

BI-WEEKLY RESEARCH & ANALYSIS

Sector Rotation: December	
Financial	XLF
Technology	XLK
Materials	XLB

Fixed Income Rotation: Q4	
Junk Bond	JNK
Aggr Bond	AGG

Index & Sector Adaptive Trend Models		
	Up Trend	Down Trend
SPX	X	
QQQ	X	
IWM	X	
XLF	X	
XLY	X	
XLK	X	
XLV	X	
XLU	X	
XLP	X	
XLI	X	
XLRE	X	
XLE		X
XLB	X	

Daily Sentiment Index	
	% Bullish
S&P 500	76%
Nasdaq 100	77%
Nikkei	72%
VIX	19%
10yr Treasury	32%
5yr Treasury	40%
CRB Index	70%
Gold	25%
U.S. Dollar	50%

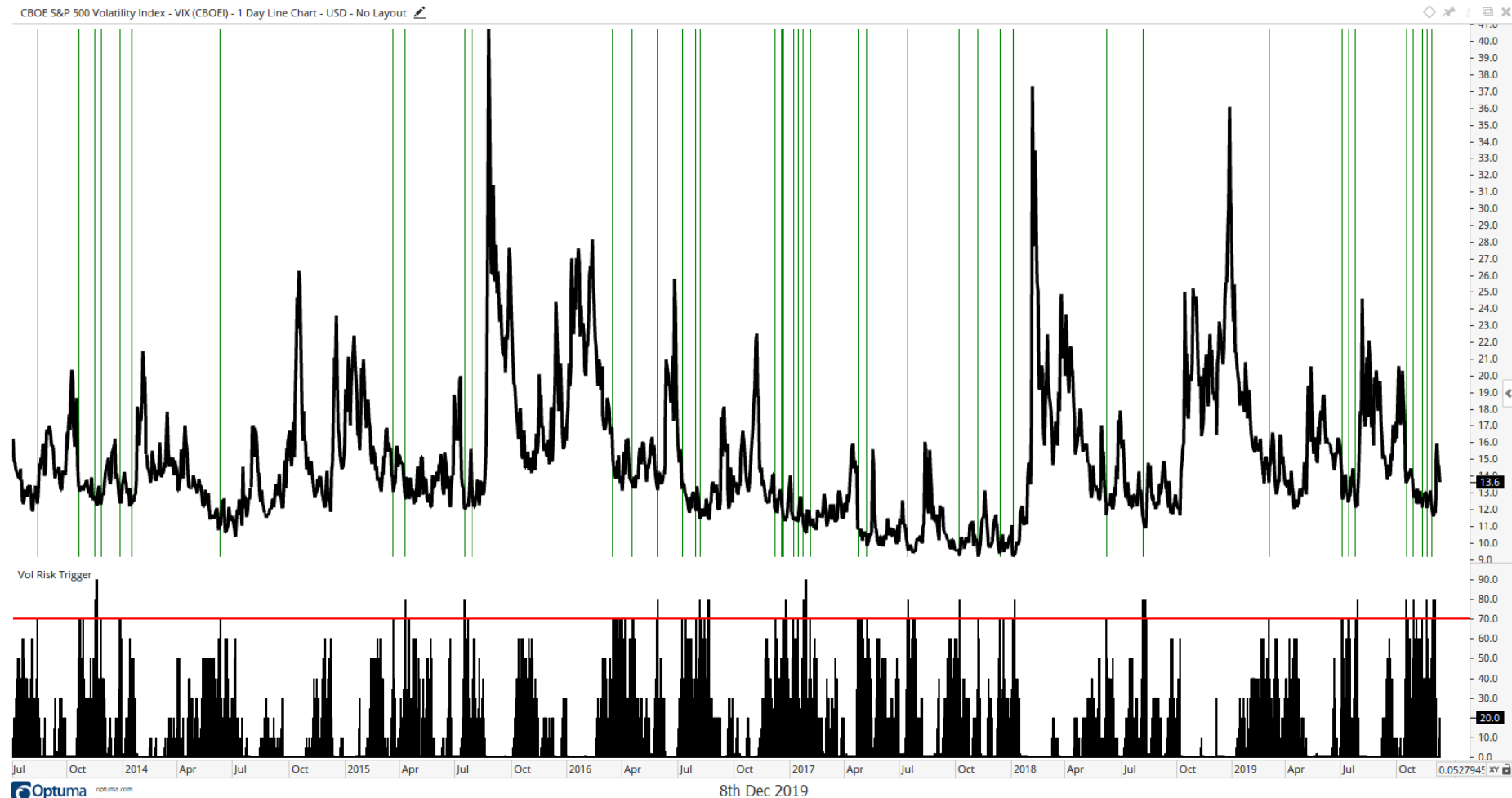
Notable Breadth Data:	
SPX >50MA	68.91%
SPX >200MA	72.28%
Nasdaq >50MA	70.87%
Nasdaq >200MA	68.93%

*Green<25% Red>80%

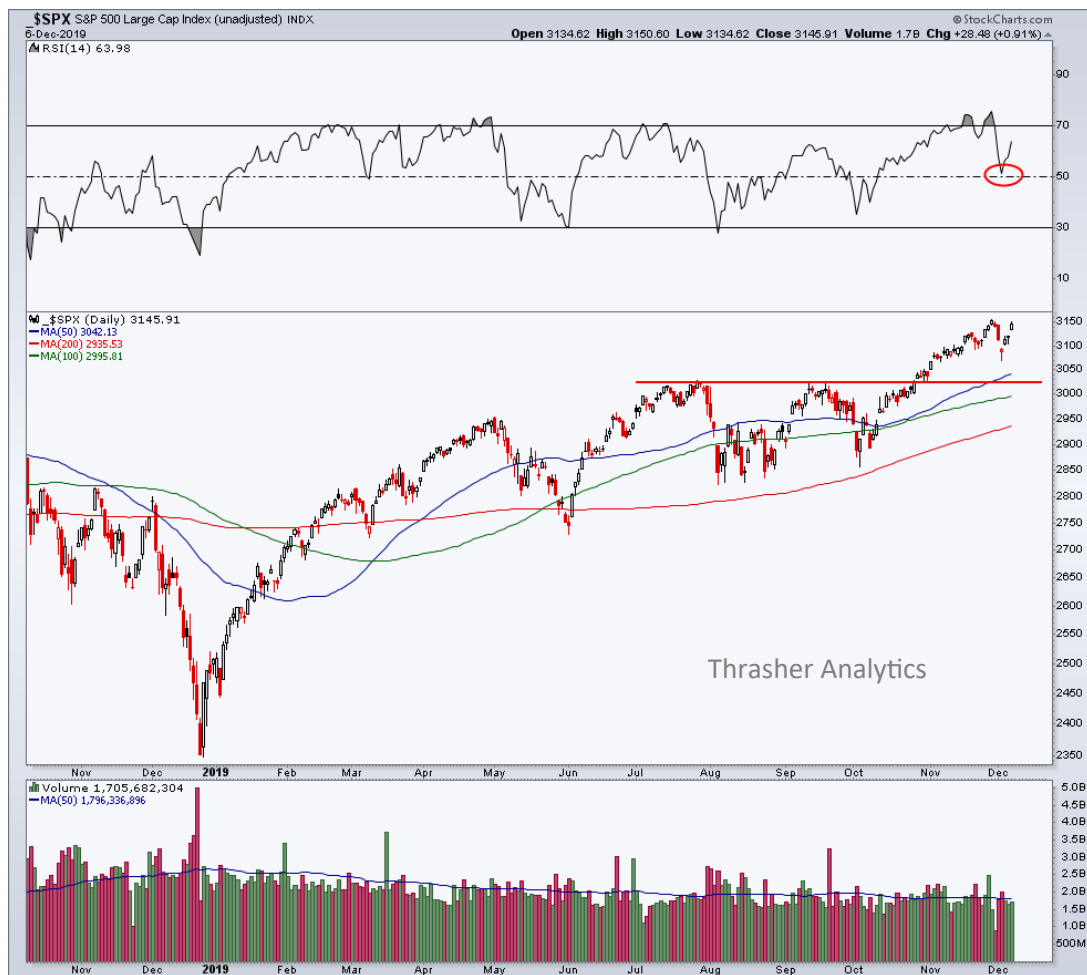
1 Day - Watch List - No Layout

<input type="checkbox"/>	Sector	> 50MA	> 200MA	1wk Perf ▼	1mo Perf	3mo Perf	12mo Perf ☒
<input checked="" type="checkbox"/>	SPDR Energy Select Sector Fund ETF	True	False	1.41%	-0.53%	1.17%	-7.31%
<input checked="" type="checkbox"/>	SPDR Consumer Staples Select Sector Fund ETF	True	True	1.08%	2.72%	2%	13.08%
<input checked="" type="checkbox"/>	SPDR Health Care Select Sector Fund ETF	True	True	0.92%	6.56%	10.01%	8.05%
<input checked="" type="checkbox"/>	SPDR Financial Select Sector Fund ETF	True	True	0.7%	2.46%	10.64%	18.59%
<input checked="" type="checkbox"/>	SPDR Communication Services Select Sector ETF	True	True	0.38%	3.31%	4%	19.26%
<input checked="" type="checkbox"/>	SPDR Utilities Select Sector Fund ETF	False	True	0.25%	0.56%	0.64%	12.37%
<input checked="" type="checkbox"/>	S & P 500 Stock Index	True	True	0.16%	2.25%	5.61%	16.69%
<input checked="" type="checkbox"/>	SPDR Materials Select Sector Fund ETF	True	True	0.1%	0.96%	5%	12.99%
<input checked="" type="checkbox"/>	SPDR Real Estate Select Sector Fund ETF	False	True	-0.34%	0.68%	-3.22%	11.72%
<input checked="" type="checkbox"/>	SPDR Technology Select Sector Fund ETF	True	True	-0.45%	3.28%	7.68%	31.06%
<input checked="" type="checkbox"/>	SPDR Consumer Discretionary Select Sector Fund ETF	True	True	-0.58%	-0.23%	-0.92%	14.25%
<input checked="" type="checkbox"/>	SPDR Industrial Select Sector Fund ETF	True	True	-1.13%	-0.32%	5.06%	16.09%

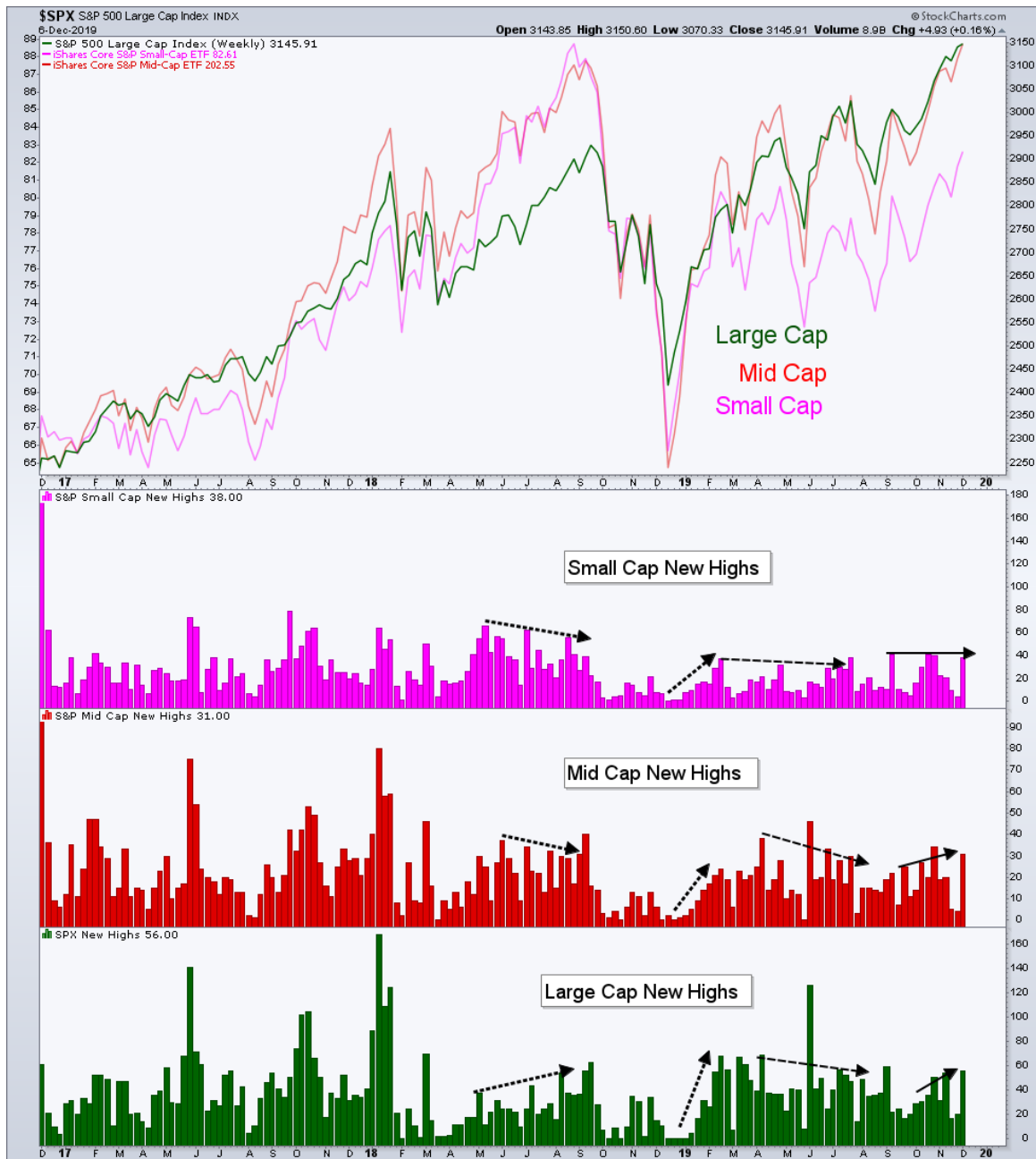
The best performing sectors last week were Energy, Staples, and Health Care and the worst performing sector being Industrials and Discretionary.



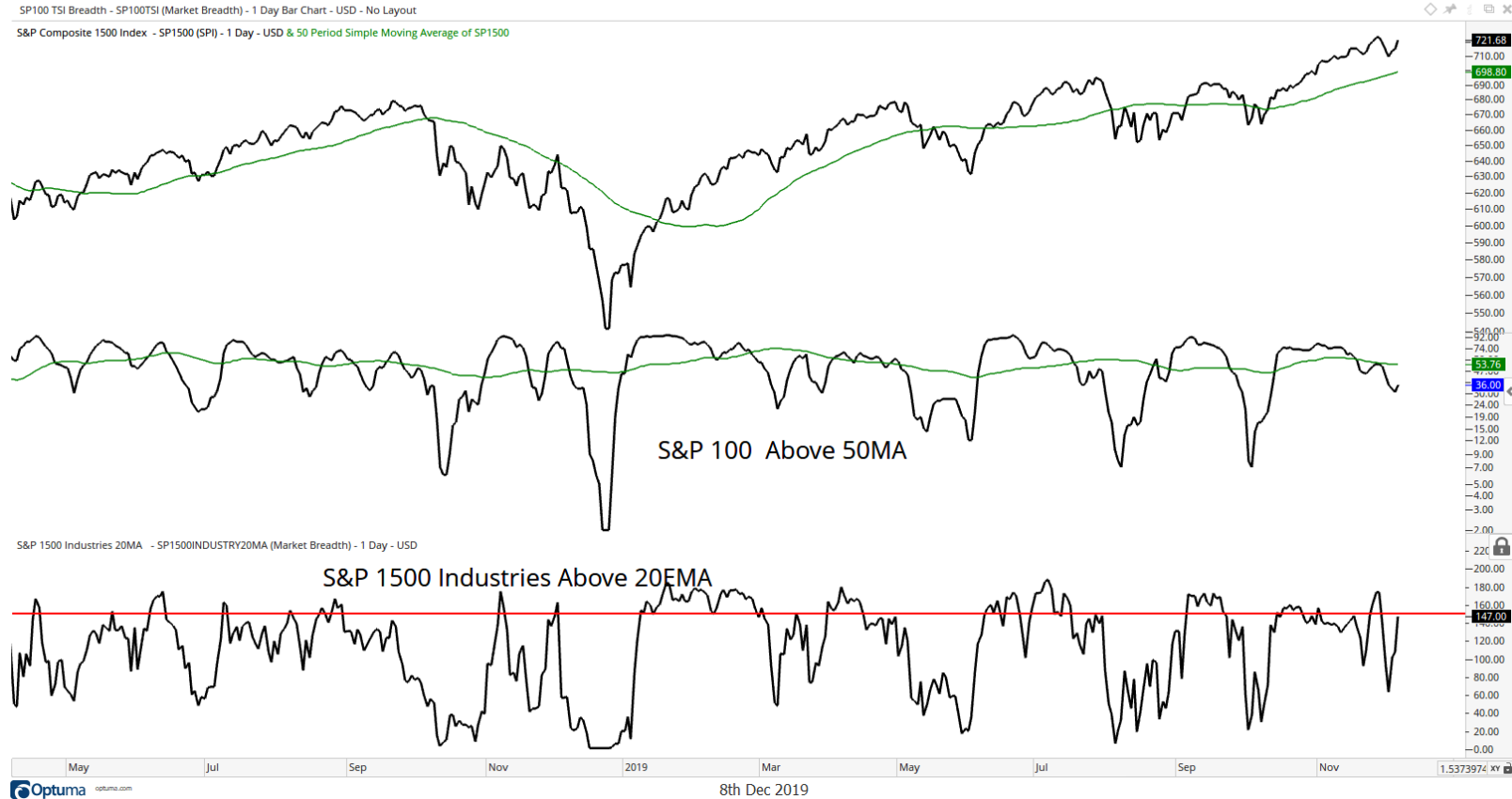
The Volatility Index rose nearly 40% as spot VIX got up near 18 last week during the quick market sell-off that was just as quickly recovered. I was asked on Twitter what level I was expecting the VIX to reach and my response was that I don't set such expectations, instead following the data the market produces. While the spike in volatility was short lived, it has for the most part 'reset' many of the datasets for volatility I follow. From here I am watching if spot vol moves back under 12.5 if SPX is able to hit a new high.



The S&P 500 had a brief dip lower over a few days but buyers quickly stepped back in to move stock back to spitting distance of its prior high. Volume was below average on the advance back but not by much. Most notable for the daily SPX chart is the RSI testing the 50 level and bouncing higher, a bullish development for momentum.



A prior concern was the lack of participation by small and mid cap stocks. That has resolved with the improvement in new highs from all three asset sizes. While stocks had a pick up in mid-week volatility they finished the week with a solid figure of new highs.



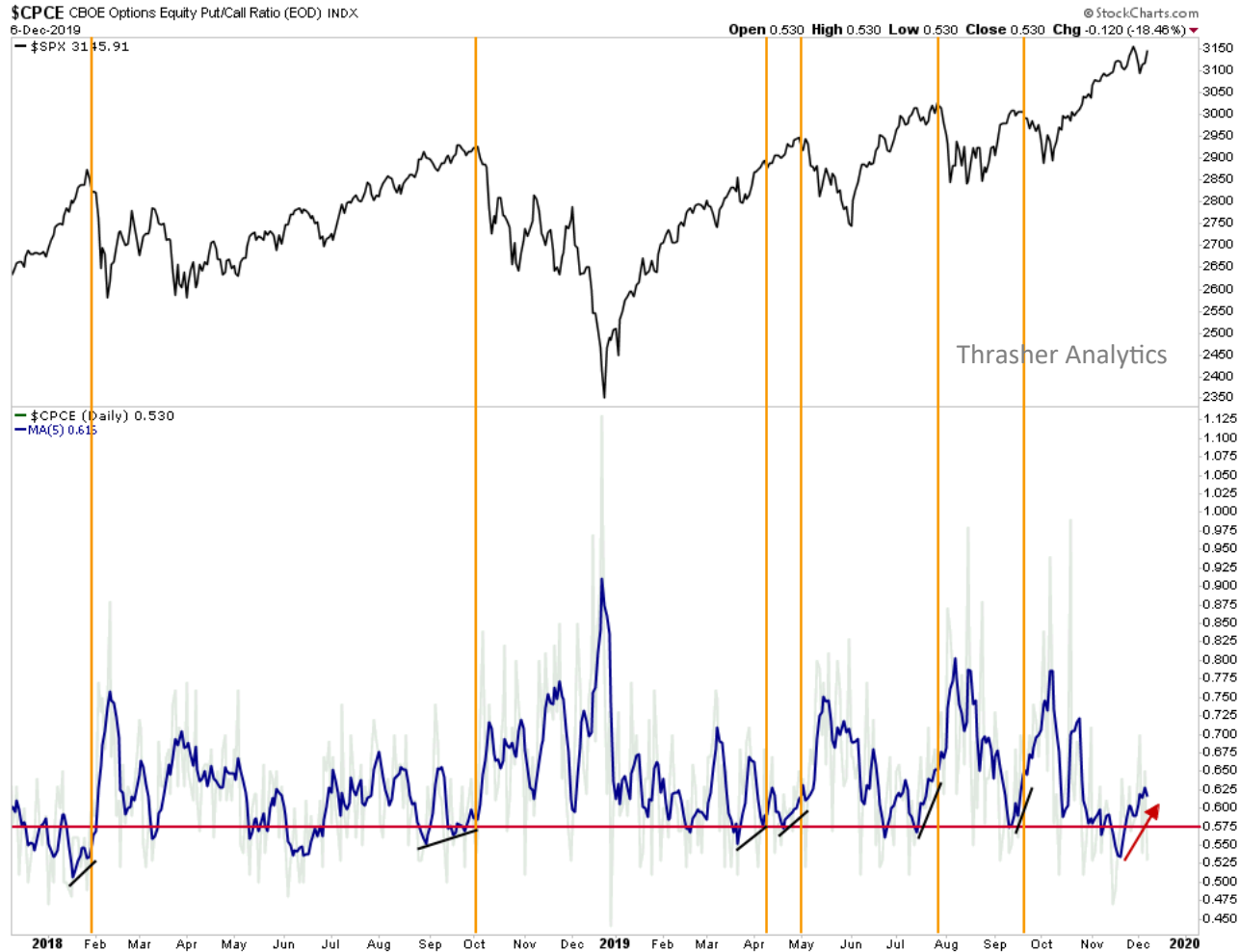
Above is a chart that shows the % of S&P 100 stocks above their 50-day Moving Average and the number of the S&P 1500 Industries above their 20-day Moving Average. I watch these two as unique methods of viewing breadth. The largest stocks are what often control the trend direction, so viewing how the top 100 stocks are doing is important. Slicing the breadth data by industry can also give an important look at the health of the market. Notice that when the S&P 500 made its prior new high, the % above MA for the S&P 100 was under its own MA, a poor sign of breadth. I'm watching for this to improve if we get another new high. The Industry data had remained positive, with no major divergences at this point.



The IWM has not been a great performer over the last twelve months. However, that seems to be changing with the breakout in relative performance last week. Coming off the double bottom and bullish momentum divergence in September, the ratio between IWM and SPY has continued to rise and has now broken above the prior November high which has been a level of importance since last June. As I previously mentioned, the number of new highs for small and mid caps has expanded, so there is good support to the strength in IWM over SPY. Seasonality also provides a tailwind for small caps, which typically do well in the back half of December and early January.



I've shown this chart a number of times and I think it's one of the most important charts when it comes to the financial sector, so I continue to use it! The chart shows the relative performance of XLF and the yield curve. Whichever direction the curve is moving, it brings strength or weakness to financial firms. During July and August as the curve flattened, XLF declined relative to SPY. However, as the curve has begun steepening once again since the September low, XLF has improved. We'll get new data from the FOMC later this week which will be critical for the yield curve and with it the financial sector. If the curve continues to rise (steepen) then banks should continue to do well.



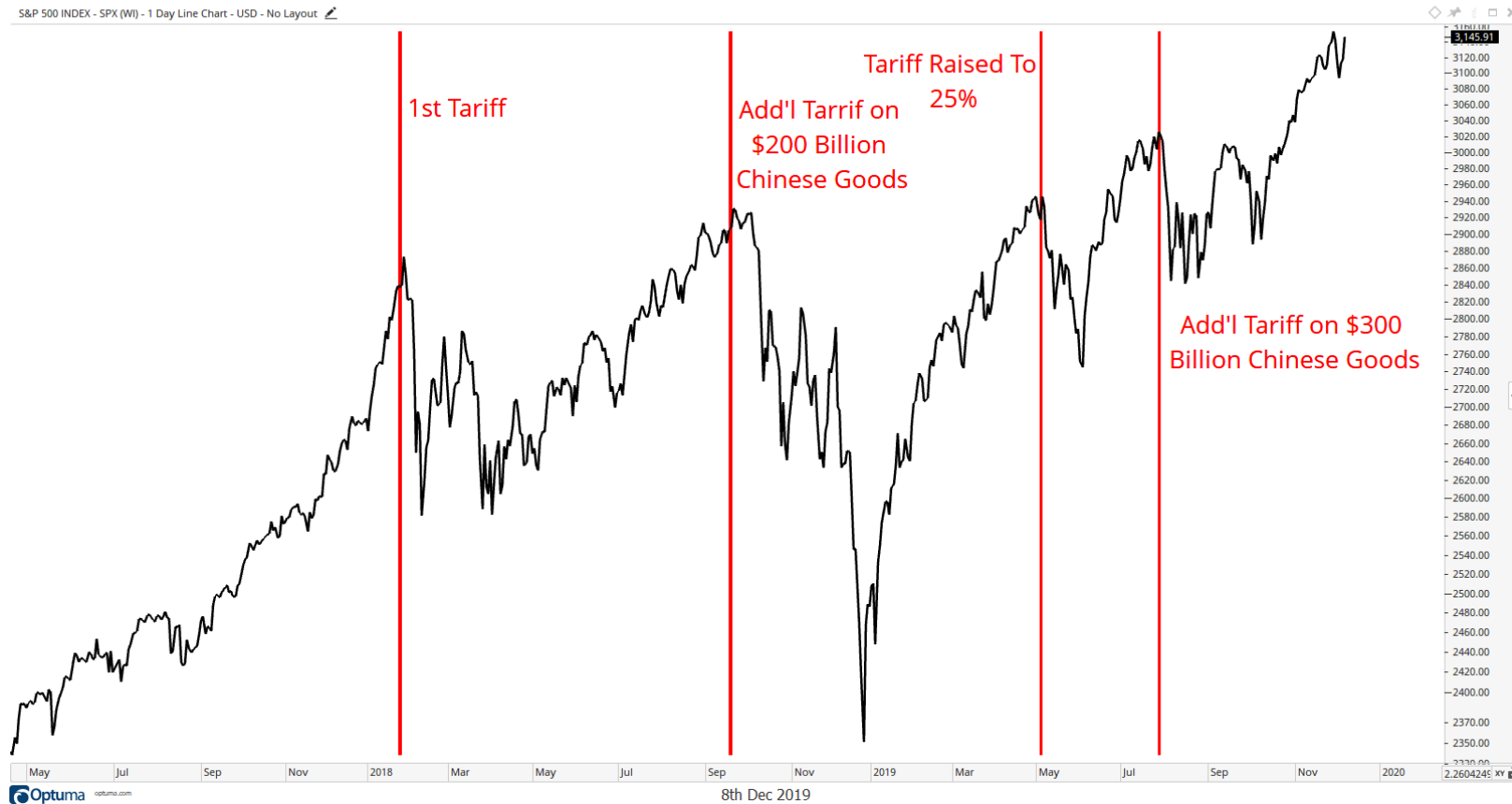
Many analysts point to a low put/call ratio as a cause for concern. Unfortunately this is a little less accurate than what the market data would suggest. What's important is when the put/call ratio begins to rise along with the market, which suggests a concern in the options market as put buying picks up. The above chart shows yellow lines at market peaks over the last two years, you'll notice they have occurred when the 5-day average ratio is off its low. We are seeing this once again today, with the P/C off its November low and continuing to move higher. This isn't a trend we want to see continue if the S&P 500 gets back to that prior high, as option traders show disregard for the bullish equity trend.



When reviewing charts, there's never a day I don't look at semiconductors. They are one of the most important components to the up trend and we don't want to lose their support. I got worried when the Semi Index (bottom panel of the chart) lost its April '19 level, threatening a false break out. Thankfully the level has been regained, with the Semi ETF (middle panel) having never reached such a juncture of its own. Semiconductors continue to appear supportive of equities, a bullish sign for the intermediate trend.

#	Week Ending	SPX Close	Weekly Drawdown	Weekly Return	SPX Close Above/Below ATH?	SPX FWD 1 Week Return	SPX FWD 2 Week Return	SPX FWD 3 Week Return	SPX FWD 4 Week Return	SPX FWD 6 Week Return	SPX FWD 12 Week Return	SPX Max FWD 12 Week Drawdown	SPX Max FWD 12 Week Drawdown *Close	SPX Max FWD 12 Week Drawup	SPX Max FWD 12 Week Drawup *Close
1	12/6/2019	3145.91	-2.25%	0.16%	0.16%	?	?	?	?	?	?	?	?	?	?
2	12/3/1999	1433.3	-2.09%	1.18%	0.79%	-1.13%	-0.86%	1.75%	2.51%	2.23%	-6.97%	-7.26%	-6.97%	3.15%	2.51%
3	4/23/1999	1356.85	-2.64%	2.87%	0.63%	-1.60%	-0.87%	-1.40%	-1.96%	-2.14%	4.56%	-5.86%	-4.66%	4.56%	4.56%
4	8/23/1991	394.17	-2.98%	2.23%	1.11%	0.32%	-1.29%	-2.68%	-1.59%	-3.28%	-2.93%	-4.58%	-3.28%	1.03%	0.32%
5	8/25/1989	350.52	-2.03%	1.30%	1.30%	0.92%	-0.50%	-1.56%	-0.99%	2.36%	-2.54%	-6.68%	-4.81%	2.83%	2.36%
6	8/21/1987	335.9	-2.26%	0.57%	0.57%	-2.64%	-5.72%	-4.14%	-6.26%	-2.33%	-26.87%	-35.56%	-26.87%	0.59%	-2.33%
7	4/3/1987	300.41	-3.19%	1.45%	0.75%	-2.64%	-4.49%	-6.29%	-4.12%	-4.32%	2.25%	-8.24%	-6.29%	3.28%	2.25%
8	5/6/1983	166.1	-2.21%	1.02%	1.02%	-0.72%	-2.38%	-0.99%	-1.01%	1.82%	-2.13%	-3.50%	-2.38%	3.31%	2.59%
9	2/18/1983	148	-2.58%	0.24%	0.24%	1.18%	3.83%	2.19%	1.28%	3.35%	11.43%	-1.76%	1.18%	12.83%	12.23%
10	10/3/1980	129.33	-2.75%	2.36%	0.06%	0.74%	1.69%	0.40%	-1.44%	6.05%	5.60%	-3.12%	-1.44%	9.77%	8.65%
11	8/22/1980	126.02	-3.03%	0.24%	0.24%	-2.89%	-0.90%	-0.38%	2.56%	2.63%	8.83%	-3.94%	-2.89%	10.27%	8.83%
Average:						-0.85%	-1.15%	-1.31%	-1.10%	0.64%	-0.88%	-8.05%	-5.84%	5.16%	4.20%
Median:						-0.93%	-0.89%	-1.20%	-1.22%	2.02%	0.06%	-5.22%	-3.97%	3.30%	2.55%
Min:						-2.89%	-5.72%	-6.29%	-6.26%	-4.32%	-26.87%	-35.56%	-26.87%	0.59%	-2.33%
Max:						1.18%	3.83%	2.19%	2.56%	6.05%	11.43%	-1.76%	1.18%	12.83%	12.23%
% Higher:						40.00%	20.00%	30.00%	30.00%	60.00%	50.00%	0.00%	10.00%	100.00%	90.00%

My friend Steven at AlphaCore Wealth Advisory ran an interesting study over the week (shown above). Steven looked at each time since 1950 where the S&P 500 declined by 2% below the prior week's close but still finished positive on the week. What I like about this study is most people would believe this to be a bullish development but historically, albeit with a small sample size, it has not been. When this has happened in the past, the index was higher just 20% of the time two weeks later and only 30% of the time 4 weeks later. This type of unique price action hasn't happened in the last decade, with the last occurrence taking place in 1999. Will this time be different?



For the last two years the announcement of tariffs on China have been the ringing of the bell for equities to move lower. In fact, we haven't see a meaningful decline that wasn't started by the trade war announcements. The above chart lays out the announcements of tariffs, and as you can see they each marked when stocks have materially sold off. I bring this up because we are now at that time again, with the next tranche of tariffs set to go into affect December 15th, leaving these next few days the final moments for them to be extended. Trump will likely wait to see what Fed Chairman Powell does on Wednesday with rate policy before making his move, so I don't expect any major announcements from the White House until late Wednesday through Friday.

Notice also on this chart that Trump got firm with China when stocks were at/near record highs. The U.S. President seems to view new highs as giving him cushion to play hardball with our trading partners.



Of the two Value Line Indices, the Geometric is what I think is most important as its equally weighted and more representative of the entire market and not just the largest market caps. A battle has taken place between the two, Arithmetic (VLA) and Geometric (VLG), with the former showing strength and the latter...not. Last week the VLA tested its breakout point and moved higher, a bullish move. However, VLG still remains below its prior July high, although it is close to breaking out. I'd really like to see VLG join VLA in making some higher highs, maybe if we get a delay in the Dec. 15th tariff then we'll finally get that breakout.

Market	% Bullish	History
<input type="checkbox"/> Corn DSI	13	
<input type="checkbox"/> VIX DSI	19	
<input type="checkbox"/> Orange Juice DSI	23	
<input type="checkbox"/> Gold DSI	25	
<input type="checkbox"/> Swiss Franc DSI	26.00	
<input type="checkbox"/> Lean Hog DSI	29.00	
<input type="checkbox"/> Euro DSI	31.00	
<input type="checkbox"/> Australian Dollar DSI	31.00	
<input type="checkbox"/> 10Y DSI	32.00	
<input type="checkbox"/> 5YR DSI	40.00	
<input type="checkbox"/> Silver DSI	46.00	
<input type="checkbox"/> British Pound DSI	46.00	
<input type="checkbox"/> Natural Gas DSI	48.00	
<input type="checkbox"/> US Dollar DSI	50.00	
<input type="checkbox"/> Platinum DSI	50.00	
<input type="checkbox"/> Copper DSI	54.00	

Code	% Bullish	History
<input type="checkbox"/> Lumber DSI	60.00	
<input type="checkbox"/> Cotton DSI	60.00	
<input type="checkbox"/> Mexican Peso DSI	63.00	
<input type="checkbox"/> EuroDollar DSI	63.00	
<input type="checkbox"/> Cocoa DSI	64.00	
<input type="checkbox"/> Crude Oil DSI	70.00	
<input type="checkbox"/> CRB Index DSI	70.00	
<input type="checkbox"/> Nikkei DSI	72.00	
<input type="checkbox"/> Cattle DSI	72.00	
<input type="checkbox"/> Wheat DSI	73.00	
<input type="checkbox"/> New Zealand Dollar DSI	73.00	
<input type="checkbox"/> Heating Oil DSI	73.00	
<input type="checkbox"/> Coffee DSI	73.00	
<input type="checkbox"/> Sugar DSI	74.00	
<input type="checkbox"/> Gasoline DSI	74.00	
<input type="checkbox"/> SPX DSI	76.00	
<input type="checkbox"/> Nasdaq DSI	77.00	
<input type="checkbox"/> Palladium DSI	88	

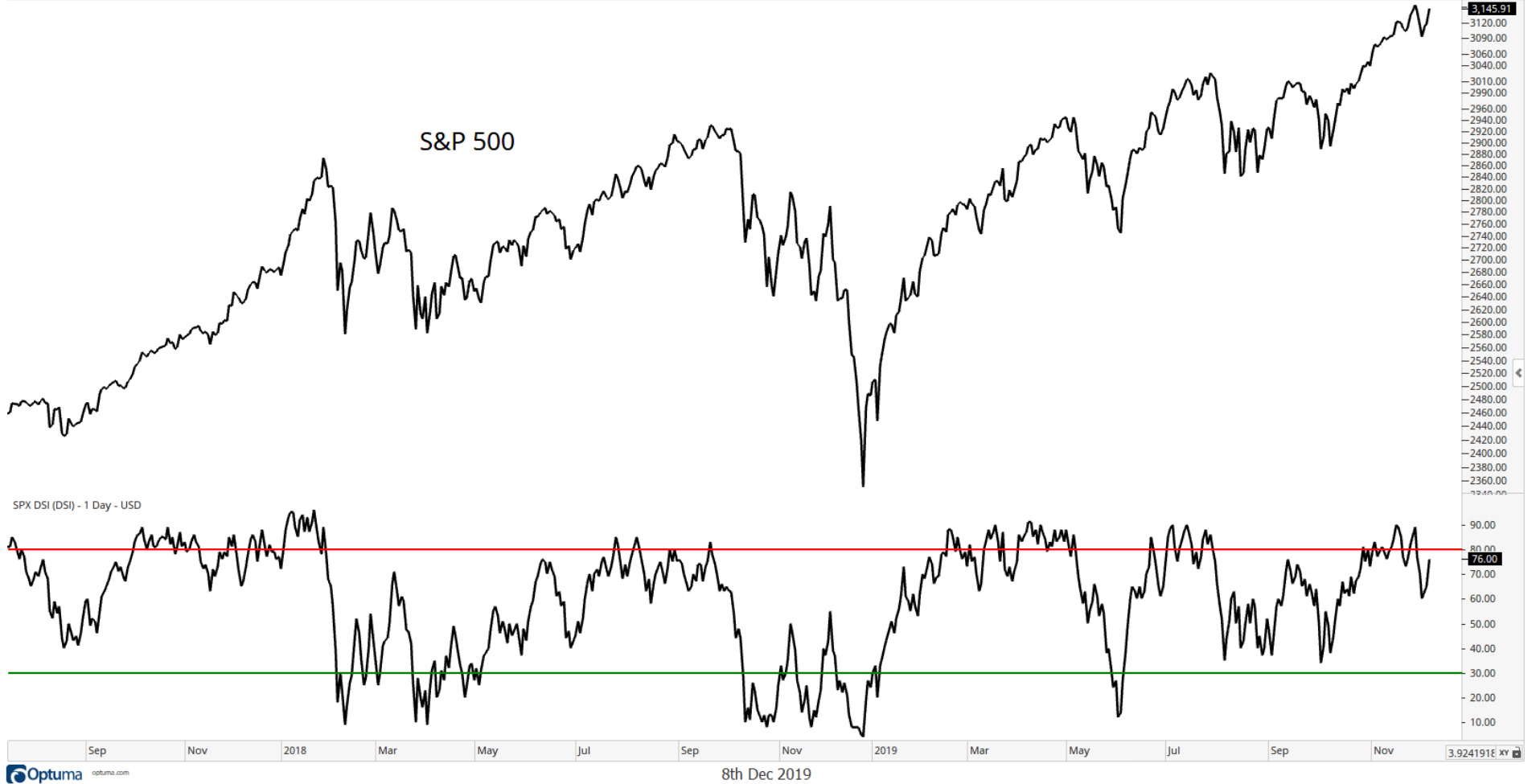
Type Code or Name to add an item to the watchlist

Above is the DSI score for each of the futures markets. The VIX, Corn, Orange Juice, and Gold all have scores at or below 25% bullish. Just Palladium has a score above 80% bullish.

10 Year U.S. Treasury Notes - TYSpot (CBOT) - 1 Day Line Chart - USD - No Layout

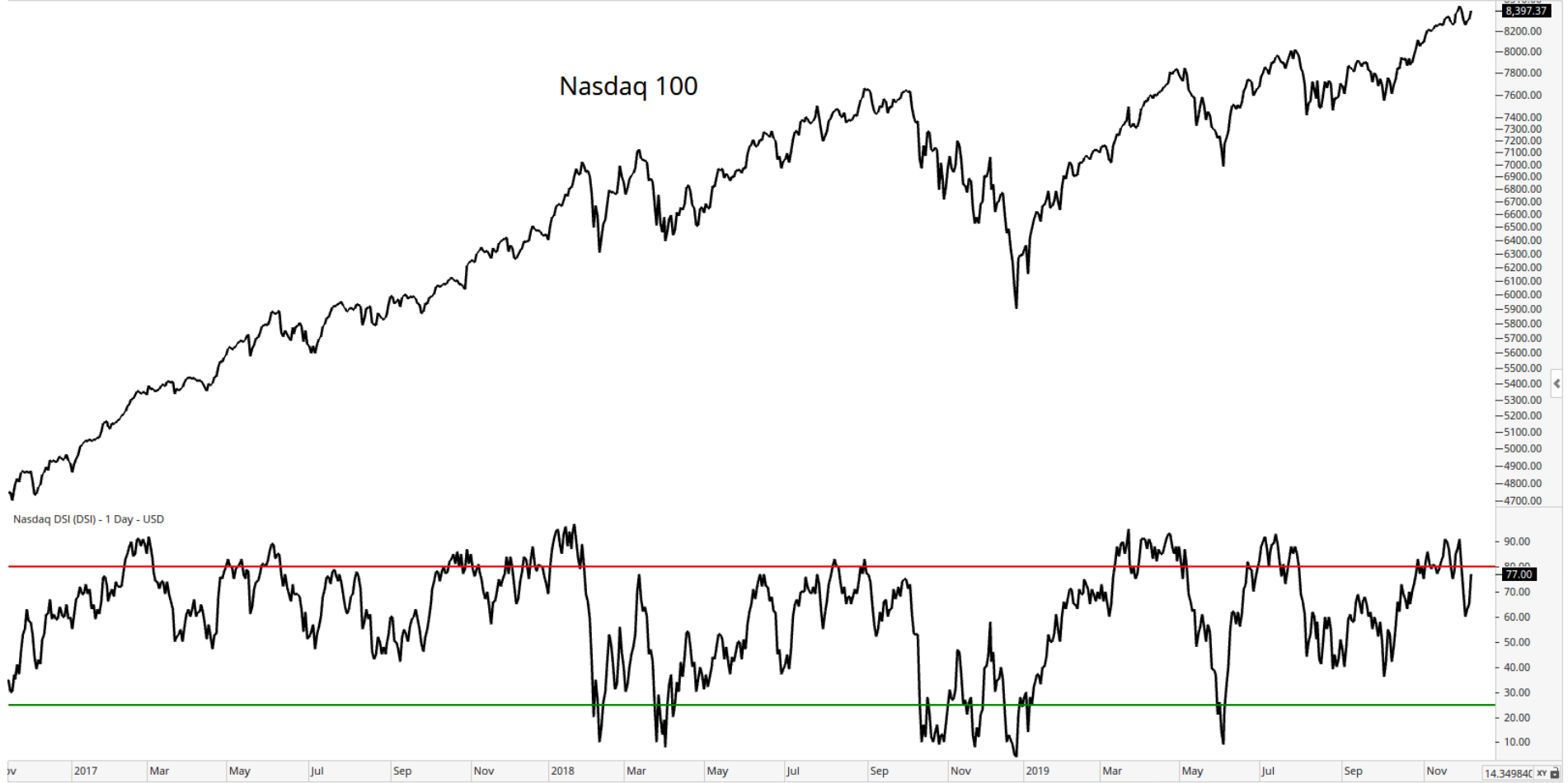


S&P 500 INDEX - SPX (W) - 1 Day Line Chart - USD - No Layout





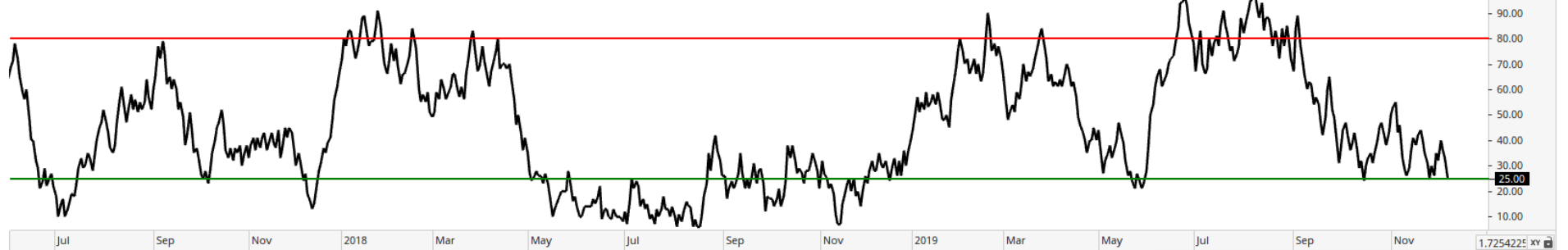
NASDAQ 100 Index - NDY (WI) - 1 Day Line Chart - USD - No Layout



Gold Futures - GCSpot (NYMEX) - 1 Day Line Chart - USD - No Layout



Gold DSI (DSI) - 1 Day - USD



Optuma optuma.com

8th Dec 2019



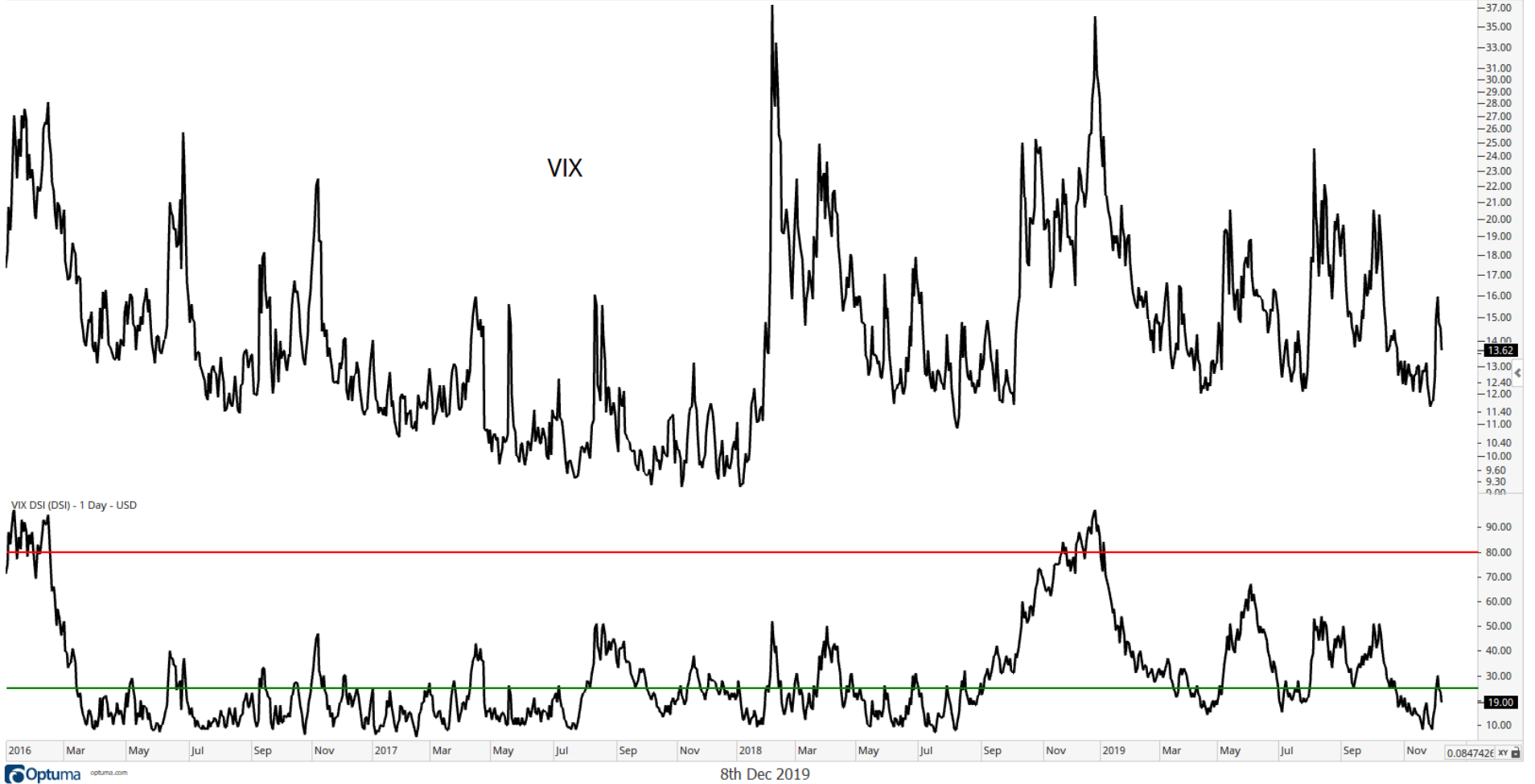
U.S. Dollar Index - DXSpot (AFUT) - 1 Day Line Chart - USD - No Layout



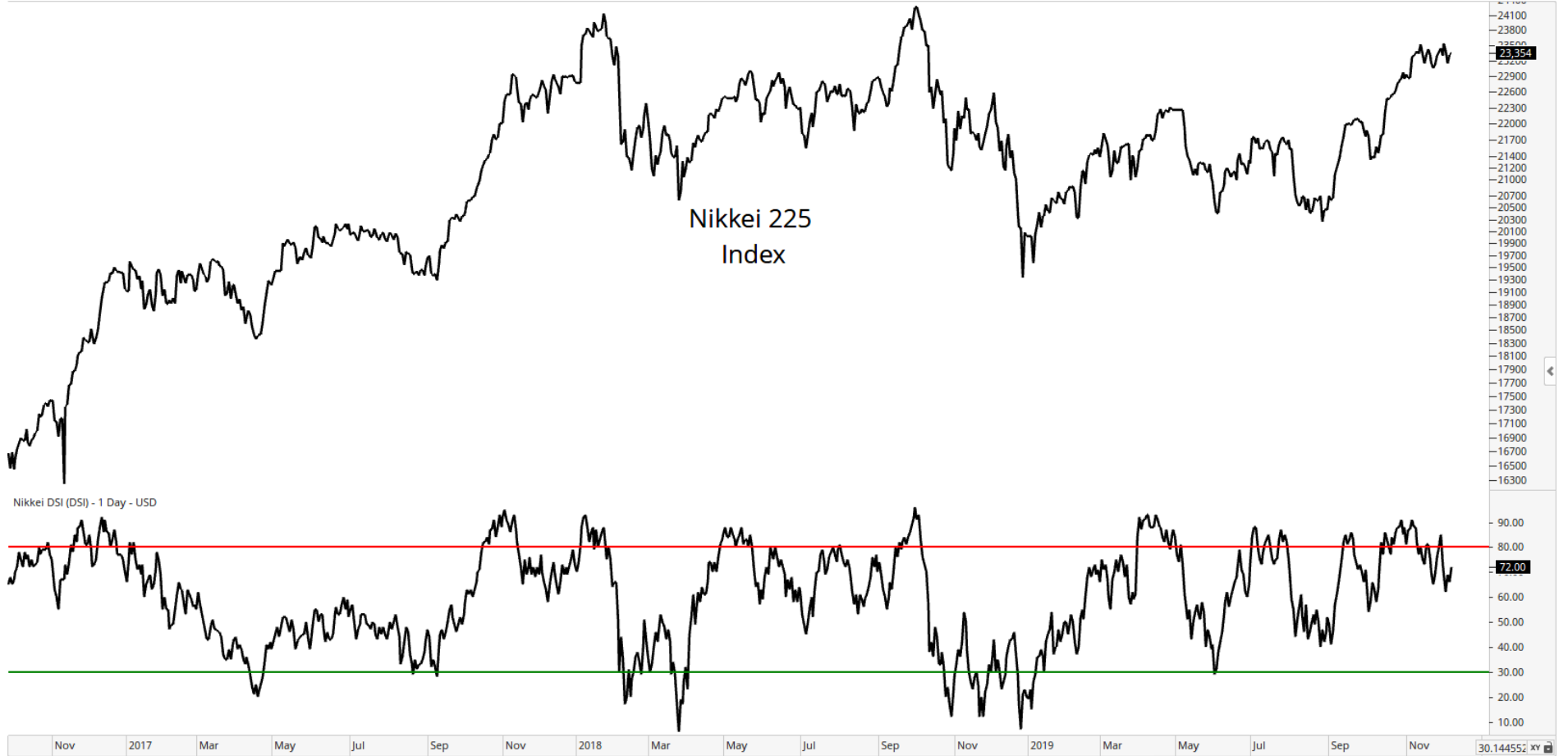
US Dollar DSI (DSI) - 1 Day - USD

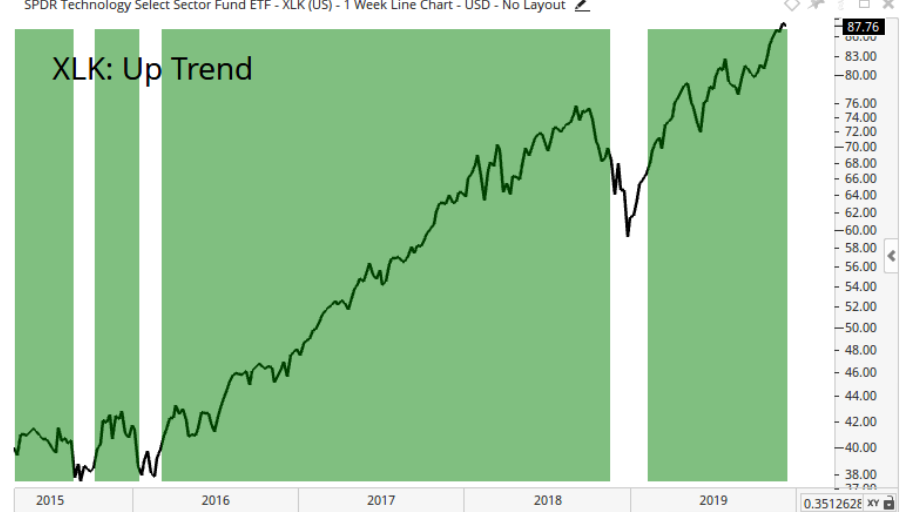
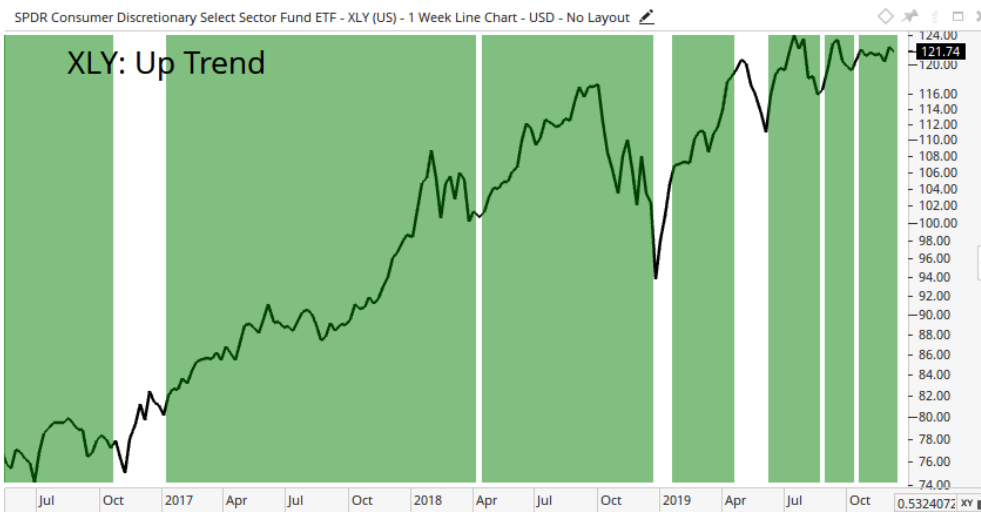
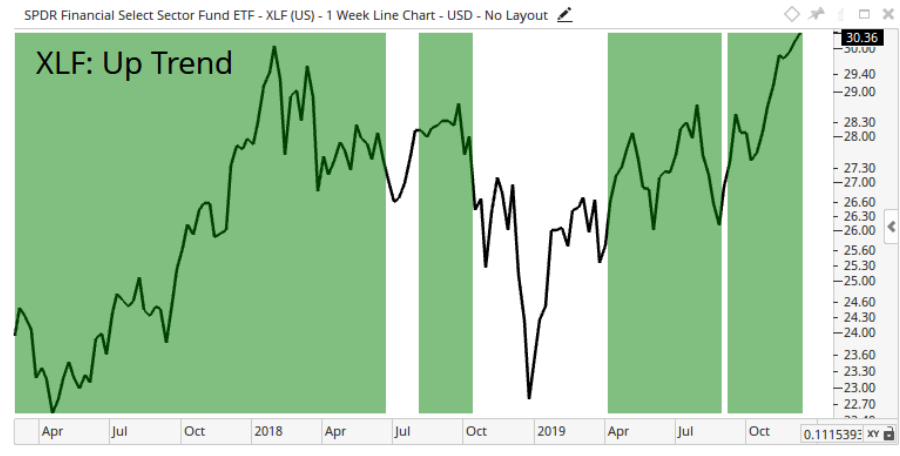
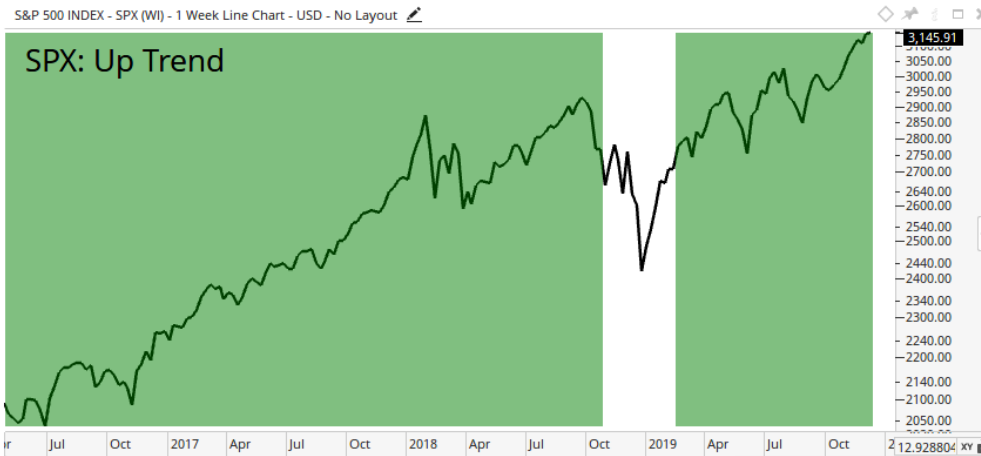


CBOE S&P 500 Volatility Index - VIX (CBOE) - 1 Day Line Chart - USD - No Layout



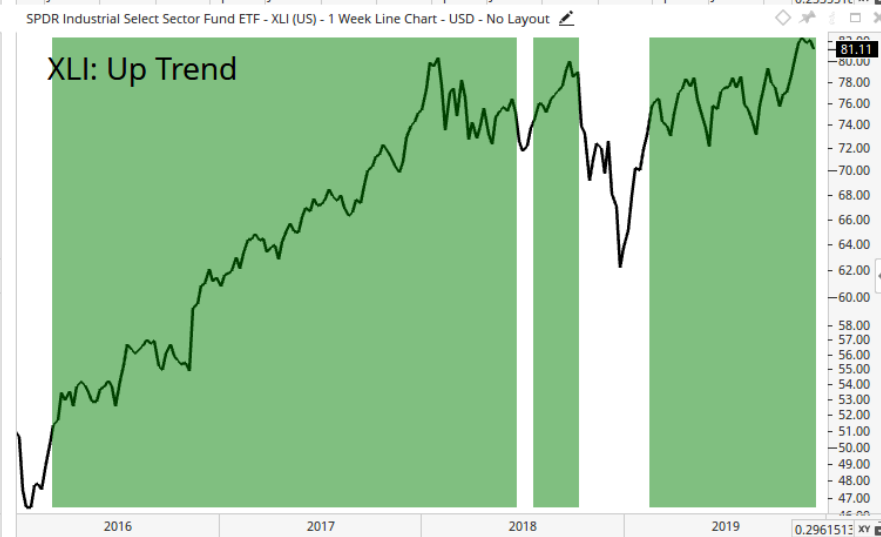
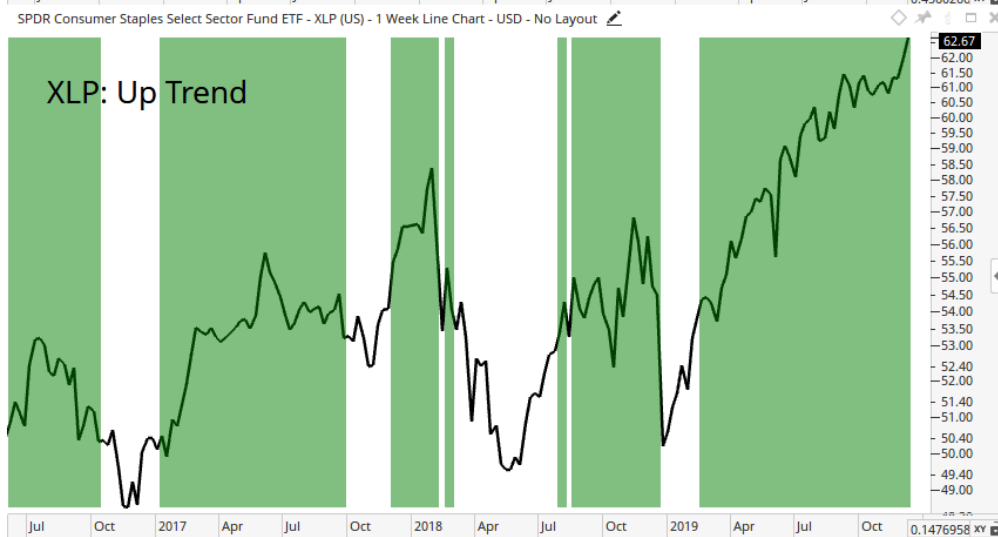
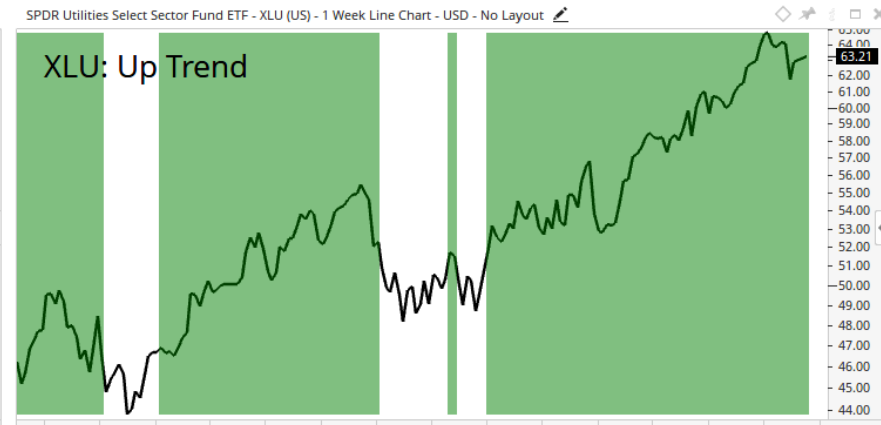
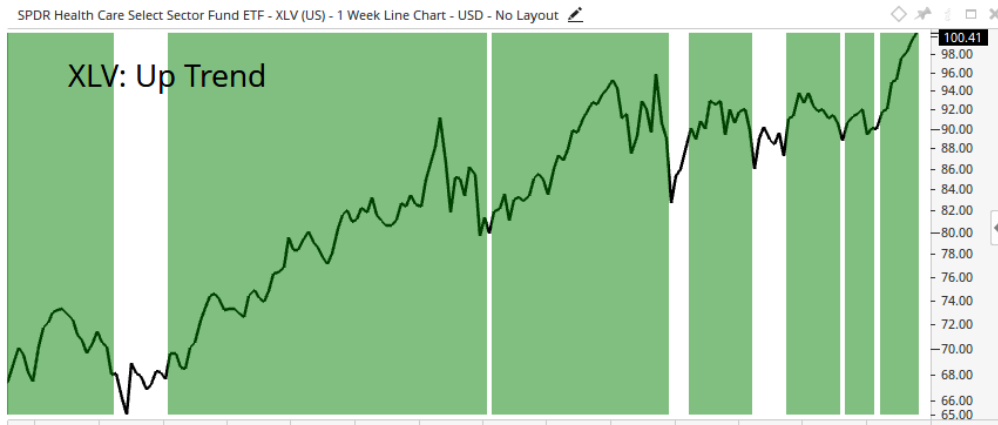
NIKKEI 225 INDEX - NYCash (CME) - 1 Day Line Chart - USD - No Layout





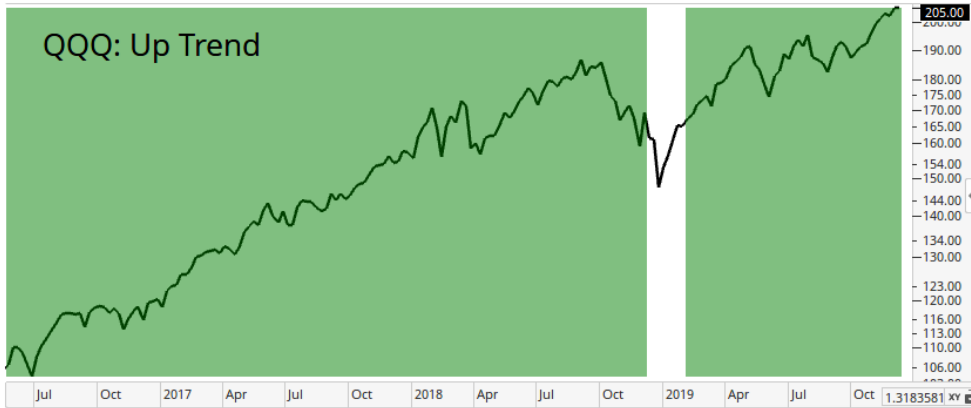
8th Dec 2019

SPX, XLF, XLY, and XLK are all in up trends.

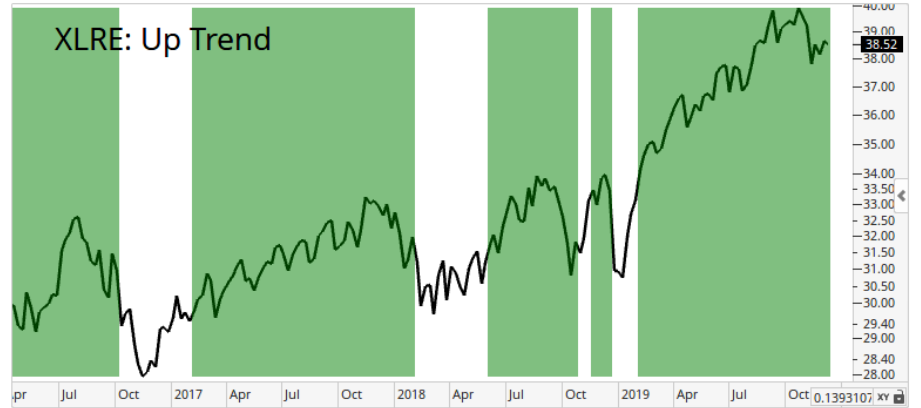


XLV, XLU, XLP, and XLI are all in up trends.

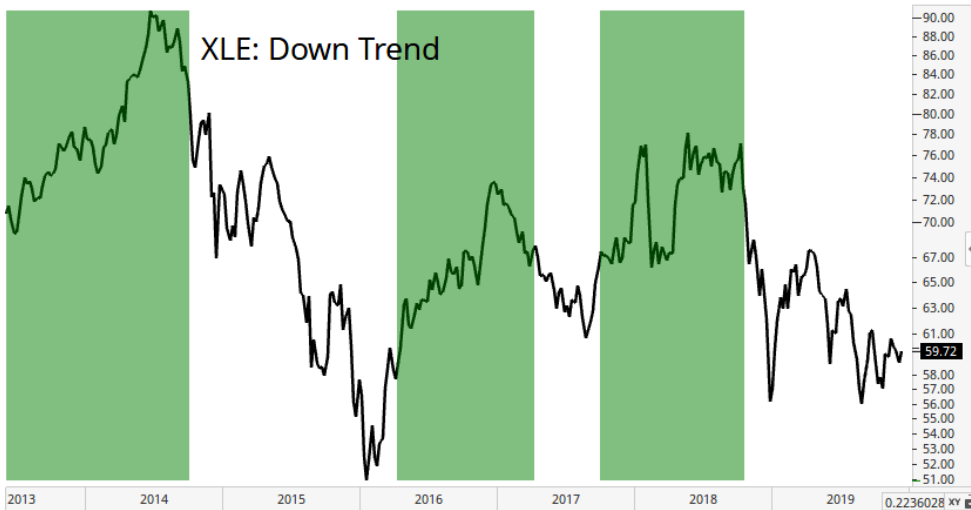
Invesco QQQ Trust - QQQ (US) - 1 Week Line Chart - USD - No Layout



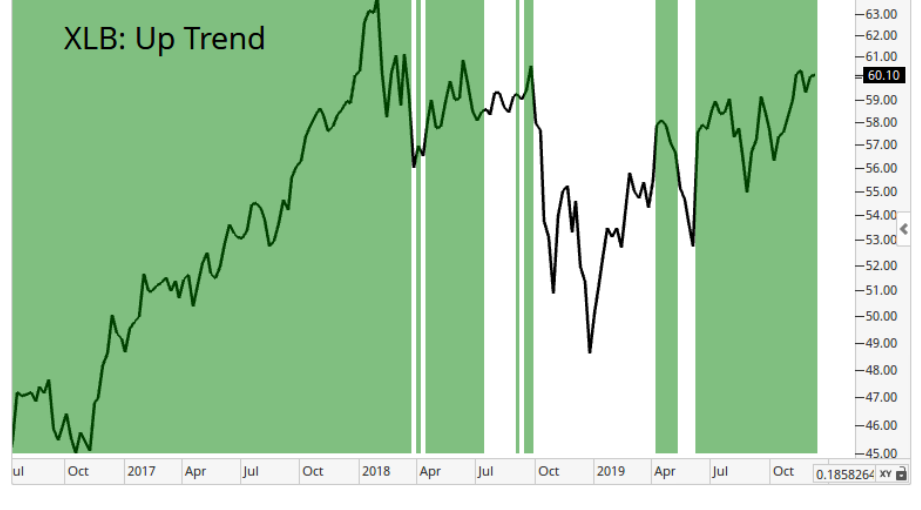
SPDR Real Estate Select Sector Fund ETF - XLRE (US) - 1 Week Line Chart - USD - No Layout



SPDR Energy Select Sector Fund ETF - XLE (US) - 1 Week Line Chart - USD - No Layout



SPDR Materials Select Sector Fund ETF - XLB (US) - 1 Week Line Chart - USD - No Layout

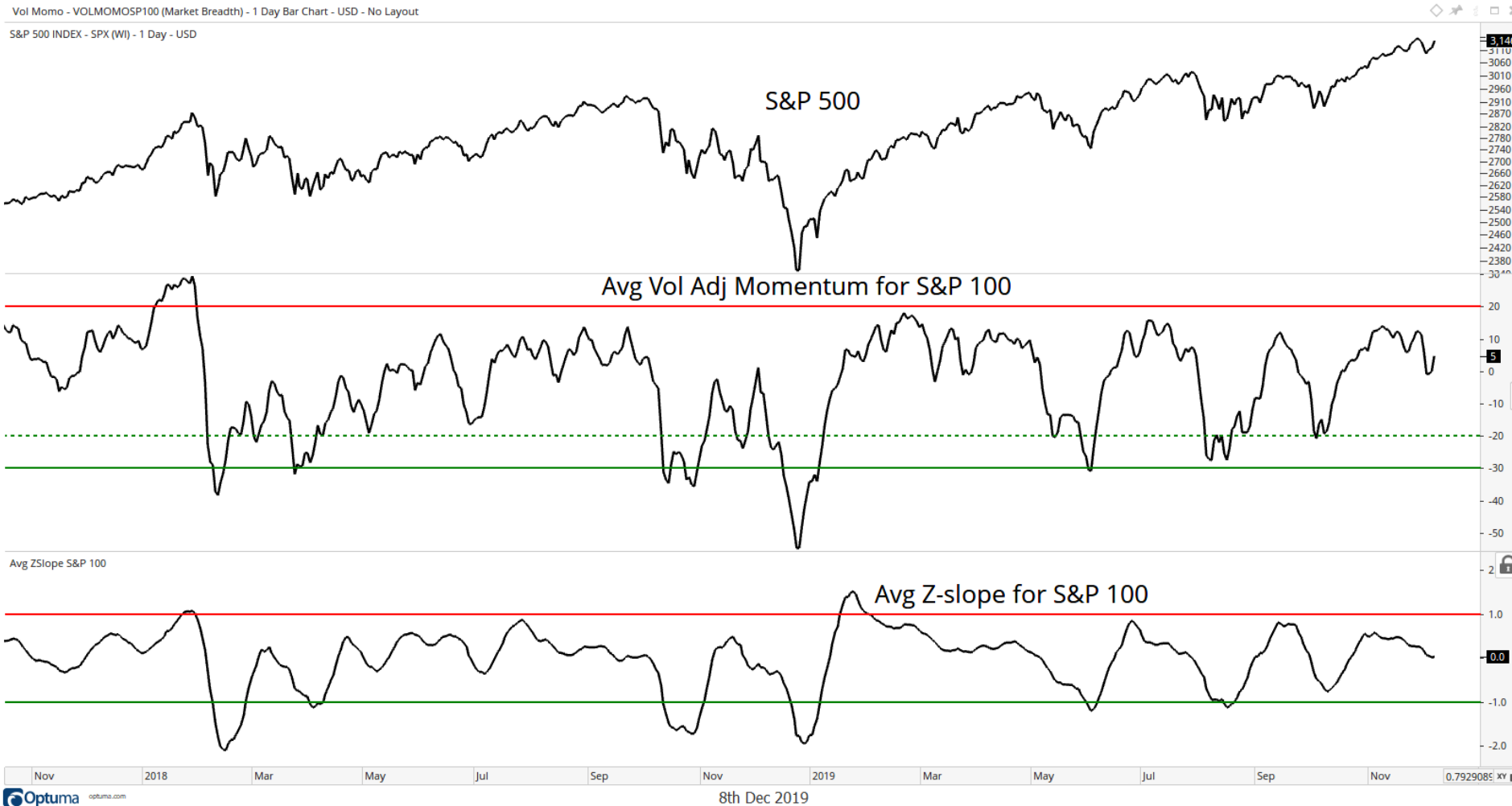


QQQ, XLRE, and XLB are in up trends. XLE is in a down trend.

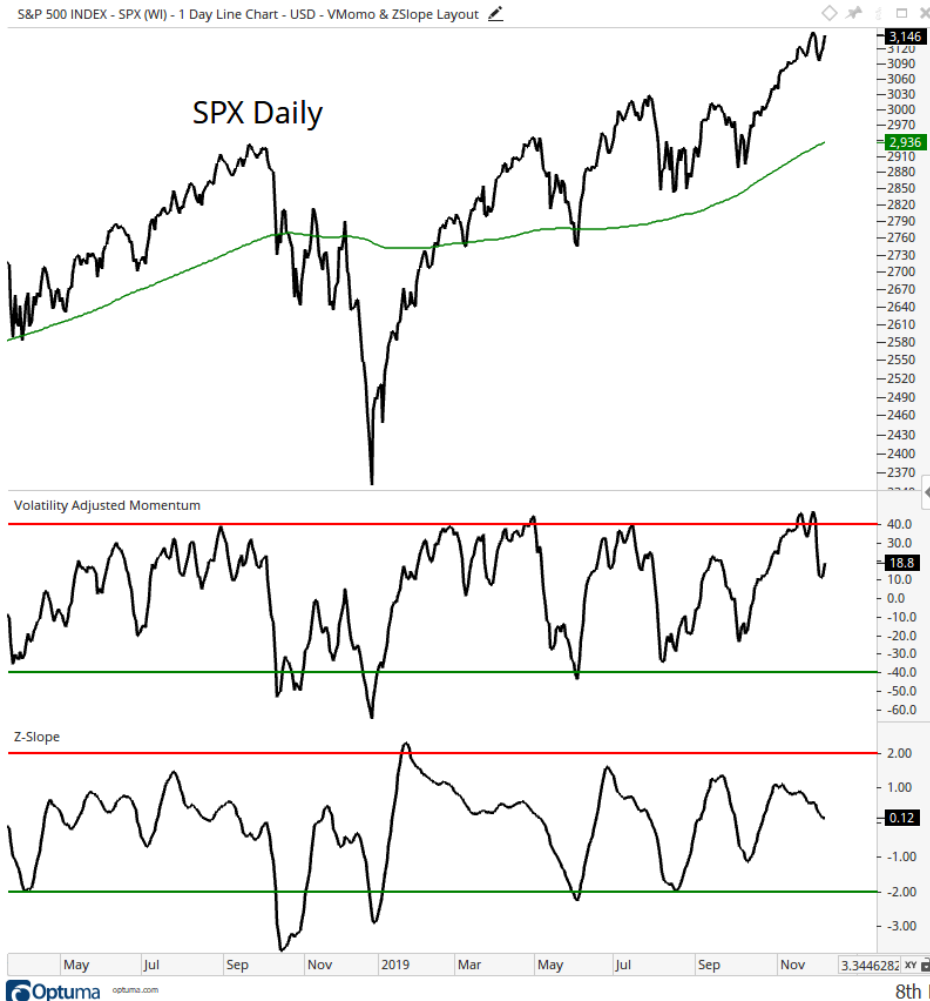
The following charts will become a regular installment for this, and future letters. Each page will include a daily and weekly chart with two indicators that are unique to Thrasher Analytics. With a focus on risk mitigation, the focus of these charts is on potential mean-reversion of each asset through the analysis of the two indicators described below.

Volatility-Adjusted Momentum (VaM): This is a spin on the traditional measures of momentum, taking into account the volatility of the underlying asset into the calculation. By adjusting for volatility we can get a better look at potential mean-reversion signals when risk/reward becomes unbalanced towards 40 as ‘overbought’ or -40 as ‘oversold.’

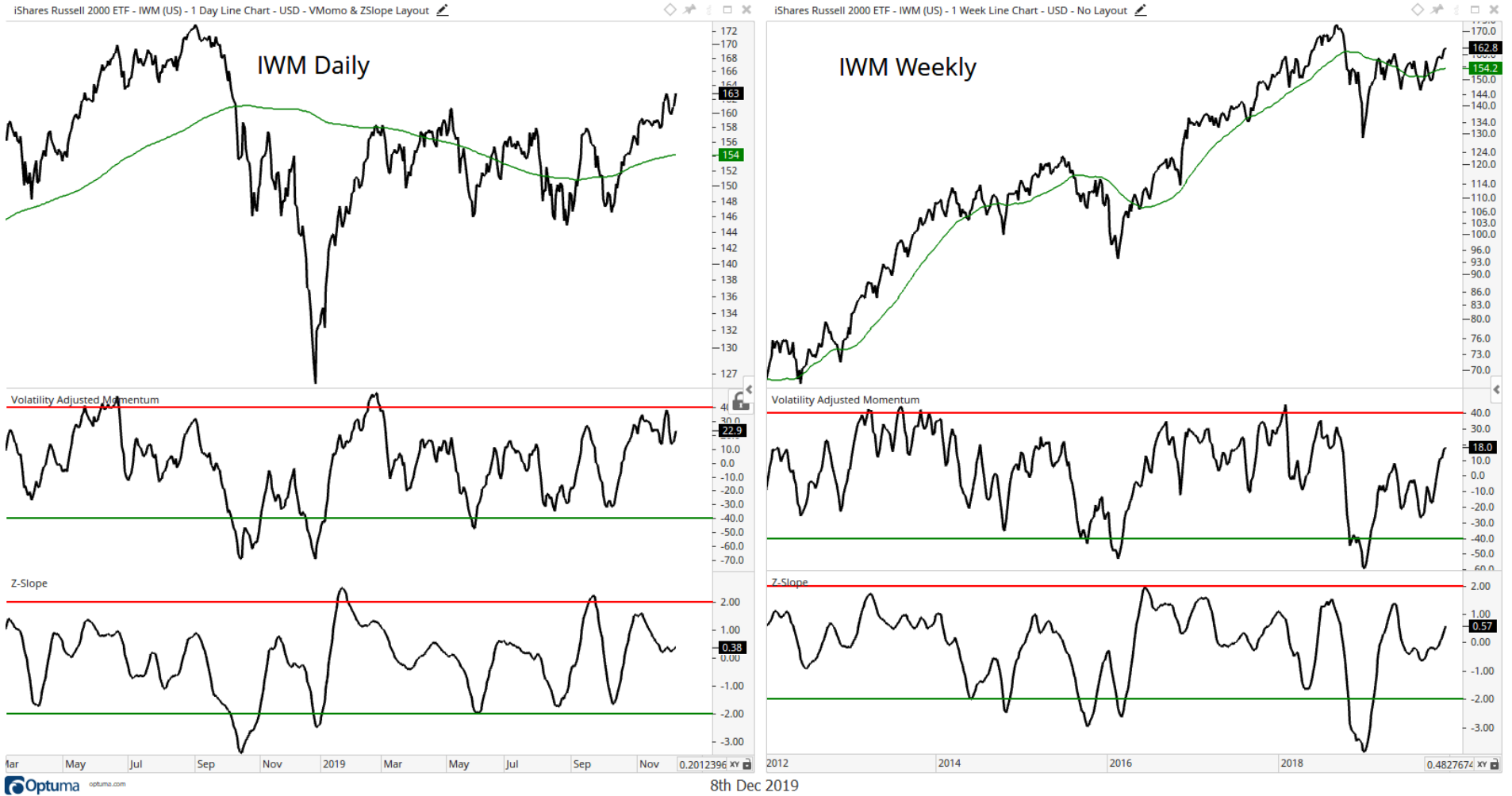
Z-Slope: This indicator takes two lookback periods, one long and one short, for calculating the slope and evaluates the z-score of the difference. This provides insight into whether the current slope of the trend fits within the long-term price history of the security. If a z-score breaks above 2, then the slope has gotten to upward sloping compared to its history. And the opposite is true when we get readings below -2, that the downward sloping trend has gotten ‘oversold’ compared to the asset’s price history.



Above are the average Volatility Adjusted Momentum Indicator (VaM) and Z-slope scores for the S&P 100.



Daily Z-Slope and VaM both are neutral



Neutral readings for both VaM and Z-slope.



Daily Z-Slope and VaM both are neutral



Neutral readings for both VaM and Z-slope.

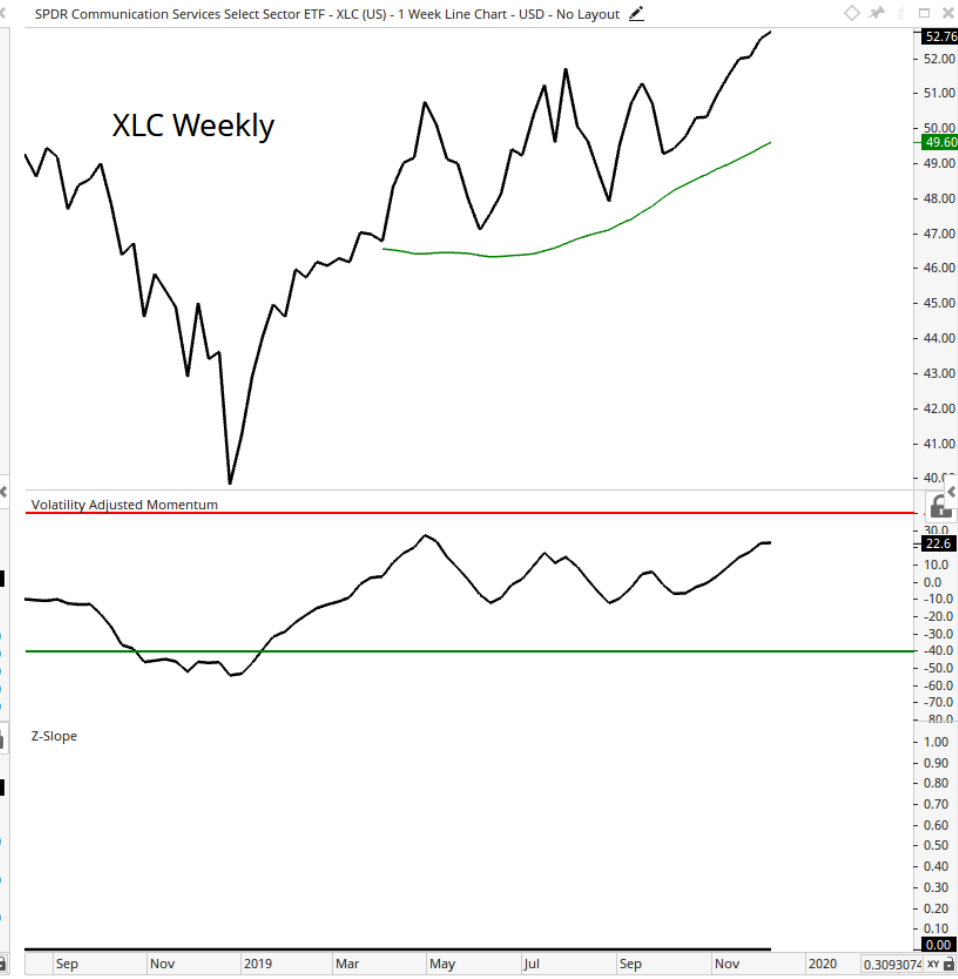
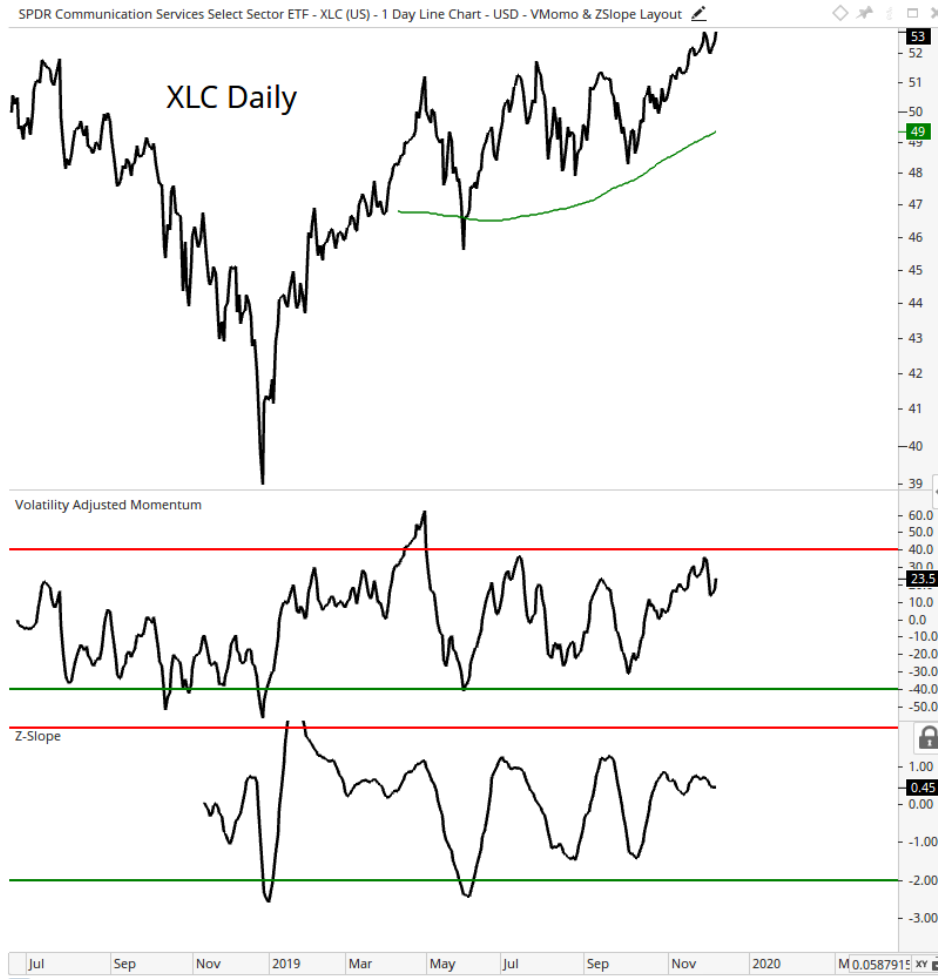
SPDR Energy Select Sector Fund ETF - XLE (US) - 1 Day Line Chart - USD - VMomo & ZSlope Layout



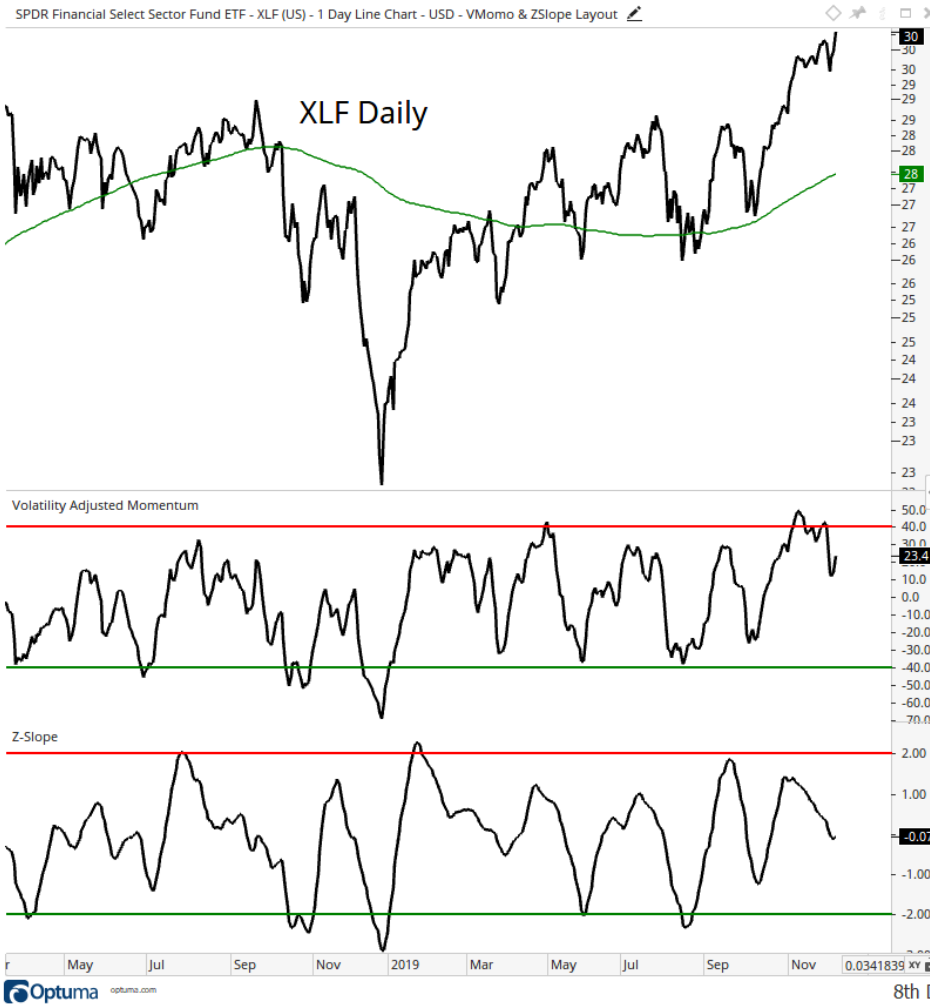
SPDR Energy Select Sector Fund ETF - XLE (US) - 1 Week Line Chart - USD - No Layout



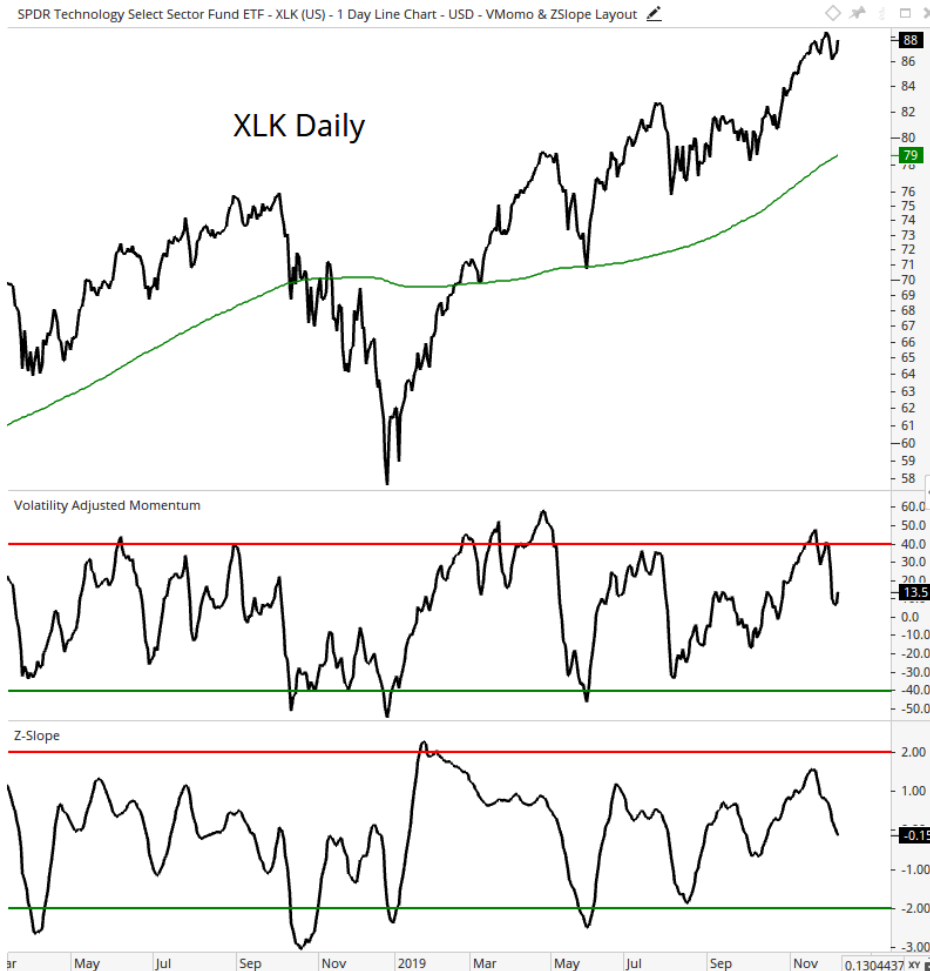
Neutral readings for both VaM and Z-slope.



Neutral readings for both VaM and Z-Score.



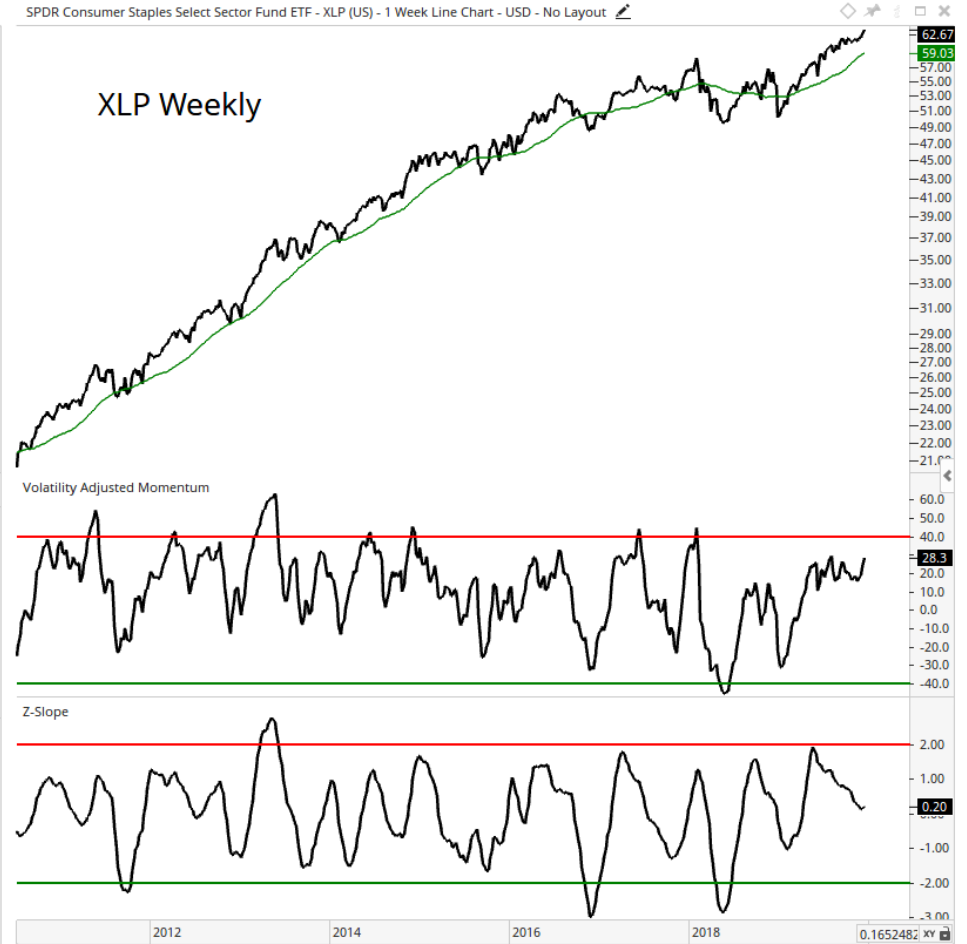
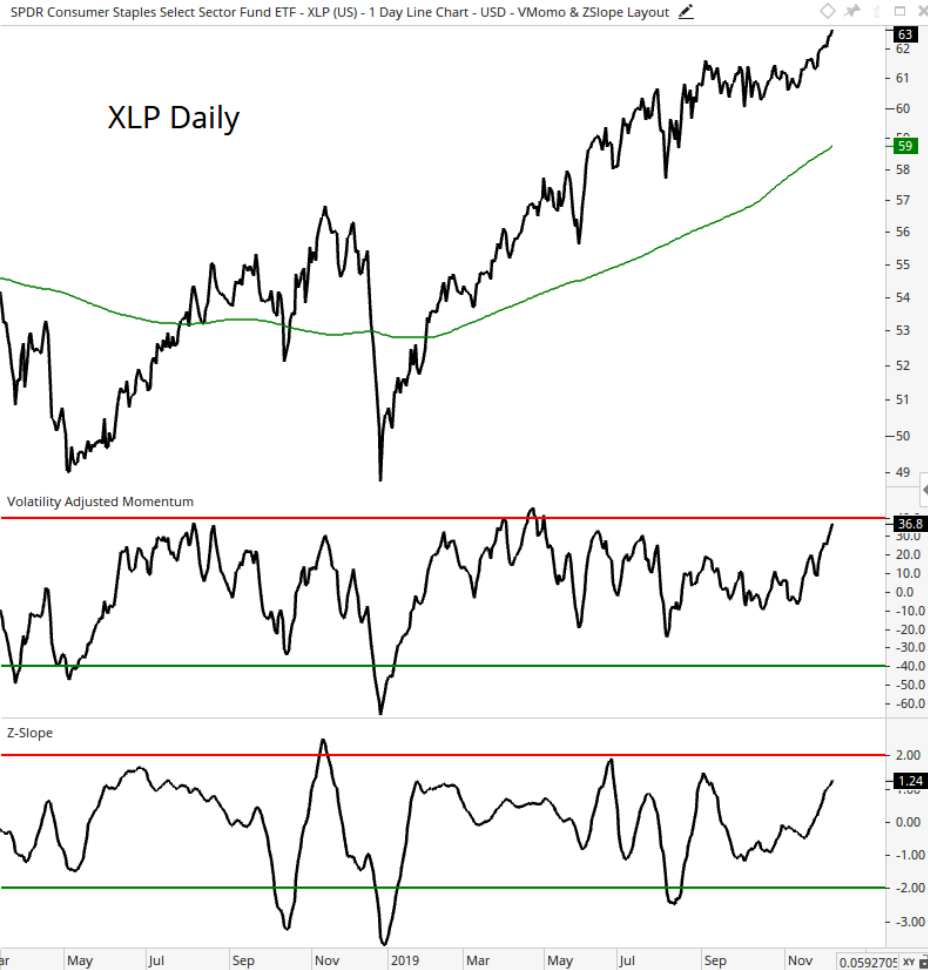
Daily Z-Slope and VaM both are neutral



Daily Z-Slope and VaM both are neutral



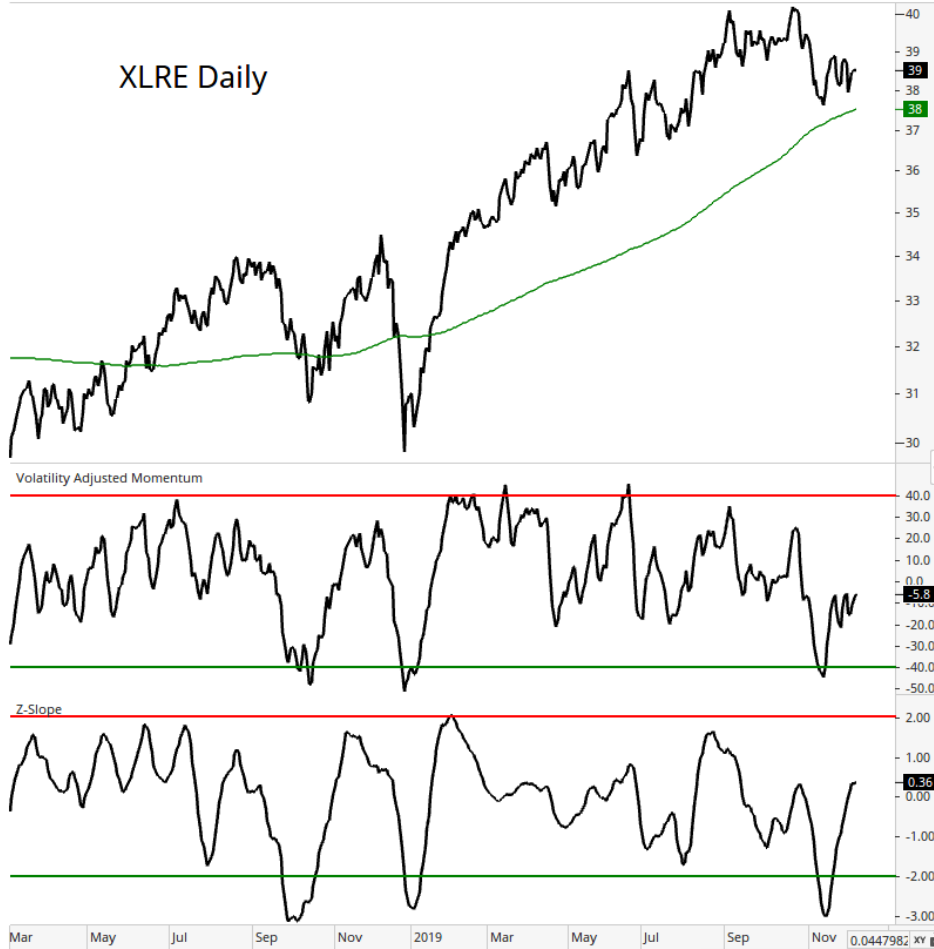
Daily Z-Slope and VaM both are neutral



Neutral readings for both VaM and Z-slope.

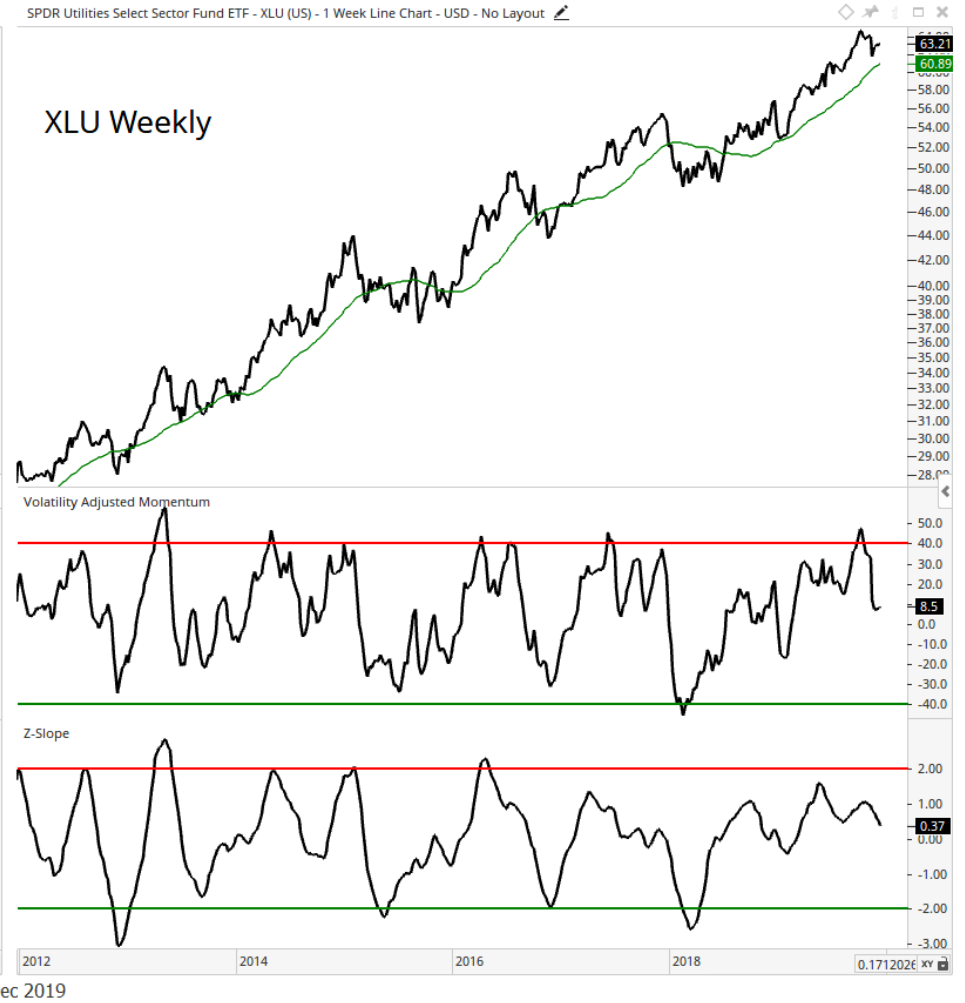
SPDR Real Estate Select Sector Fund ETF - XLRE (US) - 1 Day Line Chart - USD - VMomo & ZSlope Layout

SPDR Real Estate Select Sector Fund ETF - XLRE (US) - 1 Week Line Chart - USD - No Layout

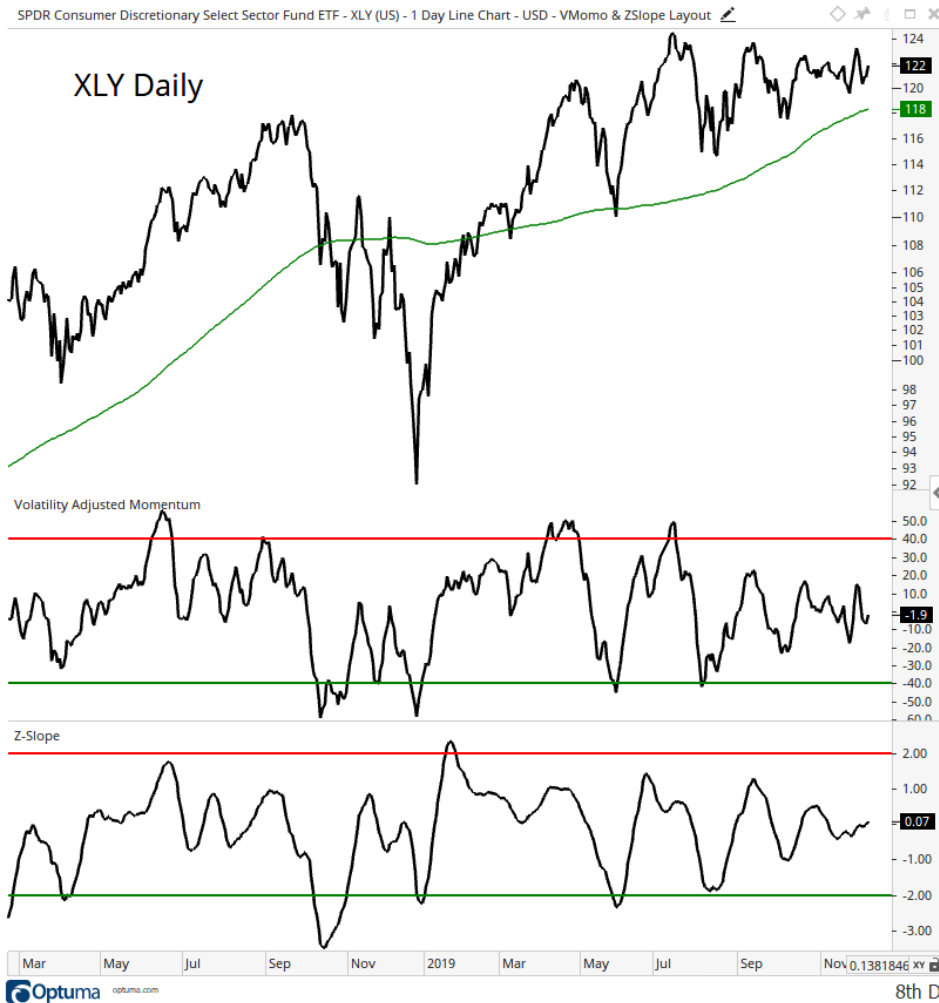


8th Dec 2019

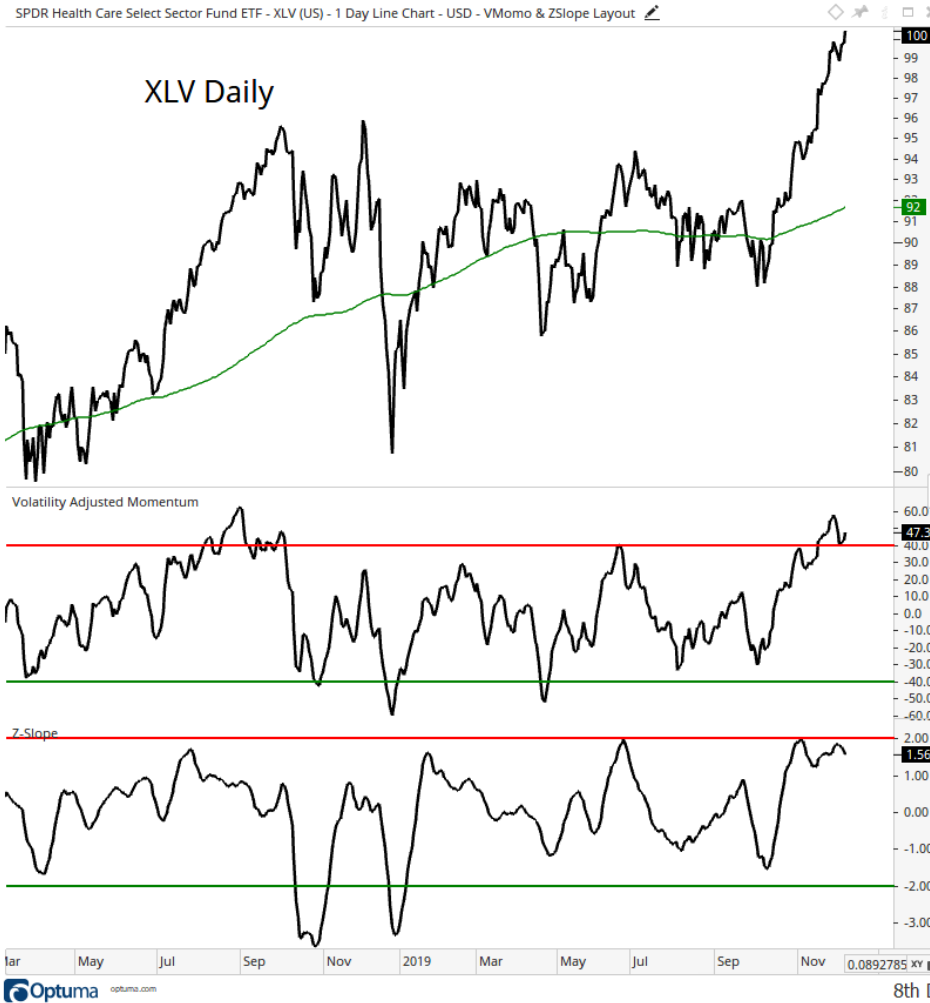
Both Z-slope and VaM are neutral



Neutral readings for both VaM and Z-slope.



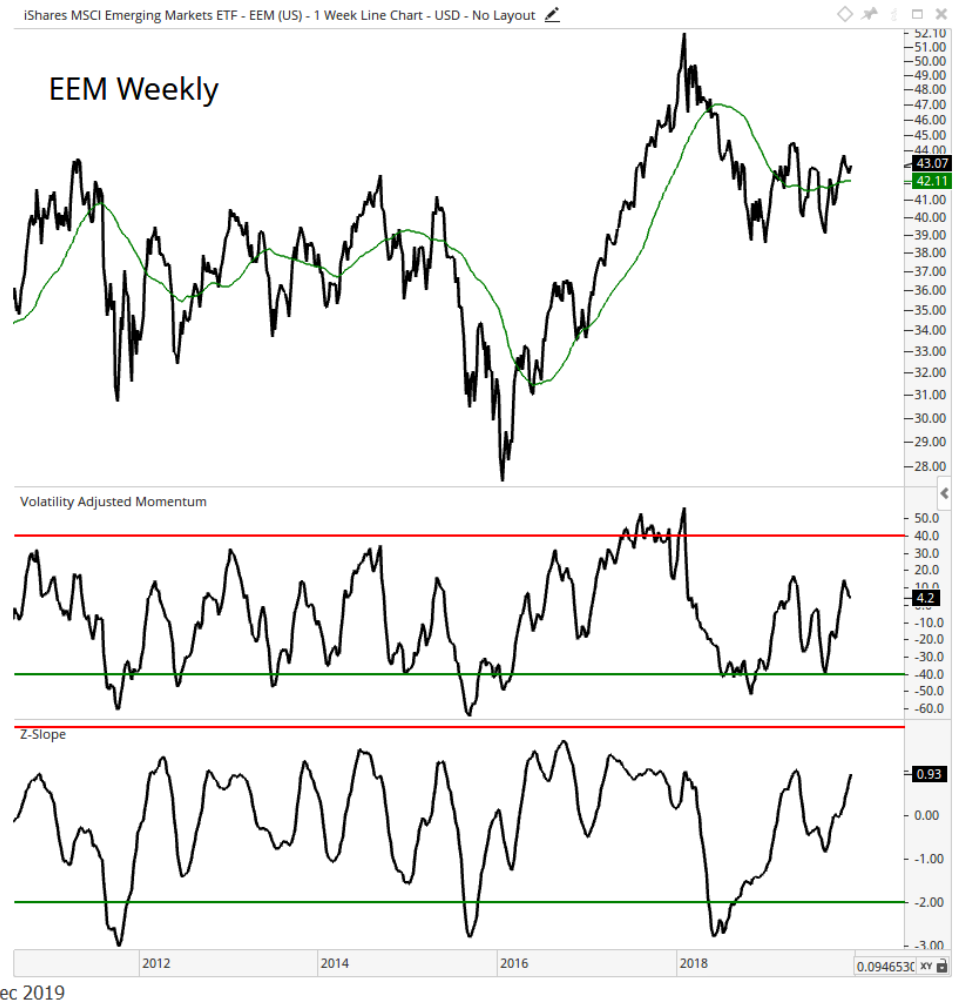
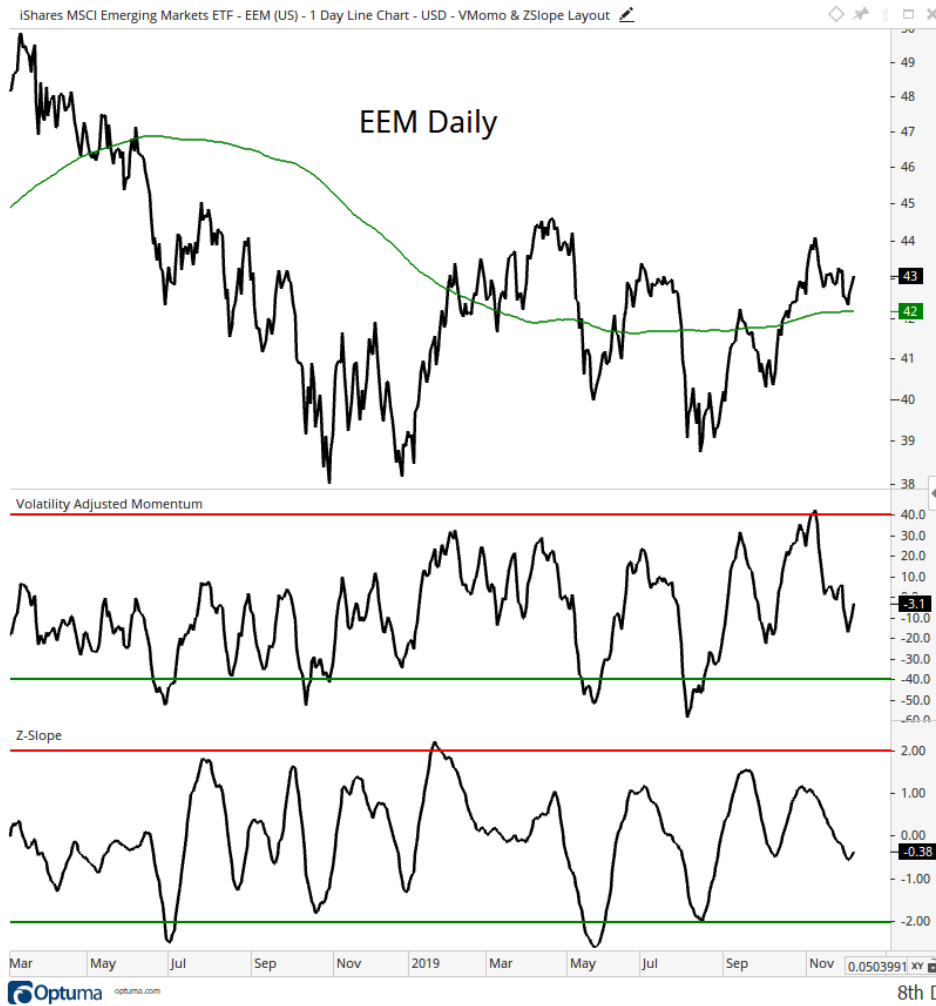
Neutral readings for both VaM and Z-slope.



Neutral readings for Z-slope with VaM now 'overbought'.



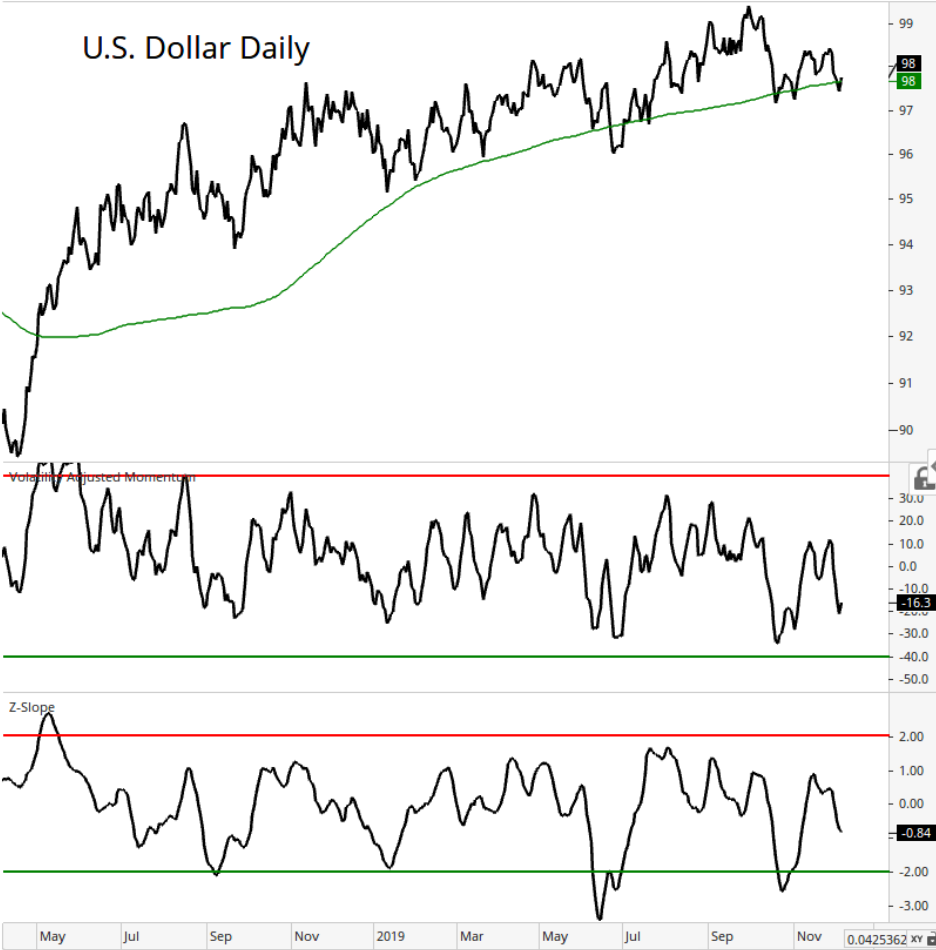
Neutral reading for z-slope and VaM.



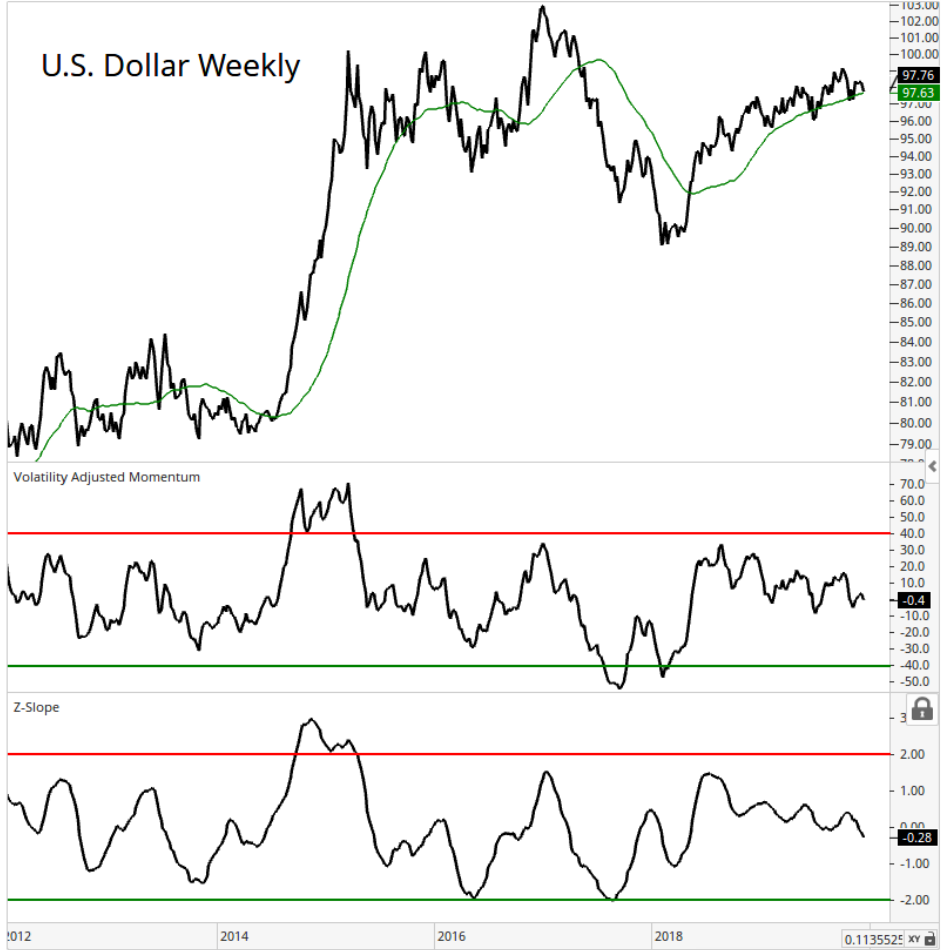
Neutral readings for both VaM and Z-slope.



US Dollar Index - DXY (W1) - 1 Day Line Chart - USD - VMomo & ZSlope Layout



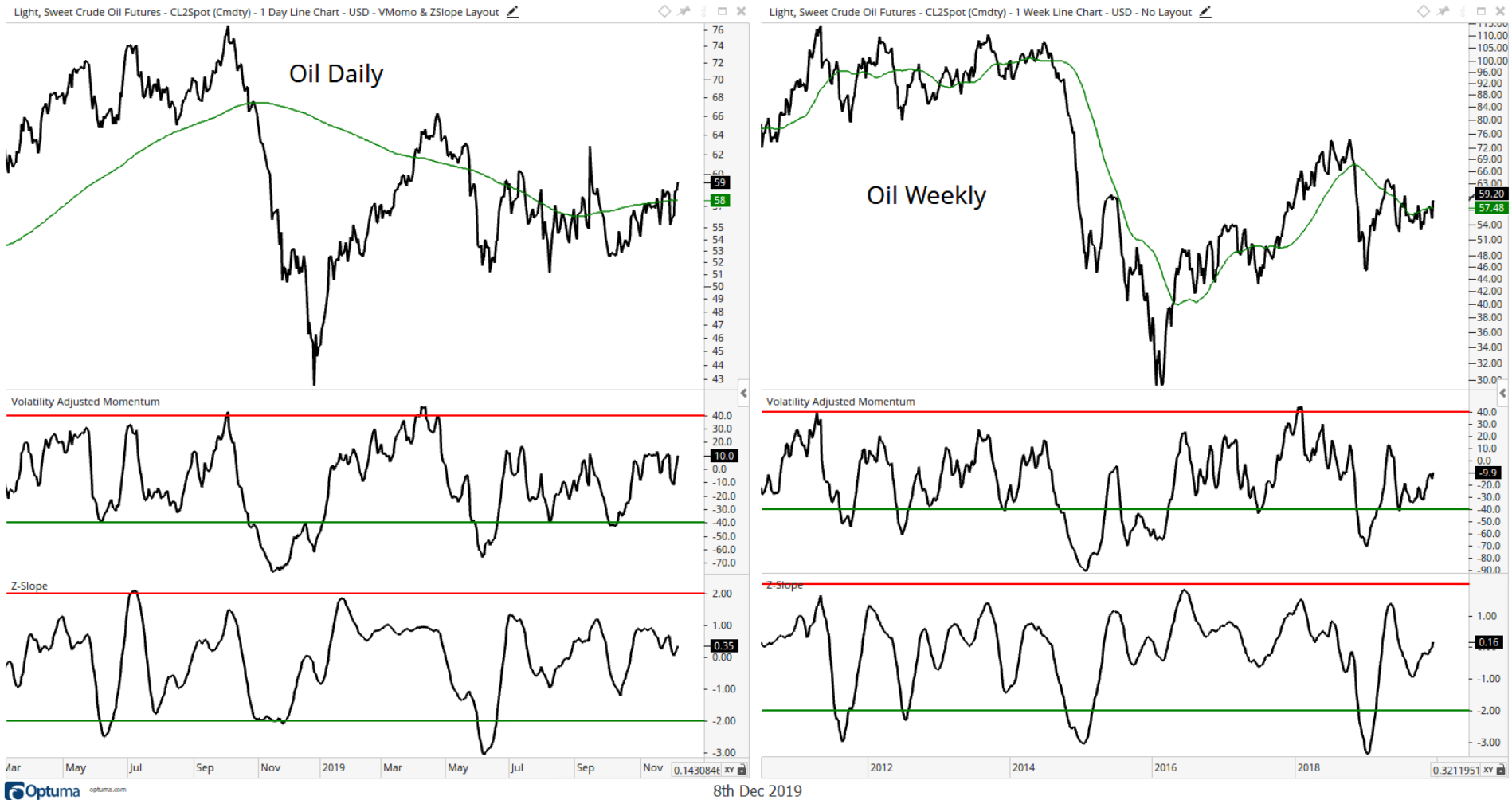
US Dollar Index - DXY (W1) - 1 Week Line Chart - USD - No Layout



Neutral readings VaM and Z-slope.



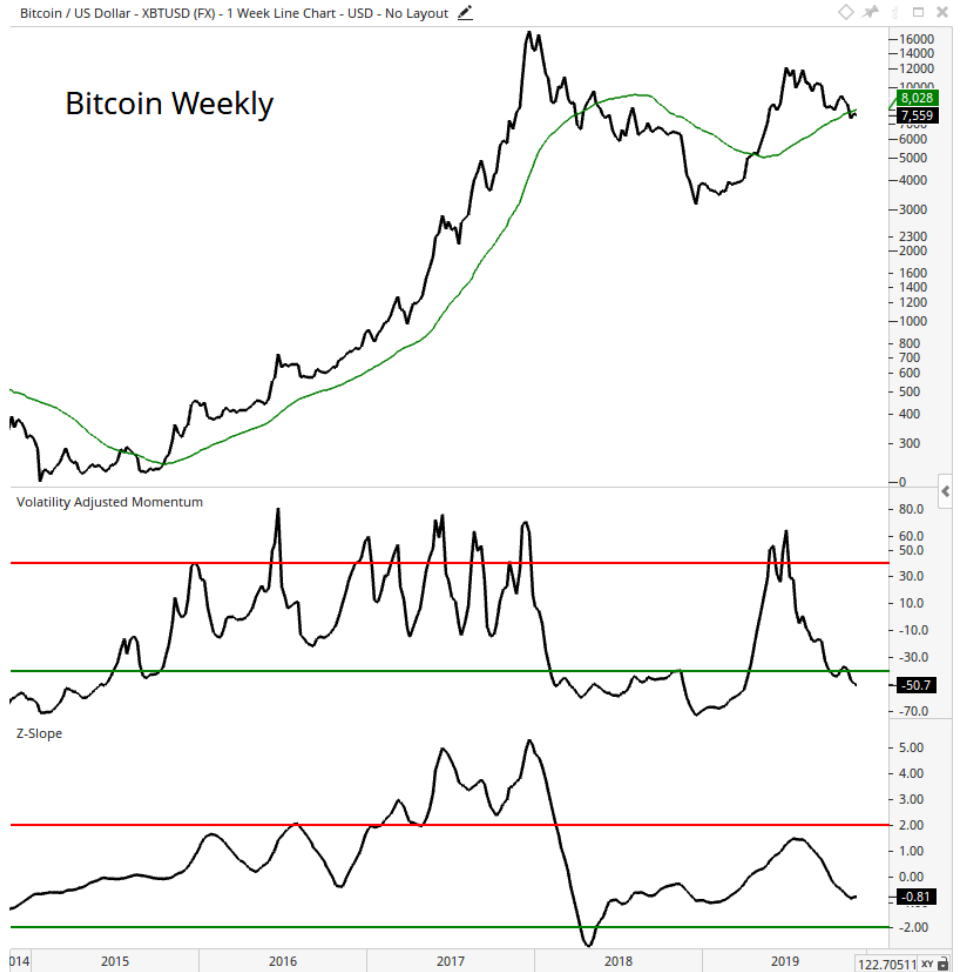
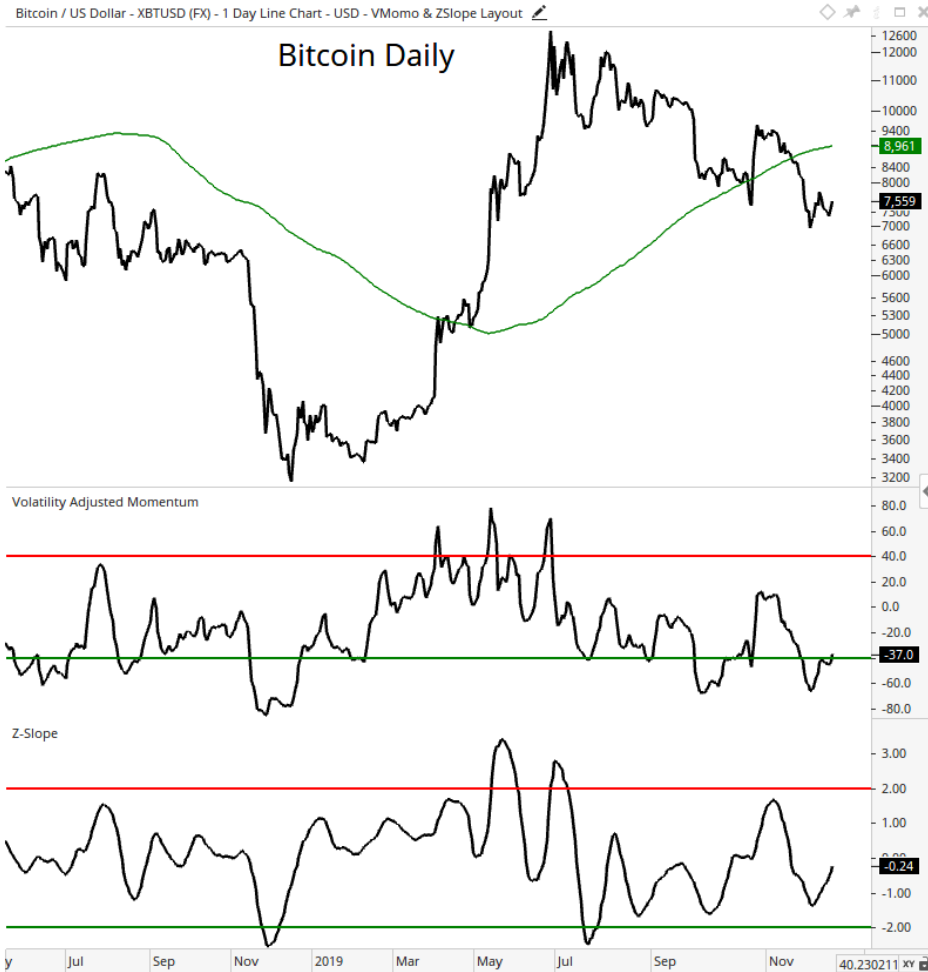
Neutral readings for both VaM and Z-slope.



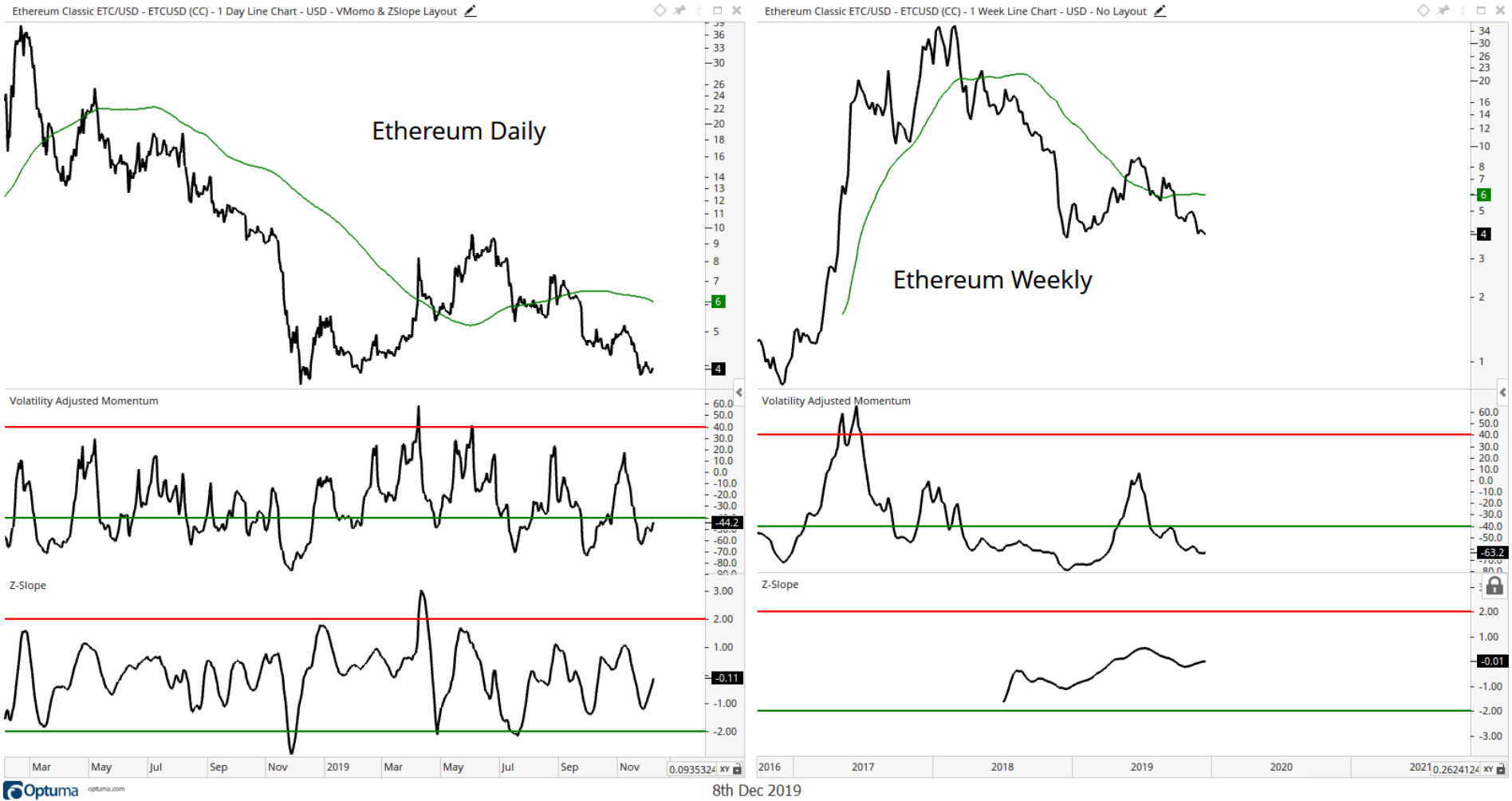
Neutral readings for both VaM and Z-slope.



Neutral readings for both VaM and Z-slope.



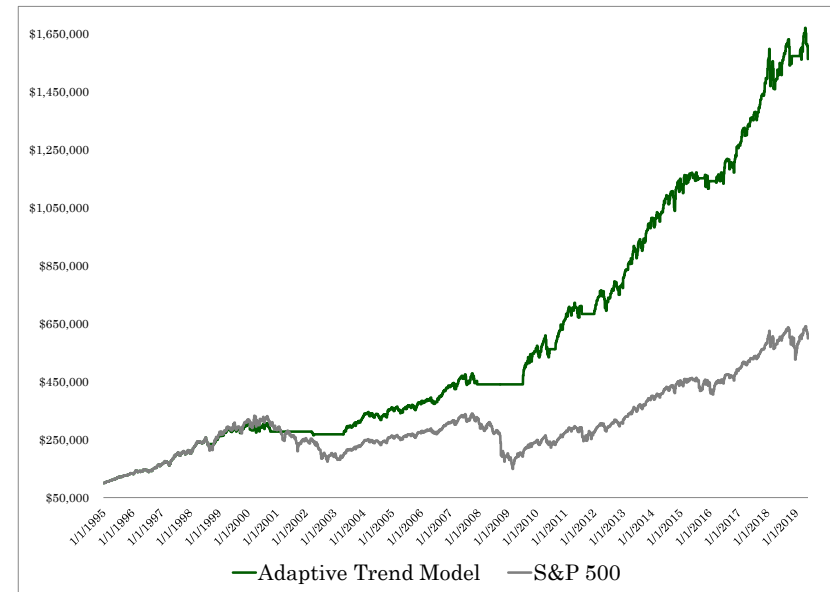
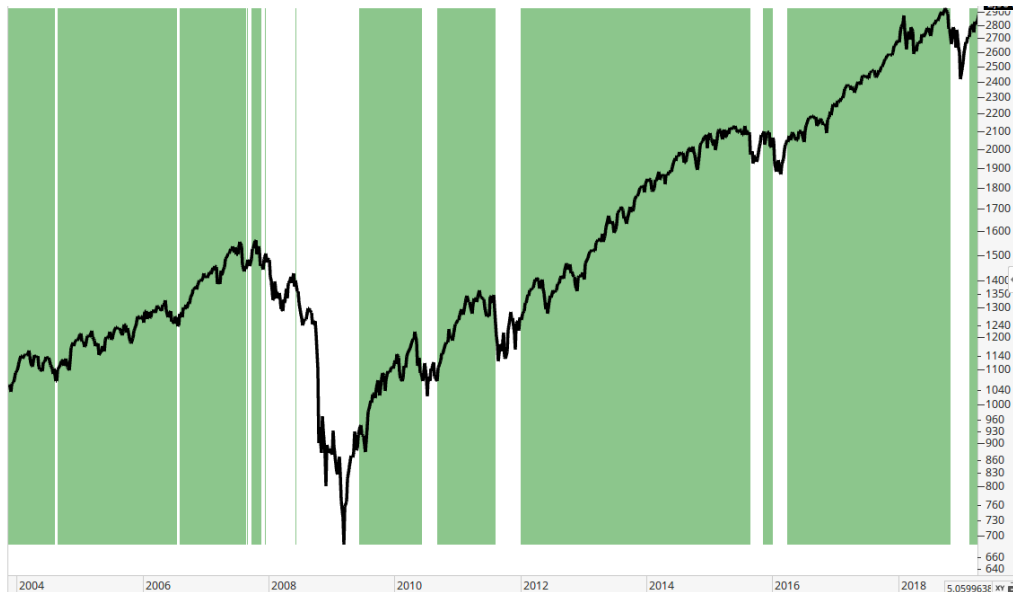
Neutral reading for z-slope and VaM is close to oversold.



Neutral reading for z-slope and VaM is 'oversold.'

Trend-based analysis is a process built on the idea of enduring minor pullbacks in the anticipating of avoiding protracted drawdowns in financial markets. With a focus on stepping out of the market during large down trends, the Thrasher Analytics Adaptive Trend Model (TAATM) pursues to minimize the “whipsaws” of signals during highly volatile periods of market activity. To accomplish this, TAATM incorporates multiple look-back time periods and incorporates volatility gauges in its evaluation of the equity market’s overall trend.

Thrasher Analytics analysis concludes the market’s trend is led by the resulting trend of its individual stocks. This means, if the majority of stocks are trending in one direction, then the broad index will be persuaded to follow that trend as well. By incorporating the individual stock trends, volatility, and multiple time periods, the TAATM provides a data-focused look at the overall trend of the U.S. equity market.

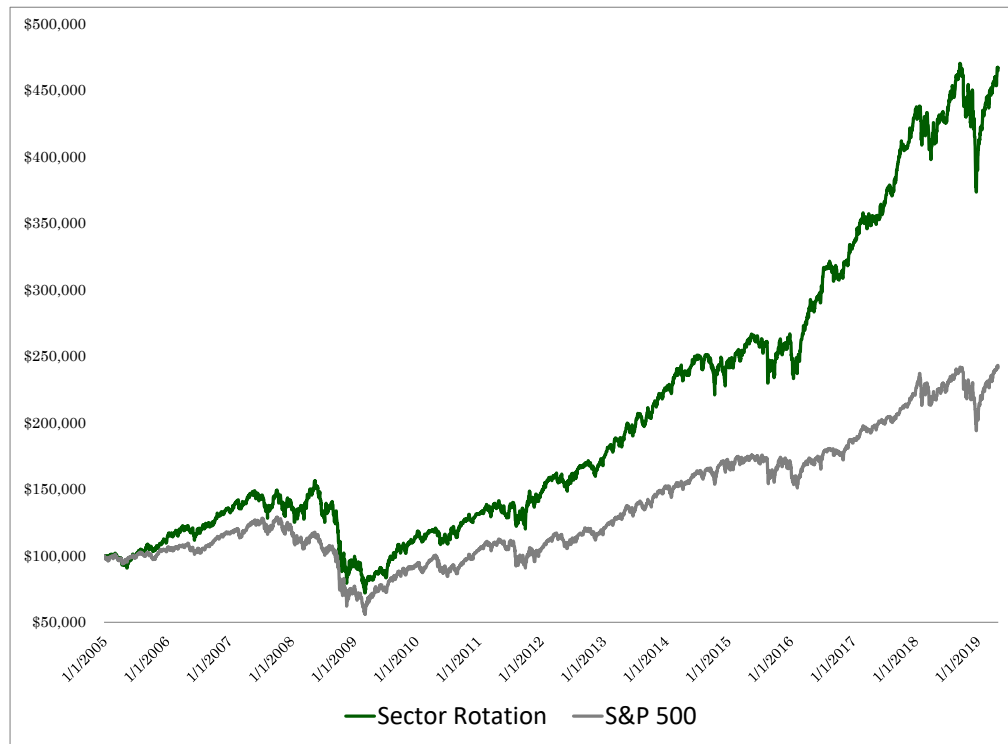


	Annualized Return	Annualized Volatility	Beta	Sharpe	Maximum Drawdown
Adaptive	12.5%	10.3%	0.47	0.97	14.1%
S&P 500	8.9%	15.3%	1	0.42	56.6%

Provided charts, data, and descriptions are a result of a back test using historical market data. No representation is being made that the use of this strategy or any system or data will generate profits. The results do not represent actual results and actual results may significantly differ from the theoretical returns being presented.

Please see complete disclosure for additional information.

Thrasher Analytics holds the belief, resulted from an in-depth examination of the performance of the primary S&P sectors, that they historically cycle through periods of strength and weakness. In order to move towards capturing the alpha from this rotation, a mean-reversion model is deployed with a monthly rebalance of the lowest scoring sectors. Using proprietary methods of systematic technical analysis, Thrasher Analytics sector rotation model focuses on equity sectors that are most heavily showing signs of volatility and trend exhaustion and likely to be exposed to a positive shift in investor sentiment. By pairing this mean reversion approach towards sectors with the Adaptive Trend Model for the broad index, a layer of risk management can be achieved through strategy diversification.

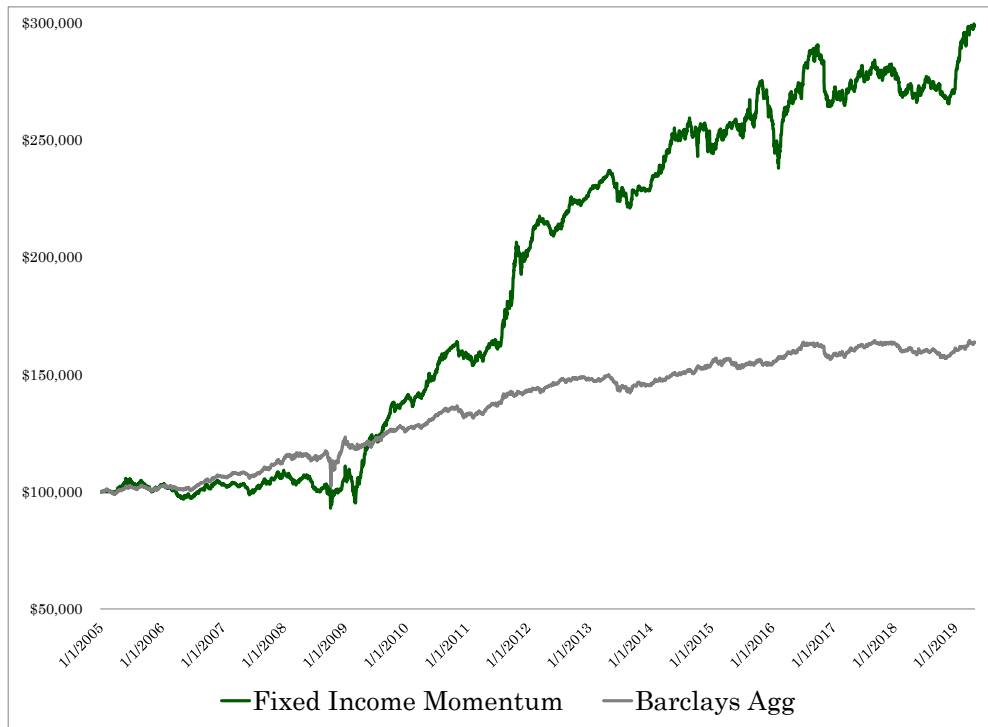


	Annualized Return	Annualized Volatility	Beta	Sharpe	Maximum Drawdown
Sector	12.7%	15.9%	0.96	0.64	53.9%
S&P 500	7.5%	14.8%	1	0.34	56.6%

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If equities are the speedboats in the sea of financial markets then fixed income securities are the tanker ships. While stocks can move violently in both directions, Thrasher Analytics research has shown that fixed income markets historically show consistent trends. Because of the tanker-like movements displayed by bonds, a quarterly rebalance method is used for the Thrasher Analytics Fixed Income Momentum Model, with a pursuit focusing on the strongest performing corners of the fixed income market. By evaluating the risk adjusted momentum of both long- and short-term momentum, the Fixed Income Momentum Model also incorporates a proprietary indicator that acts as a throttle of the momentum score of each fixed income ETF. This indicator penalizes those ETFs that have moved too high and too fast in short-term trading while still allowing overall positive momentum to be the guiding principle of the model.

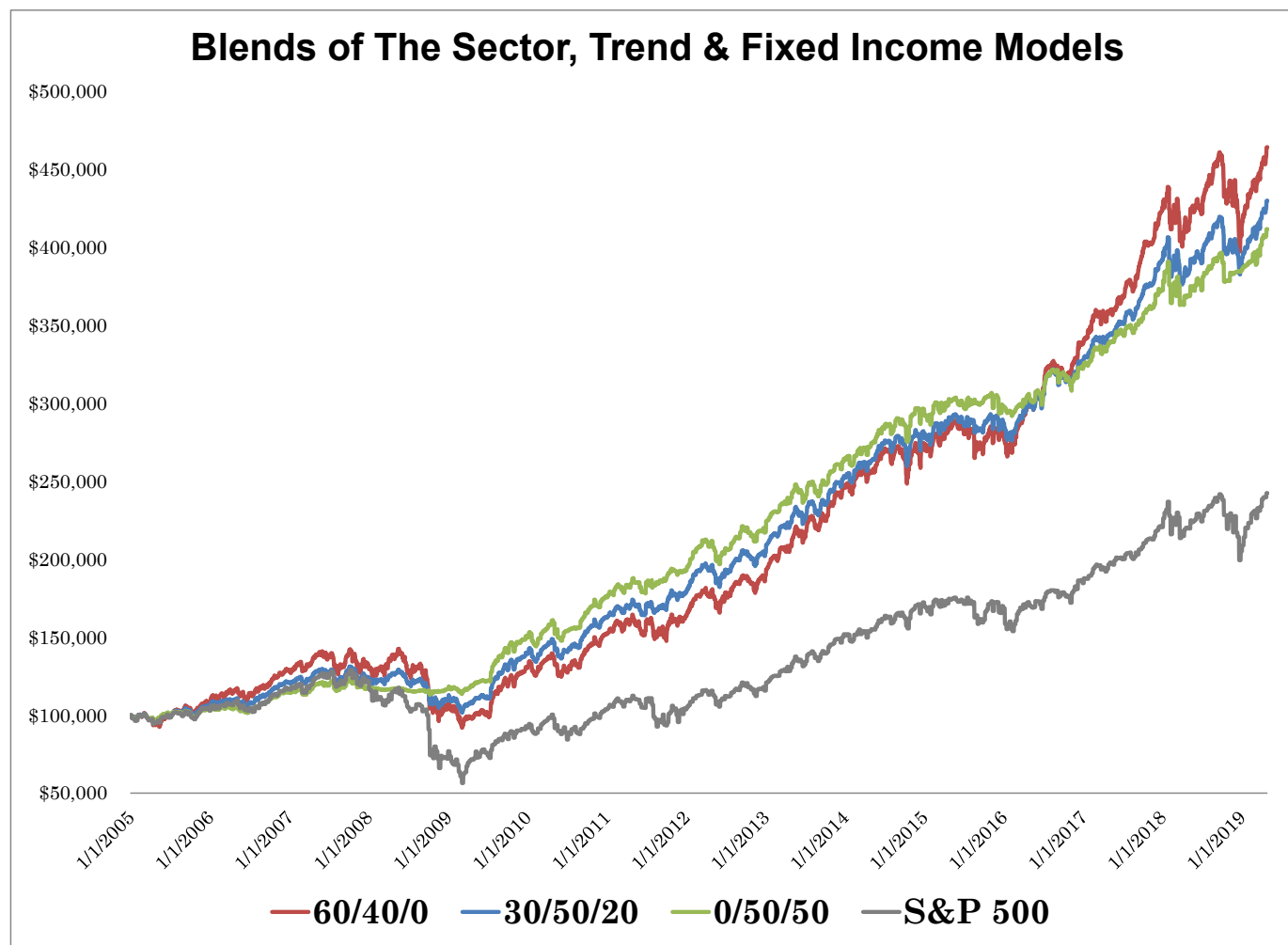


	Annualized Return	Annualized Volatility	Beta	Sharpe	Maximum Drawdown
Fixed Income	8.3%	8.2%	1.04	0.7	14.9%
Barclays Agg	3.6%	3.7%	1	0.29	11.0%

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The concept of diversification is not new to financial markets. While many market participants focus on the diversification of the underlying holdings. This procedure is can be vastly skewed during periods of high market turmoil, in which correlations across asset classes tend to historically rise. Thrasher Analytics believes in diversifying in strategy styles. By using multiple investment philosophies, specifically trend following, mean-reversion, and momentum, a blended model is created that has the ability to adapt to changing market environments and volatility. For example, when equity markets show a strong trend preference, the adaptive S&P 500 trend following component benefits but if there's a shift favoring a range-bound market the sector rotation strategy based on mean-reversion should provide favorable performance.



The above chart shows examples of blending the sector, trend, and fixed income models . Ranging from an all equity approach of 60% in sector rotation, 40% trend and 0% in fixed income; 30% in sector rotation, 50% in trend, and 20% in fixed income; 0% in sector rotation, 50% in trend, and 50% in fixed income.

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Trend (weekly)	Sector Rotation (monthly)	Fixed Income Momentum (quarterly)
Positive	XLF XLK XLB	JNK AGG

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Back tested performance is developed with the benefit of hindsight and has inherent limitations. Specifically, back tested results do not reflect actual trading or the effect of material economic and market factors on the decision-making process. Since trades have not actually been executed, results may have under- or over-compensated for the impact, if any, of certain market factors, such as lack of liquidity, and may not reflect the impact that certain economic or market factors may have had on the decision-making process. Further, back testing allows the security selection methodology to be adjusted until past returns are maximized. Actual performance may differ significantly from back tested performance.

The models, results, and data shown assumes that the markets were sufficiently liquid to permit the types of trading used in the model. A \$6.95 per trade transaction fee was assumed during the back tested period but the results give no consideration to the effect of taxes of any kind. Because the trades assumed in Thrasher Analytics' presentations have not actually been executed, the results shown may have under- or over-compensated for the impact, if any, of certain market factors such as lack of liquidity or the ability to obtain the execution prices that have been assumed. The models developed and presented by Thrasher Analytics LLC require an historical period of data for parameter estimation prior to the actual commencement of the period shown in the model and in the back tested results. No representation is being made that any account will or is likely to achieve profit or loss similar to those shown in this or any other content produced by Thrasher Analytics LLC.

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