

# FRENCH ELECTION RESULTS IN VOLATILITY CRUSH

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### VOLATILITY SUMMARY

The French election met polling expectations (a centrist is favored to win the run-off at this point, and therefore remain in the Eurozone) and what excess implied volatility existed in SPX options due to uncertainty surrounding the election evaporated overnight sending the VIX back to its low for the year.

The following charts demonstrate how low the VIX (S&P 500 option implied volatility) is relative to history:

#### One year VIX chart:

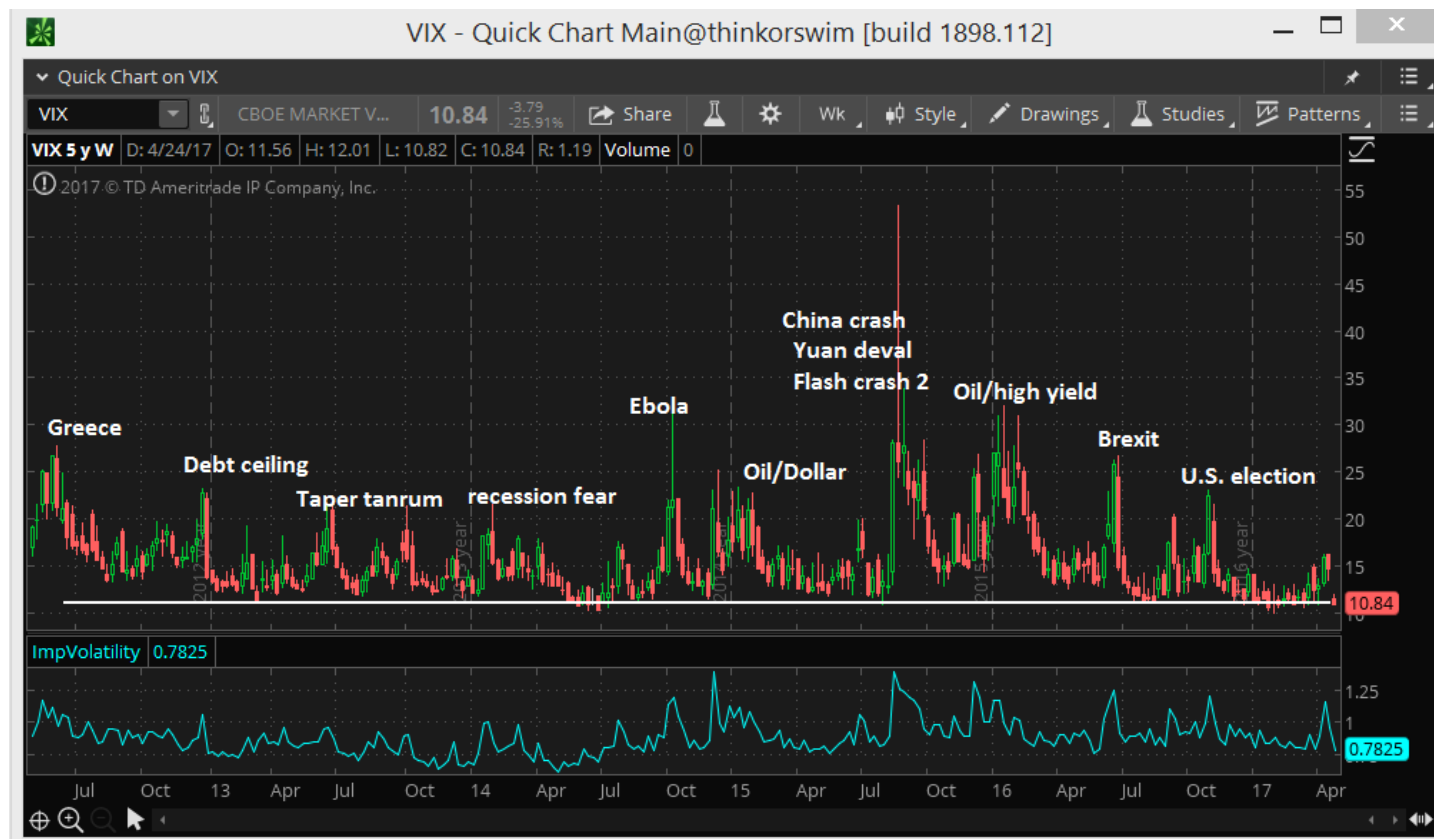


#### Ten-year chart:



- Volatility Summary
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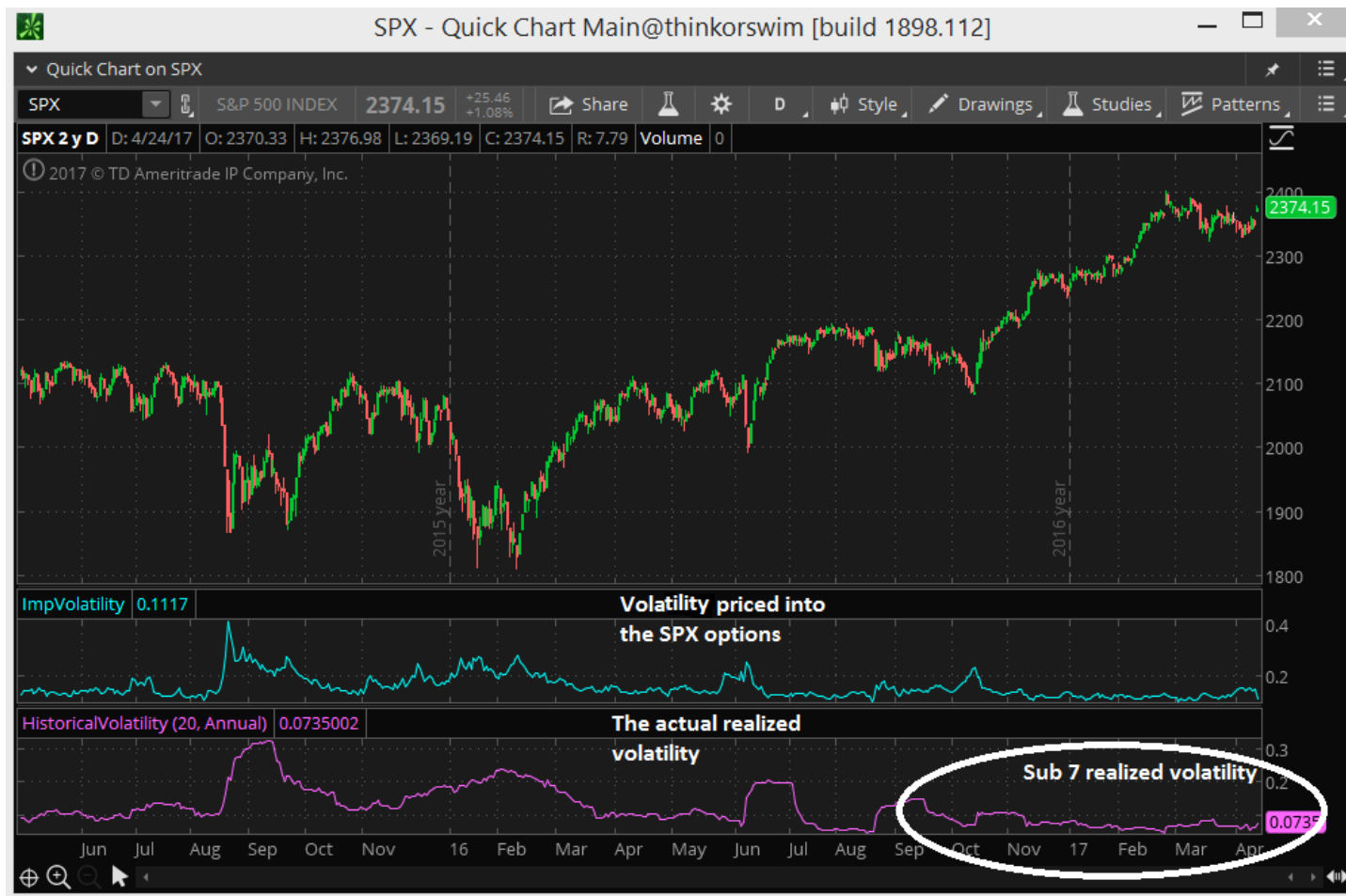
## Five-year chart:



Over the last five years, VIX spikes over 20 were a regular occurrence. The question is not if but when and in all likelihood, it will require something unexpected. Recurring events that used to rattle the market, like many on this chart, have little to no effect once the market has successfully navigated them without doing major damage.

While ignorant pundits may claim the “VIX is broken” or “it’s not useful anymore”, even the prolonged low VIX readings of the past 6 months were justified. While the VIX should show a premium (it is after all insurance - someone needs to take the other side, and that has a cost) to realized volatility (the measure of the backward-looking VIX, or the actual standard deviation of the market variance looking backward), the SPX has demonstrated realized volatility of below 7 for most of the last 6 months:

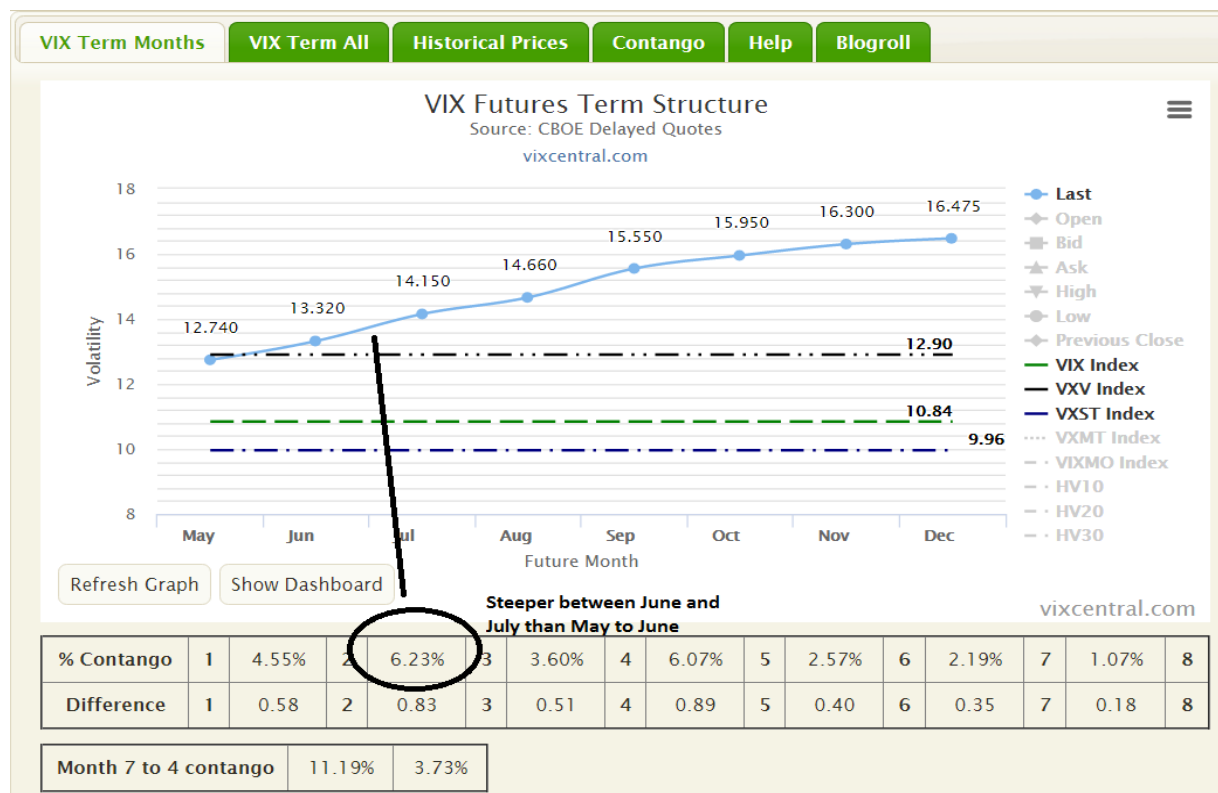
## SPX two-year chart with implied and realized volatility sub-graphs:



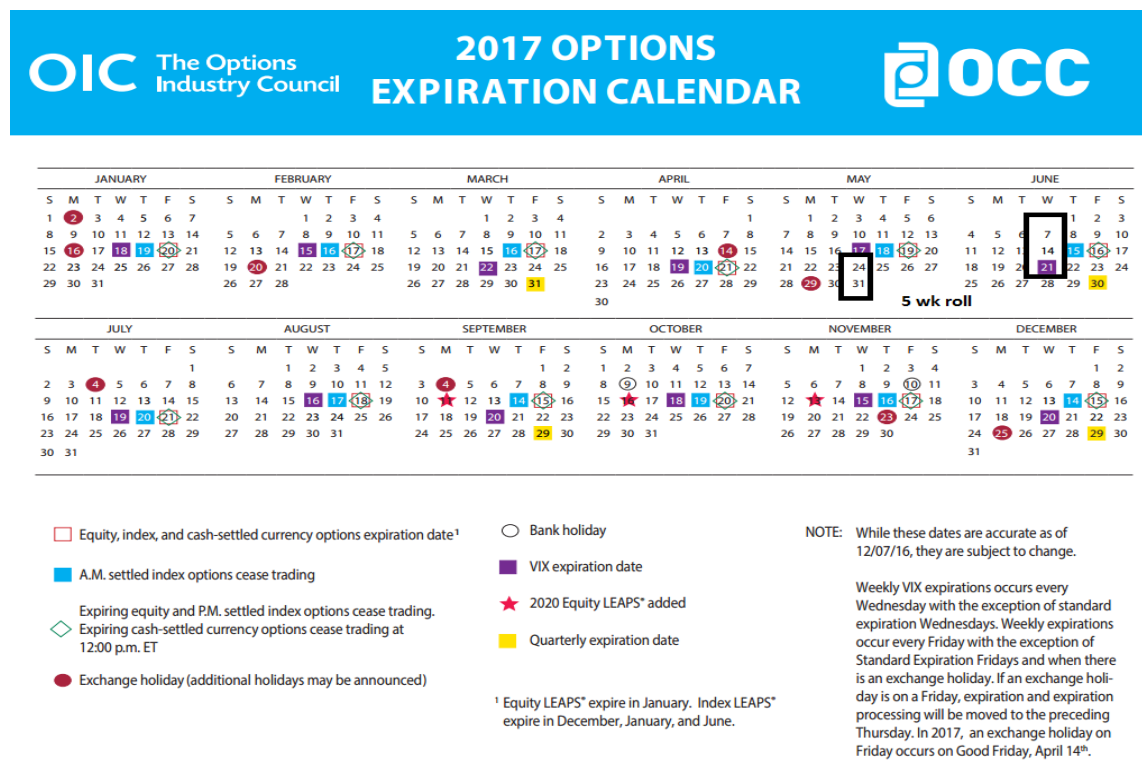
## Volatility Landscape – Volatility Indices and Exchange Traded Products

Symbol	Last	Net Chng	%Change	ImpVolatility	52High	52Low
VIX	10.84	-3.79	-25.91%	0.78	26.72	9.97
VVIX	78.17	-17.24	-18.07%	NaN	132.42	71.75
VXST	9.96	-7.13	-41.72%	NaN	31.34	8.44
VXV	12.90	-1.85	-12.54%	NaN	24.89	12.64
VXN	12.06	-2.81	-18.90%	NaN	27.10	11.85
RVX	16.12	-2.06	-11.33%	0.73	30.03	12.50
VXEEM	15.11	-5.18	-25.53%	NaN	31.79	13.97
GVX	12.29	-2.00	-14.00%	NaN	21.78	6.72
OVX	29.88	-.18	-0.60%	NaN	58.41	24.51
TVVIX	5.08	-1.20	-19.11%	NaN	11.89	2.13
EUVIX	8.70	-4.03	-31.66%	NaN	48.06	.77
VXX	15.37	-1.83	-10.64%	0.58	71.48	15.30
XIV	73.26	+7.00	+10.56%	NaN	75.48	20.21
SVXY	141.67	+13.79	+10.78%	0.62	146.00	39.432
UVXY	14.93	-4.06	-21.38%	1.13	87.65	6.07
TVIX	32.42	-8.79	-21.33%	NaN	97.75	3.711
VXZ	25.34	-.52	-2.01%	0.27	41.32	9.58
ZIV	63.25	+1.42	+2.30%	NaN	62.44	35.79
VXAPL	20.97	-1.77	-7.78%	NaN	30.58	12.26
VXGOG	19.63	-1.60	-7.54%	NaN	29.92	3.70
VXAZN	26.16	-.48	-1.80%	NaN	43.66	4.73

## VOLATILITY FUTURES CURVE



VXX as of last Wednesday began rolling into June at the price of 13.32, and that certainly appears to be a bargain considering it has a whopping 58 days to expiration. The May to June rolling period is a 5-week expiration/rolling cycle for VIX, which is always followed by a 5-week option expiration cycle:



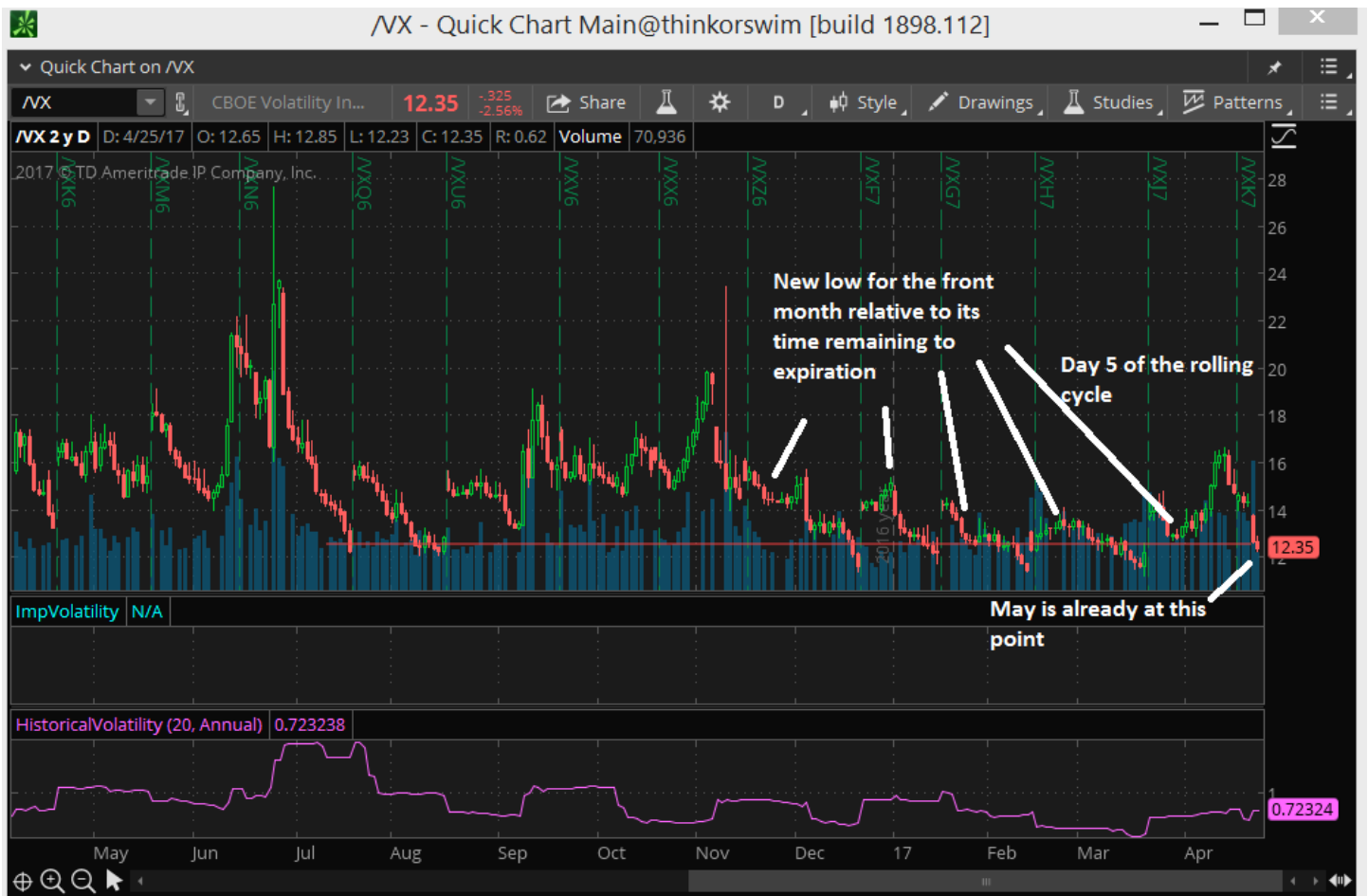
The VXX has the current weightings in the May/June contracts:

### Index Components(as of 04/21/2017)

Index Components	Weightings %
CBOE VIX Future MAY 17	85.09%
CBOE VIX Future JUN 17	14.91%

The performance of VXX is going to be primarily tied to the price of the May contract, which as of today was trading at 12.7 with 23 days to expiration. This is about as low (if not the lowest) that the front month VIX futures contract has ever traded with this many days to expiration since the financial crisis.

### One-year chart of the front month VIX futures contract (currently May with 23 days to expiration):



Considering that May is already this low, and June is only 13 with 58 days to expiration, one might conclude that the risk of holding VXX and UVXY is considerably lower than usual. That observation must be paired with a VIX trading at roughly 10.5, so those exchange-traded products and futures could certainly continue to fall. Yet it's probably safe to say that there is a potential for more reward being long VIX futures than being short at this point in time considering the amount of time to expiration of May and June.

## VOLATILITY ANALYTICS NEWSLETTER – APRIL 24TH

The \$10,000 question then becomes how to take advantage of this scenario. These ETPs and volatility futures are not the only way to express a direction on volatility. VIX is based on the prices of SPX options, so therefore SPX put options are cheap relative to just about any time in the last 10 years. Consider this trade, an SPX put vertical spread:

Long SPX \$2080 May 12<sup>th</sup> put for \$13.45

Short SPX \$2060 May 12<sup>th</sup> put for \$8.20

Net debit - \$5.25

This trade is a volatility trade at the end of the day. It will benefit by not only a small downside move in the index but also an increase in volatility. The profit and loss diagram for this trade looks like this:



Other strategies to take advantage of increasing volatility include VXX and UVXY calendar, vertical and diagonal spreads. Anyone with questions on how to construct these can send me an email or a direct message on twitter. But one example of a UVXY call calendar spread would be:

Short UVXY May 12<sup>th</sup> \$16 call for \$.70

Long UVXY May 19<sup>th</sup> \$16 call for \$.91

Debit - .21

The total risk in this trade is the debit of .21 cents, but it can easily return .40-.80 if volatility rises.

## VOLATILITY OBSERVATIONS

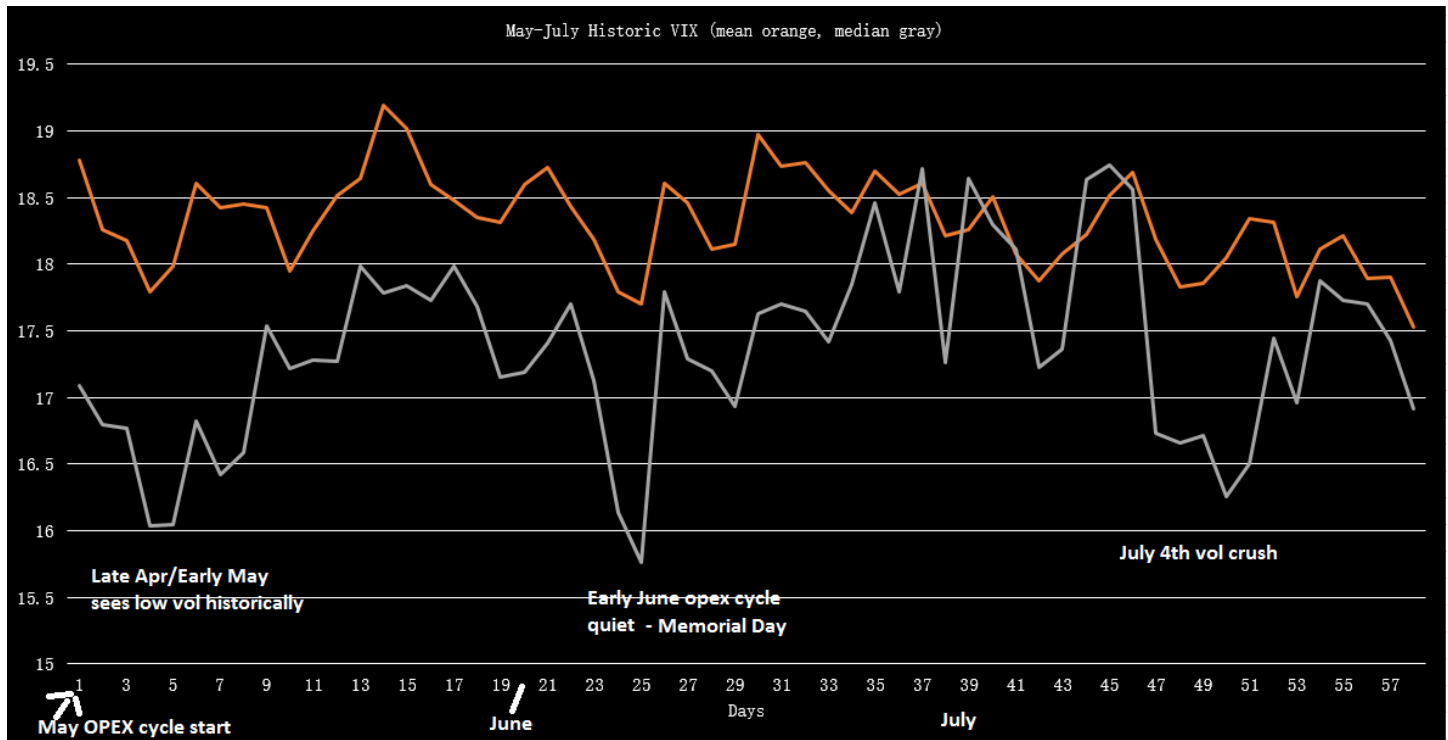
## VIX Expiration Historical Returns:

Since August of 2013, I've recorded the return of the S&P 500 the day before and the day of VIX settlement. It quickly became obvious that there was a bullish bias in the market during those days. I also believe (without concrete evidence as yet) that the Monday before "vixpiration" also has a bullish bias. I present the observations below. This may provide trading opportunities, whether it be to short volatility into vixpiration (and also options expiration), but also may prove to be a caveat to those who consider shorting the market or going long volatility on these days:

	S&P 500 VIX Expiration Day Return	date	Day Prior to Vix Expiration	Two day total return
mean	0.34%		0.15%	0.49%
median	0.20%		0.12%	0.39%
	-0.17%	4/19/2017	-0.29%	-0.46%
	0.19%	3/22/2017	-1.24%	-1.05%
	0.50%	2/15/2017	0.40%	0.90%
	0.18%	1/18/2017	-0.30%	-0.12%
	-0.81%	12/14/2016	0.65%	-0.16%
	-0.16%	11/16/2016	0.75%	0.59%
	0.22%	10/19/2016	0.62%	0.84%
	1.09%	9/21/2016	0.03%	1.12%
	0.19%	8/17/2016	-0.55%	-0.36%
	0.43%	7/20/2016	-0.14%	0.29%
	-0.18%	6/15/2016	-0.18%	-0.36%
	0.02%	5/18/2016	-0.94%	-0.92%
	0.08%	4/20/2016	0.31%	0.39%
	0.56%	3/16/2016	-0.18%	0.38%
	1.65%	2/17/2016	1.65%	3.30%
	-1.17%	1/20/2016	0.05%	-1.12%
	1.45%	12/16/2015	1.06%	2.51%
	1.62%	11/18/2015	-0.13%	1.49%
	-0.58%	10/21/2015	-0.14%	-0.72%
	0.87%	9/16/2015	1.28%	2.15%
	-0.83%	8/19/2015	-0.26%	-1.09%
	-0.24%	7/22/2015	-0.43%	-0.67%
	0.20%	6/17/2015	0.57%	0.77%
	-0.09%	5/20/2015	-0.06%	-0.15%
	0.51%	4/15/2015	0.16%	0.67%
	1.22%	3/18/2015	-0.33%	0.89%
	-0.03%	2/18/2015	0.16%	0.13%
	0.47%	1/21/2015	0.15%	0.62%
	2.04%	12/17/2014	-0.85%	1.19%
	-0.15%	11/19/2014	0.51%	0.36%
	-0.73%	10/22/2014	1.96%	1.23%
	0.13%	9/17/2014	0.75%	0.88%
	0.25%	8/20/2014	0.50%	0.75%
	0.41%	7/16/2014	-0.19%	0.22%
	0.77%	6/18/2014	0.22%	0.99%
	0.85%	5/21/2014	-0.65%	0.20%
	1.08%	4/16/2014	0.68%	1.76%
	0.75%	3/18/2014	0.96%	1.71%
	-0.65%	2/19/2014	0.12%	-0.53%
	0.05%	1/22/2014	0.28%	0.33%
	1.68%	12/18/2013	-0.31%	1.37%
	-0.33%	11/20/2013	-0.20%	-0.53%
	1.35%	10/16/2013	-0.71%	0.64%
	1.23%	9/18/2013	0.42%	1.65%
	-0.60%	8/21/2013	0.38%	-0.22%

**Volatility Wave:**

Volatility is prone to seasonality, and not only during different times of the year. It also demonstrates patterns inside the options expiration cycle. The options expiration cycle begins after the third Friday of every month, when major option positions in indices, ETFs, and stocks expire. There is a tendency for volatility to fall into options expiration and continue to be subdued the following week. This chart demonstrates the historical wave of volatility, mean and median, during the three May-July option expiration cycles:



This is merely one tool to use in evaluating whether a long or short volatility position may have option expiration and seasonal headwinds or tailwinds. It needs to be said however, that political, economic, or market dynamics can easily nullify any cycle trends. Just as the November-May stock market tends to go up due to seasonal factors, that trend can easily be completely irrelevant depending on the larger forces.

**VVIX – The implied volatility of VIX options:**

Since 2014, the implied volatility of VIX options has been lower only a couple of times; this is an indication of how inexpensive VIX options are relative to the last three years. You can see that it usually didn't last very long and preceded a rise in the prices of VIX options:





## ADDITIONAL TOPICS

In this newsletter, we will cover a number of additional topics not described in this sample. Among them will be exchange-traded product spotlights, volatility trade basics, and numerous volatility metrics and ratios. We will also explore volatility pricing in different products, implied, historical, and how to take advantage of different pricing across the term structure – the volatility prices across different time frames.