increases, as I am sure you know).

There is an additional caveat with MAR: like similar metrics (CAGR, Sharpe, etc.), they are very dependent on start/end dates. This is why I like to calculate distributions of rolling CAGRs, Max DDs, and MARs, then summarize the distributions with descriptive statistics (mean, median, etc.) and calculate 95% CI limits using the standard deviations. Calculating distributions avoids the start/end date bias, since it incorporates

ALL possible start and end dates. The greater the N, the more confidence one can usually put in the results.

The 95% CI limits of these rolling (12-month) metrics produce a particularly good estimate of the RANGE of CAGR, Max DD, and MAR one might anticipate going forward.

TMD

03 Aug 2015, 05:50 PM

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**User 10318561**

olmendreef,

David's system and the one that Frank (TTO) has come up with using VRP have another big difference.

VRP systems do 30 plus trades per year.

David's system did only 1 trade per year on average over the last 10 years.

One would think that by doing 36 trades per year, you are striving for lower maximum drawdowns, but the reverse is true. David's system had the lower drawdown.

Both are great systems. Just pointing out my observations about the differences between these 2 systems. It feels counterintuitive to hold XIV when backwardation strikes but stop loss has not been met, but as David provides evidence, it may be worth it.

RV

03 Aug 2015, 08:23 PM

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**User 10318561**

@TMD,

This topic is way over my head. I know that a RANGE of CAGR, Max. Drawdown and MAR ratios would help developing further confidence in any strategy, but still is no guarantee that the future will look the same as the past backtest.

From a practical perspective, I know one thing, the future results are going to be different than backtesting. They maybe somewhat better or somewhat worse.

The MAR ratio of 3.23 and 102% CAGR convinces me that I can do just fine even if the future does half as well as this back-test.

Additionally, as long as the economy is growing and we are in a Bull market, shorting volatility futures will benefit from a "gravity" like force. This is a force not worth fighting and we have to capitalize by betting with the force.

Your thoughts are always appreciated as you have a lot of good insights. I am hoping you will respond with



your thoughts.

RV

03 Aug 2015, 08:29 PM

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**tmdoherty**

@ User10318561,

"...but still is no guarantee that the future will look the same as the past backtest."

That's always a given. There's only two sure things in the world (death and taxes).

The question is how much confidence one might reasonably place in results from backtesting. Personally, I would like to see distributions that are reasonably narrow.

Shorting volatility might seem like easy money, and it can be at times. But, other times, volatility can cut you to shreds if you don't have some sort of risk management procedures in place. I trade volatility also, but I know it can turn on you in a hurry, so one needs to fully expect gut-wrenching drawdowns on a fairly regular basis.

TMD

03 Aug 2015, 10:59 PM

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**itscalledcommonsense**

Well, that wasn't pretty. Who could have seen that coming?

24 Aug 2015, 09:36 AM

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**tmdoherty**

According to my calculations:

On 10/21/2014, the backwardated VIX futures reverted to contango. This would have triggered a buy for XIV, which closed that day at \$32.74.

The sell limit would then be \$76.22, and the stop would be \$22.43. The sell limit was never reached. The highest XIV got after 10/21/2015 was \$50.10 intraday (06/24/2015).

However, the 38% profit target was \$45.18, and this was reached on 05/21/2015. At that point, a trailing stop loss was established. Initially, this would have been set at \$30.72. XIV reached a high of \$49.44 on 08/10/2015, so the trailing stop would have been adjusted to \$33.62 at that time (or, if using the intraday high as the basis, \$34.07).

But as it turned out, this wouldn't have mattered, because on August 21, 2015, XIV closed at \$36.04, but the next session (August 24) there was a monster gap down (-31%), and XIV opened at \$24.88. The trailing stop would have converted to a market order at that price (or very close to it) and executed.

The trade would therefore have lost about 24%, depending on the price the stop was executed at.

This underscores the potential drawbacks of stop loss orders. You can't be sure the stop will execute at the stop price.

TMD

19 Sep 2015, 08:07 PM

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**User 10318561**

TMD,

Thanks for sharing your observations.

David Easter, Did the system encounter this kind of situation in any of the previous instances?

RV

20 Sep 2015, 09:54 AM

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**David Easter, Contributor**

Author's reply » TMD,

The error in the assumption underlying your critique is that the model is based on market CLOSE prices only. The model's trailing stop sell is executed at the end of the market day; the market-close order is placed by a person, not automatically triggered by a computer. So, the gap-down market order you suggest is extraneous/foreign to the model. The position would have been closed/sold that same day at market close, but the loss on the trade was approximately 10%, not your figure of 24%.

Your warning with respect to the dangers of stop loss orders is certainly valid--just not relevant to the model presented in this article.

BTW, cycle 11 is still open, because the closing price has not yet dropped below the 20.63 stop.

RV,

Two previous cycles (2008/2011) failed to successfully reach the sell limit, and were instead sold at a trailing stop. The outcome in cycle 11 is consistent with the modeling, where 20% of the previous trades ended in like manner.

General Comment,

Not every HoldEm player with pocket aces goes on to win that hand. In fact, only about 40% win statistically. A down cycle, as in cycle 11, is both expected and unavoidable from time to time, just as a pair of pocket aces is expected to lose from time to time. That won't stop me from making a raise when I draw pocket aces, because I understand the expectation statistics, and my choices are based on what will achieve the largest gain over the long term.

20 Sep 2015, 10:58 AM

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**tmdoherty**

@David Easter,

<< The error in the assumption underlying your critique is that the model is based on market CLOSE prices only. The model's trailing stop sell is executed at the end of the market day; >>

I don't know of any way to set a trailing stop that executes at the end of the session. I have used trailing stops at probably 7 or 8 different brokers, and they always update during the session as intraday prices change, and they always execute in real time. I don't know of any way to set an order for a trailing stop that does not execute when the stop price is reached, but rather waits until the end of the session.

I guess what you mean is that there is no trailing stop order entered? That the trader has to follow the prices, and when the stop is reached intraday, they sell at the close, even if XIV reverses and closes well above the stop price?

What is the purpose of this? It is much easier to simply enter a trailing stop. For starters, if you don't do that, then every time a new high is reached on an intraday basis you have to calculate a new stop. This requires a rather high level of maintenance.

The huge gap down on Aug. 24 was very unusual. That vast majority of the time, it won't make a lot of difference if the trailing stop was executed at market close or intraday.

TMD

20 Sep 2015, 05:35 PM

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**David Easter, Contributor**

Author's reply » >>I guess what you mean is that there is no trailing stop order entered? That the trader has to follow the prices, and when the stop is reached intraday, they sell at the close, even if XIV reverses and closes well above the stop price?

The trader does have to follow the prices and does have to enter a market at close sell--but only if the closing price is (with high probability) going to be BELOW the trailing stop cutoff. No, they would NOT sell the position if it reverses that day and closes above the stop price. EVERYTHING in the model is based solely on CLOSING prices. That is the point you seem to be missing. Nothing that happens intraday is relevant to the model.

20 Sep 2015, 08:41 PM

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**tmdoherty**

Why not just set a standard trailing stop and be done with it?

That would be far less maintenance.

TMD

21 Sep 2015, 01:58 AM

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**David Easter, Contributor**

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**Undervalued\_stocks**

David, Is there a way to calculate what XIV would have been during the 2007 to 2009 recession based on VIX data? Appreciate your insight.

20 Sep 2015, 01:00 PM

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**Market Trends Investor, Contributor**

Here's the VIX short term futures inverse index:

<http://bit.ly/17DLkdJ>

20 Sep 2015, 05:36 PM

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**tmdoherty**

@ocls\_pk,

People have calculated synthetic prices for VIX-linked ETPs. Here is one:

<http://bit.ly/1zX2OSZ>

TMD

20 Sep 2015, 05:43 PM

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**David Easter, Contributor**

Author's reply » OCLS

Cycle 3 (see table in the article) gives the data for this model. The model's position would have trail-stopped out with a small gain. That exit would have been followed by an extended 18-month period in the model when cycle 3 remained open (therefore no new positions were opened) while the VXX price continued dropping to, and eventually below the original stop loss limit for that cycle.

20 Sep 2015, 08:48 PM

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**User 10318561**

David,

One factor that is bothering me currently is the fact that over the period of back-testing, there were 10 cycles and not one ended up with a loss.

Since your article was written, there has been only one cycle (i.e Cycle 11) and has ended up in an actual loss (even based on closing prices) and not just a drawdown.

As I have commented before your system for trading inverse volatility ETFs is the best I have seen on a back-testing basis. However, is this yet another system that seemed to work well in back-testing and did not hold up once an actual fast-forward period was tested LIVE? In other words, has there been a long-term "regime change in Volatility futures" which may cause this "back-testing" to be irrelevant or not applicable to the future?

This is happening at the same time as we are witnessing some systems based on "risk-parity" switching models, models switching based on relative strength, etc. are also failing badly as Bonds are not effectively picking up the slack when equities are dropping? Are we in a unique and dangerous period right now?

Any thoughts you have would be much appreciated. Goes without saying, but thoughts and observations from other commentators, and community members here would also be welcome.

RV

21 Sep 2015, 11:01 AM

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**bobtcat2**

Of course it doesn't work when it's implemented in real-time. That's not what these strategies are about- they're for entertainment only. If they could generate 100% annual return, or even 50%, for a meaningful amount of time the markets would be turned on their heads and shut down.

21 Sep 2015, 12:39 PM

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**tmdoherty**

@RV,

If I am reading between the lines accurately, I think what you are implying is that excessive curve-fitting might have been operative here?

If so, that's always a concern, but I think even more so here. Obviously a lot of calisthenics (e.g., the unusual risk management strategy and the fact that new signals within a cycle are ignored, which constitutes selection bias) have been performed to end up with a strategy that just so happens to have produced profitable trades every time (except in the lone prospective test). And, the fact that this latest test was not profitable is, arguably, testimony to that.

David doesn't detail the process by which he arrived at the final strategy, but I am guessing a lot of strategies were tested and then discarded because performance was unsatisfactory. The more of this that occurs, the greater the chance that excessive curve-fitting will adversely impact prospective performance. There are papers on this in the academic literature.

I know many would take issue with me on this, but to me, curve-fitting of itself is not necessarily grounds for rejecting a strategy. There are curve-fit strategies that do perform well going forward. The key question is what the probability is that backtested performance will accurately predict prospective performance, and there are ways to get at this question.

I think the main problem here might relate to variability. I don't know what the distribution of rolling 12-month returns looks like, but I think an analysis of that would be illuminating. I suspect the SD of the 12-month rolling returns is high, and consequently the 95% CI limits of the 12-month rolling returns will necessarily also be very wide, and very likely dip way down into negative territory.

If that is indeed the case, then that greatly increases the likelihood that backtested returns will be a poor indicator of performance going forward. These are the situations where excessive curve-fitting usually produces the greatest discordance between backtested performance and prospective performance.

Conversely, situations where strategies produce comparatively tight distributions of returns are usually the ones where prospective performance is more closely approximated by backtested returns----even where significant curve fitting has occurred (whether realized or not). The reason is purely probabilistic: if the SD of returns is very low, the chances of future returns being close to the mean of that distribution is significantly greater. As the SD increases, so too does the chance of prospective returns that differ significantly (either positive or negative) from the mean.

Stated a bit differently: the discordance of prospective returns from the retrospective CAGR (or the mean or median of the 12-month rolling returns) is linearly and positively related to the magnitude of the SD of 12-month rolling returns (or any period of rolling returns, e.g. quarterly, monthly, etc.).

TMD

21 Sep 2015, 04:49 PM

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**tmdoherty**  
@RV,

RE your "regime change" concerns, this cannot be excluded. Anybody who has done any backtesting of strategies cannot fail to have observed a marked discrepancy between performance prior to vs. following December 2008, when QE was first unleashed.

That said, the volatility markets are a very different animal than the stock and bond markets. In particular, there are more inputs into volatility-linked ETPs than simple movement of equity markets. For example, there is the relationship of the individual futures to one another (term structure), which is dynamic. Also, there is the relationship between historical and implied volatilities, which are also dynamic. And of course,

there is the relationship of the term structure to the spot. Any of these may become a dominant determinant of performance of the various volatility-linked ETPs.

Also remember that the VIX itself is based on the value of certain SPX options with a calculated 30 day constant maturity, and those derivatives themselves are, to a degree, functions of things other than the current price of the cash index.

I don't mean to suggest that the value of the SPX is not important. It definitely is, which is why the 60-day correlation between XIV and SPX is  $R = 0.83$ . However, the 60 day correlation varies from about  $R = 0.60$  to  $R = 0.90$ , and the annualized correlation is  $R = 0.67$ . This indicates that the importance of equity performance in determining XIV performance is quite variable, as would be surmised by considering the potential impact of the other determinants detailed above.

What I am driving at is this: strategies based on equity performance are very susceptible to a potential "regime change" back to pre-QE norms, and their performance will probably be more closely approximated by performance up to the end of 2008. But volatility trading is only partially under this umbrella, since the performance of volatility-linked ETPs are determined to variable degrees by factors extrinsic to the equities markets per se. So volatility trading strategies are less likely to be impacted by any reversion to pre-QE monetary and fiscal policy norms.

TMD

21 Sep 2015, 05:20 PM

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### **itscalledcommonsense**

Why are we still arguing about this? This is the most overfit short vol strategy on SA.

The "returns" ex post have been, and will continue to be, horrid. Especially risk adjusted.

24 Sep 2015, 10:47 AM

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### **David Easter, Contributor**

Author's reply » RV,

Two comments. Cycles 3 and 7 saw XIV positions being closed as a result of a trailing stop, just like cycle 11. The only reason that the preceding cycles (3 and 7) did not lose money is that their maximum closing price during the cycle was higher (on a percentage basis) compared to cycle 11--resulting on higher trailing stops. The higher trailing stops prevented losses in those cycles. The fact that those cycles made money was merely fortuitous, and not fundamental in any way to the strategy. Based on this, I don't see any obvious difference between the three cycles.

The big question is Fed action going forward. Does it create a fundamental disruption in volatility futures? It is true that money has been easy for several years, largely due to the Fed, and volatility has been low. Note however that cycles 1-3 all predated QE1, and only one of the three was sold on the basis of a trailing stop. 2 of the 3 cycles prior to QE rose to and were sold at the limit sell price.

Do I think that the dynamics of volatility futures has been permanently disrupted? No. However, it would be unwise not to expect and to prepare for continuing volatility in the near term, given the current weakness of many foreign economies and the uncertainties related to future Fed action.

21 Sep 2015, 11:33 AM

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**User 10318561**

Hi David,

Would appreciate your thoughts on the current stage of your strategy for XIV.

Thanks for all your contributions.

RV

27 Oct 2015, 05:00 PM

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**David Easter, Contributor**

Author's reply » RV,

The trailing stop took effect when the closing price dropped below 33.78 on August 24. On that date, the XIV position—opened at 32.74 on 10/21/14 was closed at the market-closing price of 29.58, at a loss of 9.7%.

Per the published strategy, even though the position has been closed, cycle 11 will remain open either until the price drops and closes below the original stop loss price of 20.63, or closes above the original limit sell of 76.22. As a result, the published strategy is on hiatus, without a position, until one of the two events occurs to complete cycle 11.

Historically (prior to the current cycle), the position was closed only twice based on the trailing stop. Both times, the price dropped further, and eventually crashed through the stop loss price.

Your previous question presented the scenario in which the price action might recover before hitting the stop loss, and then start rising again. In the current cycle, the price has dropped to within about 5% of the stop loss, but has had a tendency to increase since then.

Will the upward trend continue, or will volatility return, eventually dropping the closing price below 20.63 (approximately 36% lower than the current price)? Unfortunately, historical precedents are too few to answer. You may note that the XIV current price is still about 6% below the trailing stop trigger price that was breached in August.

I don't believe there is sufficient evidence to make any changes or adjustments to the strategy at this point. As published, the strategy currently avoids taking a position in XIV until one of the two cycle-ending triggers occurs. I personally do not have a current position in any volatility-related ETP.

It is unlikely that I will publish any revisions/updates to the strategy until after the current cycle has ended. If the cycle eventually concludes by XIV closing below 20.63, no adjustment will be warranted. On the other



hand, if the cycle eventually ends by XIV closing above 76.22, the trailing trigger strategy will need to be re-evaluated.

All the best!

30 Oct 2015, 02:02 PM

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**User 10318561**

David,

Thanks for the detailed explanation and thanks for your time and effort. Much appreciated!

Will stay tuned to your next update.

RV

30 Oct 2015, 04:14 PM

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**User 10318561**

XIV did hit \$20.63 today. Your system still is proving itself.

08 Jan 2016, 03:40 PM

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**David Easter, Contributor**

Author's reply » RV,

The closing price of XIV today was 20.45, 0.9% below the original stop loss of 20.63. This signals the close of the strategy's cycle 11.

A new cycle (#12) will begin after two conditions are met: (1) F1/F2 must remain in backwardation at the close of trading for at least one more market day (or must subsequently return to backwardation at any market close after today); (2) following (1), F1/F2 must revert to contango at the close of a subsequent market day.

This doesn't necessarily mean that the pain is over. The F1/F2 futures could continue to be backwardated for an extended period of time.

I will try to work on an update to the strategy over the weekend for possible publication next week. No promises....

Best regards,

David

08 Jan 2016, 04:19 PM

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**User 10318561**

Thanks David. Look forward to the update.

08 Jan 2016, 05:04 PM

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**bobtcat2**

If XIV goes to single digits I will put nearly everything I have in it. Figure it will be 1000% gain in a decade from there which is nothing to sneeze at. I think it is a decent possibility we see those prices for the old XIV. And \$20 for SVXY.

10 Jan 2016, 04:34 PM

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**David Easter, Contributor**

Author's reply » Bobcat,

I will not be surprised to see XIV in the low 15s in the near future. (Not so sure about going below 10.) This reflects a (minor) comment in a new article I just submitted to Seeking Alpha earlier this afternoon.

Publication status and time still unknown....

David

10 Jan 2016, 04:55 PM

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**bobtcat2**

In the event this is like 2011, figuring UVXY for 150ish and XIV 6.

10 Jan 2016, 08:02 PM

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**User 10318561**

Hi David,

Hope all is well. I was wondering if you can provide us an update. What cycle are we in now?

RV

05 Nov 2016, 03:55 PM

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**David Easter, Contributor**

Author's reply » RV,

The strategy is currently without a position, still waiting for the end of cycle 12. For more information see the comment (currently 7th from the bottom) at <http://seekingalpha.co...>

It is probable that I will have to reevaluate the trailing stop setting in the near future, based on the possibility of having been stopped out prematurely, immediately following the Brexit vote.

06 Nov 2016, 08:53 AM

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kg

I reiterate my 11 Oct 2014 comment...

24 Sep 2015, 09:25 PM

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**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, 09:03 AM

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**David Easter, Contributor**

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

29 Nov 2016, 12:17 PM