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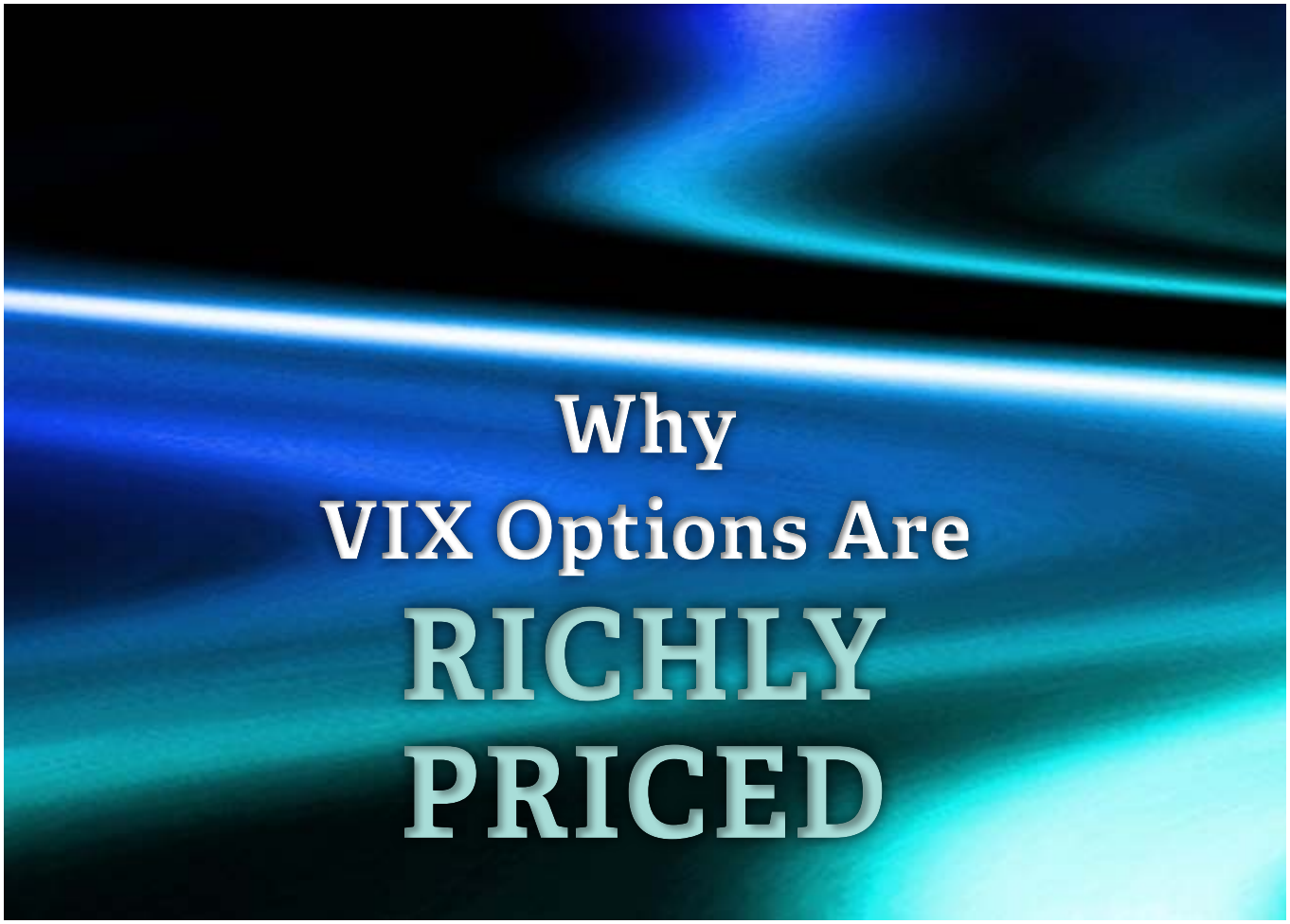

2012 Volatility Forecast for the S&P 500

An Interview with Mark Longo

The VIX Term Structure as a Predictor of Future Returns

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About the Expiring Monthly Team

Bill Luby

Bill is a private investor whose research and trading interests focus on volatility, market sentiment, technical analysis, and ETFs. His work has been has been quoted in the Wall Street Journal, Financial Times, Barron's and other publications. A contributor to Barron's and Minyanville, Bill also authors the VIX and More blog and an investment newsletter from just north of San Francisco. He has been trading options since 1998.

Prior to becoming a full-time investor, Bill was a business strategy consultant for two decades and advised clients across a broad range of industries on issues such as strategy formulation, strategy implementation, and metrics. When not trading or blogging, he can often be found running, hiking, and kayaking in Northern California.

Bill has a BA from Stanford University and an MBA from Carnegie-Mellon University.

Jared Woodard

Jared is the principal of Condor Options. With over a decade of experience trading options, equities, and futures, he publishes the Condor Options newsletter (iron condors) and associated blog.

Jared has been quoted in various media outlets including The Wall Street Journal, Bloomberg, Financial Times Alphaville, and The Chicago Sun-Times. He is also a contributor to TheStreet's Options Profits service.

In 2008, he was profiled as a top options mentor in Stocks, Futures, and Options Magazine. He is also an associate member of the National Futures Association and registered principal of Clinamen Financial Group LLC, a commodity trading advisor.

Jared has master's degrees from Fordham University and the University of Edinburgh.

Mark Sebastian

Mark is a professional option trader and option mentor. He graduated from Villanova University in 2001 with a degree in finance. He was hired into an option trader training program by Group 1 Trading. He spent two years in New York trading options on the American Stock Exchange before moving back to Chicago to trade SPX and DJX options For the next five years, he traded a variety of option products successfully, both on and off the CBOE floor.

In December 2008 he started working as a mentor at Sheridan Option Mentoring. Currently, Mark writes a daily blog on all things option trading at Option911.com and works part time as risk manager for a hedge fund. In March 2010 he became Director of Education for a new education firm OptionPit.com.

Andrew Giovinazzi

Andrew Giovinazzi started his career in the financial markets after graduating from the University of California, Santa Cruz with a B.A. in Economics in 1989. He joined Group One, Ltd. and quickly became a member of the Pacific Stock Exchange (and later the CBOE), where he traded both equity and index options over a 15 year span. During that period he never had a down year.

At the same time, Andrew started and ran the Designated Primary Market Marker post for GroupOne on the floor of the CBOE. It became one of the highest-grossing posts for the company in 1992 and 1993. While actively trading, Andrew was instrumental in creating and managing an option trader training program for Group One.

He left Group One, Ltd. to co-found Henry Capital Management in 2001. Andrew then joined Aqumin LLC (2008–2011) to help bring 3D quoting and analysis to financial data. He is Chief Options Strategist at Option Pit.

Editor's Notes

Bill Luby

As *Expiring Monthly* begins its third year, I am reminded again why I enjoy this publication. Where else can I find another group of maniacs that care enough about the VIX and volatility to analyze it and write about it on a regular basis?

This month is no exception. With March closing in on the record for the largest VIX futures monthly contango, interest in this volatility measure has spiked once again. From this month's feature article to the Ask the Xperts Q&A and several articles that examine critical aspects of the VIX, we are all over the subject of volatility once again.

Guest contributor Reed Hogan is responsible for this month's feature article, *Why VIX Options Are Richly Priced.* This article takes an in-depth look at the variance risk premium in VIX options and has important implications for trading options in an environment like the current one where the VIX term structure is in steep contango.

In two related articles, Jared Woodard discusses the discrepancies between various approaches to forecasting volatility for the S&P 500 index for 2012 and I examine the history of the VIX futures term structure and its usefulness for predicting future returns in the SPX and the VIX.

Mark Sebastian also tackles the VIX, looking at its full history and explaining longer-term VIX cycles in terms of key catalysts and mean reversion.

In this month's feature interview, Mark talks with Mark Longo of TheOptionsInsider.com about the evolution of the various options exchanges and how internet-based options content is changing.

Andrew Giovinazzi delves into hard-to-borrow stocks and some of the implications this situation has for options traders.

Andrew also reminisces about a volatility spike in McNuggets at the CBOE.

In this month's Follow That Trade column, Mark Sebastian returns to examine the impact of a newsletter recommendation on option prices and discusses how to profit from it by playing the volatility angle with an adjacent strike.

Once again, the EM team is back to answer reader questions in the Ask the Xperts segment and I return to the Back Page to attempt to tie together the Cold War, liberty and risk.

As always, readers are encouraged to send questions, comments or guest article contribution ideas to editor@expiringmonthly.com.

Have a good expiration cycle,

Bill Luby
Contributing Editor

Ask the Xperts

The Expiring Monthly Editors

Q: *I see that the CBOE has just started publishing a "VIX of VIX" index. On the surface this seems like another product of questionable value and I don't really understand how this is going to work with the underlying.*

A: On March 14, the CBOE began publishing values for their new "VIX of VIX" index under the ticker symbol VVIX. The idea of the volatility of volatility might sound strange, but I think this index will actually prove very useful to traders and investors alike.

VVIX provides a comprehensive estimate of the implied volatility of VIX options. What the VIX is to SPX, VVIX is to VIX: so anyone who thinks VIX is a useful estimate of SPX implied volatility should think that VVIX will probably be a useful estimate of how rich or cheap VIX options are as well. VIX options have become increasingly popular in recent years as daily volume and open interest continues to mark new highs. If you have ever traded a VIX option contract, you probably wanted to know what the implied volatility of the option was, and whether it was rich or cheap compared to the recent historical volatility of the forward VIX value that underlies the options. VVIX provides a quick, high-level estimate of the level at which VIX options are being priced.

As noted at the VVIX White Paper link, one of the principal applications of VVIX estimates will be by traders seeking to capture the volatility risk premium in VIX options, a topic I have written about occasionally and the topic of Reed Hogan's feature article in this month's issue. It is fairly well-known that SPX option premiums tend to be higher, on average, than is warranted by the actual volatility exhibited by the underlying index. That's all the phrase "volatility risk premium" really means. What VVIX will make plain to more traders is that VIX options are, on average, also richly priced.

The idea of the volatility of volatility might sound strange, but I think this index will actually prove very useful to traders and investors alike.

—Jared

Q: *I am a part time options trader, new(er) to the VIX. I'm looking at a calendar spread which looks good, but makes me nervous because of the unknown factor. I'm wondering if the near term IV can spike much higher than the longer term IV options, thus turning what looks like a good trade into a nightmare. I don't know where to find the historical data on such a trade, so I appeal to your personal knowledge instead. If you have a moment, I'd love to know your thoughts on this type of setup. Trying to figure out what my risks are.*

—Chris C.

A: The interesting thing about VIX options is that you should not think about them all being based on the same underlying. The best approximation for each VIX option is the VIX future of the same month, so right now with the VIX March futures at 20.15, the April futures at 23.35, the May futures at 25.10, etc. these are not apples to apples comparisons as there are distinctly different underlying securities for each. For this reason, you should also think of a May 25 call as being "in the money" even with a VIX of 17.34 as I type this. Think for a moment that the VIX could go up almost 50% to 24.99 and the May 25s would still expire worthless, because the market is anticipating an even larger move.

All this is context for your question.

The big problem is that if you are short May and long Aug VIX options and the VIX spikes in May, the Aug options are likely to move very little relative to the May, because they are anticipating significant mean reversion three months later.

Don't be surprised, for instance, if for every 10 points higher the VIX May futures move in May, the Aug futures move only 3 points. So . . . I don't think your biggest issue is front month IV so much as the fact that the Aug 'hedge' is really just a small fraction of what you probably think it is. This graphic of the February 27, 2007 VIX spike should illustrate an extreme example some of what I am talking about.

For what it is worth, just about everyone who trades VIX options ends up looking at a trade just like the one you presented me. This would actually be a good one to watch and see what happens, but if I were you I would probably stay away from VIX calendar trades (or devote a very small amount of money to what I call a proof-of-concept trade experiment) until I got a better handle on the risks involved, as a May VIX spike could be a very expensive lesson.

—Bill

Q: *I have calls in AAPL stock, if it has a dividend am I going to lose money on my calls?*

—Ralph

A: The answer is maybe. The way the OCC handles dividends is different for special dividends vs. regular declared dividends. For a special dividend, if it is of any substantive value the options are going to be adjusted automatically. This will not have an effect on your profit and loss. If AAPL decides to declare a regular dividend, the calls you hold after the exdividend will lose value. This is because of a change in the cost of carry function of put call parity. Remember: Call less Put equals Security less strike price plus cost of carry. An increase in div is going to reduce the cost of carry and thus lower the value of calls.

Hope that helps,
—Mark

2012 Volatility Forecast for the S&P 500

Jared Woodard

AS U.S. ECONOMIC data improve and it looks like the market is in a definitive bullish mode, a lot of investors are wondering what to think about the relatively high implied volatility in options prices and VIX futures. Do the options markets know something that no one else does? Are high premiums just an artifact of the last several years of volatile prices? To get a clear view of volatility expectations, I looked at the prices of several assets all tied to the S&P 500.

The attached chart (Figure 1) shows four implied volatility estimates for March 2012 through December 2013. The series displayed show estimates based a statistical GARCH forecast, the prices of at the money SPX options, VIX-style estimates incorporating most at- and out of the money SPX options, and VIX futures. I posted a similar forecast chart in January 2011 looking at data from SPX options, VIX-style SPX IV, VIX futures, SPX variance futures, and a GARCH estimate. (See "2011 Volatility Forecast for the S&P 500") Since then, the CBOE has stopped listing 12-month S&P 500 variance futures contracts, and the 3-month swap futures are listed only for June and September 2011, so I elected not to include them here. In the chart posted last year, estimates were displayed on a "days forward" basis, which made referring to the chart less intuitive after the fact; I have changed the x axis this year to reflect specific dates.

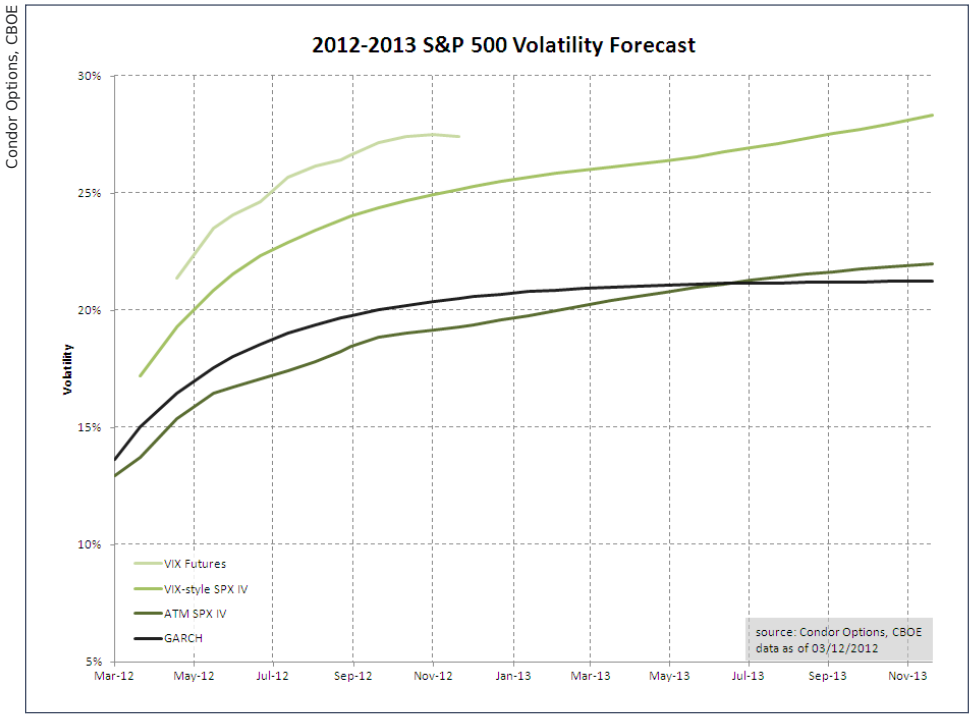

FIGURE 1 *2012–2013 S&P 500 Volatility Forecast*

Regarding the sources of these estimates, you are certainly already familiar with SPX options and VIX futures. As before, the VIX futures series plotted here shows values one month after contract expiration, since the futures are estimates of VIX values at expiration, and VIX itself has a 30-day horizon. Some readers may not know that the CBOE publishes VIX-style estimates for SPX implied volatility at horizons other than the 30-day and 90-day periods tracked by VIX and VXV. (CBOE VIX Term Structure Data) Finally, generalized autoregressive conditional heteroskedasticity (GARCH) is a popular statistical model useful for measuring time series that exhibit volatility clustering.

These forward-looking estimates should be viewed in the context of prior market returns. Since 1950, the average one-year historical volatility of the S&P 500 was 14%; the annual average was 16.6% since 1980. Since the year 2000, the average one month historical volatility of the S&P 500 (observed daily) has been 18.76%. While it seems like the stock market is becoming more volatile over time, it is worth noting that the crashes in 1980, 2000/1, and 2008 likely account for the uptick. The current one-month SPX

historical volatility is just under 10%. The fact that the market has traded so quietly in recent months relative to long-term averages might explain why the prices of options are so persistently high in IV terms.

One disparity worth noticing is between the estimates of VIX-style SPX option IV and VIX futures. For example, SPX options for September expiration are priced such that, if we incorporate and weight appropriately the volatility skew reflected in OTM options, we get a VIX-style September estimate of about 24%. But VIX futures for August expiration (estimating where a 30-day VIX estimate for September will be) are priced at about 26.5%. This relationship between VIX-style SPX IV estimates and VIX futures in last year's survey, too: VIX futures were consistently priced a couple points above SPX estimates. It has been very popular in recent months to attribute the steep VIX futures curve to the increase in volume in volatility ETPs like VXX and TVIX. I have presented evidence in several posts on the Condor Options blog that there is no discernible impact of the increased popularity of volatility ETPs on SPX options prices, OTC variance swap rates, or vega notional outstanding. The fact that VIX futures and SPX VIX-style IV are in a typical relationship provides additional evidence of market normalcy.

It is hard to argue with both a reliable statistical estimate provided by the GARCH model and with implied volatility at the same time. Unless all of these models are wrong, the remainder of 2012 is likely to be more volatile than the first quarter has been. EM

The VIX Term Structure as a Predictor of Future Returns

Bill Luby

THIS PAST MONTH has seen the largest sustained CBOE Volatility Index (VIX) futures contango in history and along with this phenomenon has come a host of questions about how significant the VIX futures term structure is in terms of predicting future stock market returns as well as predicting future volatility.

I touched on the subject of the predictive ability of the VIX futures term structure in October in *Investing Implications of the VIX Term Structure,* when I examined the future return patterns of equities, bonds, gold and VIX-based exchange-traded products in markets characterized by contango and backwardation of the VIX futures term structure. While this type of analysis may be helpful for characterizing the market for VIX futures in general terms, as the VIX futures are in contango 75–80% of the time, a degree of additional specificity could certainly better inform trading strategies that account for the shape of the VIX futures term structure as a key input into the strategy process.

Backwardation *A downward sloping futures term structure in which the front months are more expensive than the back months.*

Contango *An upward sloping futures term structure in which the front months are less expensive than the back months.*

As a result, this time around I have undertaken an analysis that is more granular and considers the degree of contango and backwardation in the VIX futures and attempts to determine the relationship between the slope of the VIX futures term structure and future returns in the S&P 500 index. Three questions in particular I hoped to find answers to:

1. Is extreme contango useful for predicting the future performance of the SPX or the VIX?
2. Is extreme backwardation useful for predicting the future performance of the SPX or the VIX?
3. Is there a linear relationship between the slope of the VIX futures term structure and the future returns of either the SPX or the VIX?

Analysis of VIX Futures Term Structure by Decile

VIX futures data are available going back to the March 2004 launch of the VIX futures. For the first two years VIX futures contracts were traded, the contract months were limited and somewhat haphazard. It was not until October 2006 that the CBOE revamped the VIX futures contracts, adding enough months to ensure that the first five consecutive months were always offered. Since May 2008, at least the first seven consecutive months have been available to trade.

In evaluating the VIX futures term structure data, I analyzed the full set of VIX futures settlement prices going back to 2004 as well as the more modern consecutive front five months data subset that originates in October 2006. In each case, I calculated the slope of the VIX futures term structure from all available VIX futures contracts for each day, then used the slope of the overall VIX futures term structure to create ten buckets of VIX futures data. For these deciles, I then calculated the mean returns for each decile for both the SPX and the VIX for seven separate periods ranging from 1 day to 100 days. As noted earlier, I performed the same analysis for the data from March 2004 and the continuous consecutive contract data from October 2006. As it turns out, there were only minor differences between the data from March 2004 and the data from October 2006, so I elected to focus on the full data set from March 2004.

An analysis of the decile data showed two promising developments. First, the top performing decile for the SPX for periods from 1–100 days was overwhelmingly the decile with the

The S&P 500 index is a consistent outperformer when the VIX futures term structure is in steep backwardation.

most extreme VIX futures contango. At the same time, the worst performing decile for the VIX for periods ranging from 1–100 days was overwhelmingly the decile with the most extreme VIX futures backwardation.

While it was interesting to see that the two VIX futures term structure extremes coincided with the best performing SPX data and the worst performing VIX data, what was just as interesting was that these happened at the opposite ends of the VIX futures term structure extremes. In fact, while extreme VIX futures backwardation seemed to be an excellent predictor of future VIX declines, it appeared to have very little predictive value in terms of future SPX performance. Similarly, while extreme contango seemed to be an excellent predictor of future SPX gains, it appeared to have only a weak predictive value in terms of future VIX performance.

Given the richness of the results for the SPX in steep contango and the VIX in extreme backwardation, the amount of noise in the balance of the quintile data was certainly disappointing.

Summarizing the Data by Quintile

Considering the possibility that the decile data might be too granular, I aggregated the results from the ten quintiles into five deciles in hope that the larger buckets (n=201 for the decile buckets, n=402 for the quintile buckets) might yield some more distinct patterns across the full set of quintiles.

Figure 1 summarizes the quintile data for future returns for the SPX using VIX futures data from March 2004 to the present, with quintile 1 (slope of 0.0302) aggregating the data for that 20% of the time when the VIX futures were in the steepest contango and quintile 5 reflecting the 20% of the time when the VIX futures backwardation was most pronounced.

With any luck, the color coding makes this table easier to read. Note, for instance, that the contango-heavy quintile 1 has either the highest aggregate gains (bright green shading) or second highest aggregate gains (olive green shading) for each period from 1–100 days into the future. As was the case with the decile analysis, however, the quintile summation data for extreme backwardation in quintile 5 shows that while extreme backwardation is associated with the highest gains on the next trading day, looking out 3–100 days reveals performance data that is for the most part right in the middle of the other deciles.

Converting the VIX performance data from deciles to quintiles also yields little in the way of additional insights. Figure 2 shows that extreme VIX futures backwardation (quintile 1) is an excellent predictor of future declines in the VIX. On the other hand, quin-

		Mean SPX Performance, N Days Later						
Quintile	**VX Slope**	**ROI +1**	**ROI +3**	**ROI +5**	**ROI +10**	**ROI +20**	**ROI +50**	**ROI +100**
5	(0.0202)	0.079%	0.083%	0.065%	-0.121%	0.150%	0.977%	1.766%
4	0.0025	-0.063%	-0.071%	-0.080%	0.035%	-0.260%	-0.768%	-1.436%
3	0.0090	-0.029%	-0.043%	0.003%	0.262%	0.546%	1.763%	2.633%
2	0.0159	0.059%	0.174%	0.209%	0.261%	0.619%	1.254%	2.010%
1	**0.0302**	**0.066%**	**0.186%**	**0.315%**	**0.589%**	**0.877%**	**1.272%**	**3.101%**

FIGURE 1 *Mean SPX Performance by VIX Futures Slope Quintile*

		Mean VIX Performance, N Days Later						
Quintile	**VX Slope**	**ROI +1**	**ROI +3**	**ROI +5**	**ROI +10**	**ROI +20**	**ROI +50**	**ROI +100**
5	**(0.0202)**	**-0.528%**	**-1.200%**	**-1.774%**	**-2.438%**	**-6.735%**	**-12.307%**	**-16.449%**
4	0.0025	0.596%	0.864%	1.376%	2.016%	6.823%	18.682%	26.549%
3	0.0090	0.778%	1.855%	2.359%	2.134%	3.440%	3.979%	15.781%
2	0.0159	-0.079%	0.027%	0.478%	1.417%	1.670%	3.520%	7.225%
1	**0.0302**	**0.407%**	**1.232%**	**1.771%**	**3.623%**	**8.216%**	**17.118%**	**22.147%**

FIGURE 2 *Mean VIX Performance by VIX Futures Slope Quintile*

CBOE, VIX and More

tile 2, while includes data from periods in which the VIX futures term structure is relatively flat, shows the VIX outperforming the median return for all quintiles across all time horizons. Also, while the VIX does show above average gains when the VIX futures term structure is in contango (decile 1), these gains are difficult to distinguish from those in quintile 3 or quintile 4. In fact, quintile 3, the middle quintile, shows the best aggregate gains in the VIX for all periods through five days—which is never the sign of a robust model.

Conclusion

Based on the decile and quintile analysis summarized above, there is compelling evidence that the S&P 500 index is a consistent outperformer when the VIX futures term structure is in steep backwardation. Similarly, the VIX consistently underperforms when the VIX term structure is in backwardation.

Unfortunately, the data make it difficult to extend the conclusions above even to the future performance of the SPX when the VIX futures are in extreme backwardation or the VIX when the futures are in extreme contango. Returning to the questions posed at the beginning of this article, the decile and quintile data are sufficiently noisy that I am prevented from establishing a linear relationship between the slope of the VIX futures term structure and future performance of the SPX or the VIX at this time.

That being said, the predictive value of the VIX future term structure at extremes has some interesting implications for traders. For starters, as far as the future SPX performance is concerned, extreme VIX futures contango presents some interesting opportunities for trades with a bullish directional bias and suggests that the need for portfolio protection for longs is minimal in this type of environment.

Turning to the performance of the VIX, perhaps the key takeaway is that while extreme VIX futures backwardation is associated with subsequent declines in the VIX due to mean-reversion, the degree of VIX futures contango has little bearing on the future performance of the VIX index. This conclusion should be of great interest for those who trade VIX futures, VIX options and VIX exchange-traded products. EM

Further Reading

"Exploring the VIX Futures Term Structure, Part I," *Expiring Monthly,* August 2010.

"An Interpretive Framework for VIX Futures (Second in a Series)," *Expiring Monthly,* September 2010.

"VIX Futures: Putting Ideas into Action (Third in a Series)," *Expiring Monthly,* October 2010.

"A History of VIX Futures Roll Yields," *Expiring Monthly,* September 2011.

"Investing Implications of the VIX Term Structure," *Expiring Monthly,* October 2011.

"Calculating the Future Range of the VIX," *Expiring Monthly,* February 2012.

History of the VIX

Mark Sebastian

OPTION TRADERS HOLD the idea of mean reversion in option volatility close to their hearts. Without reversion, I do not think it would be possible to trade price options in an efficient manner. It would be like insurance companies trying to price auto insurance with no long-term statistics on drivers.

In the case of the VIX, the long term mean is about 20%. However, that doesn't mean that it is constantly going to hover at 20 with strong pops below 20 and strong pops above 20. Let's not forget that the VIX has an unlimited upside. For instance, in 1987, if the VXO (the original VIX based on the OEX) existed the VIX would have traded close to 180% and taken more than two weeks to break 60. (Figure 1)

FIGURE 1

Vix and More

However, on the downside, below 20 the VIX does not have nearly as much room to run, the market is never going to truly stop moving so it will always have some sort of volatile; thus, we can consider the VIX's low band at somewhere around 9%. The result of this is that the VIX has many more low ticks below 20 than it does ticks above 20. However, because spikes up can be so high, it pulls the average price of the VIX up toward that 20% level.

Think of it this way, if we had 10 people in the room all in 7th grade, but one of them is the teacher who is about to retire, the average age of the group is about to happen.

Now that the VIX is below 15, I have been a little bit surprised by how many investment professionals have such a short term memory about market volatility and a lack of understanding of how the VIX works. In fact, if one were to really take some time to look at specific periods of time in the market over the last 20 years one would notice that there are times where traders would have considered a 15 VIX the sale of the year, and times where traders would consider a 15 VIX a great buy. Let's examine the last 20 years and see if we can find a few patterns.

Looking at the year 1992, the Iraq War ends, the US rises out of a post-war recession, and the market has an extended rally. This rally was pure tech bubble, it was slow and grinding. Looking at the VIX, many traders are surprised to see periods of time where the VIX is this low. (Figure 2)

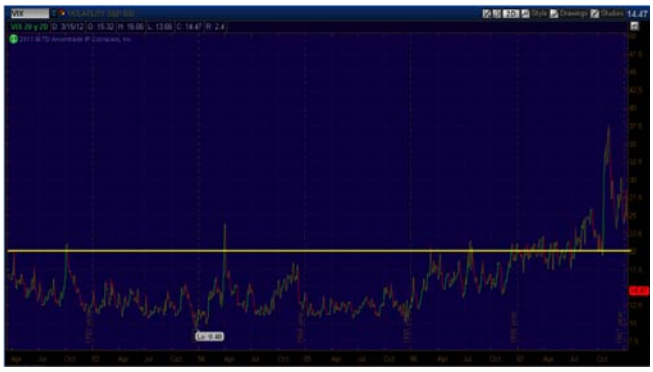

FIGURE 2

In about 5 years from just after 1992 began until 1997, the VIX broke 20 on five occasions and if traders had sold a 15 VIX they were almost certainly excited. A trader in 1994 would have thought that it would be crazy for the VIX to break 30 and would have considered 15 a huge sale.

In the beginning of 1997, the VIX finally starts to begin to get some movement and gets its first true surge because of our friends over at LTCM. Interestingly, this leads us into our first true period of increasing volatility, the tech bubble.

The period of 1998–2003 was marked by constant volatility; first the tech bubble hit, and in what is a rarity stocks

went up and so did volatility. Markets were starting to calm down and then September 11th happened. As the market was figuring out September 11th and the economic issues that came with it, we saw Enron blow up. (Figure 3)

It wasn't until early 2003 that the market finally worked through all of these crazy, volatile events. Each one of these events seemed to lead into another event and so on. In mid-2002 as Enron was melting and internet company after internet company was collapsing, it could have been hard for a trader to imagine that this would end. During that time, not only was a 15 VIX a buy, even 20 was a buy.

As the fear around Enron, the dot-com bubble, and terrorism started to subside, we entered a new period of low volatility and rallying markets. From early '03 until mid '07 again we enter another really slow period. (Figure 4)

It takes oil breaking 120, the Chinese economy slowing, and a rogue trader to finally get the market to blow up again. Until that happened, again we hit a period of time where traders thought a 15 VIX was a big sale, let alone 20. I remember when the VIX broke 10, we were all somewhat surprised—but more lamenting how slow the market was.

As you can see, at the end of '07 as oil is exploding and the housing market is starting to fall apart, we finally see the period of time that is currently in everyone's mind. The US banking crisis and the European Sovereign debt crisis. (Figure 5)

This is another period where traders think that it is impossible for the VIX to be below 20, crisis after crisis seems to keep hitting the economy, and the world. However, this is not going to last forever.

Looking back, each of these cycles is about 4–5 years long, we are about 4 ½ years into this crisis, the US economy is finally getting back on its feet. Banks are passing stress tests (mostly); our friends across the pond seem to have their house in order.

Could it be that we are heading into a new period? The market has been moving at a snail's pace this year. The actual 'realized' volatility of the market over the last 3 months has been less than 12%. A VIX of 15 is more than a 3% premium to market movement. Maybe VIX isn't low right now. If we consider the VIX a forward-looking index, maybe expectations of what volatility will be going forward are low, and the general public needs to catch up to the major investment houses and firms. EM

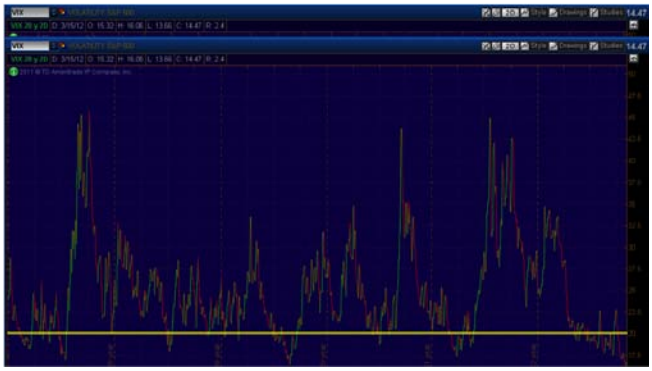

FIGURE 3

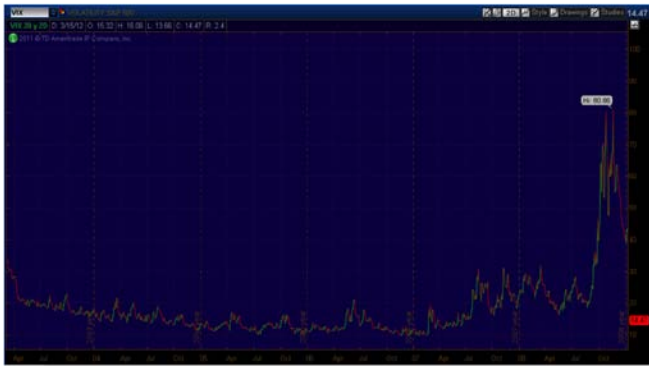

FIGURE 4

FIGURE 5

The Misunderstood
Hard-to-Borrow

Andrew Giovinazzi

WHAT IS A hard-to-borrow (HTB) stock? One thing I coach traders on is spotting market patterns in options. By that I mean are current market volatilities giving away any secrets about the stock? There are several products now that highlight order flow. In general that is a good idea since seeing where the action is always helps. When a stock goes HTB it leaves an indelible print on the option volatility structure. Before I dive into that, let's examine the mechanics of a HTB stock.

Mechanics

The mechanical factors in the market place have to do with the clearing function. Essentially these are things that are forced to happen by a variety of actions on the part of the clearing agent. Assignment and exercise are another example of market mechanics. The HTB comes about when a stock or security is heavily shorted. Each security needs to be located and borrowed before the underlying settles if the seller wants to short it. The clearing agent handles this function through the "Box" at the clearing firm as they keep track of the borrowable names. If the Box cannot locate the stock, the client who has the short shares will be bought in at the market. After trading at least two dozen short squeezes I know from experience that is never at a good price. Needless to say the short leg of a trade is now gone like a puff of smoke.

I have seen short squeezes that **pushed stocks** up two and three hundred dollars for weeks at a time.

Market Impact

What does this do to the secondary market for the security? Well, all of sudden there is a rash of buyers trying to close short positions like some Terminator ravenously buying shares. Up goes the price. I have seen short squeezes that pushed stocks up two and three hundred dollars for weeks at a time. Remember since there are only long sellers really able to sell, the upside gets a little hairy. This forced buy-in is called a "short squeeze" as the shorts get their you-know-whats handed to them.

Cost of Carry Impact

What does this do to the cost of carry of the options? Several things, really, as the put/call parity relationship become fractured. Calls and puts get separated by the new, negative cost of carry. When traders look at option screens there is a computed cost of carry built into the option pricing model. When a stock gets HTB, that negative cost becomes the new value in the model. So for a stock that has the front month combos trading for $1 underwater, the new cost of carry will be -$1 and so on for every strike in the expiration cycle. The larger that borrow gets, say moving from $1 to $2, that means there is more pressure on the short to cover since there is less stock available to borrow. A current extreme situation is in SHLD right now with the April borrow at -$4. For now it costs at least 60% of the value of SHLD per year to be short the stock if you back the value out of the market prices. That is pretty pricey.

Volatility Impact

The volatility impacts are a little harder to discern as one platform can have a different interpretation of what "fair value" is for the cost of carry. If the platform uses the current broker dealer loan rates to impute cost of carry, all of the puts for a HTB name will look very expensive relative to the calls.

Here is an example. (Figure 1) Note the differences in the implied volatilities in the circled columns. The put IVs are about twice the CALL IVs. This means the platform is running a normal cost of carry.

ThinkorSwim

Impl Vol	Prob.OTM	Delta	Bid X	Ask X	Exp	Strike	Bid X	Ask X	Impl Vol	Prob.OTM	Delta
102.93%	0.27%	1.00	49.60 C	50.35 C	APR 12	30	0 ...	.09 I	124.08%	98.78%	.00
113.91%	1.94%	.99	44.75 B	45.35 X	APR 12	35	.05 Q	.14 ...	116.35%	97.80%	-.01
96.62%	1.93%	.99	39.80 B	40.30 C	APR 12	40	.15 C	.17 C	106.96%	96.68%	-.01
58.39%	0.15%	1.00	34.70 C	35.25 C	APR 12	45	.14 X	.24 I	93.13%	96.12%	-.02
64.19%	1.52%	.99	29.75 B	30.30 B	APR 12	50	.25 I	.38 C	85.58%	94.11%	-.03
40.45%	0.08%	1.00	27.20 I	27.75 X	APR 12	52.5	.33 I	.42 I	80.75%	93.14%	-.04
52.19%	1.62%	.99	24.80 C	25.25 X	APR 12	55	.47 A	.59 I	79.09%	90.99%	-.06
42.66%	0.99%	.99	22.25 C	22.75 B	APR 12	57.5	.66 C	.78 I	77.08%	88.55%	-.07
37.52%	1.03%	.99	19.75 C	20.25 C	APR 12	60	.93 I	1.06 C	75.84%	85.38%	-.10
--	0.00%	1.00	17.25 I	17.65 I	APR 12	62.5	1.35 I	1.53 A	76.37%	81.00%	-.13
--	0.00%	1.00	14.85 A	14.95 I	APR 12	65	1.86 I	2.09 A	76.42%	76.37%	-.17
32.55%	5.90%	.95	12.40 I	12.90 B	APR 12	67.5	2.52 I	2.73 A	76.39%	71.41%	-.21
37.10%	14.59%	.88	10.40 X	10.75 N	APR 12	70	3.30 I	3.55 A	76.64%	66.11%	-.25
40.80%	24.81%	.79	8.60 A	9.00 C	APR 12	72.5	4.30 I	4.55 C	77.60%	60.53%	-.30
43.17%	34.28%	.71	7.05 A	7.25 Q	APR 12	75	5.50 I	5.70 I	78.89%	54.99%	-.35
45.75%	44.44%	.61	5.85 C	6.10 C	APR 12	77.5	6.80 I	7.10 A	80.51%	49.66%	-.40
47.03%	53.09%	.53	4.75 I	4.90 Q	APR 12	80	8.35 I	8.65 A	82.78%	44.65%	-.45
48.96%	60.85%	.45	3.85 I	4.05 X	APR 12	82.5	10.00 I	10.40 A	85.33%	40.12%	-.49
50.37%	67.58%	.38	3.10 I	3.30 X	APR 12	85	11.85 I	12.20 A	88.06%	36.08%	-.53
51.80%	73.28%	.32	2.51 I	2.69 C	APR 12	87.5	13.85 I	14.30 C	90.10%	32.60%	-.56

FIGURE 1

Livevol

62	76.45	67.85	10.40	10.75	SHLD Apr21 70	3.30	3.55	67.62	23.48	104	2007
2	71.41	66.80	8.60	9.00	SHLD Apr21 72.5	4.30	4.55	66.54	28.52	49	253
46	66.07	65.33	7.05	7.25	SHLD Apr21 75	5.50	5.70	65.55	34.01	99	1843
261	60.14	65.35	5.85	6.10	SHLD Apr21 77.5	6.80	7.10	65.23	39.86	58	331
104	53.95	65.01	4.75	4.90	SHLD Apr21 80	8.35	8.65	64.88	45.81	50	557
83	48.11	65.10	3.85	4.05	SHLD Apr21 82.5	10.00	10.40	65.02	51.63	33	4
97	42.53	65.00	3.10	3.30	SHLD Apr21 85	11.85	12.20	65.07	57.45	41	467
13	37.54	65.61	2.51	2.69	SHLD Apr21 87.5	13.85	14.30	65.81	62.56	10	
167	33.01	65.20	2.03	2.18	SHLD Apr21 90	15.90	16.50	66.14	67.21	12	193
119	24.25	66.31	1.25	1.44	SHLD Apr21 95	20.00	21.20	66.53	75.81		
65	17.99	67.53	0.87	0.99	SHLD Apr21 100	24.75	25.15	67.69	81.98	3	5

FIGURE 2

Now contrast this screen with a quote screen from another vendor (Figure 2). In this case the vendor is using a cost of carry reflective of the market conditions (the big negative borrow) which makes the IVs for the calls and puts near the same value.

In either case the easy way to check and see how far out of whack things are, just add the ATM put price to the stock price. SHLD was trading around $80 so that makes the synthetic calls trading for $8.5 or so. The actual calls are trading for $4.85. Either way there is some big IV in the option pricing. One of the truisms about a HTB name is that the IV rockets mostly because the risk of a squeeze up becomes hard to quantify along with the problems that made the name a short candidate in the first place. A move in either direction is likely to be violent.

Opportunities

The HTB has a few goodies attached to it. The biggest one is in the skew of the options. Directional skew up and down has decent edge on it (note the LIVEVOL shot, Figure 2). Short term ratio spreads do not look too bad either as long as the risk can be held in check. One of my favorites is a ratio call spread that buys extra calls. Sometimes the upside gets hit hard as the shorts switch from stock to calls leaving them a bit cheap relative to what is going on and nice entry points can pop up. With this position, just sitting and waiting for the squeeze to build can bring nice rewards. **EM**

Why VIX Options Are RICHLY PRICED

by Reed Hogan, Guest Contributor

WHAT IS THE VRP? The variance risk premium can be thought of as the average difference between the volatility you pay for and the volatility received in any kind of volatility derivative. In terms of trading options, this premium can be considered the average difference between the volatility level you bought and the actual volatility experience by the underlying contract during the life of the option. One might initially expect that over a large enough sample size, the difference between these two should net out to be approximately the same. Academic literature and real world experience suggest that this is typically not the case, and in fact the volatility realized over the life of a contract is often lower than the volatility implicit in the initial price of the contract. The magnitude of this difference—the variance risk premium—changes for different products, and is an important concept for any participant in volatility markets to understand. With the advent of the expanding world of volatility derivatives, this paper attempts to understand this premium in VIX options.

It is important for option market participants to have an understanding of the typical direction of this premium and also some arguments for its existence. Academics have used the CAPM pricing model and complex mathematical approaches to precisely identify the source of this premium, and it seems that the common conclusion is that there are many sources for the existence of the VRP. I have found that a basic intuitive understanding of the primary sources of the existence of the premium suffice in a non-academic context.

One common explanation of a negative VRP is the negative correlation between volatility and returns, which makes volatility assets powerful portfolio risk management tools. Option buyers should be willing to pay a premium for these contracts if the volatility they purchase serves to reduce their overall portfolio variance. This explanation relates the premium to purchasing insurance, because buyers are paying an additional cost to manage overall portfolio risk. Another explanation for the existence of this premium is the skewness of returns in volatility contracts. Volatility of returns is mean- reverting, but prone to very large positive spikes. This means that a long position in a volatility product should typically lose smaller amounts of money, but is very profitable when volatility spikes. For the sellers of volatility products, regular premiums compensate them for the risk of an infrequent but very large loss in times of market uncertainty.

How can you measure it and why should we measure it in VIX options?

Different methods have been used to analyze this premium in options. Bakshi and Kapadia (2003) used delta-hedged S&P 500 options to examine the sign of the premium. By purchasing options and delta-hedging them with the underlying security, one can effectively hedge out all risk other than volatility risk, so the payoff from these positions determines whether the realized volatility was greater or less than the implied volatility of the contract. These payoffs therefore can be used as a measure of the direction of the premium. They find that a strategy of delta-hedging a long position in S&P 500 options underperforms zero, implying that option prices in general include a premium over the expected volatility during the life of the contract. While this method successfully argues that the premium is negative, it cannot quantify the premium. Each option contract has a different vega—a measure of the sensitivity of option prices to changes in volatility—which would affect the size of the premium for different option contracts. Therefore, the payoff of a delta-hedged strategy would not only be affected by the premium, but also by the individual option contract's sensitivity to changes in volatility.

Delta-hedging options also becomes very difficult when the underlying price is not continuous, and so the payoffs from this strategy begin to reflect the premium less with more price gaps. This phenomenon can be easily illustrated by running through two examples of delta-hedging a simple call, one with a continuous price feed and one with gaps. Let's assume that you are initially buying a 50 delta call and selling 50 shares of the underlying security to remain delta neutral. Now assume that underlying price slowly drifts up, and your option position is now long 60 deltas. As your option position was slowly picking up deltas with an increase in the stock price, you were slowly selling more shares against these deltas to remain delta neutral. These shares are losing money as stock increases. Now, let's assume that the price change happened overnight, so that the next morning your option position was long 60 deltas and your stock position was still only short 50 deltas. You only lost money on 50 shares as the stock went up, rather than increasing your short position as the stock went up. The payoffs from these two positions are very different, and illustrate why gaps in the underlying price can misrepresent the variance risk premium being measured by a delta-hedged position.

Delta-hedged single option positions can say something about whether the premium is negative or positive, but market participants would benefit greatly from quantifying the size of this premium. Carr and Wu (2009) were the first to do this analysis by creating synthetic variance swap rates derived from option prices. The methodology they developed is based on the idea that one can replicate the payoffs of a

variance swap closely by trading a strip of out of the money options with strike squared weights and delta hedging with the underlying security. The payoff from a variance swap is the difference between the realized variance of an asset and a predetermined forward-looking variance benchmark, called the swap rate. The average of these payoffs precisely measures the variance risk premium, and is therefore a very useful tool to quantify the premiums. Data on variance swaps is not readily available, however, because these contracts are traded over-the-counter (OTC) rather than through a public marketplace. By synthetically creating these contracts, this data can be replicated for any asset, and can therefore measure the size of the variance risk premium for any asset.

So why do we care about variance swaps? It is easy to write off these products as exotic and inaccessible to the typical retail investor, but understanding what variance is and also understanding the unique characteristics of these products helps to unlock extremely useful information for any volatility based derivative. It is first important to understand that variance is merely volatility squared. A volatility of 50% corresponds to a variance of 25% (50% × 50% = 25%), and a volatility of 150% corresponds to a variance of 225% (150% × 150% = 225%). These two examples also highlight another important characteristic of variance: Variance has a convex relationship to volatility. Figure 1 shows the payoff of a volatility swap (blue line) and the payoff of a variance swap (red curve) with the same strike. Volatility swaps are much like a variance swap in that they are initiated with a benchmark volatility, and the person who is long the contract is paid a notional amount times the difference between realized vol and the vol benchmark. Notice that the red variance swap line is greater than or equal to the blue volatility line at all levels of volatility. The convexity of variance means that gains accelerate at higher levels of volatility and losses decelerate at lower levels of volatility if you are long the variance swap. This cannot be the way these contracts would be priced in real life, however, because there would be an instant arbitrage relationship from buying the variance swap and selling the volatility swap with the same strike. In practice, the pricing of variance swaps is adjusted by moving the strike higher, shown in the graph as the green line. Notice that the green line has a payoff of 0 at a higher level of volatility, representing a higher "break-even" volatility benchmark. The amount by which the variance swap with the adjusted strike (green line) underperforms the volatility swap line (blue line) when the volatility swap has a payoff of zero is the variance risk premium.

Variance swaps are also useful because they offer pure exposure to volatility. Trading options also gives a trader exposure to volatility, but the payoff of the position depends on other factors as well, mainly the price of the underlying security. This makes trading variance swaps the most direct and uncontaminated way to trade price volatility. This also means that variance swap data provides the most clear informational content about the volatility of a security, which can then be applied to all vol derivatives.

While previous papers have analyzed this premium in various asset classes, this paper measures this premium in the volatility asset class by applying a similar methodology to VIX options. Since the inception of VIX derivatives in 2004 (futures) and 2006 (options), the trade volume in these

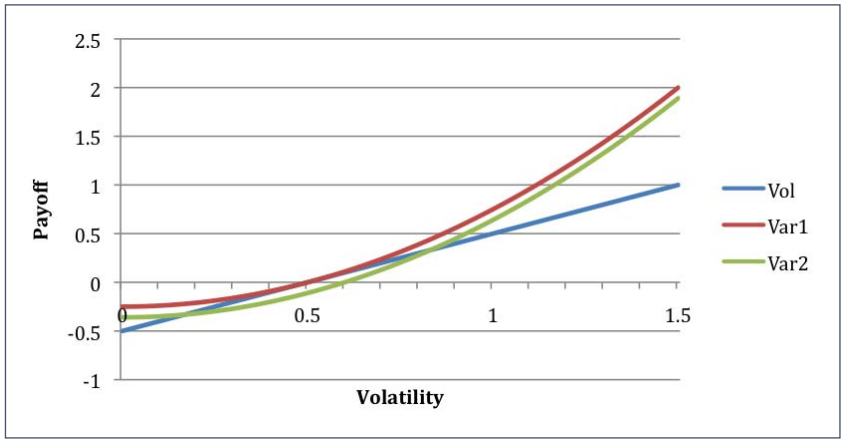

FIGURE 1

contracts grew substantially. Figure 2 shows the growth since 2006 in VIX options, in terms of call and put volume, and VIX futures. The values for 2011 are extrapolations of the realized numbers through April of 2011.

Active product innovation in the volatility asset class also indicates a growing demand for volatility products. It seems that every day there is a new volatility ETN or ETF that tracks different parts of the VIX future term structure with different leverages. Recently, CBOE also applied the VIX methodology to the Emerging Market ETF EEM and added futures and options for this index. It is clear from these recent developments that market participants are more aware of volatility as an asset class of its own and are demonstrating a growing interest to transact in these products. With more people participating in the VIX options and futures market, and the volatility asset class more broadly, it is important to better understand the pricing of these contracts. By measuring the VRP in VIX options, we have one more tool to analyze hedging or speculative trades in these contracts.

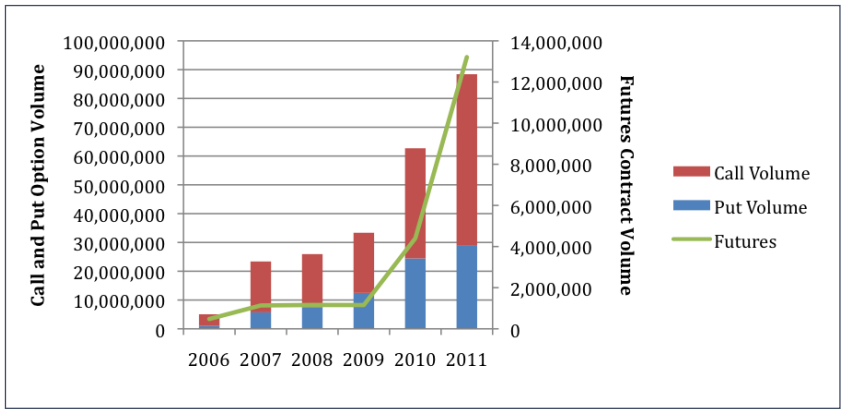

FIGURE 2

Methodology Used

To create synthetic variance swap data, you must determine an accurate swap rate and measure the realized variance over the life of that contract. To measure the latter, I simply calculated the variance of the corresponding VIX future closing prices over the course of the contracts life. Determining the swap rate is much trickier. This paper adopts a methodology developed by Matysin[1] which applies a normal distribution to variance levels across differently levels of moneyness. The integral of the resulting line, adjusted for the forward price of the underlying contract, accurately derives a swap rate.

While the math used to derive the formula can be a little bit messy, it makes sense that the swap rate can be derived from option-implied variance. Since no cash changes hands when a variance swap is initiated, it follows that the swap rate is a conditional risk-neutral expectation of the future variance of the underlying security. You can think of the methodology used in this paper as a formula to convert the option markets expectation of future volatility into the correct format for a variance swap.

DATA/Results

Using the methodology described in Table 1, this paper measures the variance risk premium in VIX options to be 3.27%. To put that into context, other papers have measured this premium using a similar methodology for the S&P500 (2.74%) and DJIA (2.58%)[2] and even in crude oil (3.58%) and Natural Gas (2.96%).[3] This suggests that the premium in VIX options is more than market index premiums and on par with physical commodities. The 3.27% value for VIX options suggests that if you buy 100 dollar variance swaps on VIX futures, you would lose on average 3.27 dollars. As an option

	Realized	Implied	VRP
Mean Variance	0.595	0.628	-0.033
Mean Volatility	0.771	0.792	-0.021
Standard Deviation	0.595	0.295	0.53
Skewness	2.402	2.306	2.488
Range (Variance)	4.122	2.86	4.379
Minimum (Variance)	0.075	0.165	-1.011
Maximum (Variance)	4.197	3.025	3.367
Observations	1107	1107	1107

TABLE 1

market participant, you can think of these results in terms of buying and receiving variance (remember variance is volatility squared); on average, the portfolio of options that replicate the variance swap realized 2.1% less volatility than implied by their prices.

While this information is useful for anyone buying or selling VIX options, an examination of the components of this data is also revealing. The realized variance of VIX options has an incredible range during the lifetime of this database, with a minimum and maximum value of 7.5% and 419%. To put those variance terms into more manageable volatility terms, that corresponds to a realized volatility range of 27% to 205%. Consider also that the mean realized volatility was approximately 77%, much closer to the lower bound of this range. This strongly supports the idea that the variance risk premium is a regular premium collected by the seller of a volatility product to compensate for times when volatility surges against them. This explanation is also apparent in Figure 3, which tracks the cumulative PnL of the variance contracts. Note that each data point reflects the entire PnL resulting from the duration of the life of the contract initiated on that date. The saw tooth shape of this graph helps to demonstrate how regular premiums from these trades can be collected, and subsequently wiped out when variance spikes. Looking at Figure 4, which shows a times-series of the premium itself, you can also see this phenomenon. For much of this graph, the VRP is hovering below zero, but infrequently spikes substantially.

This paper also ran a regression of realized variance against the swap rate to determine whether the premium varies with regard to time or the level of the swap rate. The results of this regression suggest that the variance risk premium in VIX options is relatively constant. This can most likely be attributed to strong mean reversion characteristics in VIX option volatility. In this dataset, the standard deviation for realized variance (.595) is significantly higher than the standard deviation of the swap rate (.295). This suggests that realized variance changes in larger magnitude than the swap rate, and indicates that the swap rate adjusts for the future mean reversion of volatility. It follows that this premium should be relatively constant with regard to time and the swap rate.

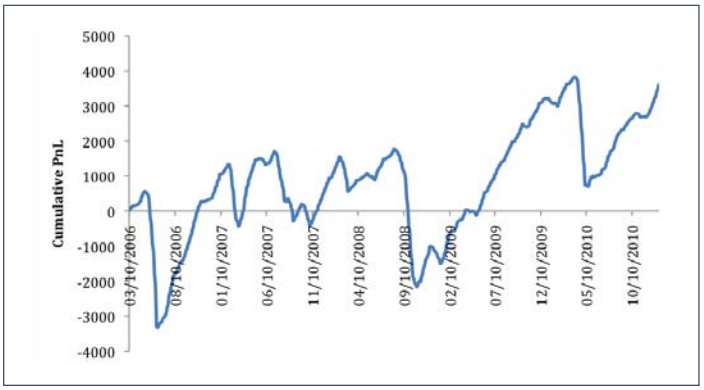

FIGURE 3 *Simple Equity Curve – Short Var*

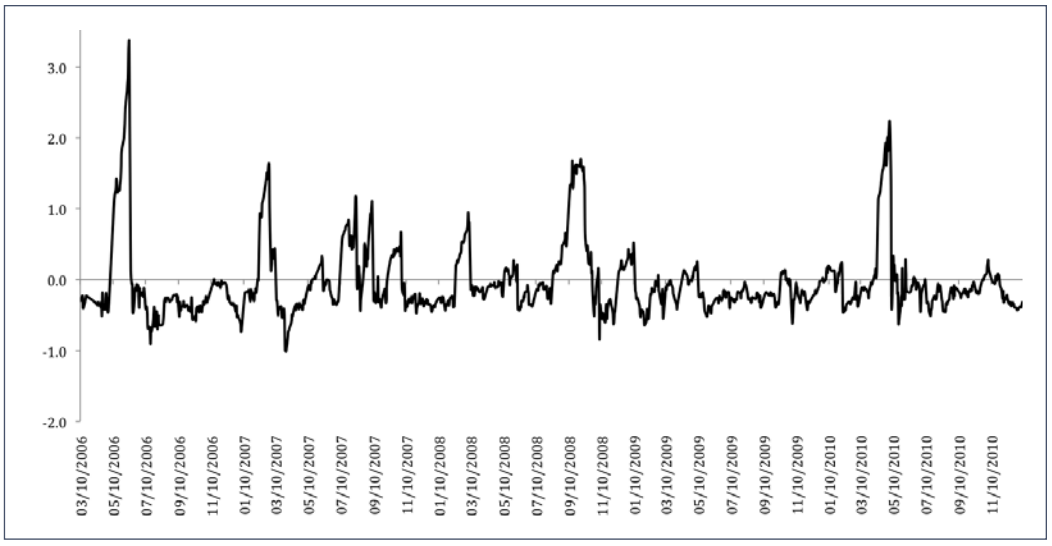

FIGURE 4

Limitations to Consider and Conclusions

With any academic paper, it is important to think about the limitations in the methodology and the implications of applying the conclusions the paper draws to real trading strategies. In this paper, there are some substantial limitations to consider. If the reader is aware of these limitations, this should not decrease the information content of the work but rather put that information into the appropriate context.

Two of the larger limitations are related to jumps in the underlying security and the nature of the dataset itself. We discusser earlier how jumps in the underlying price feed change the payoffs from a delta-hedged portfolio. For very similar reasons, these jumps also cause the Black-Scholes model to break down. BS essentially prices a delta-hedged position in the option, and implies a volatility level required for the underlying security in order for the position to break even given the market price of the option. If the delta-hedging of this position is less accurate, so is the information content of the BS model. This methodology derives swap rates from the collection of BS implied volatilities, so more frequent jumps means a less accurate dataset. It is important to know that VIX futures gap relatively frequently, and contribute to inaccuracies in this analysis.

The extreme skewness in the realized variance of VIX futures and also the variance risk premium itself is something the reader should also consider. While this is the nature of the dataset, and also ultimately one of the contributing factors to the existence of the VRP, it is good practice to think about how this affects the generalized conclusions reached. With a dataset this skewed, one should consider the effect of the frequency of spikes in realized variance. What would happen to the average risk premium if this data set included one more or one less volatility spike? Can we expect the number of variance spikes that occurred in a six-year dataset to reflect the future frequency of such spikes? Even though there is no right answer to these questions, it is important to think about these scenarios.

Trade strategies specifically designed to capture this premium are difficult, but not impossible, for retail investors to execute. One would have to sell out of the money options in VIX options themselves, or possibly a VIX ETF like VXX, and hedge them frequently with the underlying security. The logistical problems with initiating strategies like these make doing them in small sizes difficult and likely not worth the transaction fees. It is also important to consider the volatility environment when executing these trades. Recently, contango in VIX futures has been very steep, suggesting that VIX options have substantial premium built into them. One most consider the benefit of selling juicier option premiums against the implicitly increased chance of a spike in variance.

This paper, and academic papers in general, does not provide a clear cut, alpha generating trading strategy but rather provides one more piece of information for the informed retail investor to think about. While there can be some argument about the accuracy of the exact VRP in VIX options, there is strong evidence to suggest that the premium is consistent and significant. To capture this premium with a trading strategy, the general goal should be to net sell VIX option premium, with a strong awareness of the infrequent and very large spikes in realized vol. For investors who are executing other trading strategies or hedging portfolio returns, knowledge of this premium can help to contextualize the best way to act on your investment thesis. EM

Reed Hogan graduated from Claremont McKenna College in 2011 with a BA in Economics and Finance. He currently works as a clerk at a proprietary option trading firm in Chicago.

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[2] Wu, Liuren and Carr, Peter P., Variance Risk Premia (October 24, 2007). AFA 2005 Philadelphia Meetings. Available at SSRN: http://ssrn.com/abstract=577222 or http://dx.doi.org/10.2139/ssrn.577222

[3] Trolle, Anders, and Eduardo Schwartz. "Variance Risk Premium in Energy Commodities." Journal of Derivatives 17.3 (2010): 15–32. http://sfi.epfl.ch/files/content/sites/sfi/files/users/192823/public/TrolleSchwartz_Energy_Variance_Risk_Premia.pdf

Mark S. Longo is the founder of TheOptionsInsider.com, the premier destination for options information. An options trader and former member of the Chicago Board Options Exchange, he is also the co-founder of The Options Alliance, a consortium of options publishers, brokers, exchanges and vendors.

Expiring Monthly Interview with Mark Longo

Mark Sebastian

I have known Mark Longo for some time; he and I are co-hosts of the Option Block podcast and Volatility Views. While some may think he is simply a marketing guru, the fact is that there is no one in the financial media that has a stronger understanding of the derivative markets, exchange politics, and social media than Mark. His site is a must read on a daily basis for any serious options trader. I sat down with him and asked him a few questions:

Expiring Monthly: *Please describe The Options Insider.*

Mark Longo: We are a leading source for free information about the options market. We cover everything From basic education to unusual activity, advanced trade management, analysis and breaking news. Our audience runs the gamut from retail to institutional, with a growing number of financial advisors and asset managers thrown into the mix. We further differentiate ourselves from the increasingly crowded online options space by limiting our contributors to people with practical backgrounds in the options market. We also operate the world's only radio network devoted to options traders. As a result, we occupy a relatively unique space within the options world.

EM: *What caused you to get into this business?*

ML: When we started building The Options Insider in 2006, very few outlets provided free access to options information. Most websites charged for options content or used it to up-sell their other options products/services. So we saw an opportunity to create something different that was accessible to all options users. We launched in January of 2007 and have been going strong ever since.

EM: *What makes The Options Insider different from other new aggregators?*

ML: We launched the site primarily around original options content. That was simply because so few outlets were operating in the free content arena to any significant extent. As the years passed and more options destinations came online, we began partnering with those destinations to add their content to our offering. Now, The Options Insider has grown to become a fantastic aggregator of online options information as well as a source of compelling original content. Our goal is to provide our audience with a one-stop shop for all of the best information from the options market.

EM: *Where is financial news heading?*

ML: Sadly, the days of original content are fading. Most financial news sites simply offer links to outside content these days along with the ability to comment on those links. So, while we endeavor to provide our audience with a curated snapshot of aggregated options content every day, we also continue to invest in compelling original content across a variety of medi-

ums. Our radio network is a perfect example of that. We spend a significant amount of time and resources creating original radio content every week. Unfortunately, that level of commitment to original content is rare in the modern financial news arena.

***EM:** What has been the impact on podcasting for your business and the industry?*

ML: Our radio network has a tremendous impact on our business. It is a signature part of The Options Insider brand. Much of that impact stems from the fact that we were among the first to podcast about options and have been doing it for over five years. We are also the only ones to offer a radio network targeted at the options audience. As smartphone adoption increased in recent years, podcasting became an even more effective tool for reaching out to niche audiences like options users. There will certainly be many more resources devoted to this medium in the years to come.

***EM:** What information do you find most valuable to your readers?*

ML: Unusual activity is still our most popular content offering because it hits all options demographics. Whether they're a seasoned pro or a novice retail trader, everyone wants to know about the hot options activity of the day. We're also focusing on advanced trade management content much more (gamma scalping, adjustments, etc.) because that is an extremely important area that is critically underserved at the moment.

***EM:** What is the current climate for the exchanges right now?*

ML: In many ways it is a race to the bottom, with more exchanges devoting resources to attracting "noise volume" such as dividend trades, fee arbitrage, etc. That volume boosts their market share and their bottom line, but represents little actual customer activity or economic intent on the part of the end-user. We find this trend disturbing because this volume does little to expand the options market by attracting new customers or broadening the appeal of the product. In many ways, it actively disenfranchises core constituencies such as liquidity providers and retail customers.

***EM:** What is next for the exchanges, there seem to be M-T exchanges popping up everywhere, can the traditional PFOF model last?*

ML: It certainly seems that M-T exchanges offering aggressive rebates and catering to niche groups like HFTs will be the trend going forward. It's difficult to see how traditional exchanges survive without radically changing their business models and customer bases to reflect this new reality.

***EM:** You are kind of known as an insider's guide to the exchanges, what are your thoughts on the SEC investigation into CBOE?*

ML: All information points to the fact that it's centered around the CBSX right now. But it's an extremely fluid situation that could change at any moment.

***EM:** Now that the NYX-DB deal fell through, what is next for the ISE?*

ML: That is the million-dollar question in th options space right now. ISE's market share has trended downward in recent years. Their parent company, Eurex, has been forced to write-down significant losses on the initial purchase price of the exchange. The NYSE/DB merger would have provided ISE with access to new technology and more resources. With that off the table, and with so many m-t exchanges catching up to, or even surpassing, ISE in market share, it's hard to see which way ISE goes from here.

***EM:** What do you think could be the next major change in trading over the next few years?*

ML: The current trend of non-traditional sources of "liquidity" usurping traditional market makers will only exacerbate in the coming years. This inevitable trend has disturbing implications for the future of the options market, particularly in illiquid classes or on days of extreme volatility. If you are an active options trader, particularly a multi-leg spread trader, then this trend will impact you in the near future if it hasn't already. EM

Slow Days

Andrew Giovinazzi

AS THE VIX BRIEFLY dipped below 15% this week it made me think about how I used to pass the time on slower days when I was a market maker. There is a misconception about floor trading in that it is busy and hectic all of the time. That is not entirely true. When the volatility dies down and some of the seasonal slowness comes in the hyper group of adrenaline junkies known as floor traders find themselves with extra time on their hands and not much to do. Sure the market is trading and ticking but what really counts is the velocity of orders hitting a trading floor at any one time. If that velocity slows to a trickle something has to give.

After all, that was a trip to Mexico so what is wrong with a shaved head anyway?

Think of trading floors as big locker rooms since it is mostly men (some women). This is a group predisposed to betting so when the quiet comes guys start to come up with interesting things to bet on. This scene was made famous in Liar's Poker in the late 80s. The bond trading room at Salomon Brothers had some impromptu Liar's Poker for big bucks. Floor traders looked for more interesting things to bet on since part of the goal was to kill time. Half of the fun was coming up with something good to bet on. Normally it had to consist of something verifiable on the floor itself. That was part of the fun. Also there was usually some sort of mildly sadistic quality to it. Since there was a steady stream of clerks who needed extra dough there usually was always a willing taker.

Take one of my favorites. Send a clerk around to collect bids to shave their head. First, some time got killed finding a clerk who would shave their head for money. You throw out a couple of bids, $100, $200 etc and no takers. Then the guys would get together and up the ante a bit, say $500, and still nothing. Ramp it up to $1000 and then there was some interest. After all, that was a trip to Mexico so what is wrong with a shaved head anyway? One hour later the clerk comes back bald as a cue ball. Most of the day was happily over.

Eating contests were pretty popular too. Eating hot sauce or drinking a gallon of milk, stuff like that. The CBOE has this great lunch room with wall to wall windows so members could eat lunch and keep an eye on the action in their crowds. It was one of my favorite places to have lunch (besides Ceres). On a slow day we came up with an idea of eating a 50-piece Chicken McNugget box in one hour for $500. I thought no way could anyone do that. We happened to be lucky enough to have a huge kid from the South Side clerking in the pit next to us. His boss, the broker, called him Tiny. He was not tiny. He took the bet like it was the easiest money he was ever going to make. We decided to have the contest in the members lounge and I wanted to see Tiny eat the nuggets from the pit since I could not leave the DPM. He was standing by the window wolfing down those nuggets. The first 30 minutes rolled by and he had scarfed down half of them and was looking strong. It was impressive. 40 minutes into it he started to slow down, really slow down and now the 20 McNuggets left looked as big as baseballs to Tiny. He sipped some milk. That was a bad idea because at about minute 50 he could not eat one more. I know because he tried to eat one more and out they came all over the members lounge window. It was spectacular. Only one hour to go in the day and the close looked like it was heating up.

As a trading note, be careful fading in a quiet market as things can change in a hurry once some liquidity starts to show up. EM

Taking Advantage of a Newsletter

Mark Sebastian

THERE ARE GOOD NEWSLETTERS and there are bad newsletters, it can be very difficult to figure out one from another. However, there are times when it can be extremely easy to figure out a bad one as well. For starters, this sounds counterintuitive, but one does not want a letter that is followed by too many traders, because something like what happened in DR Horton on March 8th might happen to you.

DHI is not a small homebuilder, but it is also not exactly a super active option either. The CBOE lists it as a class C, meaning mid-tier activity. With an average volume of a little over 9,000 contracts a day, it can handle big orders, but not HUGE orders. Thus, when a major newsletter called for its traders to buy the DHI April 14 puts something got completely out of whack.

LiveVol Pro

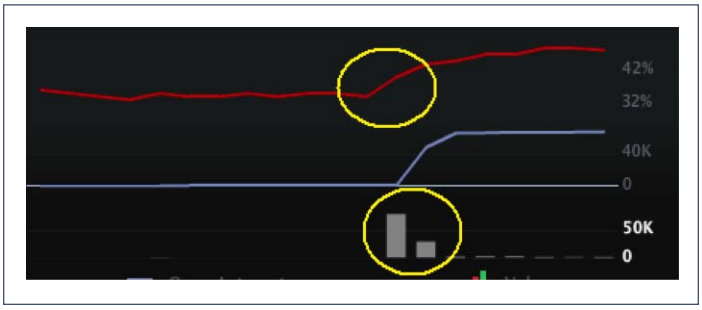


FIGURE 1

Notice how open interest and IV spiked when the recommendation came out.

As traders bought up the puts, they began to dramatically shift the movement in volatility on the strike. This caused the 'sharks' to come swimming, and pretty soon, investors who thought they were getting a great purchase weren't getting such a great purchase. In fact, I would venture to say that aside from owning AAPL calls at any price (almost a joke there) selling the April 14 puts might be the best layup of the year for these traders. Here is how they traded it.

When the traders first start seeing the order flow enter DHI, all on one stike, all to buy, they know something is up. Finding out about the newsletter (which they quickly do), rather than sell options to the traders buying on the newsletter recommendation, the sharks BUY a strike near the suggested strike in an attempt to get ahead of the newsletter lemmings. A trader might buy 100 of the DHI April 15 puts and hedge the trade delta neutral (buying 6800 shares of stock).

OptionVue 7

2.09			0.96	-87.0
1.27	32.4%	+100	1.66	-68.6
0.67	34.7%		1.93	-43.5
0.33	38.4%		1.60	-22.0
0.14			1.05	-10.1
0.07			0.60	-4.31

FIGURE 2

Once commissions are factored in the trader pays about a 33% volatility on the trade.

OptionVue 7

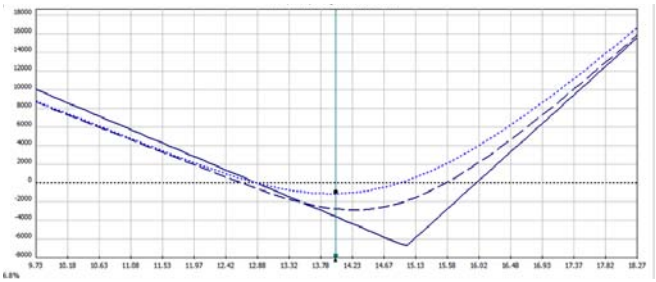


FIGURE 3 *Profit/Loss by Change in DHI Common Price*

As the volume on the options increases and the volatility of the 14 puts explodes the trader finally pulls the trigger on selling the puts once the IV is up enough. The trader sells enough so that he can unwind his stock position and get short vega (sensitivity to changes in implied volatility).

OptionVue 7

15 puts	1.25	37.7%	+100	1.82	-65.1
14 puts>	0.71	40.4%	-158	1.94	-44.0
13 puts	0.38	44.2%		1.60	-26.1
12 puts	0.18	48.3%		1.10	-14.1

FIGURE 4

The new position looks like this:

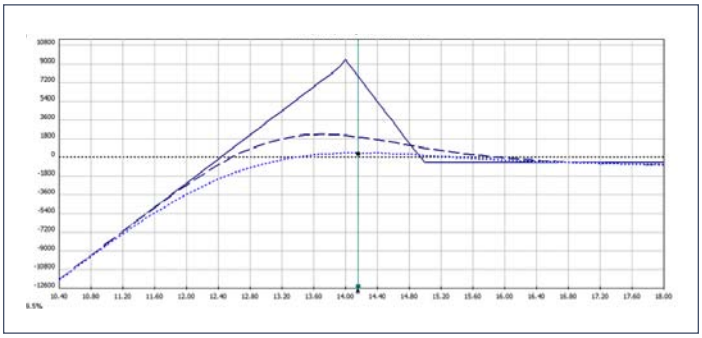


FIGURE 5 *Profit/Loss by Change in DHI Common Price*

It's essentially a front spread. He manages it by taking it off when IV falls, or by trading deltas against the gamma. Our initial purchase of 100 puts is up about 300.00.

Once the trader enters the sale, within an hour, the IV has started to decline. With IV in the trader now has some decisions to make on this position. On 258 contracts the trader is up 700.00 (not bad for 2 hours work).

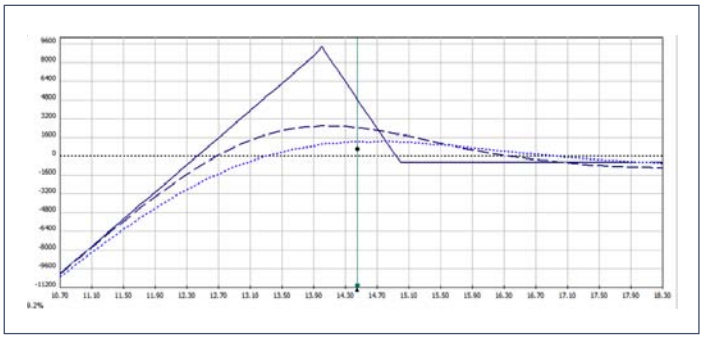


FIGURE 6 *Profit/Loss by Change in DHI Common Price*

At this point the trader can either cut bait, reduce the position, or let it ride. That is an entirely different FTT. For our purposes we shut the door on this trade. EM

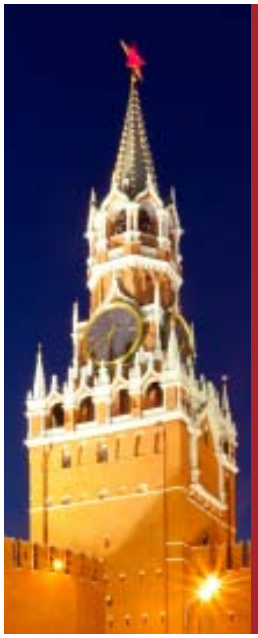
Freedom To vs. Freedom From

Bill Luby

THE COLD WAR was an era in which warfare was waged on many fronts, with the conflict of ideas and philosophy often serving as a proxy for troops, tanks and even nuclear-tipped weapons.

One of the more interesting philosophical skirmishes from this era involved two competing conceptions of liberty: positive liberty and negative liberty. For those of us who reside in predominantly democratic capitalist nations, the dominant theme is positive liberty, which is essentially the ability to exercise our free will in an environment in which individual liberties, personal choice and self-realization are encouraged and the restrictions upon those liberties by the state are relatively limited. The flip side of positive liberty is negative liberty, in which obstacles or restrictions to those individual choices are removed or minimized. Part of the argument in favor of negative liberty is that one who has food, housing, health care, education, employment and other necessities provided for them is free from having their desired pursuits restricted by those and other factors. During the Cold War, the negative liberty argument was the Soviet Union's rejoinder to the Western clamoring for more liberty and human rights.

I mention all this as I have recently been thinking a great deal of the distinction between positive liberty (freedom to) and negative liberty (freedom from) in the context of investing. I believe there is an investing lifecycle. Most of us start our investment careers with a minimal amount of capital and expertise. Over time we identify areas in which we have an edge and we incorporate those into our strategic approach. As our skill and expertise multiplies, so do our account balances—for the most part.



The irony of this development process is that as we acquire more skill and expertise, many of us become less inclined to put them into action.

Part of the irony of this development process is that as we acquire more skill and expertise, many of us become less inclined to put them into action, as risk aversion grows and return of capital begins to take precedence over return on capital. When I was in my twenties, I wanted to hit the ball out of the park every time I came to bat. Now that I am in my fifties, I am beginning to see the appeal of just making sure I advance the runner and not hit into an inning-ending double play.

When it comes to investing, playing defense is not as much fun as playing offense, just as trying to avoid a twisted ankle is a lot less fun than trying to climb a rugged mountain. Consider, however, that the freedom to risk half of one's trading account on a single trading idea may ultimately be less important than the freedom from blowing up, suffering a large drawdown or perhaps even being forced to seek out another career. A good trader must find the balance between freedom to and freedom from and be willing to develop skills and expertise in both areas. While a trapeze artist performs with a safety net, that safety net should make it easier to reach for the heretofore unthinkable. EM