

Module 8:

Bonus strategy: Using puts for income



Module overview

- We looked at selling puts to buy stocks on pullbacks before
- This strategy is more aggressive, looking at selling puts to generate income
- The goal will be to create income by selling puts that have a high probability of expiring worthless rather than selling puts on stocks we want to own
 - Focus is on the option rather than the stock

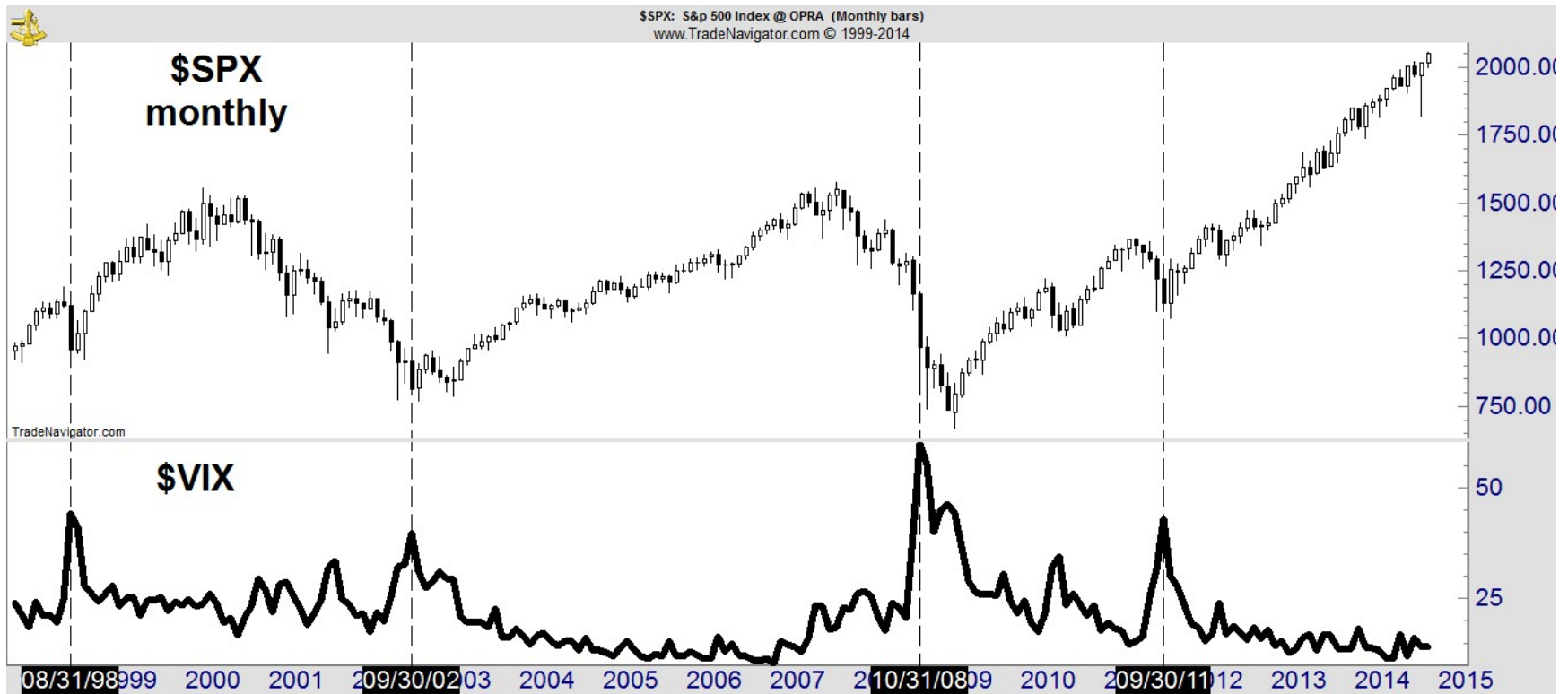
Strategy overview

- This strategy requires finding high volatility stocks whose volatility is declining
- Puts on these stocks have a small probability of being exercised
- This is a pure income strategy that could generate income of 10% or more a year
- Rules are fully described in *Fixing the Vix*, an award-winning paper at <http://goo.gl/pUH0IY>

This strategy relies on an indicator that is similar to VIX

- VIX is used to measure the volatility of options on the S&P 500
 - VIX is widely followed as the “fear index”
 - VIX rises when markets fall and fear also rises when market falls
- There are a number of instances when spikes in VIX coincide with bottoms in the S&P 500

VIX spikes at important bottoms



VIX tops close to important bottoms although timing varies

Limits of VIX spikes

- No way to know when VIX has actually topped
 - Spikes are only visible in hindsight
- VIX applies only to the S&P 500
 - Calculated using data from options contracts on S&P 500
 - VIX does not apply to individual stocks
 - The majority of stocks will move with the market trend but some will not

VIX fix overcomes limitations of VIX

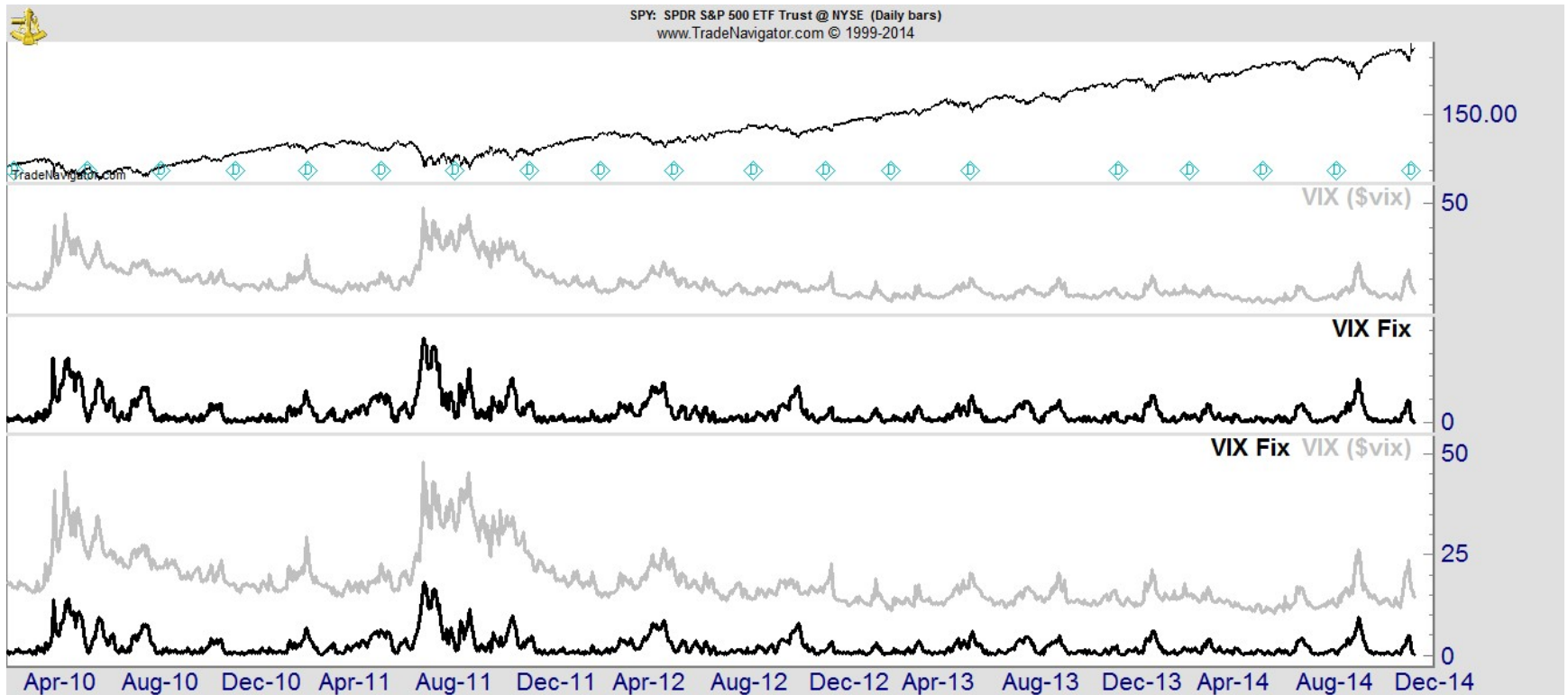
- Detailed by Larry Williams in a 2007 article in *Active Trader* magazine
- Approximates the values of VIX by calculating the relationship between the recent market action and the current close

$$(Highest (Close, 20) - Low) / (Highest (Close, 20)) * 100$$

Highest (Close, 20) = highest closing value in the past 20 periods

Low = current low

VIX and VIX fix applied to SPY: Visually equivalent



- Price of SPY is at top of chart
- VIX is below SPY as grey line; VIX Fix is below that
- VIX and VIX Fix are both shown at the bottom of the chart

Flexibility of the VIX Fix

- Can be applied to any stock or ETF
 - Finds the right stock at the right time rather than providing a signal about the broad market
- Can be applied in any time frame (intraday, daily, weekly or monthly)
- Can be incorporated into a complete trading strategy

VIX fix trading strategy

- Add a 20-period moving average to the VIX Fix indicator
 - Buy when indicator $<$ MA
 - Sell when indicator $>$ MA
- The absolute value of the indicator is not important. The position of the indicator relative to the MA is what we trade

Reason for trading rules

- VIX Fix mirrors VIX so when VIX Fix is high, fear is high
- We want to buy when fear is high because we expect a bottom in price at that time
- Adding an MA to the indicator provides us with timing signals
 - When $VIX\ Fix > MA$, fear is higher than average
 - Buy when $VIX\ Fix < MA$ which indicates fear is subsiding

Finding the indicator parameters

- The value of 20 for the VIX Fix is approximately one month when using daily data
 - That value is used for consistency in weekly tests
- The value of 20 for the MA is simply a reasonable time period to use for trend following
 - It is not optimized

Can the same idea be applied to VIX?

- Yes, but...
 - The buy signal from VIX and the MA would be applicable to the broad stock market
 - Using VIX we would be getting a signal to buy all 500 stocks in the index at one time
 - The sell signals would apply to all 500 stocks at the same time
 - This would not be a practical system for finding individual stocks

Simple test results: % of profitable tests

- 94% of the stocks in the S&P 500 were profitable in testing
- 90% of the individual stocks in the NASDAQ 100
- 80% of the individual stocks in the Russell 2000

An options strategy

- Back testing shows the VIX Fix and MA strategy can be used to profitably time stocks
 - Buy when fear is falling; sell when fear is rising
 - Remember fear is high when volatility is high; the words fear and volatility are interchangeable
- Options prices are higher when volatility is high
 - We should be able to maximize gains by selling options when volatility is high and benefitting from the decrease of the volatility premium
- Put options should decline in value as volatility decreases
 - This indicates a put selling strategy can be profitable

Reality of put options selling

- Many investors believe that selling puts is a high probability trading strategy with an expected win rate of 75% or more.
 - Summa, J. (n.d.). *Do Option Sellers Have a Trading Edge?*
- Summa did find 76.5% options held to expiration, on average, expire worthless
 - Did not include contracts closed prior to expiration.
- Of all contracts traded, just 5.5% expired worthless
 - This means we need a high probability strategy to benefit from selling options

Put selling strategy

- Trades were based primarily on the VIX Fix indicator
 - First screening criteria: VIX Fix for the underlying stock must be below its 20-week MA
- Additional requirements
 - Use a strike price at least 8% below the market price
 - Put sale generates a return on investment of at least 3% on the required margin deposit
 - Option expires in less than 90 days and the expiration date is before the next scheduled earnings announcement
 - Delta of put option is > -0.20
 - Find delta with the calculator, <http://goo.gl/0WThht>

Real-time test results

	Recommendations made and closed	% wins
2013	62	93.5%
2014	114	92.1%
Total	183	92.6%

- Based on real-time trade recommendations described in an academic paper
- No risk management rules
- All recommendations were allowed to expire

Losses: 92.6% wins = 14 losses

- Exit all losing trades at the closing price on the option's last trading day the option expired
 - Profits from winning trades exceeded the expense of closing losing trades cumulatively and in both 2013 and 2014
- Even when dollar value of losses is considered, VIX Fix put selling strategy is profitable

This can be done with a spreadsheet

	A	B	C	D	E	F	G	H	I	J	K	L	M	N
1	Date	Open	High	Low	Close	Volume	Adj Close		Highest	Numeratc	VIX FIX	MA(26)		B/S
10	12/8/2014	163.29	163.33	155.33	155.38	4677200	154.3		194.4	39.07	20.10	8.53		
11	12/1/2014	161.64	164.52	161.35	163.27	4186900	162.13		194.4	33.05	17.00	8.04		
12	11/24/2014	161.54	163.86	161.01	162.17	4263000	161.04		194.4	33.39	17.18	7.60		
13	11/17/2014	164.16	164.97	159.8	160.92	4454000	159.8		194.4	34.60	17.80	7.20		
14	11/10/2014	161.9	164.49	161.61	164.16	4017200	163.02		194.4	32.79	16.87	6.72		
15	11/3/2014	164.25	164.54	160.05	162.07	4120400	160.94		194.4	34.35	17.67	6.25		
16	10/27/2014	162	165.59	161.8	164.4	5467500	162.15		194.4	32.60	16.77	5.74		
17	10/20/2014	166.85	170.33	161.1	162.08	13940500	159.86		194.4	33.30	17.13	5.18		
18	10/13/2014	185.49	186.65	178.69	182.05	4869200	179.55		194.4	15.71	8.08	4.64		
19	10/6/2014	189.69	190.89	185.1	185.93	3158200	183.38		194.4	9.30	4.78	4.49		
20	9/29/2014	188.51	190.85	186.24	188.67	2869300	186.08		194.4	8.16	4.20	4.38		BUY
21	9/22/2014	193.72	194.14	188.61	190.06	3269500	187.45		194.4	5.79	2.98	4.23		BUY
22	9/15/2014	191.42	195	190.58	194	4008800	191.34		194.4	3.82	1.97	4.18		BUY
23	9/8/2014	190.75	192.78	189.51	191.28	2578200	188.66		194.4	4.89	2.52	4.25		BUY
24	9/2/2014	192.68	192.97	190.06	191.2	2406900	188.58		195.19	5.13	2.63	4.31		BUY
25	8/25/2014	191.39	194.13	190.66	192.3	2300400	189.66		195.19	4.53	2.32	4.36		BUY
26	8/18/2014	188.1	192.07	187.76	190.41	2214900	187.8		195.19	7.43	3.81	4.42		BUY
27	8/11/2014	187.81	188.88	186.28	187.38	2185400	184.81		195.19	8.91	4.56	4.43		
28	8/4/2014	189.35	189.95	183.58	186.63	2954100	184.07		195.19	11.61	5.95	4.53		
29	7/28/2014	194.3	196.4	188.86	189.15	3967700	185.46		195.19	6.33	3.24	4.70		BUY
30	7/21/2014	191.3	195.9	189.25	194.4	3916100	190.61		195.19	5.94	3.04	4.92		BUY
31	7/14/2014	188.55	195.95	188.21	192.5	6843400	188.74		195.19	6.98	3.58	5.05		BUY
32	7/7/2014	187.61	188.9	186.21	188	2996700	184.33		195.19	8.98	4.60	5.08		BUY
33	6/30/2014	181.33	188.99	180.26	188.53	4595500	184.85		195.19	14.93	7.65	5.04		
34	6/23/2014	181.92	183	179.27	181.71	3540700	178.16		195.19	15.92	8.16	4.90		
35	6/16/2014	182.4	184.47	181.24	181.55	4837300	178.01		195.19	13.95	7.15	4.87		
36	6/9/2014	186.22	187.64	180.91	182.56	3628700	179		195.19	14.28	7.32	5.07		
37	6/2/2014	184.76	187.65	183.92	186.37	2848600	182.73		195.19	11.27	5.77	5.27		
38	5/27/2014	184.8	185.65	182.33	184.36	3973900	180.76		195.19	12.86	6.59	5.48		
39	5/19/2014	186.61	187.16	184.7	185.94	2813200	182.31		195.19	10.49	5.37	5.62		BUY
40	5/12/2014	191.12	193.03	185.93	187.06	3881400	183.41		195.19	9.26	4.74	5.75		BUY
41	5/5/2014	191.05	191.49	186.93	190.08	2785000	186.37		195.19	8.26	4.23	5.91		BUY
42	4/28/2014	191.14	196.86	190.58	191.44	4239000	186.62		195.19	4.61	2.36	6.22		BUY

Using Yahoo! data

- Download weekly data
 - High will be in column C and close will be in column E
- Add these formulas to Row 2
- Column I called Highest
$$=MAX(E2:E25)$$
- Column J called Numerator
$$=I2-D2 \text{ or highest - low}$$
- Column K called VIX Fix
$$= ((J2/I2) * 100)$$
- Column M called MA(26)
$$=AVERAGE(K2:K27)$$
- Column N called B/S
$$=IF(K2<L2,"BUY"," ")$$

Bottom line

- You can benefit from the decline in volatility by using a disciplined trading strategy
- This is a unique indicator that shows when “fear” is subsiding and stock prices are expected to rise
- Selling options when volatility crosses below the MA allows you to benefit from declining volatility and rising prices

To implement the bonus strategy

- Identify potential put selling using the VIX Fix/moving average indicator
 - Spreadsheet can help you do this
 - Trading software packages or some online sites can also do this
- Sell short-term options providing at least a 3% return on margin
- Allow options to expire worthless which testing shows happens frequently
- Close any options in-the-money at expiration with a “buy to close” order on expiration day

What's next?

- Summary: Putting it all together