

A QUESTION of CAPITAL EFFICIENCY

Comparative Implied and Realized Index Volatility

Trading EXPIRATION

An Interview with Phil Flynn

RISK OR UNCERTAINTY:

Explaining the Variance Premium

EXPIRING MONTHLY THE OPTION TRADERS JOURNAL

EDITORIAL

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CONTENTS

- 4 Editor's Notes Bill Luby
- 5 Ask the Xperts The Expiring Monthly Editors
- 6 **Trading Expiration** Andrew Giovinazzi
- 7 **Comparative Implied and Realized Index Volatility** *Bill Luby*
- 10 Expiring Monthly Interview with Phil Flynn Mark Sebastian
- 13 Risk or Uncertainty: Explaining the Variance Premium Jared Woodard
- 15 **EXPIRING MONTHLY FEATURE** A Question of Capital Efficiency Mark Sebastian
- 19 FLOOR STORIES: How Did We Get Here? Andrew Giovinazzi
- 21 FOLLOW THAT TRADE: Long-Short Straddles on Two Major Market Indices Bill Luby
- 23 BACK PAGE: Hedging Michigan Eric Kovalak, Guest Contributor



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

Over the course of the last few issues, several articles have touched upon the subject of the variance (volatility) risk premium, also known as VRP. This month we have made VRP the central theme of the issue, tackling the subject from several different angles.

In Risk or Uncertainty: Explaining the Variance Risk Premium, Jared Woodard begins the first of a two-part examination of "Ambiguity Aversion and Variance Premium," a recent paper by Jianjun Miao, Bin Wei, and Hao Zhou, that offers an ambiguity-based explanation for the variance premium puzzle.

In a related vein, this month I address the subject of VRP in two different ways. In *Comparative Implied and Realized Index Volatility*, I look at VRP across a variety of major market equity indices and I follow one tangent in a related Follow That Trade piece, *Long-Short Straddles on Two Major Market Indices*.

Mark Sebastian authors this month's feature article in which he delves into some of the benefits of index options as a more efficient use of capital than trading the corresponding ETFs or ETNs directly.

Phil Flynn is the subject of this month's feature interview. Mark does the honors again and their wide-ranging discussion spans the evolution of the commodities markets and the changes brought about by commodities ETPs to futures strategies, trading frequencies, the financial media and other subjects. Andrew Giovinazzi describes how weekly options have changed the nature of expiration trading and have given the retail investor more viable trading strategies. Andrew also reflects on the evolution of options trading over the years in terms of exchanges, technology and other aspects.

Once again, the EM team is back to answer reader questions in the Ask the Xperts segment, while Eric Kovalak makes his Expiring Monthly debut on the Back Page, with some thoughtful commentary on Michigan that is thick on options metaphors and some reassuring news for pet owners.

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







The Expiring Monthly Editors

Q: I'm relatively new to the world of options. I've been reading a lot of the risk management articles in EM, and also about how options can let you use capital more efficiently, e.g. by using calls to replace stock positions. Given how effective options can be, is there a reason an informed investor wouldn't just trade options exclusively?

-M. Lefort

A: Interesting question. There are some reasons you might want to take a position in an underlying asset, instead of gaining exposure with options. If your investments are income-oriented, you should just buy the underlying asset. If your time horizon is very long, or you're a buy-and-hold sort of investor, the cost of rolling options periodically will reduce the other benefits of owning them instead of shares. If your reason for taking a position in a stock is exclusively price-based, that is to say if you have no other views about time or volatility, trading options all the time is a bad idea. since the product is more

complex than you need. An average stock investor trading options alone would be like someone who bought a Tesla Roadster just to go to the grocery store.

That's not to say that Teslas, and options, aren't fantastic products for people who can make use of them. I would argue that a smart investor should work to incorporate explicit views about time and volatility into her positions, since those views are probably operative anyway on an implicit level. In the accounts I manage for clients and myself, the bulk of our exposure is in options contracts and spreads. But again, the appropriateness of a financial product is a very personal matter.

—Jared

Q: What's the difference between volume and open interest?

.....

—David

A: This is a common mistake that newer traders sometimes don't get. Volume is pretty simple:

it is the total number of contracts that changed hands on a given day. Open interest is not nearly as simple. When there is a lot of trading some is done to close an existing trade. Other trades are done as new opening positions. Think buying a stock and then selling it to close the long vs. selling to sell short a stock. On the flip side, buying to close a short sale vs. buying to go long. Open interest represents how many traders are long and short at any given time. If a trader buys a call from

By studying the differences between volume and open interest, traders can get insight into whether a large block trade is a trader opening a trade or closing a trade. another trader (technically actually the OCC but that is a an entirely different discussion) the trade itself creates an open interest of 1. If the same two traders then trade back, it would decrease open interest of -1. What if a trader that is long a contract sells it back to the market place and a trader that did not have an open position buys the contract? It would have a net effect of 0 on open interest. By studying the differences between volume and open interest, traders can get insight into whether a large block trade is a trader opening a trade or closing a trade. It can be a great tool for pro traders.

—Mark

Q: Can a trader hedge Sep VXX options with Apr VXX options? Are these well-enough correlated?

—Mark

A: September and April VXX options are directionally correlated for the most part, but the underlying futures they are based off *(continued on page 24)*



Trading **Expiration**

Andrew Giovinazzi

EXPIRATION TRADING used to be kind of a black art. Reason being it only happened once a month and positions had to time to mature. The gradual change from vega-oriented positions to gamma-oriented positions are kind of like springtime for the East Coasters. You never know what would pop out of the ground (or off the sheets). The slow tick tock of theta usually scares most traders. With the advent and rising popularity (and liquidity) of the Weeklys (another great CBOE option invention) now is a good time to dig into expiration since it is not just for pros anymore.

Moving into Expiration

The key part of expiration trading is the changing relationship of gamma (how sensitive the option is to a change in the underlying) and vega (how sensitive the option is to a change in volatility). Since price and volatility are the two most variable inputs to the option model the gradual move in importance to gamma is a big deal. From a position management perspective the traders has to ask, "Do I want this gamma?" A position put on from a vega point of view will no longer really perform as a vega risk-type trade. For longer term positions sliding into expiration, think long and hard about those vertical spreads and Iron Condors. Is the reason they were put on still valid as a gamma dominant trade?

Open Interest (OI) vs. Volume

The advent of the Weeklys creates a new contract cycle every week for

many of the biggest trading names. The question we get at Option Pit all the time is about Open Interest. Do I want to trade a contract that has such low open interest?

The answer, of course, is a Weekly has no open interest because it was newly listed and nothing has traded yet. But, voila, one hour of active trading can and will generate huge open interest. Open interest at expiration merely means there is a possible gravitational force to the big OI strike since there is someone on one side who has a large positive gamma position. If the position is big enough to pin the underlying, the big OI strike is very well where it could end up. Ultimately if traders are looking for liquidity, better to look at the size of the bid/ask. If the option series is liquid on entry it most likely will be liquid on exit.

Exploding Gamma and Rapid Decay

For the sake of brevity I will treat all options here as the expiration week period (Thursday before to the day of expiration, or about eight days). The only real differences between the Weeklys and Ordinaries are the legacy OI in the Ordinaries coming into expiration and the Weeklys with their relatively lower OI. Gamma will march up every day until expiration. What the positions get is rapidly evaporating theta as expiration day draws near. Nice positions game the short front month contract for



Now is a good time to dig into expiration since it is not just for pros anymore.

> a quick financing of the second month contract. Time spreads of various types work well here on the Thursday or Friday before expiration (7–8 days before) for rapidly decaying options. Split the strike and traders can pick up some pretty cheap options. The advent of the Weeklys makes this trade structure possible week after week.

Gaming the Expiration Position

As the day of expiration approaches, options become that great binomial trade, the all or nothing. A close on expiration .01 above the strike gives a vanilla call 100 deltas and .01 below the strike 0 deltas. If a trader positions a short delta against that what do they get? That is an instant explosive gamma backspread for the ages. The name breaks and the trade becomes a nice winner or the name stays at or above the strike for a scratch or small loss. For traders with legacy positions and Weeklys that have become rip ups (OTM options with little hope of life) the one-day gamma event is the dream. Place stock orders above the market (near the long strike price) or trade half of the deltas when the underlying moves to the strike. A quick turnabout will yield fantastic results.

APRIL 2012 🔀 6

Comparative Implied and Realized Index Volatility

Bill Luby

WHEN IT COMES TO broad measures of implied and realized volatility, most investors tend to focus all of their attention on the S&P 500 Index (SPX) and its implied volatility counterpart, the CBOE Volatility Index (VIX). As the SPX and the VIX are the undisputed benchmarks for broad-based equity indices and implied volatility, a strict adherence to these two indices is certainly understandable.

Is an SPX and VIX-centric view of volatility justified? Is it desirable? What additional information can investors glean from monitoring implied and realized volatility in some of the other major market indices?

This article examines the differences in implied and realized volatility as measured by the SPX/VIX and four other broad-based equity indices and their volatility index pairs:

- S&P 100 Index (OEX) and CBOE
 S&P 100 Volatility Index (VXO)
- NASDAQ-100 Index (NDX) and CBOE NASDAQ-100 Volatility Index (VXN)
- Dow Jones Industrial Average (DJIA) and CBOE DJIA Volatility Index (VXD)
- Russell 2000 Index and CBOE Russell 2000 Volatility Index (RVX)

Correlation and Beta of Volatility Indices

Of all the volatility indices noted above, the newest to the party is the RVX, which was launched in May 2006. The CBOE has reconstructed VIX data going back to January 2004, however, which makes it possible to analyze the various movements of the volatility indices for more than eight years of historical data. Figure 1 summarizes some of the key facts about these volatility indices.

	onaonying	Term	Launched	Data Begins
VXO	OEX	30 days	Jan 1993*	Jan 1986
VIX	SPX	30 days	Sept 2003*	Jan 1990
VXN	NDX	30 days	Feb 2001	Feb 2001
VXD	DJIA	30 days	Mar 2005	Oct 1997
RVX	RUT	30 days	May 2006	Jan 2004
VXV	SPX	93 days	Nov 2007	Jan 2002

FIGURE 1 Comparative Volatility Indices

	VIX	VXO	VXN	VXD	RVX
VIX	1.000				
VXO	0.994	1.000			
VXN	0.974	0.979	1.000		
VXD	0.997	0.994	0.976	1.000	
RVX	0.985	0.976	0.965	0.982	1.000

FIGURE 2 Volatility Index Correlation Matrix, 2004–2012

Rank	Index	HV	Beta
1	RUT	24.63	1.39
2	NDX	20.70	1.16
3	SPX	17.78	1.00
4	OEX	17.15	0.96
5	DJIA	16.43	0.92

FIGURE 3 Mean Equity Index Historical Volatility, 2004–2012

*Note that the asterisk [Fig. 1] with respect to the launch dates for VIX and VXO is a reminder that the formula used for calculating the VIX was revised in Sept. 2003. As a result, the VIX data set includes the published VIX data from 2003 to the present as well as reconstructed data going back to 1990. The VXO data were originally published under the VIX label from 1993–2003, was reconstructed going back to 1988, and has been published as VXO since 2003. As Figure 2 shows, there is a high degree of correlation across the five main volatility indices. Using data going back to the beginning of 2004, the correlation between the VIX and the four other broad-based volatility

> indices ranges from a high of .997 for VXD to a low of .974 for VXN. As one might expect, the correlation between VIX and its predecessor, VXO, is also very high at .994. The correlation between VIX and RVX is toward the middle at .985. Correlations between the other four volatility indices are generally slightly lower than those with the VIX. One exception is VXD and VXO, which is very strong at .994. The weakest correlation

across the entire correlation matrix is between VXN and RVX and even then a .965 correlation is nothing to scoff at.

Calculating the beta of these volatility indices from 2004, the results appear to be influenced by the market capitalization of the securities in the underlying index. Figure 3 shows that realized or historical volatility (HV) in the Russell 2000 index has been 39% higher than the SPX since 2004, while HV in the NASDAQ-100 index has been 16% higher during the same period. On the other side of the ledger, HV for the OEX has been 4% less than the SPX, on average, while HV for the DJIA has been 8% lower.



Implied Volatility and the Volatility Risk Premium

While some might consider the above to include some moderately interesting factoids, the data becomes more compelling when we start comparing and contrasting historical volatility with implied volatility. At first glance, a table of the volatility index data from 2004-2012 (see Figure 4) looks to closely resemble the historical volatility data shown in Figure 3, although it is obvious that the implied volatility data are generally 15-20% higher than the corresponding historical volatility data.

Given the variety of volatility regimes we have witnessed over the course of the past eight years, I thought it might be instructive to calculate the volatility risk premium [calculated as the volatility index from 21 trading sessions ago divided by the current 21-day historical volatility] or VRP and see how the VRP has fluctuated on an annual basis for each of the five volatility indices. The results are summarized in Figure 5.

It is not surprising, but still interesting to note that 2008 is the only year

in which the mean volatility index levels did not show a premium over the mean historical volatility value—and this held true for all five volatility indices. This is in sharp contrast to the first 16 weeks of 2012, where implied volatility has exceeded realized volatility by at least 53% in each of the five volatility indices. Note that the prior highs in VRP were from 2004 and 2009/2010, when stocks were rebounding from a sharp downturn and there was widespread skepticism about the sustainability of the rally.

The green shading in Figure 5 identifies the volatility index with the highest VRP, while the red shading shows the index with the lowest VRP. Interestingly, the VXO/OEX combination has consistently demonstrated very high VRP and has had the highest VRP in seven of the eight years in which there is a full set of data. At the other end of the spectrum, the RVX/RUT combination has consistently demonstrated the lowest VRP among the group since the 2008 financial crisis.

Conclusion

Drawing upon data from 2004 to the present, I have briefly examined the correlation, beta and volatility risk premium across the five major market equity volatility indices (VIX, VXN, VXO, RVX, VXD) and their corresponding

Rank	Vol Index	Mean	IV Beta
1	RVX (RUT)	27.74	1.31
2	VXN (NDX)	23.97	1.14
3	VIX (SPX)	21.11	1.00
4	VXO (OEX)	20.93	0.99
5	VXD (DJIA)	19.24	0.91

FIGURE 4 Mean Volatility Index Levels, 2004-2012

underlying equity indices (SPX, NDX, OEX, RUT, DJIA).

During the course of the eight plus years covered in this analysis, the correlation data for the volatility indices was uniformly high and otherwise unremarkable. The beta of the volatility indices showed considerably more diversity and followed a pattern in which the mean values of the volatility index were inversely related to the market capitalization of the stocks comprising the underlying index, with the RVX and Russell 2000 index being the most volatile, while the VXD and Dow Jones Industrial Average were the least volatile.

The most interesting findings come from a comparison of the volatility indices to the realized volatility in the equity indices. Here there was a strong volatility risk premium (VRP) across the board, most pronounced in the VXO and S&P 100 index and least pronounced in the RVX and Russell 2000 index. It should be noted that some traders prefer to use an absolute difference between the volatility index and realized volatility in calculating VRP. Using this type of analysis causes

Year	RVX/RUT	VXN/NDX	VIX/SPX	VXO/OEX	VXD/DJIA
2004	25.79%	21.23%	41.15%	41.87%	34.82%
2005	19.58%	22.70%	27.60%	28.60%	19.43%
2006	22.10%	14.91%	31.33%	32.74%	26.84%
2007	17.89%	14.10%	12.98%	13.98%	14.90%
2008	-11.92%	-10.03%	-12.25%	-5.47%	-13.23%
2009	17.98%	33.96%	31.48%	40.27%	32.88%
2010	25.42%	29.36%	34.72%	35.23%	32.97%
2011	2.73%	13.04%	15.06%	16.56%	14.35%
2012	53.19%	71.16%	79.76%	75.50%	78.24%

FIGURE 5 Annual Volatility Risk Premium, 2004–2012



only slight changes in the results: VXO/ OEX and VIX/SPX would still be first and second in absolute terms, while RVX/RUT would move up from fifth to fourth, with VXD/DJIA falling to the bottom.

In terms of implications for traders, understanding the differences in market capitalization and fluctuating sector weightings in the underlying indices is the first step toward using the indices as indicators or to set up options trades. For instance, while the OEX is a subset of the SPX, it has a

greater weighting in energy, whereas the SPX places more emphasis on financials and health care. The NDX is probably the most ephemeral of all, with five stocks (Apple, Microsoft, Google, Intel and Oracle) currently accounting for approximately 42% of the index.

I will delve into some of the issues raised by this article in future issues and have already picked up one related thread in this month's Follow That Trade: Long-Short Straddles on Two Major Market Indices.

Further Reading

- "Follow That Trade: Long-Short Straddles on Two Major Market Indices," Expiring Monthly, April 2012.
- "Risk or Uncertainty: Explaining the Variance Premium," Expiring Monthly, April 2012.
- "Why VIX Options are Richly Priced," Expiring Monthly, March 2012.
- "Follow-Through in Monthly Volatility Risk Premia," Expiring Monthly, February 2012.
- "Huge Premium for Equity Market Variance Swaps?" Expiring Monthly, November 2011.



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Phil Flynn is a senior market analyst at PFGBEST Research and a daily contributor to the Fox Business Network. Read his daily energy report and e-mail him at pflynn@pfgbest.com.

Expiring Monthly Interview with Phil Flynn

Mark Sebastian

Expiring Monthly: Tell us a little bit about yourself.

Phil Flynn: I am kid from the South Side of Chicago, something I really benefited from. When I was looking for a summer job my dad said "Hey, I know this broker on the floor (of the CBOT) why don't you go down there and get a summer job on the floor." I never looked back, and I think that was 1978-1979. I really got a great education about life, markets, economy, and politics in the best school around, which is really the trading pits in Chicago.

EM: Eventually you went out on your own and became a broker? Trader? Market maker?

PF: I have basically done about all of it on the floor. I have mainly worked on the floor. Early in the day, when discount commission came into play, I worked with Barry Lind (of Lind-Waldock). I started with Lind-Waldock when they started the discount division. I was with them for many, many years, until I became an off-the-floor trader. I used to work with Barry Lind directly. I did his margins, his charts, ... I learned a lot about trading from Barry. Barry was a genius trader. He wrote a book called "Method Trading," which are the basic rules that I still use to this day. You don't get that type of education anymore. I learned to trade because a trading firm said, "You look like a bright kid, so I am going to let you clerk for us while we teach you to trade."

EM: What's the best way for traders to learn how to trade and learn these financial markets?

PF: In one way, you are never going to learn they way I did. In another way, there are a lot more opportunities, because traders have access to more information from the internet and from trading platforms, but it will never be the same. They will never experience the way we used to experience being in the trading pits after a bullish report and listening to the roar. You didn't even have to look at the boards to know whether it was a bullish or bearish report. It was like a ball game, you didn't have to look to know if the guy struck out, or hit a home run, or what. That was how it was in the trading pits. It was that mass humanity trading, it was spitting, it was swearing, it was knocking people over. But at the end of the day, it was the best way of price discovery that was known to man. To this day, I miss it. Today what you have to do, you have to read everything, you know I scan all the sites. You should watch Fox Business Network, obviously. You should check in with WSI, IBD, . . . you just can't get enough information.

EM: Let's talk about the commodities markets now that they have gone electronic. What direction do you think the commodities markets are goinglike equities, all electronic? Same underlying? Same multiplier? I hear all the time from the retail market what makes trading commodities so hard is that every contract is different.

APRIL 2012 🔀 10



PF: I think there is some truth in that, and sometimes, there are contracts I find confusing to this day. You wonder why they make these things so complicated. I will give you a perfect example. With the Federal Reserve, the fed fund futures contract, a lot of people traded it, but the general public didn't understand it. Why? Because you had to do all these complicated math programs. Figure out when the fed meeting is, divide by 7, and do all these things to figure out what the market is telling you. Where if you would have expressed it in such a way where, "Hey, we have a 70%-80% chance," the general public would have bought in. I do sometimes think it is the way the contract is structured that causes people not to trade these things.

But what is happening is the ETFs you don't have to understand. And that has been a big boom to the market, and I think a big positive boom. You know the anti-speculative crowd says it's the worst thing to ever happen to commodities. They are wrong; I think it is the best thing to happen to commodities.

EM: How do you handle USO and UNG, that have some of the contango problems. What's the key to trading those types of ETFS?

PF: First of all, you are picking the market that has been in a bear market, and you also have to consider the fact that the ETF is in its infant stage. The way I look at that is one of the biggest problems we have had in the futures

markets in natural gas and energy is price discovery for 20 years or 5 years down the road.

We used to have that before they changed the taxes in the 80s, they had the tax advantage, so you could have a market made way out into the future.

The problem we have had in the natural gas UNG: you know that it is very difficult to create interest in that part of the contract, because it just isn't there. You know we start these ETFs, and we have to concentrate on the front end of the contract. It has created a few settlement problems at the end.

We have a secondary market with ETFs where everybody who may want to be short or long natural gas, can drive up the price of the stock higher than the commodity. To me that could also be a useful indicator for trading, as valid as perhaps a VIX index, to show the trader sentiment.

If people are willing to buy an ETF above the market value, it really shows the underlying demand for that commodity is really overdone, or it is something you have. But you know despite the fact that it may have caused some short term problems at an expiration or two, in the big picture.

What it is going to do is create more products from that contract. We are going to find products that focus on the front end, the back end, and soon you will have an average of all the different contracts. Why this is important for the producers is because as you get that liquidity in the market, and you can look at the marketplace and say, "Hey, I can make an investment on a multibillion dollar oil deal if I know I can lock in 30 dollars a barrel into the year 2100 or to whatever it is," and that can be a real plus. It is going to take some time to develop, so I don't think you can get too over-upset over the shorter term situations.

EM: Let's talk about what you do throughout the day. You are a contributor at FOX. How do you like working for a network, and what's your experience been like?

PF: I love it. I really do. Number one, I am a big ham. That's a lot of fun. Number 2, the people at FOX are phenomenal. I am very excited being at this new network. There is some incredible talent over there. I just want more people to find us. I think, once they tune into the network, they will be amazed. It's not business as usual. It's not what you see on CNBC. I think it is business with a swagger. It is a different idea. You know, being down on the floor, I would like to think FOX presents the markets in a unique way that I think provides value for the average investor. A lot of times you would turn on some of the other business stations. and some of the people who watch would be spinning their heads like what the heck are they talking about? I think with FOX they bring it down to a level that almost anybody can understand.

EM: At PFG Best, who are your clients?

PF: I have a very diversified base of clients. I have a lot of what we call

retail business, the average investors, but we also have some CTAs, some commodities funds, and hedge fund accounts. Generally speaking, what I do is research for the firm, and basically for most clients, we create trading programs for them based on what they tell us. You know, whatever the client is looking for.

Some say to me, "Phil, I want to invest \$25,000, and I want to be more aggressive and I want to turn it into whatever," and we would create a more aggressive trading program. If someone came to me and said, "Phil, this is \$25,000. I want to be a little more conservative. I know futures are risky, and you can lose money on every trade." We can create a program.

I think our value for the average investor is I get them thinking about risk vs. profit potential. Most of the customers that I have seen that come into this market, they think profit, and they don't think risk. They don't have a good solid plan in the market of what they want to do. One of the worst things that has happened to a lot of retail traders is deep discount trading. It encourages a lot of these traders to trade too much. People come in and say it's only \$2. Well, instead of doing one, I can do five or six, and they are back and forth all day. One of the worst things someone can do is sit in front of a one-minute bar chart all day and trade back and forth 50 times a day. They end up at \$75 after commissions on the day, and to me that's a losing strategy over the

long run, because they are taking an incredible amount of risk.

What I tell people is, my philosophy for most retail traders is trade less and try to make more. You do that by basically creating a program where you are thinking about your profit vs. your risk potential. Quit trying to trade the next two minutes. Look at every day as a new day as an opportunity to buy the low and sell the high. Think about the long term, and you will do much better.

EM: So do you work with active traders, or are you developing more kind of the "I have \$1,000,000, and I want \$100,000 invested in commodities, and I want you to handle it"? Do you help the day trader or the long term guy or both?

PF: My philosophy is this: if I am starting a new program, it is three steps. Think day trade first, swing trade second, and position trade third. That's my philosophy. Whenever I am putting on a program, when I am putting on a trade, if I don't think that that particular trade has a chance to make a profit in that particular trading session that I am putting it on, then I don't want to do that trade. Obviously not every trade is going to win. I want to have a plan that says, hey, this could be the low of this trading session, this could be the high. Then I would run different risk scenarios. OK, what if we have a surprise? What would be the next level of risk? What would be an outside day? So our run for every market every day probably has four or five scenarios

for that day. Why is that important? Because then we can—again getting back to risk vs. profit potential—come back to you and say you know I can trade any market. I can create a system for multiple markets.

EM: If somebody is looking to work with you, you help day traders and active traders. Do you do passive management?

PF: Very selective. I don't do a lot of that. Only for select people. I think sometimes, when we try to become a CTA or trade a specific program, we pigeonhole ourselves. I think, to be honest with you, if I can handle a much greater clientele, I can advise airlines, the average Joe, energy funds that use our research and use our advice.

EM: You have to go through PFG to work with you? **PF:** Yes.

EM: Anything else you want to bring up that we didn't bring up?

PF: If your audience is thinking about getting into futures, think about your risk vs. profit potential. Futures are very risky. You shouldn't be getting into it unless you have money you can afford to lose. The ones who get into it, be very conscious of risk vs. profit potential. Don't put on a trade to just put on a trade. No flipping a coin. Get away from the systems that have trading 35 times a day. You don't need to trade 35 times a day.

Risk or Uncertainty: Explaining the Variance Premium

lared Woodard



READERS OF THIS JOURNAL will

be familiar by now with the variance or volatility risk premium-the difference between the volatility implied by options prices and the volatility exhibited by the underlying asset. While the existence and size of the premium are empirically undeniable, attempts to explain why the premium exists have been somewhat ad hoc. Specifically, prior attempts in the literature have typically assumed standard asset pricing models-including the expected utility hypothesis on which those models rely-and then added on factors representing stochastic volatility of volatility or extreme tail risk to explain the existence of the variance premium.

Ad hoc models are undesirable because they are unreliable. If our best economic model relies on an implausible assumption—that agents fundamentally act rationally-and then welds on external factors when needed to explain empirical phenomena like the variance premium, then it is harder to have confidence that the explanations and predictions of the model will hold true over time.

In "Ambiguity Aversion and Variance Premium," Jianjun Miao, Bin Wei, and Hao Zhou argue that the variance premium can be better explained in terms of ambiguity rather than risk. The abstract for the paper is below:

Little is known about the variance premium puzzle—the historical variance premium (the difference between risk-neutral and objective expectations of market return variance) is an order of magnitude greater than can be rationalized in a standard asset pricing model. In this paper we provide an ambiguitybased explanation for the variance premium puzzle. Specifically, we show that our model can endogenously generate a sizable variance premium to closely match the magnitude in the data. More importantly, we find that ambiguity captures about 96 percent of the model implied variance premium whereas risk can only explain about 4 percent of it. Our model also matches the levels and volatilities of the equity premium and the risk free rate.

Applying the model to historical consumption data, we find that variance premium mostly captures depressions, deep recessions, and financial panics, with a post war peak in 2009.

To understand the difference, it is important to know that risk and ambiguity-sometimes in the literature: uncertainty-are used as technical terms. A risky situation is one in range of possible outcomes is finite and is known in advance to the agent. An example familiar to options traders might be owning a vertical call spread. If the underlying drops below a certain level, the premium paid for the spread will be lost; if the underlying rises above a certain level, the spread will be maximally profitable and will not accrue any more gains. In other words, the finite range of possible outcomes is easily determined, which means we can also find ways of reaching reliable estimates of the probability of those outcomes.

But now imagine a situation in which you own a call option and you only know the current price of the option, but not the strike, the price of the underlying, the option implied volatility, or any other information. You are asked to determine how probable it is that the option's price will double in value before expiration. That's an impossible estimation to make: there are an unknown number of possible outcomes, so there's no way to assign probabilities to them individually. Economists and philosophers call this kind of epistemic situation uncertainty or ambiguity.



The risk/uncertainty distinction is about whether a given situation even admits probability estimates in the first place.

The distinction between risk and uncertainty should not be confused with the opposition between expected utility and behavioral approaches to economics. The latter distinction is about describing how agents actually act: for example, given a true set of probabilities, do agents make bets consistent with those probabilities? Expected/rational utility theory asks us to assume that they do, while behavioral approaches including prospect theory confirm that agents often deviate. The risk/uncertainty distinction is about whether a given situation even admits probability estimates in the first place.

To explain how ambiguity aversion make sense of the variance premium, the authors claim that the variance premium can be decomposed into three components.

The first component is the difference between the expectations about a "boom state" (a period of sustained growth) between an agent whose beliefs match an expected utility function (Bayesian analysis) and an agent whose beliefs are uncertain. This first component is positive because uncertain, ambiguity-averse agents put more weight on recessionary periods and less on growth periods than do rational utility-driven agents. The authors rely on a previously introduced ambiguity model to estimate the aversion of market participants.

The second component is the difference between the volatility of the market during a boom and the market volatility during a recession. The value of the second component is also positive because volatility is countercyclical: market volatility tends to be

higher when growth is low (in a recession) and vice versa. Because uncertain agents underweight good news and overweight bad news (per the first component), they can be expected to overpay for hedges, feeding into the counter-cyclicality of market volatility. The third component involves the relationship between volatility and prices, but is not important for our purposes.

An economic model is only as valuable as the true predictions it makes, so the authors compare the ability of their ambiguity model against several conventional approaches. The results are striking, and in the second part of this article, I will explain those results and discuss what implications the ambiguity-aversion explanation has for investors and traders who manage strategies designed around the existence of the variance premium.





EXPIRING MONTHLY FEATURE

A QUESTION of CAPITAL EFFICIENCY

ETFs vs. INDEX and FUTURES OPTIONS

by Mark Sebastian



hat is the most important part to becoming a successful trader? There are those that say it's risk management, there are those who would say it takes a good 'stomach.' Other traders will say it's having a great 'system' or being really smart. Heck, there are those that think it's computers that make good traders, not traders who make good traders (while there may be a hint of truth to that; good computers, like planes, need good pilots). If I were to sum things up in a short sentence, I would say this: "Good traders find the way to use their capital in the most efficient manner possible." By that I mean, traders that find the way to use their money in the best trades become successful.

While that may sound like a huge 'no duh' statement, I think upon review, many traders need to examine how much time they spend analyzing how efficient they are with their capital. I am certain that there are traders who do little to nothing to try and ensure that they are efficient traders. While trading efficiently is meant more for a series of books than an article for a magazine there is one subject that fits neatly within these pages: selecting the right product to trade a strategy. By this I mean, should traders be using ETFs or index options, something that few traders consider. We will discuss the advantages of each type of product, and then offer a few steps to help traders make the necessary steps to move toward the right product.

ETFs

Exchange Traded Funds, or ETFs, and their cousins, ETNs, while certainly performing their original intent—a cheaper alternative to mutual funds and index funds—have slowly expanded the spectrum of markets they cover. In that time, we have also seen the volume of ETFs explode. In many ways, the major driver of the US market is the ETF markets. Incredibly there are over 20 ETFs and ETNs that trade over 12 million shares a day on average (Table 1).

Incredibly, the SPY trades over 145 million shares a day. An incredible 19.8 billion dollars a day in assets changing hands every day, a full 1/4 of the total assets under management every day. Based on the volume in the ETFs, one thing should be clear: while there are investors that buy and hold

these products, there is a subset of traders that are moving millions of these shares back and forth every day. Be it HFT, day trader, or swing trader, ETFs and ETNs are extremely popular to trade actively.

Like the underlying instruments, the ETF options are also super active. The SPY trades an average of over 2.2 million contracts a day¹, on a notional value; the SPY actually trades more shares a day than the underlying instrument. Other classes like QQQ, IWM, EEM, and XLF also trade massive volumes on a daily basis. Herein lies the greatest advantage of the ETFs for the average option trader: liquidity. Markets in SPY and other active ETPs (exchange traded products) are typically .01-.02 wide in the front month options, even inthe-money options are often never wider than a few pennies.

Symbol	Name	Avg Vol	AUM
SPY	SPDR S&P 500	145,945,875	\$99,880.4 M
XLF	Financial Select Sector SPDR	78,824,977	\$6,865.4 M
EEM	MSCI Emerging Markets Index Fund	51,456,422	\$38,362.7 M
IWM	Russell 2000 Index Fund	50,923,254	\$14,402.8 M
QQQ	QQQ	49,500,559	\$33,290.9 M
VXX	S&P 500 VIX Short-Term Futures ETN	39,129,117	\$1,617.8 M
TZA	Daily Small Cap Bear 3X Shares	23,134,785	\$690.4 M
VWO	Emerging Markets ETF	21,698,695	\$53,704.8 M
EFA	MSCI EAFE Index Fund	19,432,051	\$36,038.4 M
SLV	Silver Trust	19,074,975	\$9,701.2 M
SDS	UtraShort S&P500	17,629,369	\$2,068.6 M
FXI	FTSE China 25 Index Fund	17,311,320	\$6,194.3 M
EWJ	MSCI Japan Index Fund	16,127,713	\$5,510.9 M
TNA	Daily Small Cap Bull 3X Shares	14,717,560	\$770.6 M
TVIX	Daily 2x VIX Short-Term ETN	14,487,792	\$449.9 M
EWZ	MSCI Brazil Index Fund	14,473,947	\$8,708.9 M
XLE	Energy Select Sector SPDR	14,424,972	\$7,462.1 M
FAZ	Daily Financial Bear 3X Shares	14,198,068	\$764.7 M
GDX	Market Vectors TR Gold Miners	13,136,818	\$6,187.0 M
XLI	Industrial Select Sector SPDR	12,497,666	\$3,221.2 M
GLD	SPDR Gold Trust	12,212,763	\$67,860.8 M

TABLE 1 The 21 ETPs that trade over 12 million shares a day
 on average



Obviously, as traders move further away from front month options, spreads widen, but for all intents and purposes a trader can get in and out for little or no cost.

Another advantage of these products for option traders is the breadth of products. Traders that are interested in trading S&P 500, S&P 100, NASDAQ 100, Russell 2000, VIX Futures, Oil, Nat Gas, countries all over the world can find a product to trade. Most of these products have enough volume for traders to get in and out without paying large price bid-ask spreads.

This leads us to some of the major issues with some of these products: the structure. Ask any trader that has bought and held a double or triple long or short, bought volatility ETN, a commodity ETF, or any host of ETPs and they can probably tell you a story. This story involves holding the product and not understanding what things like 'daily returns,' 'roll yield,' or 'target return' mean; this is then added to costs of the fund, and a slow move in the expected direction. The conclusion of this story ends with the ETP lower than when the trader bought the fund despite the underlying being higher. It is even uglier when the trader is wrong on direction or the ETP stays neutral. The truth is that there are SO many of these products, structured in so many non-intuitive ways, a trader can think he or she is setting a position with one bias when the trade moves with a completely different bias. I recently saw this happen on a popular trading show with a national office, so don't simply think that because pros are pros that they get all of these products . . . they don't.

The next issue with ETFs, and this is one I want to focus on, . . . the cost. One of the major reasons I don't trade a lot of SPY stock is that because I get much better bang for my buck using the futures. For typically less than 2.50 a contract a trader can buy or sell one futures contract in the S&P mini-contract the equivalent of 500.00 shares of SPY stock. Typically 500 SPY shares is going to cost more than 2.50 no matter how good one's rate is, unless the trader is a full-on professional. That said, trading 500 shares of SPY vs. ES is not going to be a HUGE commission difference; it gets even worse when looking into the cost of option commissions—a subject we will touch upon later in this piece.

INDEX OPTIONS

The most actively traded option in terms of notional dollars traded back and forth in the world is the CBOE's SPX option—on any given day close to 100 billion dollars in notional dollars can change hands. Simply a huge amount of money in dollars, this can make the index an easy contract to trade, and at the same time be quite intimidating. I know many a retail, and even institutional, trader that won't touch the product.

The main reason many traders won't touch the index has to do with the market. Unlike the SPY and just about every ETF, most other equities, and even a few indexes, the SPX, NDX, RUT, and VIX, are mainly open outcry. This leads to a little less clarity in the market, especially for those that don't know the markets very well, and a wider screen market. Take the closing market of the ATM options in the front month May options.

OI	Volume	Delta	IV	Bid	Ask	Strike	Bid	Ask	IV	Delta	Volume	01
5385		52.37	15.70	21.40	24.80	SPX May19 1370	21.00	22.40	15.62	47.62		14389
		_										

FIGURE 1 An ATM bid-ask quote for SPX options

3.00 wide in an ATM option can seem a little scary and truthfully it should be. However, traders need to be aware that unlike ETF options, index options have an 'inside market.' While that 3.00 wide market might be scary, the SPX pit would be willing to take down at least 10,000 contracts at those prices (I am not exaggerating here, they would). The inside market that is usually about 1,000 up, is for the most part less than .30 wide. This means that the SPX pit is willing to take down the equivalent of 10,000 SPY contracts with .015 away from the median point. This is not something that happens in front month options, even in the case of the SPY.

Next, there are the tax implications. While we cannot legally get into many of the rules and regulations of the tax implications of index options; index options that settle into cash are subject to the 1256 rule. This rule is what traders call the 'split straddle.' Essentially the profit of the trading off of index options is split between short term and long term capital gains. This is very beneficial to traders. While I would love to dig into the details, we can't dole out tax



advice in this magazine. If you are an active trader that trades SPY, consult a tax professional; you are likely creaming your tax bill on any money you are making.

Finally, we come to commissions. This is, in my opinion, where index options like NDX and SPX crush the ETF completion. The NDX represents about 40x the value of QQQ; the SPY is about 10x the value of the SPX. Almost all of the major indexes are MUCH cheaper to trade because they require much fewer contracts to trade. Take the NDX. If a trader wanted to trade 100x the value of the NDX, that would require the trader to trade 100 NDX contracts; assuming a decent commission structure, the cost of the trade would likely be around \$75.00.

Now it would be great if brokers and the exchanges said that the QQQ being a smaller index should have a lower commission, or brokers passed through the contract fee limits they get from the exchanges in order to defray the cost of trading QQQ. The fact is they don't. While the NDX was about \$75.00, the same QQQ trade with the same risk would have a commission cost of \$3000.00!!! Any serious trader needs to be aware of the commission cost of trading (few traders pay real attention to it. Traders that want to be efficient, especially if they are trading any size, need to consider commission cost.

THE SWITCH

Switching from ETFs to index options is not simple to many traders. Traders that are used to ETF trading need take care in moving to the bigger indexes (or futures options for those that trade things like USO). Great care should be taken; to help the process I have prepared a checklist traders can follow to help smooth out the process. For the retail public which trades SPY, take a look at SPXPM, it has surprisingly wide markets.

• Figure out the ETFs' corresponding cash index.

For SPY it's SPX, for QQQ it's NDX, etc. For some of the triple long, double short, or some of the other ETFs there may be no way to recreate the ETF in an index; in that case either consider the validity of the ETF or keep trading it. For some of the commodity-based ETNs and ETFs take a look at using the futures options, another major task, but usually worth it.

• Migrate slowly at first. Trade no more than one contract to learn how the markets trade.

Like all other things, don't jump in with both feet. Stick a toe in the water and see where it takes you. It is completely okay to spend some small amount of capital in indexes and keeping a huge portion in the ETFS while you learn.

 As you migrate learn where—relative to bid-ask spread—your trades are getting filled.

As I stated, SPX has wide markets but the inside market is SUPER tight. Learn to use these tighter markets and hopefully do even better than the bid-ask spread.

- Trader may want to try an intermediate index. Try trading OEX or XEO before trading SPX. It is completely okay to pick a smaller index that correlates well to an index you are trading. The point is learning.
- Slowly increase size away from ETF into Index. Again, *don't rush*. Time is always on your side as a trader, and I have found that it is almost never a good idea to jump into things.
- Be smart in executing, *never* hit a bid or lift an offer. You caught the discussion on the inside markets, make sure you heed that word.

Trading options in general is not easy. To make matters worse many an options trader consistently fails at being efficient with his or her capital. One small step that traders can take is to evaluate the product that he or she is trading in order to accomplish the task at hand. One thing we know for certain is that tax savings and commission savings contribute directly to the bottom line. We also know that there are no index options that have double, triple leverage, strange structures, and odd returns. While there is certainly a time and place for ETFs, most active trades would do themselves a major favor to investigate ETF trading.

¹ LiveVolPro[®] www.livevol.com

How Did We Get Here?

Andrew Giovinazzi

The Old Days

When I first walked onto the option trading floor in San Francisco I knew it was for me. Back in 1989, where many market makers were still shaking off the crash looking for their second or third round of backing, the floors were a very parochial and exciting place. Not in the Church sort of way, but very local. Almost everything was who you knew and how you did things. A new trader could max out their credit cards, deposit money into an account, take a test and get going. Today that is not possible. Also, the technology was, well, not quite dominant yet. Open outcry ruled the day. Essentially once a floor trader opened their mouth the quote showed up on the screen or a broker could hit the bid. Everything was live from the open to the close. As the market evolved, technology and entry into the markets were the things that have changed the most. I would like to explore those two points and the impact on our current environment.

Most of the traders I knew used cardboard cards to keep track of option positions. That was their real time risk management system. Clearing firms, like Sage (who always seemed to be one step ahead from what I saw and I cleared through them from 2001–2006), had pretty good position management systems for Greeks and risk but many traders still relied on cards and contract count backing out reversal/conversion combinations. Greeks and dynamic risk were simply called "sheets". Every tick in a stock price had a vertical column and traders could read their sheets and monitor positions, theoretical values and risk semi-real time. When I started making markets in February of 1991, I was known as a "sheet guy," somewhat derogatively. Almost from the day I walked on the floor I noticed two things:

- 1. The pace of the change of technology improved rapidly
- Barriers to entry to providing liquidity to options markets kept getting bigger

At the time my sheets were a big piece of technology that used to take all night to run to prepare for the next day. In a couple of years they would be available in real time on handheld computers and most of the card readers had vanished. Was that necessarily a good thing?

Changes in Quoting Technology and Liquidity

The PSE in the late 80s specialized in what were known as "Q" stocks. These were the names that traded on the NASDAQ and in general were much more volatile than the NYSE listed stocks. The CBOE and AMEX traded mostly the big names and the index products. What the PSE had to solve was the volume of quote traffic generated from the big movements in MSFT (I know you laugh but it was a mover), SUNW, DRAM and some of the other OTC names back then. The PSE also listed several Biotechnology stocks like Genentech. These stocks traded at much higher volatilities than the standard listed names. The option liquidity



tended to stay in one place because most of the names then were singly listed. The markets on Instinet, which was the dominant trading platform at the time, where usually .3 wide and the Level 2 NASDAQ could be .5 wide for the same name. This was my early introduction to liquidity as a clerk both for options and stock. Working an Instinet machine was a quick lesson in where the market was and where it wasn't. The problem then, as now, was where the "size" was. Much of the time there was a hidden bid or offer that you had to know was there. That instilled the less that liquidity is size (volume) at a price and not just volume.

As the number of stocks and strikes kept expanding (feels like they doubled every year) the role of the liquidity provider (market maker) had to keep pace with the growing size and pace of the markets. When I first started I managed 15 or so issues and it was a handful. By 2000 I was managing 50 or so names and auto guoting technology had taken over for open outcry on all exchanges. It was at this point that traders needed technology just to keep up. Without it, they were behind the eightball. The technology cost associated with providing liquidity kept getting higher too. The guy with the credit card account could no longer afford to compete.

Fractions to Decimals

The speed of quotes running into OPRA (Option Price Reporting Authority)

The exchanges built giant pipes to run data into and out of the reporting systems and the proprietary trading world figured out ways to fill them up.

have been growing at a rate I could not imagine back in 1989. The largest change to both liquidity and market structure was the decimalization of the market in the early 2000s. Knowing how to add and subtract fractions used to be a necessary skill. More importantly, decimals replaced the amount market participants could "lean" on each other. For example, if a trader posted a 1/4 bid for 100 contracts, in the old days another player would have to bid 5/16 to step in front of market. The risk was around .065. Now with .01 markets the risk is almost negligible. That is a big step. This change happened to markets on all option and equity trading floors and I believe was a big force behind moving liquidity off of the old exchanges. It became very hard to move size when another participant can jump in front with .01 (or less) and keep the larger institutions from getting filled. Posting liquidity had very little benefit. More and more paper is matched off the floor, and while there is volume, there is not necessarily liquidity. What this meant for the market makers is lower margins for options and more fractured option volume since the floor became more of a quoting and crossing venue. From the 1-5 lot public point of view, this was seen as a big plus as the cost of trading options went down. Liquidity started to drain from the system, albeit slowly.

High Frequency Trading (HFT)

It is funny to think about the equity option trading world now as opposed to not very long ago. The exchanges built giant pipes to run data into and out of the reporting systems and the proprietary trading world figured out ways to fill them up. I don't really have an axe to grind about HFT since the markets have been moving that way for quite some time. When the balance shifts to just technology dominance of the biggest firms, as opposed to a balance of liquidity, market making and technology, the market finds itself in its current state. Smaller blocks of liquidity are exiting the market, pure and simple. A way to get back in some kind of balance is to require firms that generate quote traffic to provide some kind of real liquidity in the market.

Floor traders were obligated to make a market while they were standing in a crowd. Members had to provide some liquidity during crashes, takeovers and whatever market events happened that day. As the market moves unceasingly in one direction of faster, less liquid and more volatile trading it is probably time to take a look at what is needed to bring liquidity back in. We should make what we have work better before we add yet another trading floor to further fracture the liquidity that is already there.



FOLLOW THAT TRADE

Long-Short Straddles on Two Major Market Indices

Bill Luby

IT IS TIME ONCE AGAIN for what I call a "proof-of-concept trade." Since I rarely trade options in the major market indices, this month's Follow that Trade seemed like a good time to take some of the ideas that cropped up elsewhere in this issue in *Comparative Implied and Realized Index Volatility* and turn them into a trade.

Background and Rationale

In my article on implied and realized index volatility, I noted that since the beginning of 2009, the RUT (Russell 2000 Index) and RVX (CBOE Russell 2000 Volatility Index) pair has consistently demonstrated the lowest volatility risk premium (VRP) among the major market indices, while the SPX (S&P 500 Index) and VIX (CBOE Volatility Index) have generated either the highest or second highest in each of the past three years. The rationale for this trade is simple: play the VRP differential game by going short SPX straddles and long RUT straddles in the same notional amount.

Setup and Entry

Having established a bias in favor of shorting SPX straddles and going long RUT straddles, I searched for a setup in which the VIX was considerably higher than average relative to the RVX than it has been for the last eight years. As it turns out, there were a number of instances that fell into the category of a high VIX relative to the RVX from August 2011 through the beginning of January 2012, but during the last three months these readings have hugged the historical mean tightly.

While I had every intention of waiting for a large spike in the VIX relative to the RVX, fatigue and lowered expectations finally got the better of me on April 10, when the VIX:RVX ratio hit a two month high, even though this high was only in the 59th percentile of data from 2004 to the present.

I selected ATM straddles for the month of May, rounding up to the next strike in both instances. At the close on April 10, the RUT was at 784.15 and the May 785 straddle was 50.65; the SPX was at 1358.59 and the May 1360 straddle was 62.80. So that the notional dollars were approximately equal, I bought 10 contracts of the RUT May 785 straddle at 50.65 and sold 8 contracts of the SPX May 1360 straddle at 62.80. Keep in mind that while the relative positions are fairly large (\$50,650 for SPX and \$50,240 for RUT), the actual dollars at risk in this transaction is relatively small, given the historical correlation of .985 between these two indices.

Position Management

In managing this trade, I paid particular attention to the direction of the moves in the VIX and the RVX as well as the magnitude of the changes in the two volatility indices. My assumption was that with both volatility indices slightly elevated relative to their recent ranges, the most likely scenario was that both the VIX and the RVX would decline and the trade would be a winner if the decline in the VIX would be able to keep pace or almost keep pace with the decline in RVX.

April 11—Right off the bat, both volatility indices declined, yet the net value of the position declined \$12. This is an early warning sign, but only a mild one at this stage.

April 12—For the second day in a row, the equity indices rose and the volatility indices declined. Today there was a big difference in the magnitude of the moves in the volatility indices, with the VIX falling 14.1% and the RVX falling only 8.2%. My hypothesis was that a move like this should greatly enhance the profitability of the trade. Instead, the loss grew from \$12 to \$27 and larger warning flags went up.

I like to think of my **Options strategies** . . . as a portfolio of strategic experiments on the margin.



Date	RUT	RVX	May 785 P	May 785 C	May 785 Strad	P/L	May 1360 Strad	May 1360 C	May 1360 P	VIX	SPX
4/10/12	784.15	26.88	25.55	25.10	50.65	0.00	-62.80	32.05	30.75	20.39	1358.59
4/11/12	796.59	26.38	21.25	30.40	51.65	-12.00	-63.05	28.45	34.60	20.02	1368.71
4/12/12	808.59	24.23	14.35	39.45	53.80	-27.10	-62.25	17.30	44.95	17.20	1387.57
4/13/12	796.29	26.11	20.55	29.45	50.00	26.90	-60.25	27.00	33.25	19.55	1370.26
4/16/12	798.08	26.55	18.90	30.55	49.45	44.40	-58.75	26.45	32.30	19.55	1369.57
4/17/12	810.63	25.25	14.45	36.50	50.95	9.80	-61.20	18.05	43.15	18.46	1390.78
4/18/12	803.32	25.81	16.45	31.10	47.55	69.40	-58.00	18.75	39.25	18.64	1385.14
4/19/12	798.90	25.51	16.60	28.90	45.50	123.50	-53.80	19.85	33.95	18.36	1376.92
4/20/12	804.05	23.96	13.30	30.95	44.25	155.20	-51.40	17.20	34.20	17.44	1378.53
% change	2.54%	-10.86%	-47.95%	23.31%	-12.64%		-18.15%	-46.33%	11.22%	-14.47%	1.47%

FIGURE 1 SPX-RUT Straddle Summary

April 13—This time the equity indices fell and the volatility indices rose. The good news is that the straddles, which have come to be dominated by the valuation of the put leg, have finally slipped below their opening prices and for the first time the net position shows a profit: \$26.90.

April 16—Monday's trading favored the RUT, with the RUT rising and the SPX falling. The VIX was unchanged, but the RVX rose 1.7%. Both straddle prices continued to decline and the profit grew to \$44.40.

April 20—With both equity indices up only 0.7% for the week, it has been a relatively slow week. Both volatility indices, however, have declined sharply for the week, with the VIX down 10.8% and the RVX down 9.8%. The steady decline in volatility expectations has gradually eroded the value of both straddles, with the RUT straddle down 12.64% from its opening value, while the VIX has declined 18.15% from its opening value. The profit in this trade is now at its highest level since the trade was opened: \$155.20.

This is the result that I had hoped for and for that reason, I believe it is time to take at least partial profits, if not close out the position entirely. As this is first and foremost a proof-of-concept trade, I will continue to leave the ledger open on this trade and see how it develops during the final four weeks prior to expiration. At this stage of the game, I expect the educational value of monitoring this position for another four weeks to be more important than the potential profits that can be wrung out of it. Should some particularly interesting insights come out of this, I will revisit this trade in a future issue. CBOE, thinkorswim/TD Ameritrade, VIX and More

Epilogue and Takeaways

Part of the reason I like these proof-of-concept trades is that they force me out of my comfort zone into areas of trading with which I typically have only some minor familiarity. In the case of this comparative volatility strangle, I see a need for strategy analytics (evaluating how this type of trade would have performed in the past and adjusting the rules for entries and exits as appropriate) to be combined with actual one-off proof-of-concept trades such as the one outlined above.

Of course there are huge risks in generalizing from one small set of data points, but I like to think of my options strategies not necessarily as a fixed set of trading approaches that have the best backtested and/or real-world results, but rather as a portfolio of strategic experiments on the margin. Proof-of-concept trades are one way of implementing those strategic experiments which often provides valued feedback on a current strategic focus or points the way to new strategy ideas.

In the case of SPX-RUT straddles, I think the volatility risk premium and relative volatility approach has some merit and another round or two of strategic experiments is warranted.

Hedging Michigan

Eric Kovalak, Guest Contributor

SOMETIME AGO, after a day of distorted volatility curves and erratic price movements, a friend of mine asked why I enjoy trading the markets. After offering him a monologue of notions few could believe, the truth was—it's a hedge against everything else. Successful trading may promise salvation from job interviews, long commutes, and the prospect of someone else directing your financial future, but at the end of the day, many traders are working towards the concept of a profitable hedge. The last decade has given us good cause; tech and housing bubbles, financial collapses, currency inflation, and for me, a hedge against my home state—Michigan.

Michigan's economic woes began in a previous generation. Most people visiting the Motor City today never experienced the interwar glory days which made Michigan a midway stop for Broadway performers traveling from New York to Los Angles-that's right, Grandma Nostalgia is still baking cookies. Four lane roads were once so congested one would avoid them before sundown, but by nowas experienced in October 2008-you could hold a chess tournament under the stoplight. Wall Street had Lehman Brothers, Countrywide Financial, and potentially the Freddie and Fannie twins; Michigan had General Motors, Chrysler, and everyone was holding breath for Ford. Everywhere are reminders of Detroit, Flint, foreclosure, and economic destruction. Years of foreign competition matched with the deindustrialization of America have given Michigan a reputation as a one-state recession, and this is easily supported with a GDP graph that belongs in the morgue.

The Michigan story causes one to check for bullet holes like they just replayed a tick chart of the Flash Crash. Take a deep breath, we're still here. Michiganders now realize that no matter what the future brings, we won't be forced to eat the family pet. And no matter what direction the DJX trades, there remains significant opportunity in 'traditional economy' and value added businesses. It is unlikely that America will ever again experience the vast disparity between domestic and overseas manufacturing cost as Michigan has weathered for the last 30 years. And unlike a typical Eastern Bloc state, it tears down the old as quickly as it builds the new. Michigan is moving on, but is it making the best trades?

I have always had a sense that a genuinely workable trading strategy

The Michigan story causes one to check for bullet holes like they just replayed a tick chart of the Flash Crash.



would at times, in the right environments, allow you to go and take the meat out of the market. These are the opportunities where for the same or less risk as usual, you can express in real terms a greater expectation for the outcome. Here the trader has a competitive advantage through strategy, and specific choices set his positions apart from the otherwise perpetual constraint of efficient markets. It also means for many, the ability to operate in the core of the market instead at the peripheral, trading at-the-money. If the goal is to execute in size, it's sometimes difficult to put money to work by picking up nickels around the edges.

This should be a lesson for Michigan. Its ace card is one it's been playing for years—so long as the geographical beauty and cultural soundness of the state make it a place that people want to live, it will be rescued from the throes of a perpetual economic and migratory recession. College students will leave to make their fortunes and eventually return home, and the success stories of Chicago will buy waterfront homes just north of the border. These hopes are akin to selling out-of-the-money puts. If the trader ends up owning the stock, that's fine, but he's really hoping to simply enjoy the view. Coastal states such as California and New York recently reported a continued exodus of the squeezed middle class. In contrast, Michigan is experiencing an exitbound stampede of the capital intense

Hedging Michigan (continued)

entrepreneurial class. Losses can be found by measuring every asset from brains to bank accounts, and while window dressing improves the sunset, the state is in dire need of people who remember how to turn on the lights.

Citizens want to believe the state is not entirely asleep at the wheel. The Michigan Economic Development Corporation has distributed millions in funding to project specific causes hoping to spur the velocity of money, and local investors in all major cities have stepped up to the plate by recommitting their goals to be developed close to home. These are excellent cheerleaders, but too often organizations within the state try to champion specific portions of the economy, and this is similar to selling out-of-themoney calls upon its future. The State of Michigan and our Citizens need to think like a serious trader: what's our edge, and where do we need to trade to once again become a serious participant in the marketplace.

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Ask the Xperts (continued from page 5)

of can diverge from time to time. Of course the Sept futures move much less faster (30–40% of the front month futures, on average), so as a hedge they should probably be approximately 3x the size of the front month.

The big issue I have with these is that if there is a spike in April volatility just before the expiration, the Aprils will move almost as quickly as the VIX and the Septembers may move only 20–30% as quickly, so to have a reasonable chance at maintaining a proper hedge, the size of the September position should grow the closer we get to expiration. Even then, there is no guarantee that the September position will be a properly sized hedge—any more that there is a guarantee that the 6th month futures will move in the same direction (not to mention at a predictable ratio) to the front month futures.

When thinking about this issue, I always have this VIX futures chart in the back of my head that shows the 6th month VIX futures moving 10% as quickly as the VIX and the 8th month futures moving only 3% as much as the VIX on a day when the VIX spiked 64%. —Bill

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