

**ThrasherAnalytics.com**

**BI-WEEKLY RESEARCH & ANALYSIS**

Sector Rotation: December	
Financial	XLFX
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	
XLFX	X	
XLFX	X	
XLK	X	
XLV	X	
XLU	X	
XLP	X	
XLI	X	
XLRE	X	
XLE		X
XLB	X	

Daily Sentiment Index		
	% Bullish	5-day MA
S&P 500	84%	82%
Nasdaq 100	84%	81%
Nikkei	83%	85%
VIX	11%	16%
10yr Treasury	30%	29%
5yr Treasury	40%	39%
CRB Index	70%	76%
Gold	37%	37%
U.S. Dollar	51%	45%

\*Green<25% Red>80%

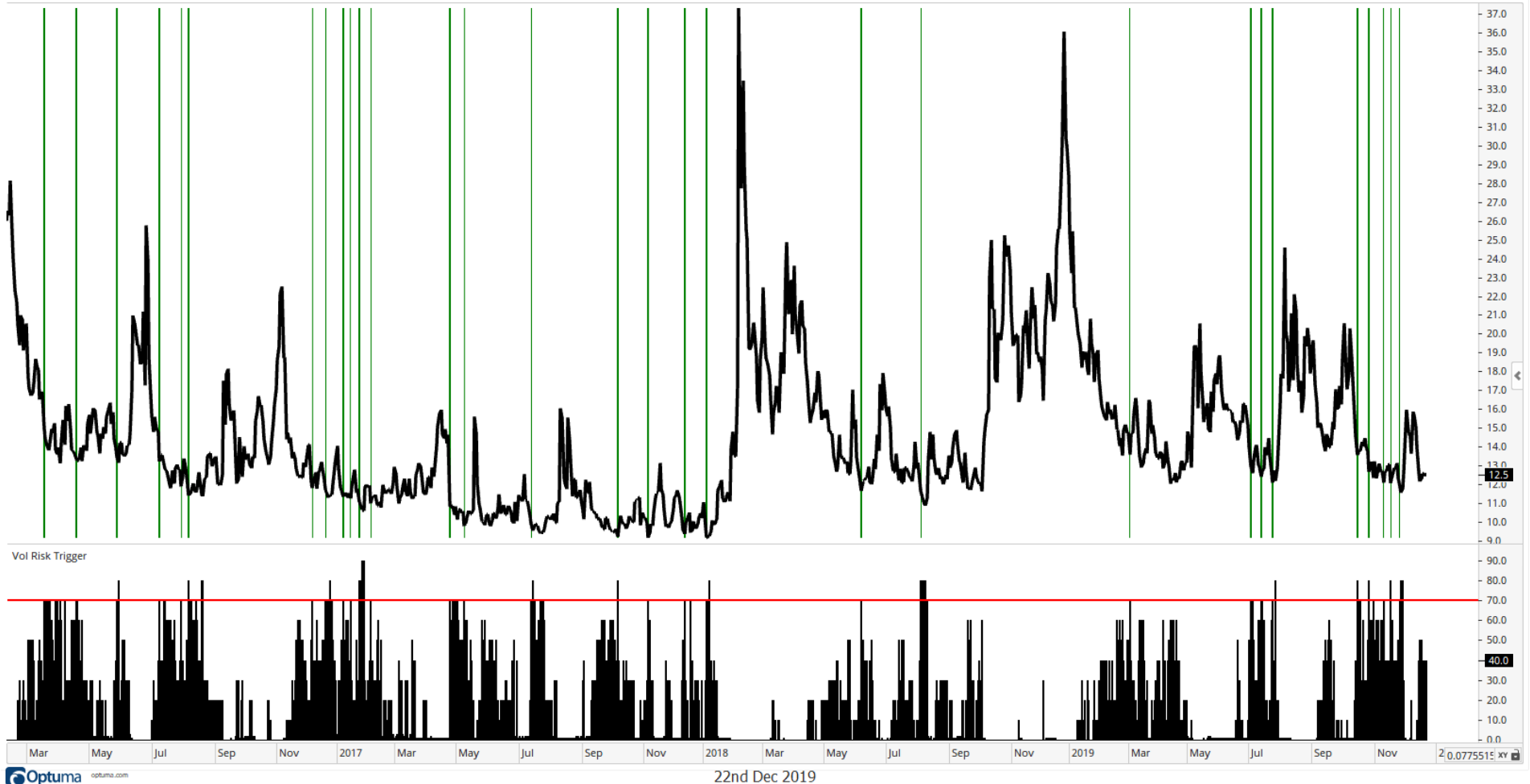
Notable Breadth Data:	
SPX >50MA	77.82%
SPX >200MA	75.25%
Nasdaq >50MA	86.41%
Nasdaq >200MA	79.61%

1 Day - Watch List - No Layout

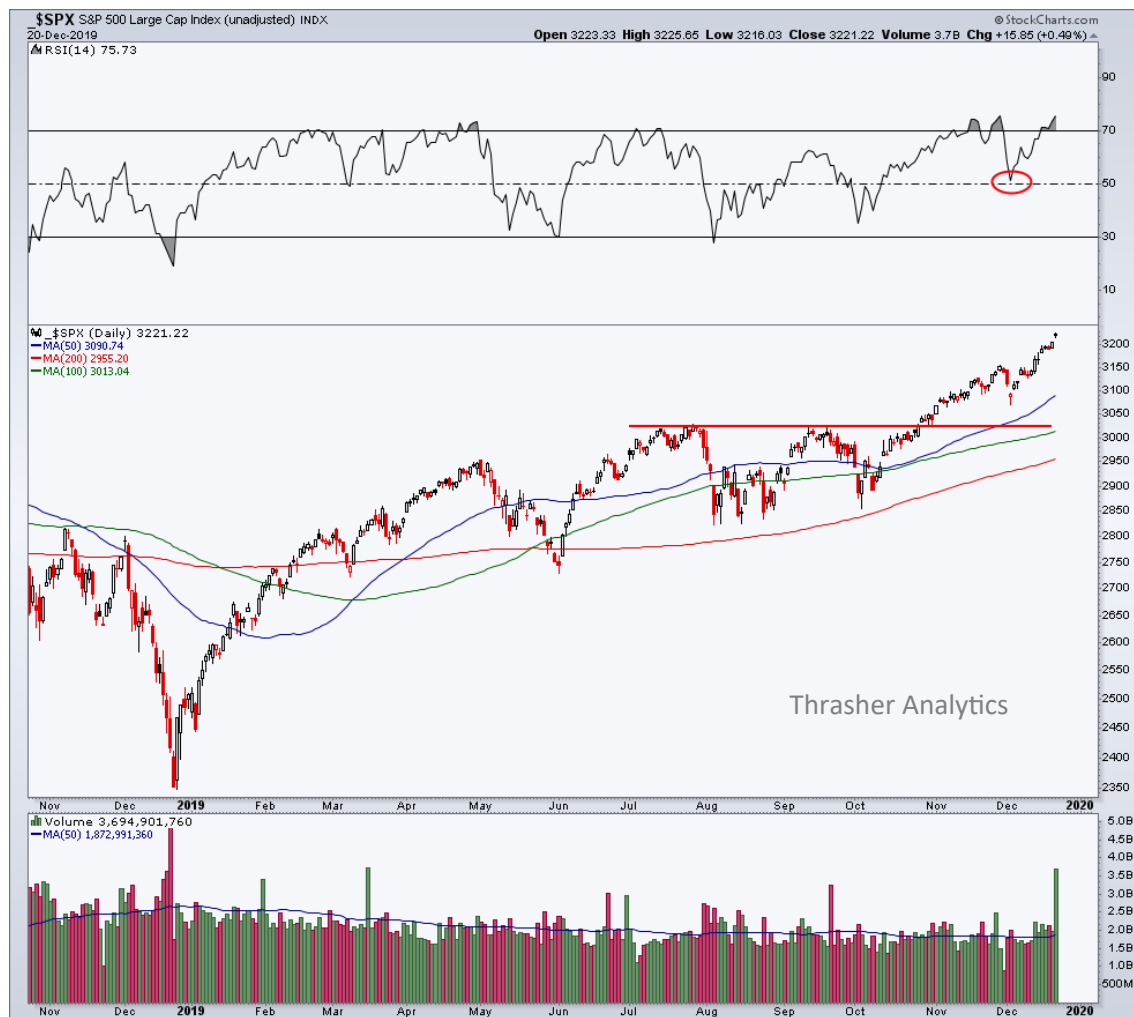
☐	Sector	> 50MA	> 200MA	1wk Perf	1mo Perf ▼	3mo Perf	12mo Perf ☒
☑	SPDR Health Care Select Sector Fund ETF	True	True	1.8%	5.16%	11.63%	22.12%
☑	SPDR Technology Select Sector Fund ETF	True	True	1.63%	4.37%	13.32%	48.32%
☑	SPDR Communication Services Select Sector ETF	True	True	2.61%	3.95%	6.39%	30.61%
☑	SPDR Energy Select Sector Fund ETF	True	False	1.74%	3.89%	0.13%	7.29%
☑	SPDR Consumer Discretionary Select Sector Fund ETF	True	True	1.12%	3.64%	3.46%	29.32%
☑	S & P 500 Stock Index	True	True	1.65%	3.63%	7.66%	30.55%
☑	SPDR Financial Select Sector Fund ETF	True	True	-0.1%	3.20%	9.26%	31.11%
☑	SPDR Materials Select Sector Fund ETF	True	True	0.73%	2.61%	4.35%	23.34%
☑	SPDR Consumer Staples Select Sector Fund ETF	True	True	0.51%	2.25%	4.61%	23.31%
☑	SPDR Utilities Select Sector Fund ETF	True	True	1.93%	2.20%	1.13%	18.51%
☑	SPDR Industrial Select Sector Fund ETF	True	True	-0.33%	0.20%	4.67%	27.57%
☑	SPDR Real Estate Select Sector Fund ETF	False	True	1.73%	-1.60%	-2.25%	20.25%

The best performing sectors over the last month has been health care, technology, and communication.

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



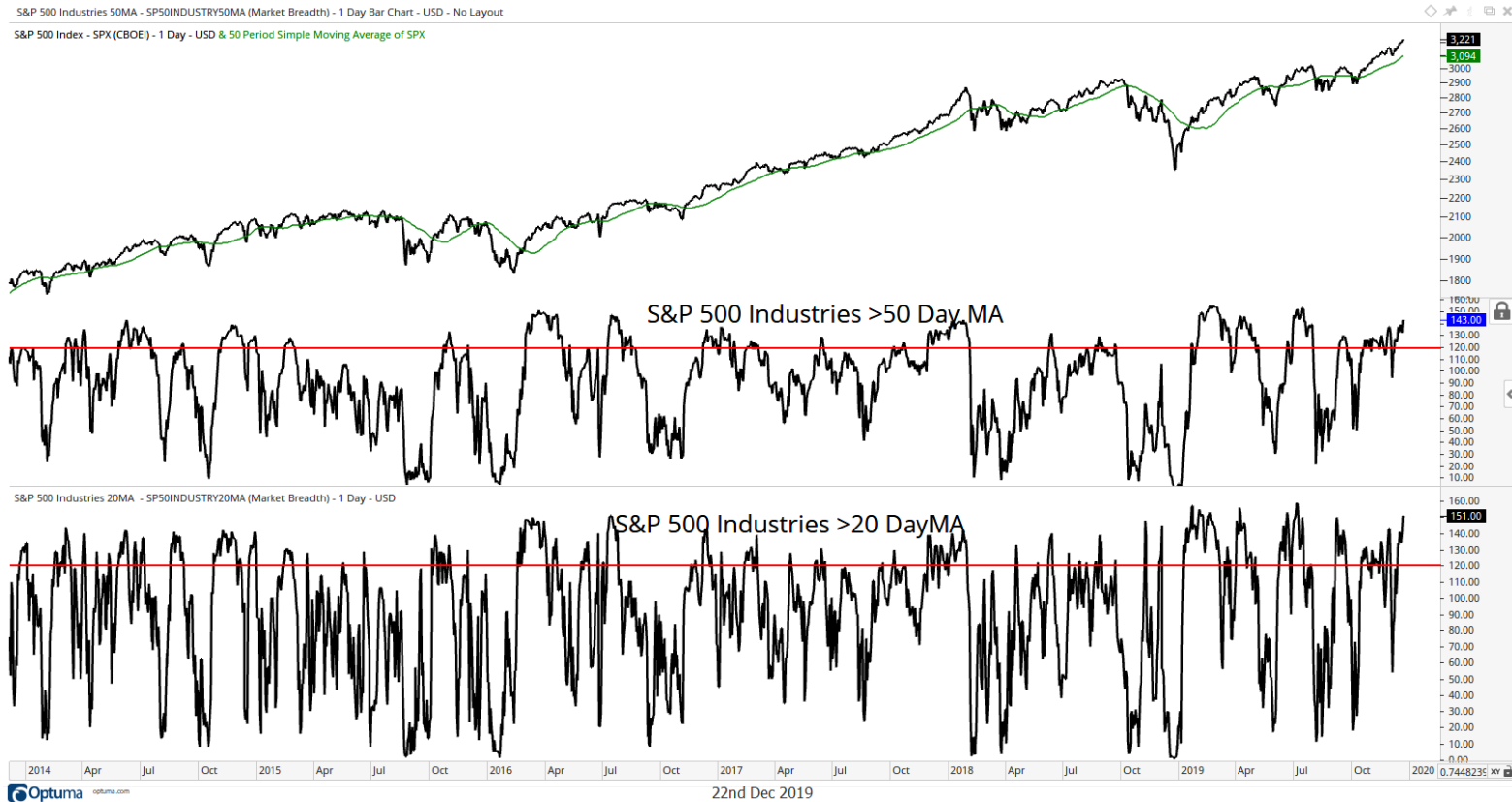
The Volatility Index has come down from its recent 4 point move higher. Spot volatility hasn't reached its November low but has given back the bulk of its recent move advance as the market prepares to wrap up 2019. Sentiment towards the VIX has also come down, with the DSI now at just 11% bullish.



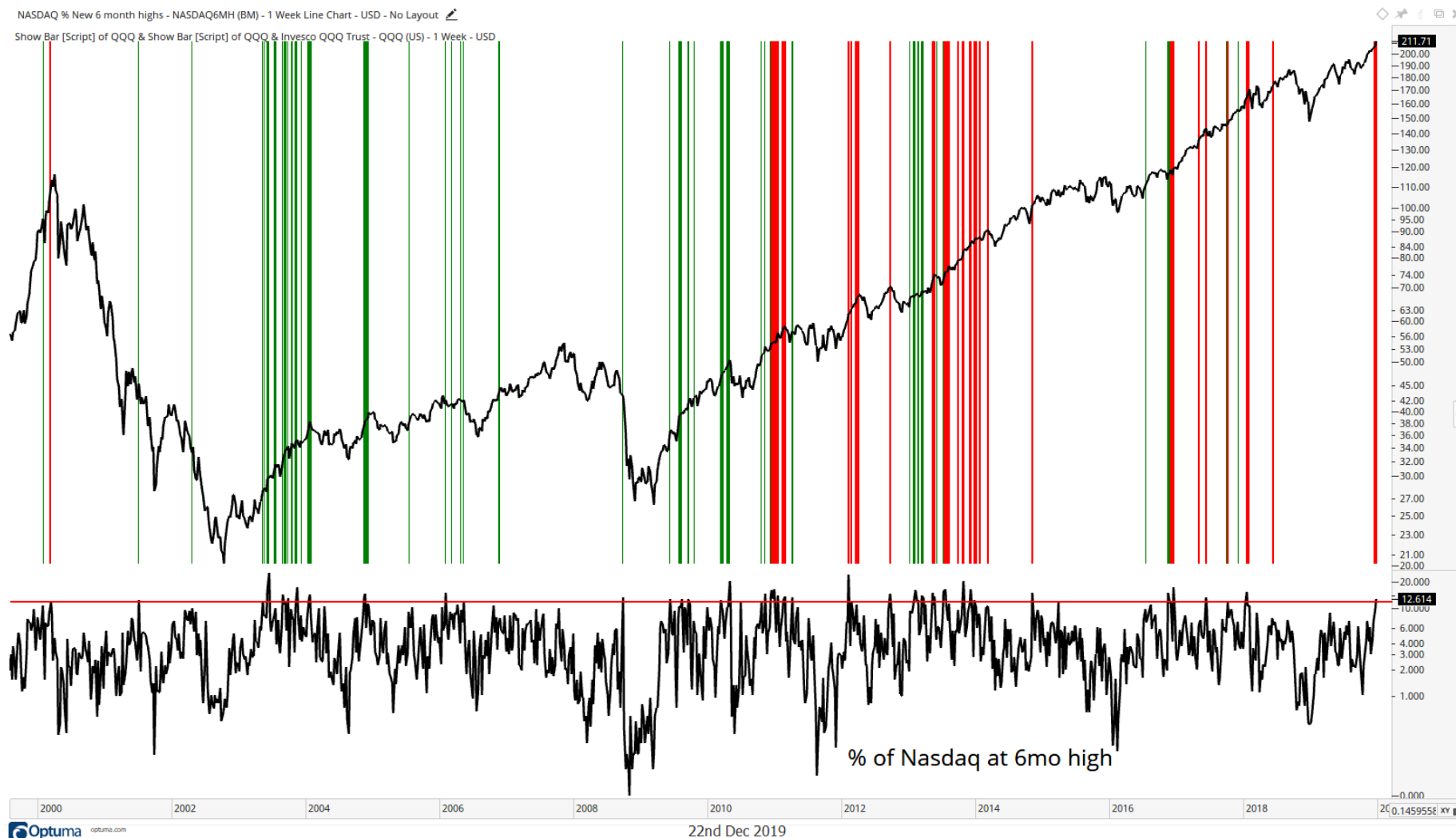
The S&P 500 has remained strong after its 3-day dip that saw momentum maintain in its bullish range, not even seeing a move under 50 in the RSI. Friday was a triple witching day, with options expiring which explains the spike in volume you see on the chart above. Price action has now taken the index well above its 50-day MA. To put the distance from its 50-Moving Average in context, the S&P 500 is current at the 100th percentile with a 1-year lookback and the 88th percentile going back 5-years. The move off the Dec. low saw the SPX shoot up to this lofty 5yr % tile but its not a level we've seen before that except in January '18. We don't typically see this kind of spread except when the index is recovering from a major low like in '15 or '16 or more recently '18. I think the fact that we're seeing the spread widen 12-months after a major low speaks to the forth in equity sentiment, a topic we'll be getting to more later in the letter.



With the rise in equities continuing after the brief dip that started December, the risk-on components are mixed at this point. We have high yield leading aggregate bonds and high beta showing strength. Meanwhile, smaller cap stocks aren't showing leadership at the moment with equal weight and Russell 2000 stocks bow either flat or down relative to the large cap index.

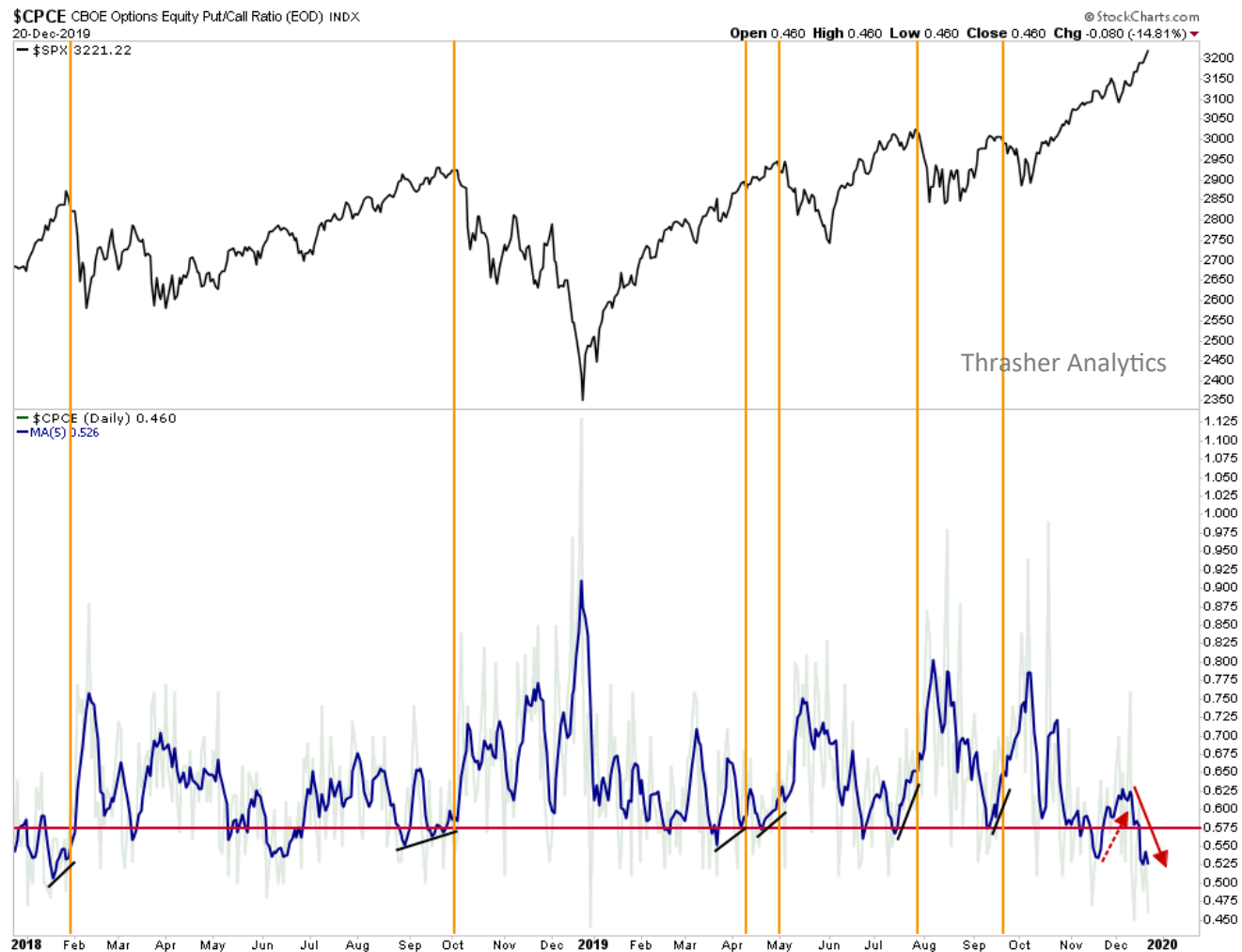


Above is a chart that shows the % of S&P 500 industry's are trading above their 50-day and 20-day moving averages. This is a unique way to review breadth data. Instead of zooming into to view the level of participation of individual stocks we take a step back and look at the broad equity industries. As you can see, we are seeing a great deal of strength in participation of the individual industries with the bulk trading above their short-term and intermediate-term average, a bullish sign for equities.

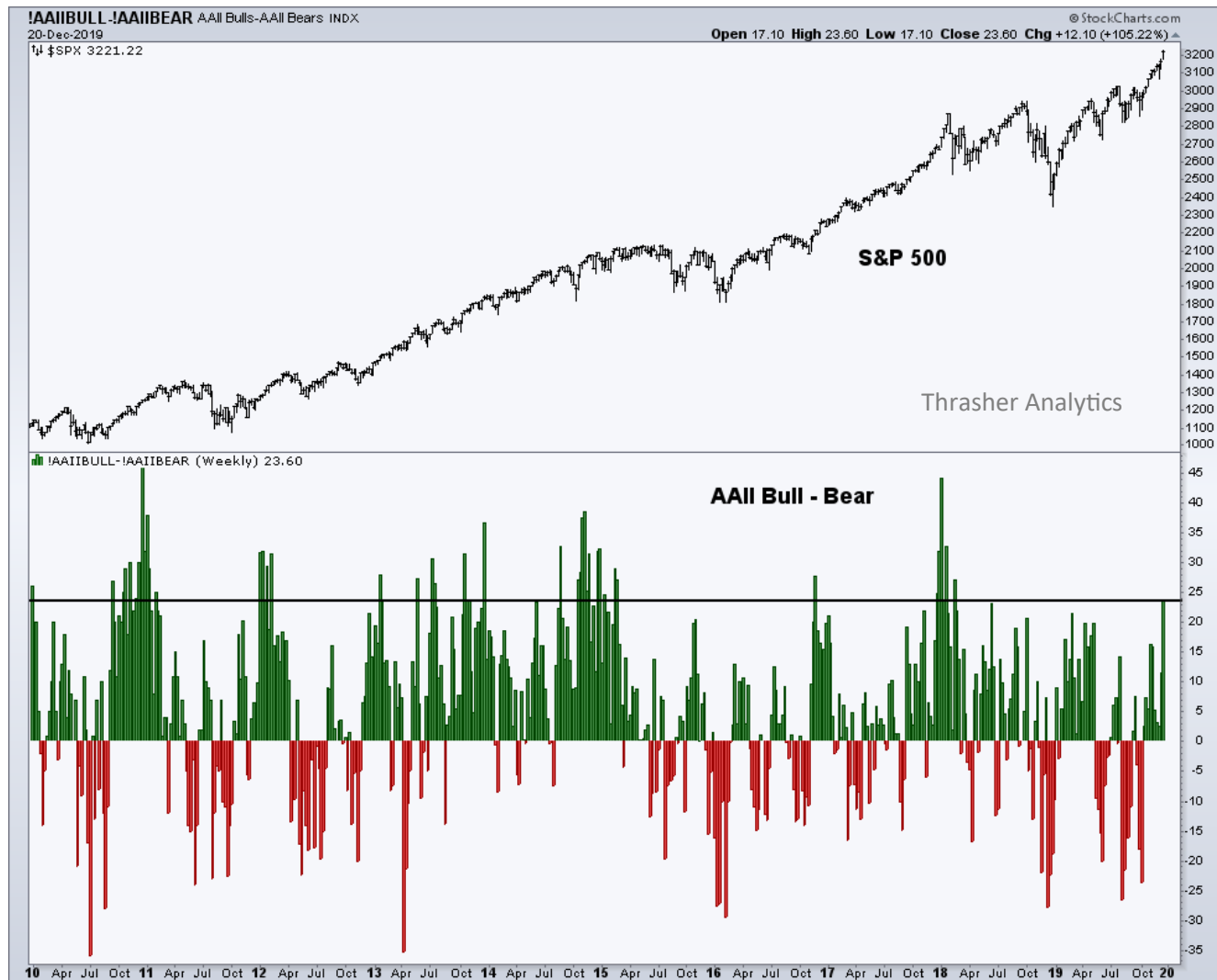


Above is a chart showing the percentage of the Nasdaq 100 that are at 6-month highs. Currently we are seeing a new 2019 high of 12.6%. I've broken the data up to show when we've gotten above 12% and the index was at a new 52-week high (red vertical lines) and when it's occurred while we weren't at a new high (green vertical lines). The resulting price action has been mostly bullish when initially breaking above 12% with only a few occurrences leading to an immediate move lower, most notably back in 2000. Over the last 10 years it's been a positive development, which shouldn't be too much of a surprise.

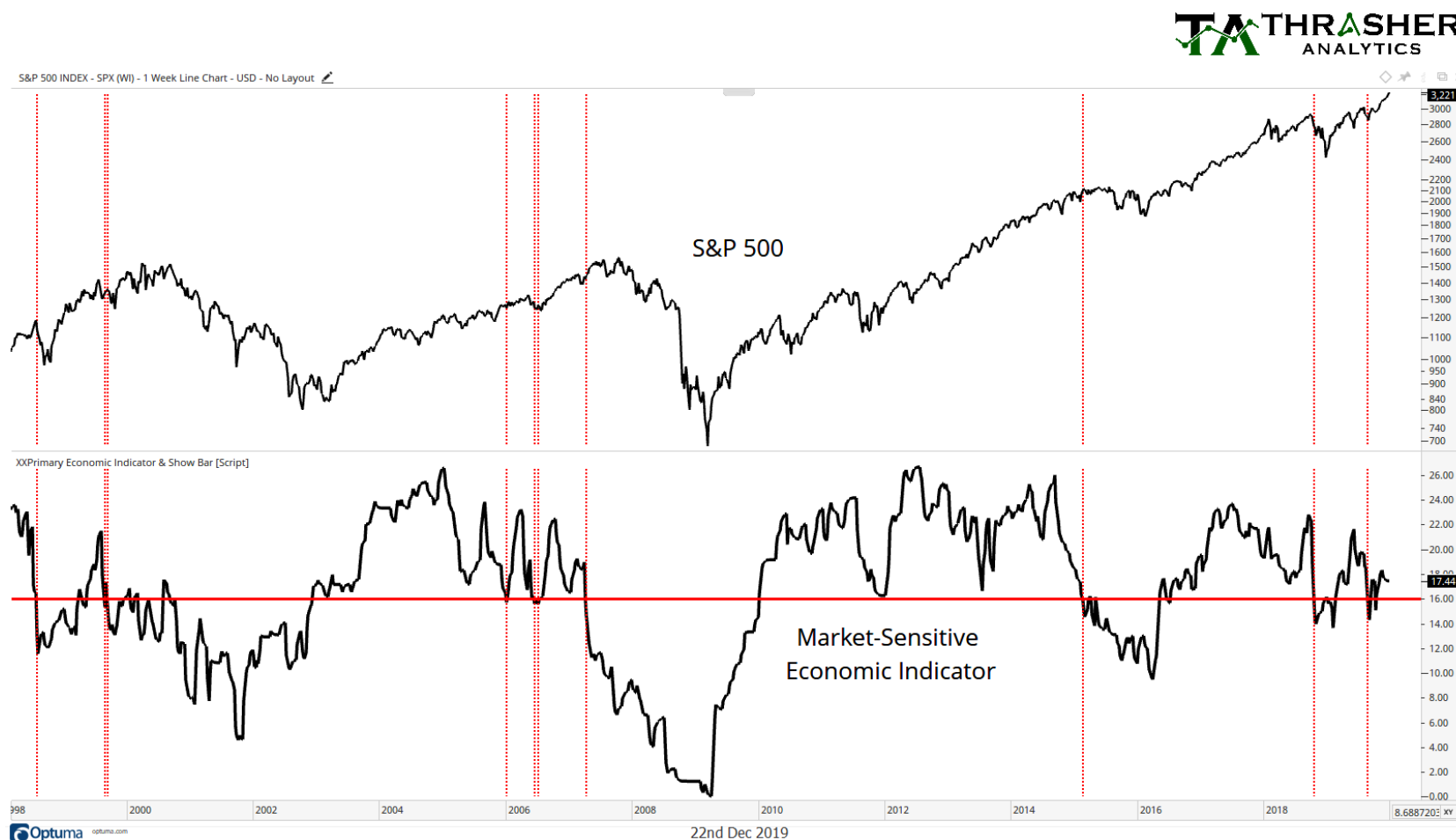




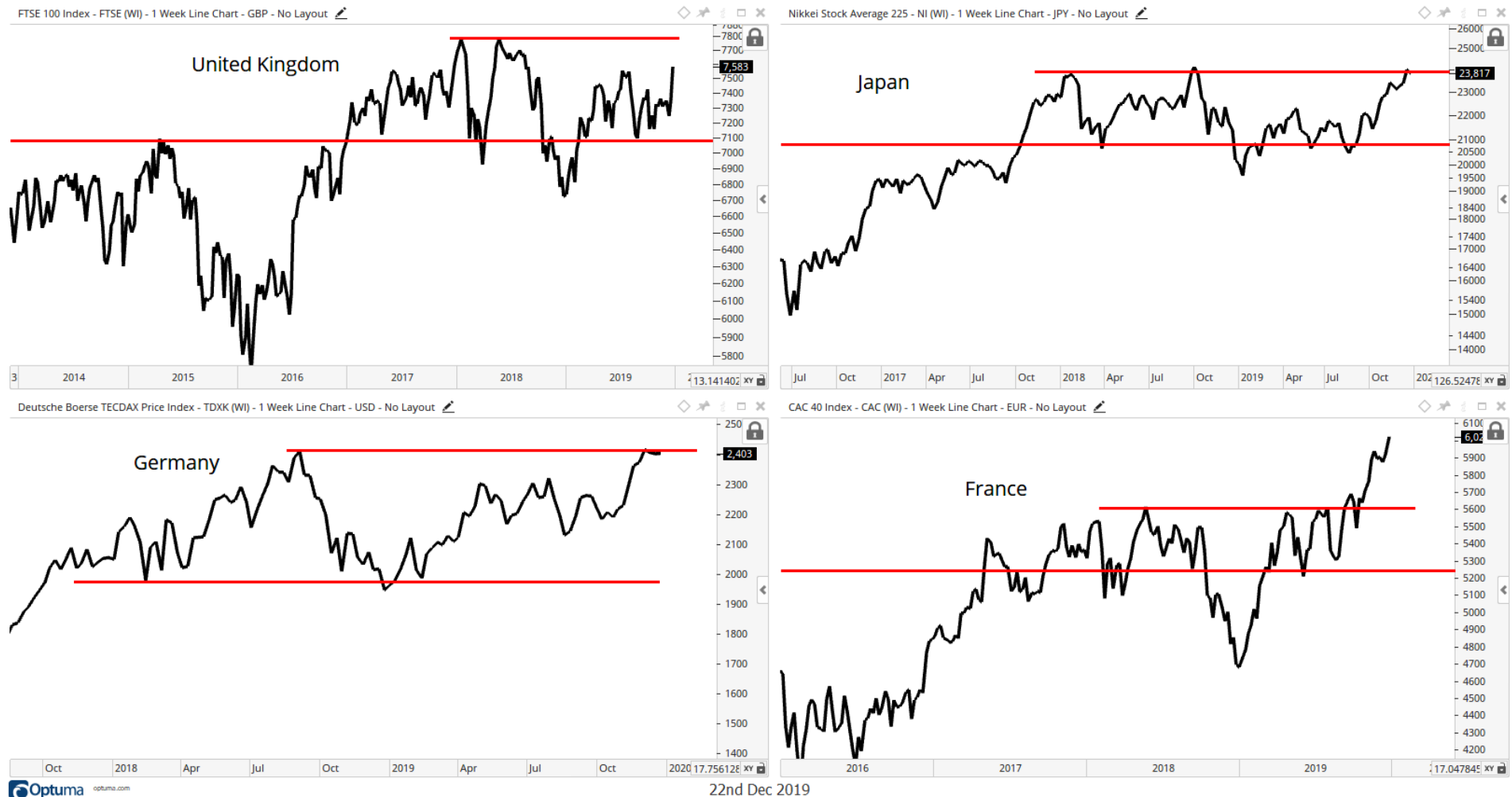
In my last letter I showed this chart, noting that typically the put/call ratio begins to rise ahead of a turn lower in equities. Quickly we saw the 3-day dip in equities that was quickly recovered and with it a move lower in the 5-day average put/call ratio. The lack of interest in puts has sent the 5-day average to a new 2019 low and about the level we saw in ahead of the January '18 decline. It's interesting how much similarities are developing between the current market and December '17.



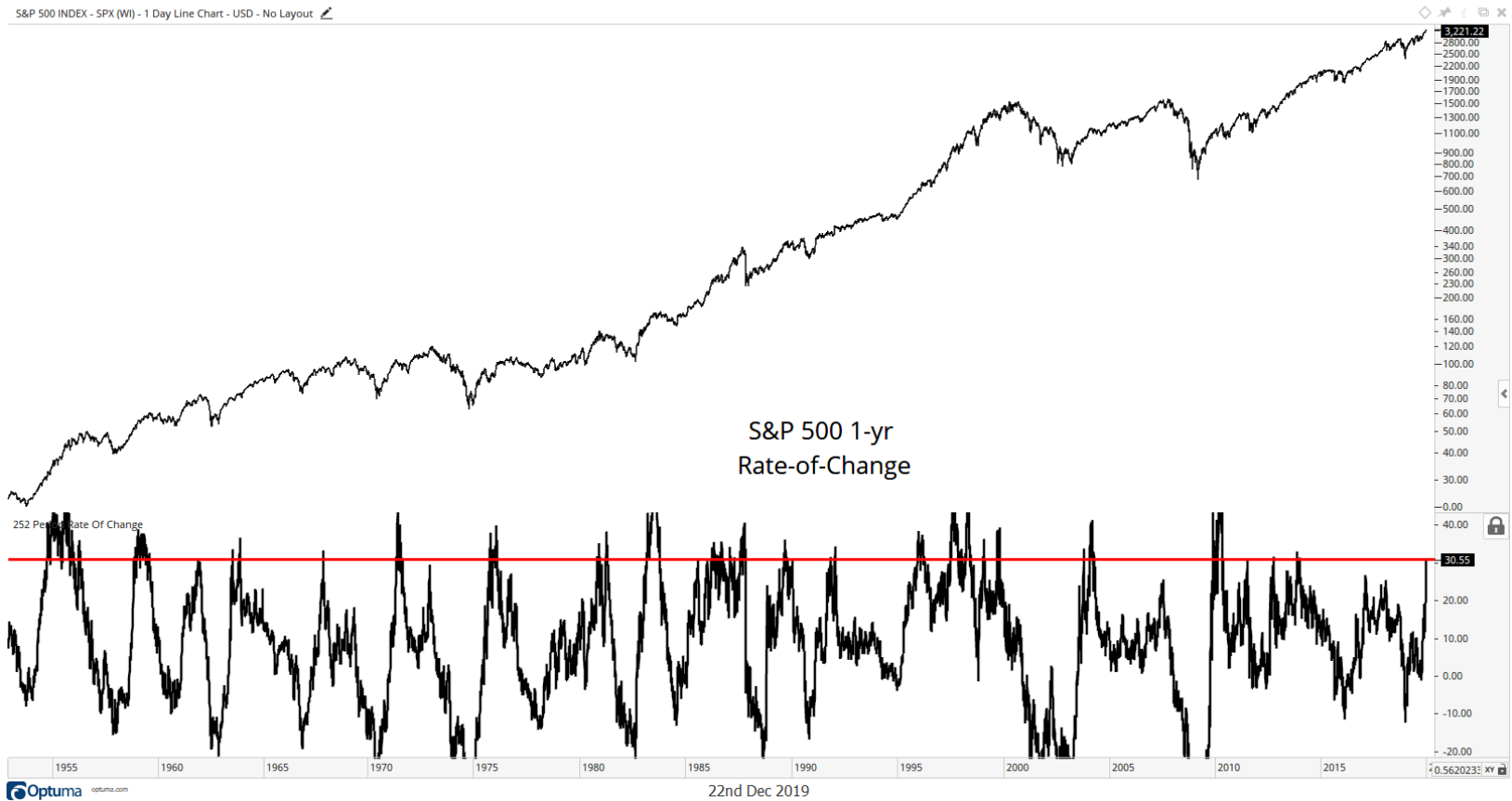
The AII Index is a sentiment gauge of retail investors that's published each week. Most weeks this data is insignificant, only catching the eyes of traders when at extreme levels. It's when sentiment becomes extremely bullish or extremely bearish that can have an impact on markets. Last week we saw one of those times with the Bullish minus Bearish reaching the highest level since...January 2018 (there it is again). The spread between bulls and bears in the retail investment community has grown to a near 2-year high. It's important to note that typically we see sentiment 'top out' before equity prices. So from here I'll be looking for a lower-high in the AII spread if equities continue to advance as the breadth data would suggest.



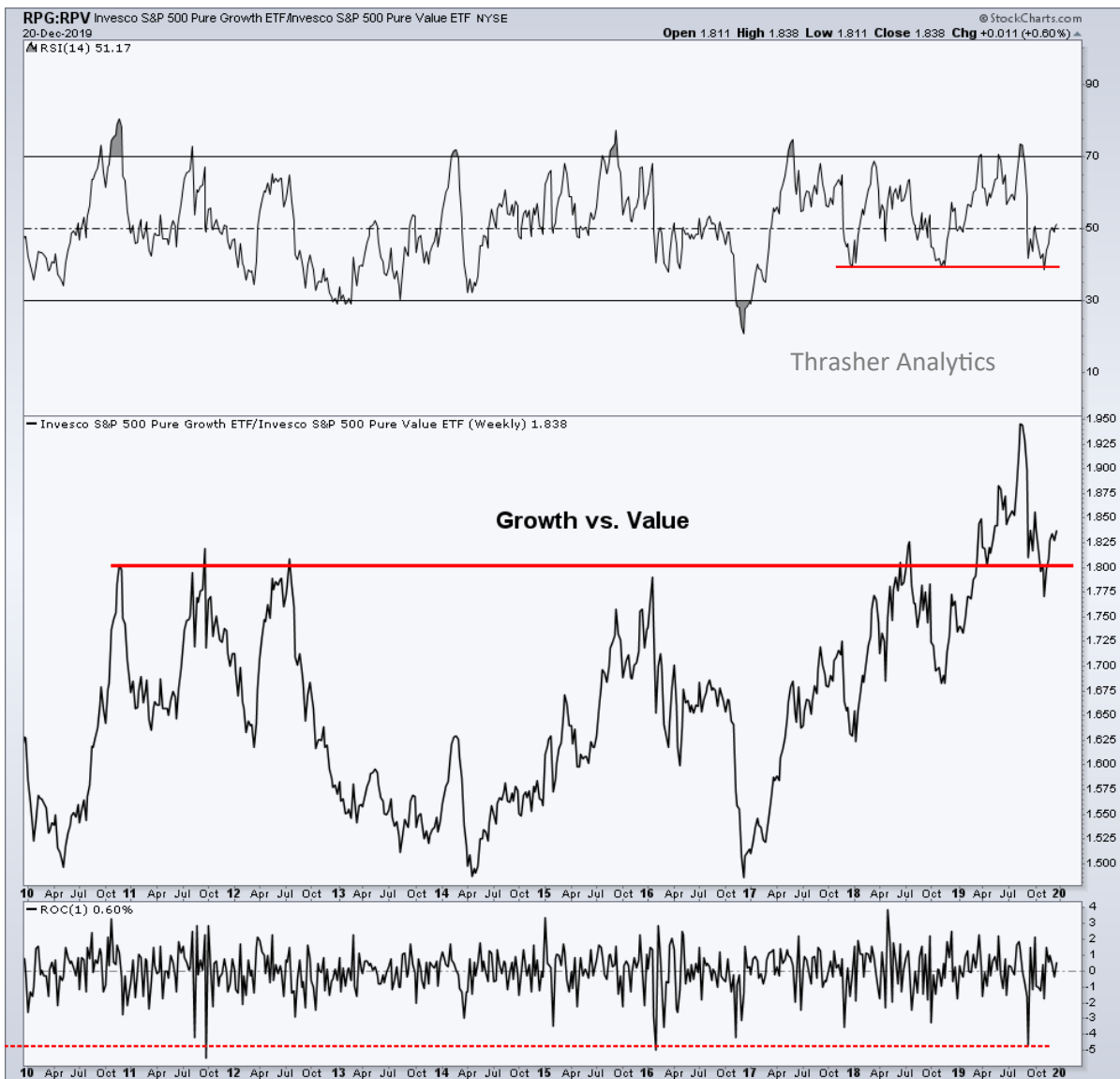
It's been a few months since I last shared the market-sensitive economic indicator, a compilation of economic data that's historically correlated to equity trends. When evaluating economic growth, I'm most concerned with the data that has a tie to the market. A move under 16 is significant. We last saw this happen twice, during Q4 of last year and a slight dip in the summer. Since then the data has improved and it appears the economic data is fairly supportive of the up trend in equities.



Above are the four primary markets that make up the MSCI EAFE Index. France has been the strongest of the four with near breakouts in Germany and Japan. However, recently Germany and Japan have been unable to hold above their prior 2018 highs. We'll want to see these prior highs re-taken out and ideally see the UK join the bullish breakout list. If instead we see Germany and Japan continue to reverse, it could take many other smaller countries with them and ultimately the EAFE as a whole lower. Price needs to decide which direction it goes next and the decision will be a critical one as we kick off 2020 trading.



While we still have two weeks of trading left of for the year, the 1-year change in the S&P 500 has breached 30%, a level we haven't seen very often since 1950. Running a study on when we've breached the 30% level in the past, the market has been lower 65% of the time 3-months later by an average of 2.3%, 6-months later the index was down on average 66% of the time by 4.16% and by the next year it was down 77% of the time by an average of 9%. It seems the most bearish occurrences were during the 1960s, 70s and 80s, with the resulting price action being less impacted since the 90s through today.



The calls for the end of growth's reign in relative performance have not been confirmed by the price action in the ratio between growth and value, as growth continues to recover from its prior summer decline. I've continued to point to the RSI has the focus point looking for the rotation back to value. However, the RSI of the ratio has remained above prior support and continues to suggest a preference for growth over value.



One industry that has my attention as we move into 2020 is the beat up MLP space. The AMLP ETF is the largest of the MLP ETFs and tracks the Alerian MLP Infrastructure Index. The chart above shows price only, not adjusting for the dividend of the fund. AMLP in November broke below the prior 2016 low but has recovered nicely, creating a potential false breakout. In the top panel we can see the RSI, which put in a recent higher low, creating a bullish momentum divergence. I also have noticed a pick up in volume, similar to prior important turning points in the price action of AMLP. This could be a space that sees a bounce back in the first half of next year and is a chart to keep an eye on if it continues to recover and hold above \$8.

<input type="checkbox"/>	Market	% Bullish ^	History +
<input type="checkbox"/>	VIX DSI	11	
<input type="checkbox"/>	Corn DSI	27.00	
<input type="checkbox"/>	10Y DSI	30.00	
<input type="checkbox"/>	Swiss Franc DSI	32.00	
<input type="checkbox"/>	Lean Hog DSI	33.00	
<input type="checkbox"/>	British Pound DSI	33.00	
<input type="checkbox"/>	Orange Juice DSI	35.00	
<input type="checkbox"/>	Australian Dollar DSI	35.00	
<input type="checkbox"/>	Cocoa DSI	36.00	
<input type="checkbox"/>	Gold DSI	37.00	
<input type="checkbox"/>	Euro DSI	37.00	
<input type="checkbox"/>	5YR DSI	40.00	
<input type="checkbox"/>	Natural Gas DSI	48.00	
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<input type="checkbox"/>	Platinum DSI	63.00	

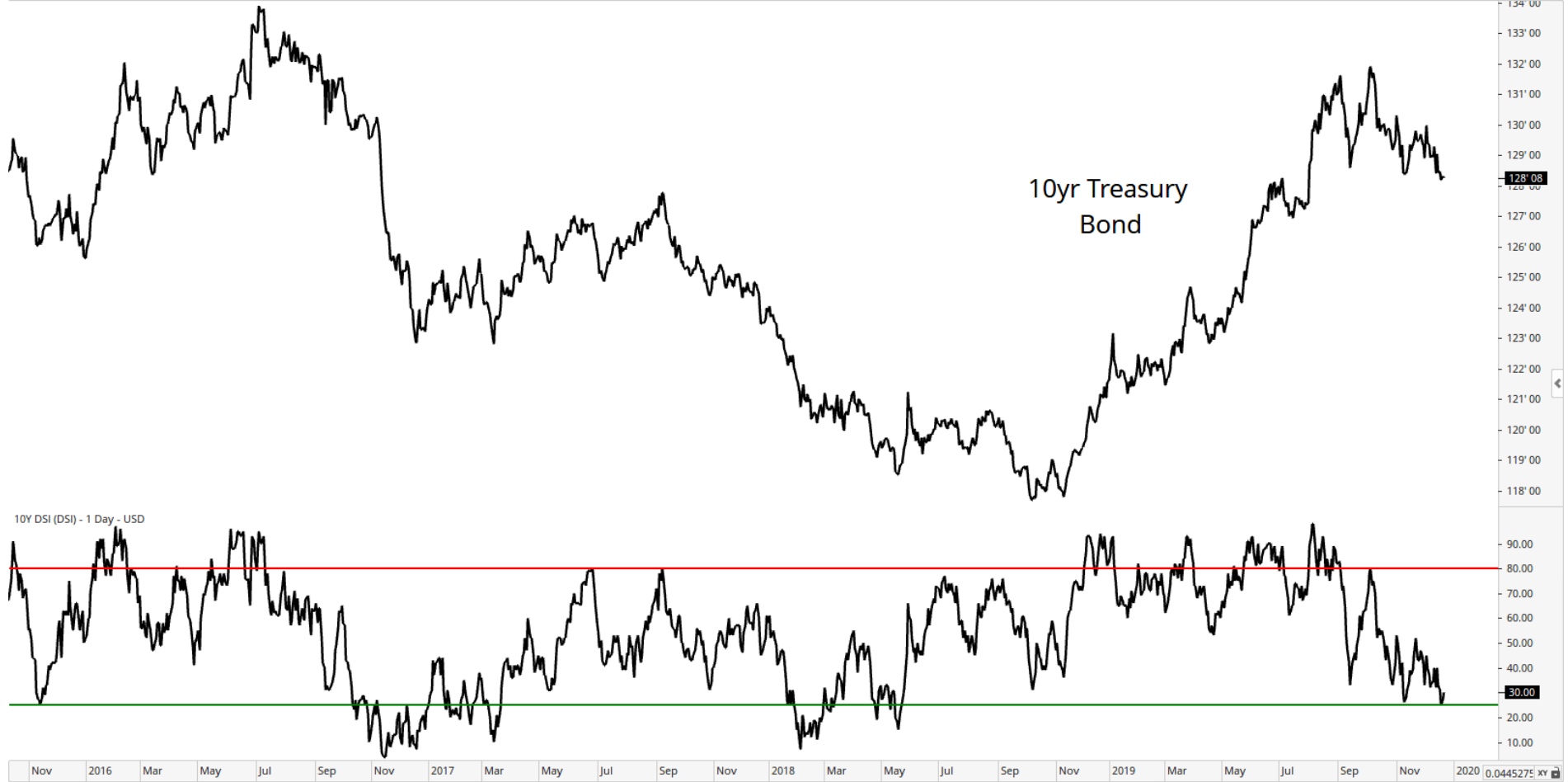
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<input type="checkbox"/>	EuroDollar DSI	63.00	
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<input type="checkbox"/>	Sugar DSI	70.00	
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<input type="checkbox"/>	Nikkei DSI	83	
<input type="checkbox"/>	SPX DSI	84	
<input type="checkbox"/>	Nasdaq DSI	84	

Type Code or Name to add an item to the watchlist

Above is the DSI score for each of the futures markets. The VIX is the only market under 25% bullish. The Mexican Peso, Nikkei, S&P 500, and Nasdaq are all at or above 80% bullish.



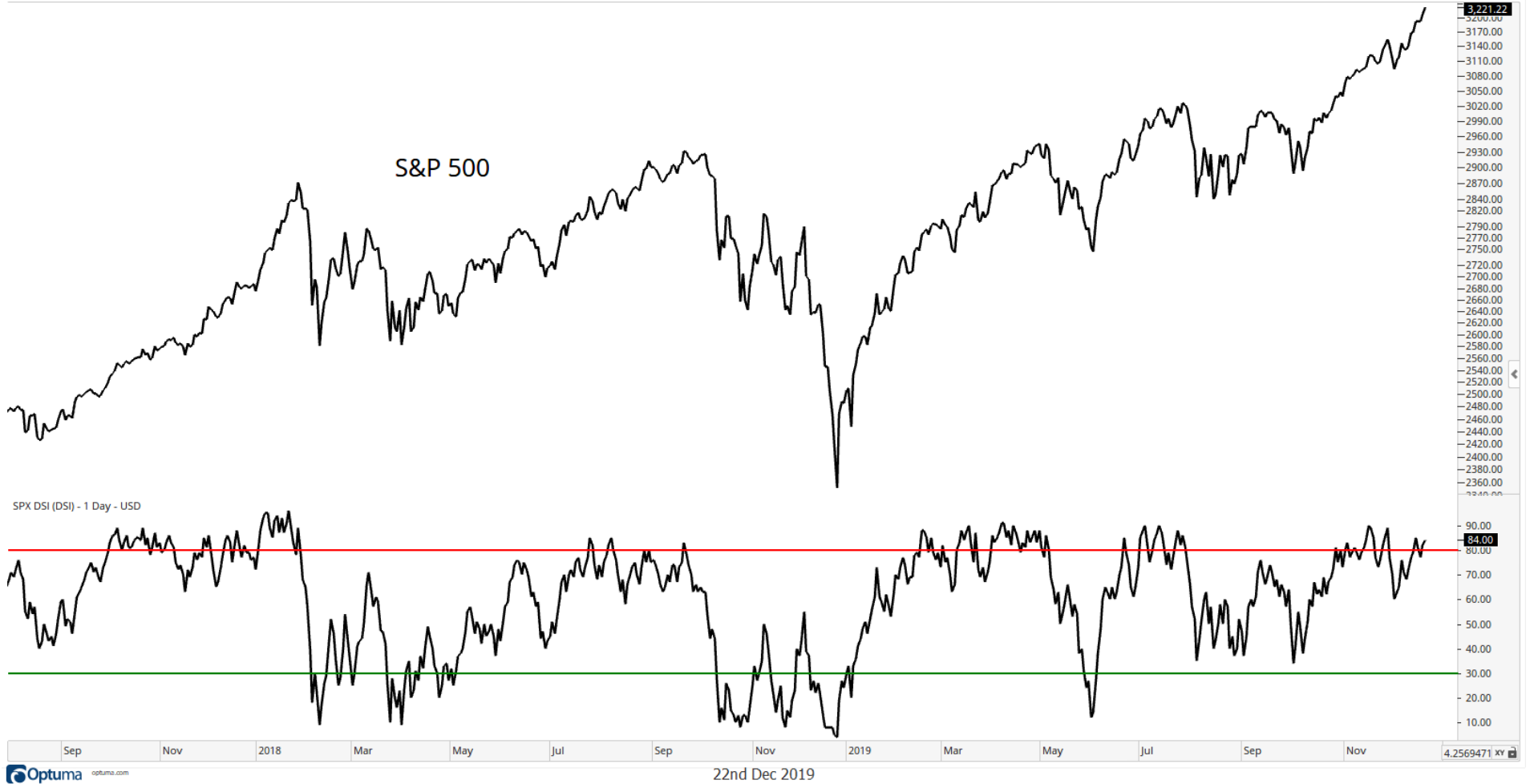
10 Year U.S. Treasury Notes - TYSpot (CBOT) - 1 Day Line Chart - USD - No Layout



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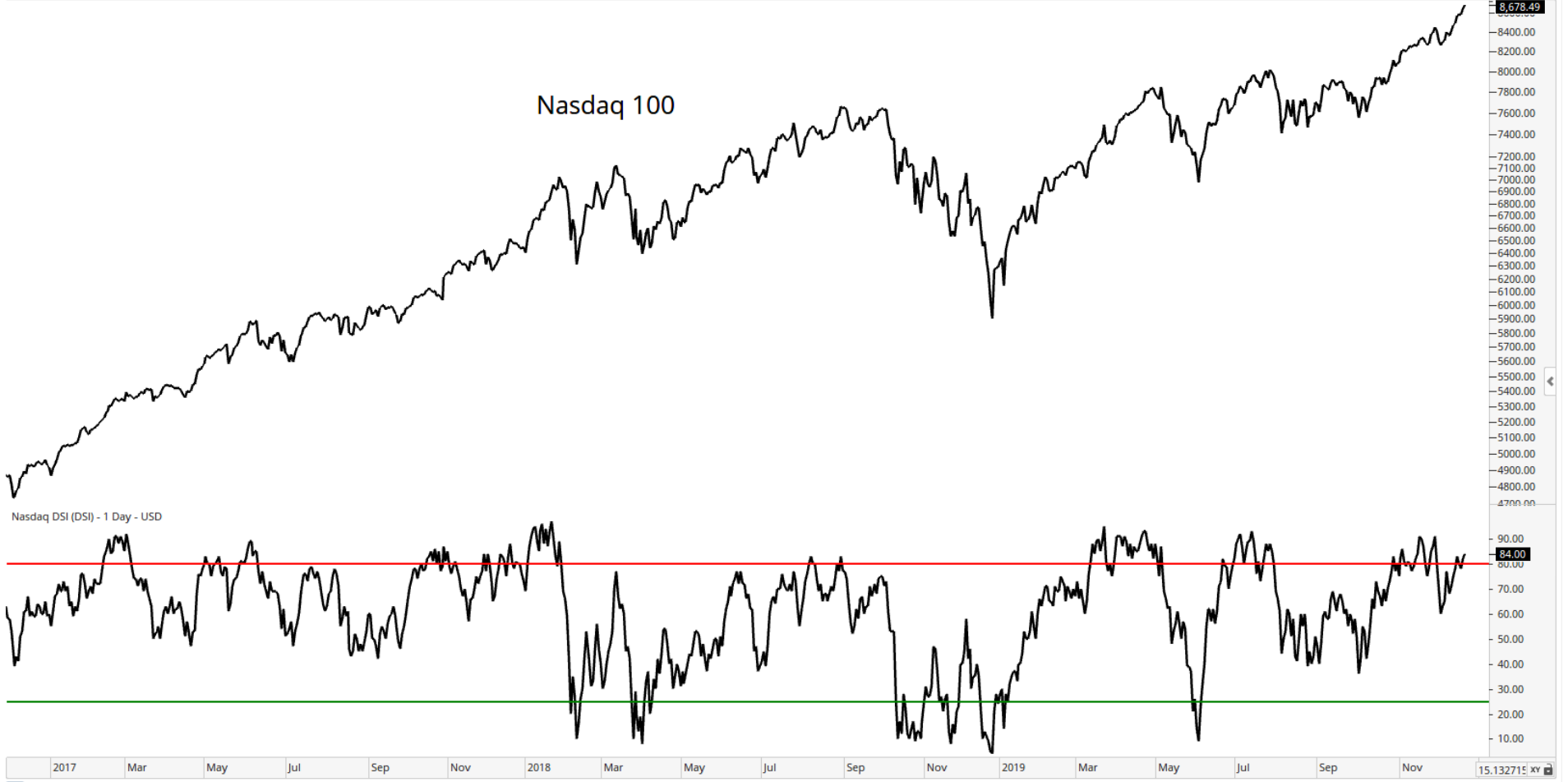
22nd Dec 2019

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



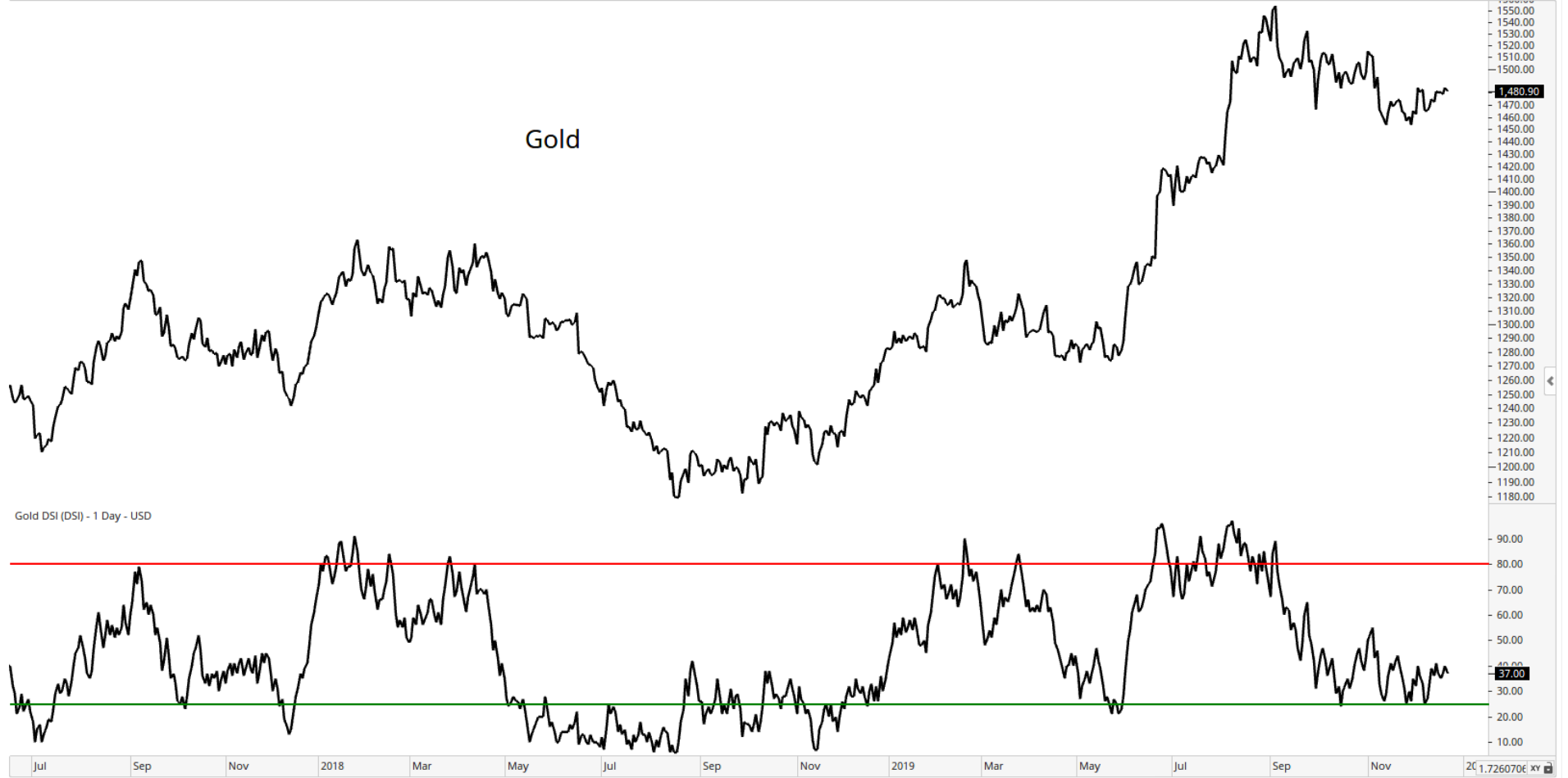


NASDAQ 100 Index - NDY (WJ) - 1 Day Line Chart - USD - No Layout





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



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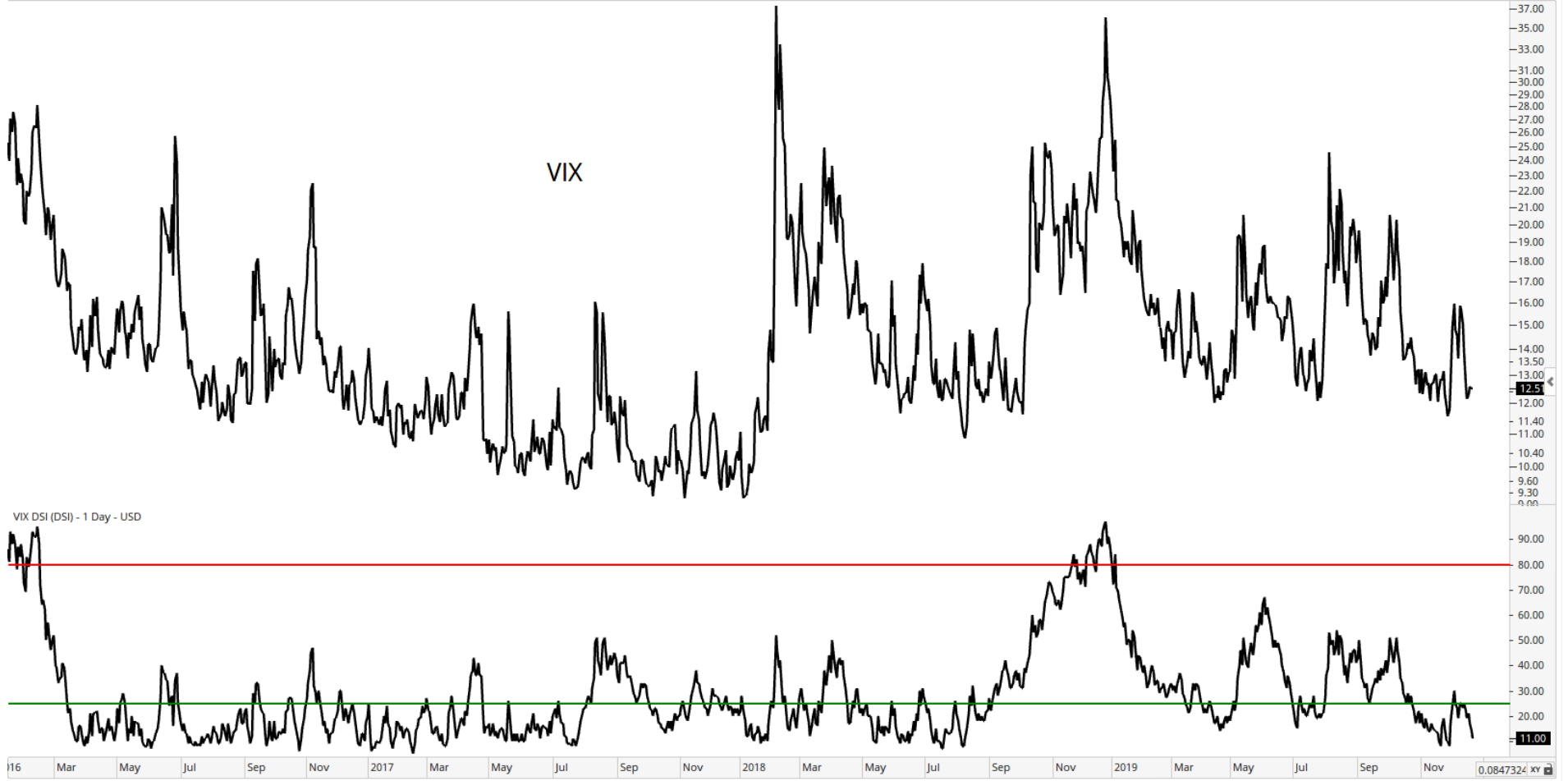
U.S. Dollar Index - DXSpot (AFUT) - 1 Day Line Chart - USD - No Layout



US Dollar DSI (DSI) - 1 Day - USD



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

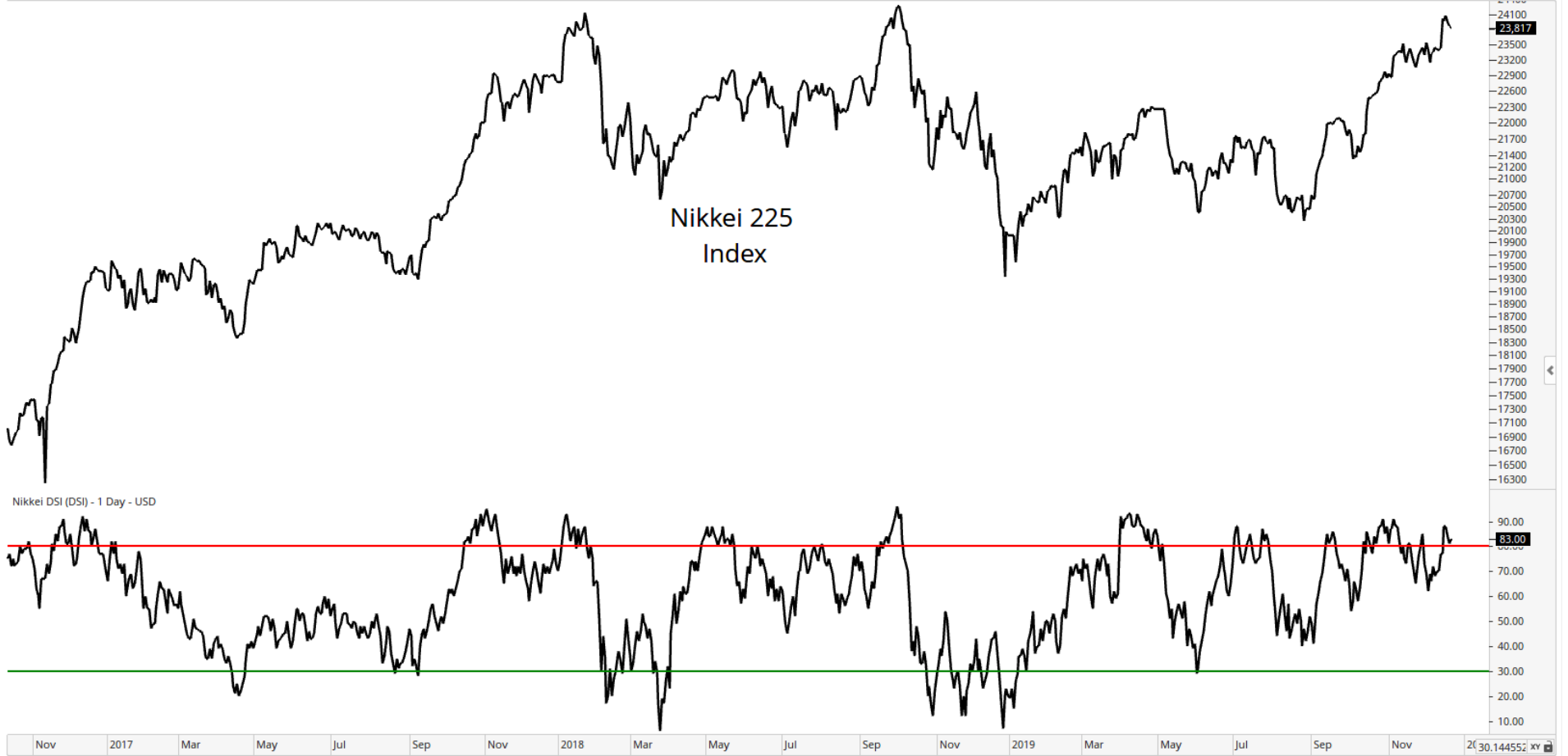


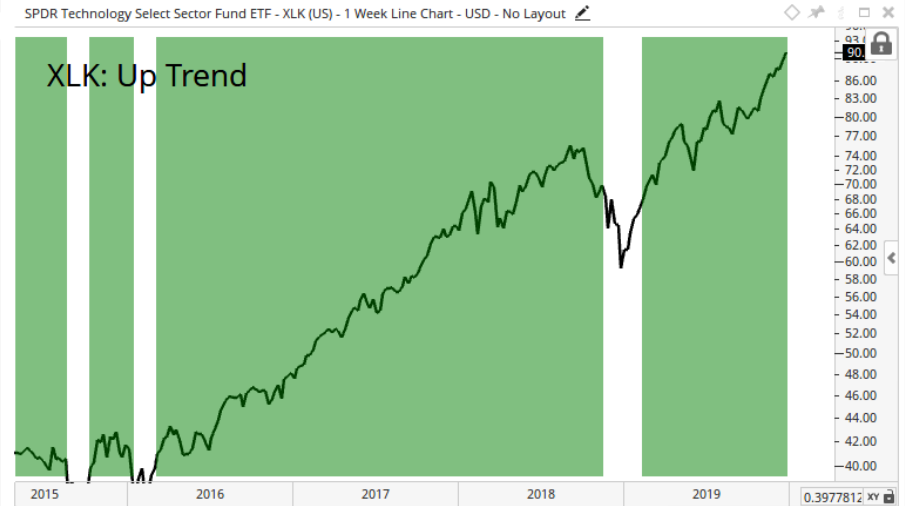
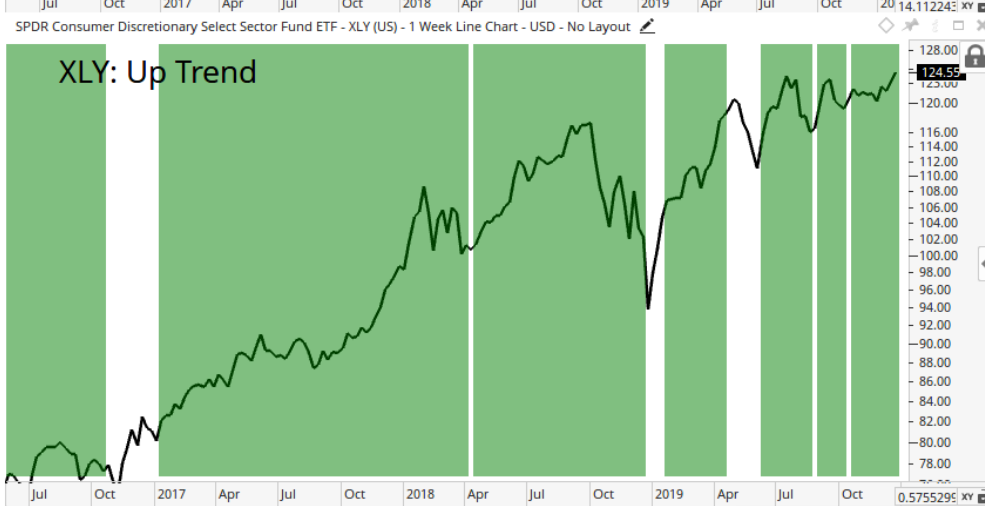
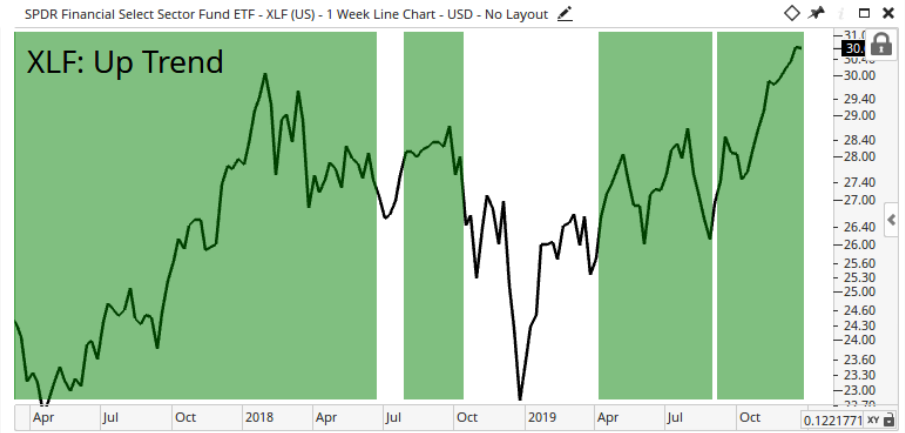
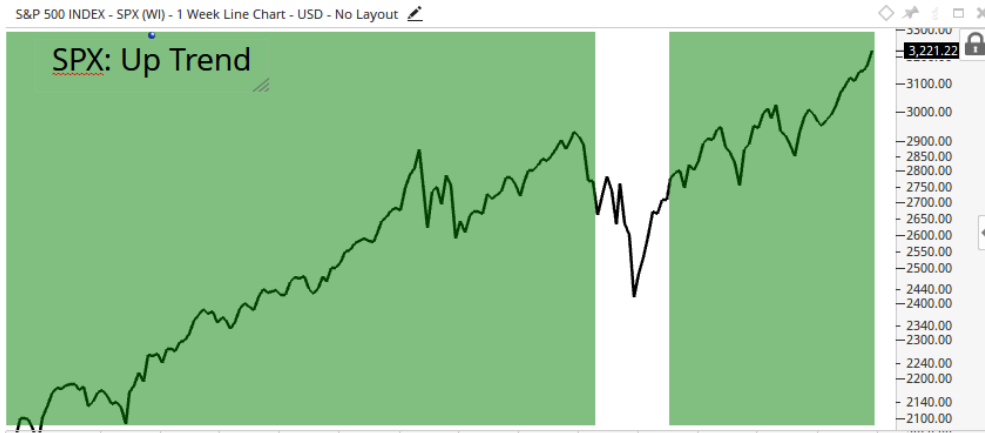
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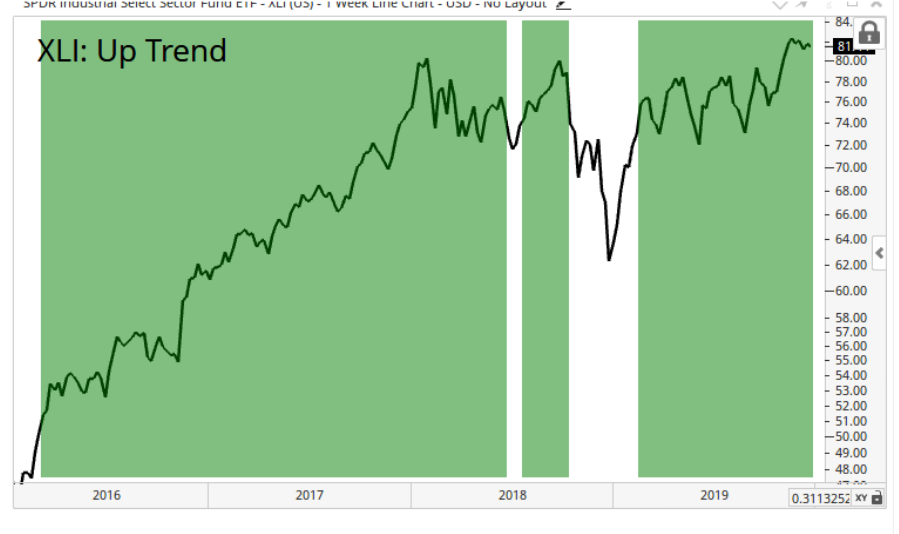
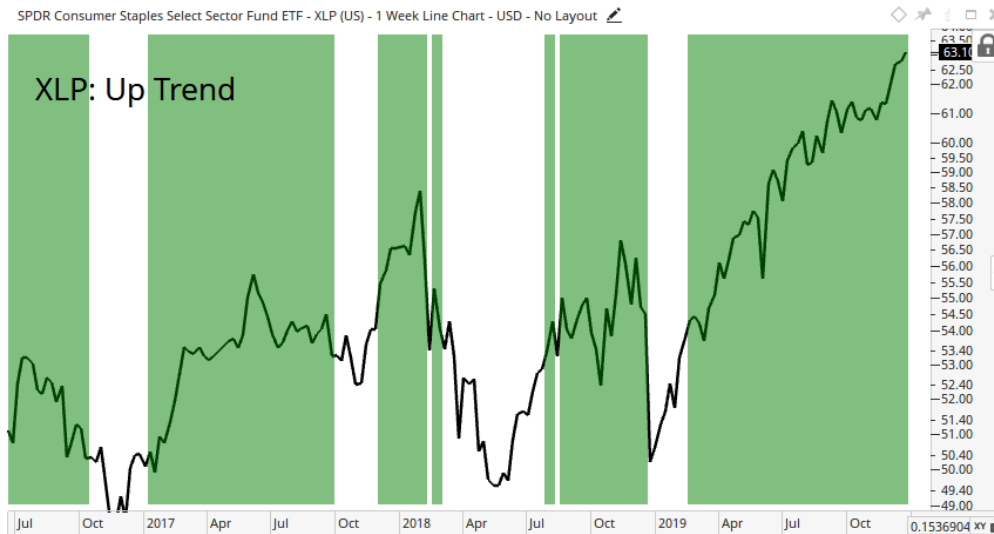
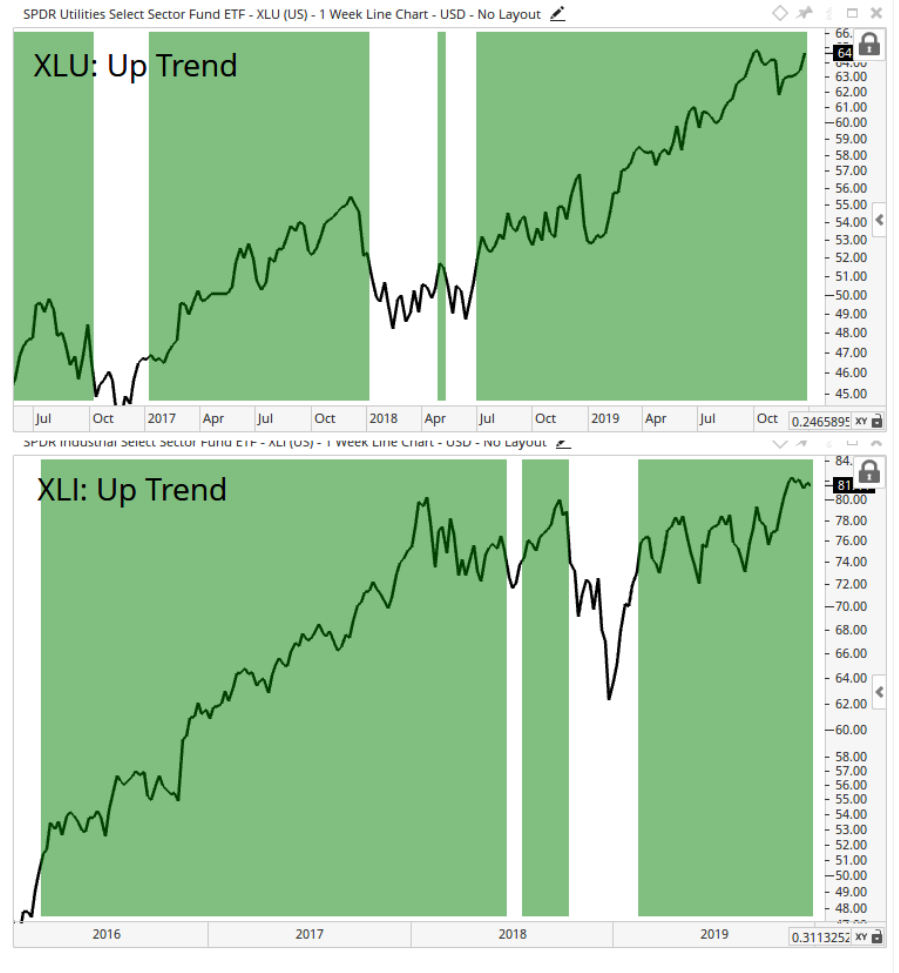
NIKKEI 225 INDEX - NYCash (CME) - 1 Day Line Chart - USD - No Layout



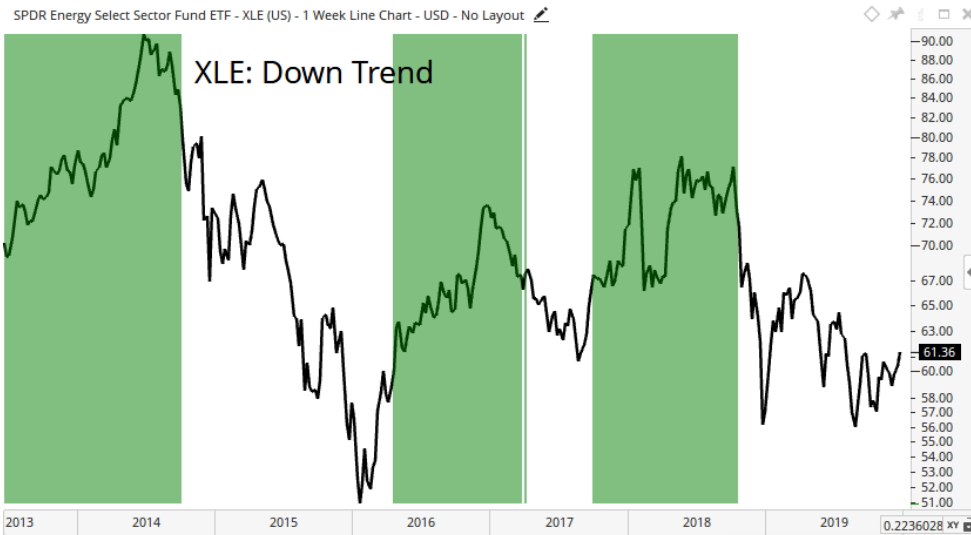
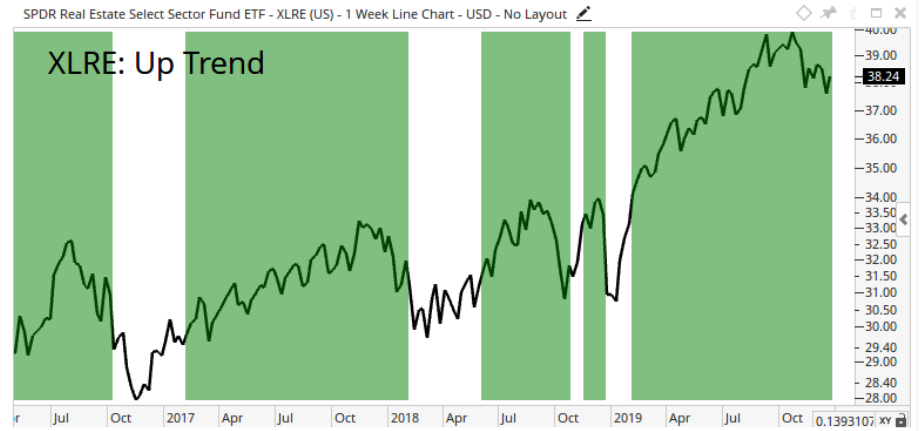
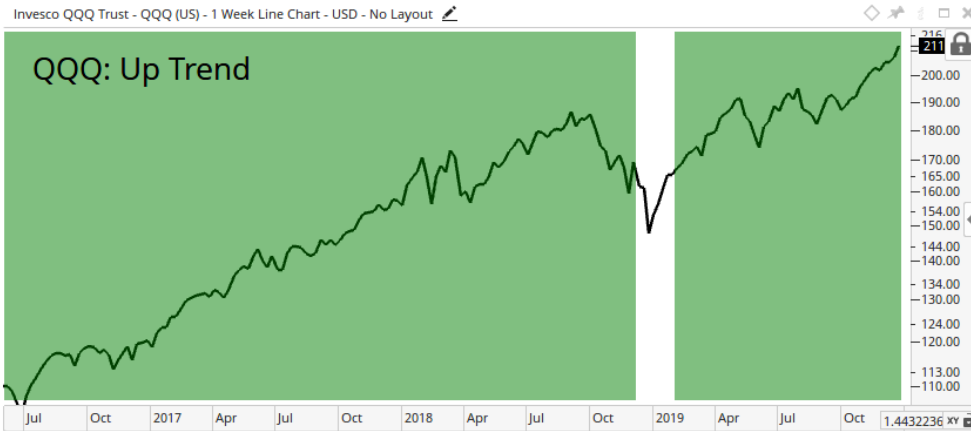


SPX, XLF, XLY, and XLK are all in up trends.





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

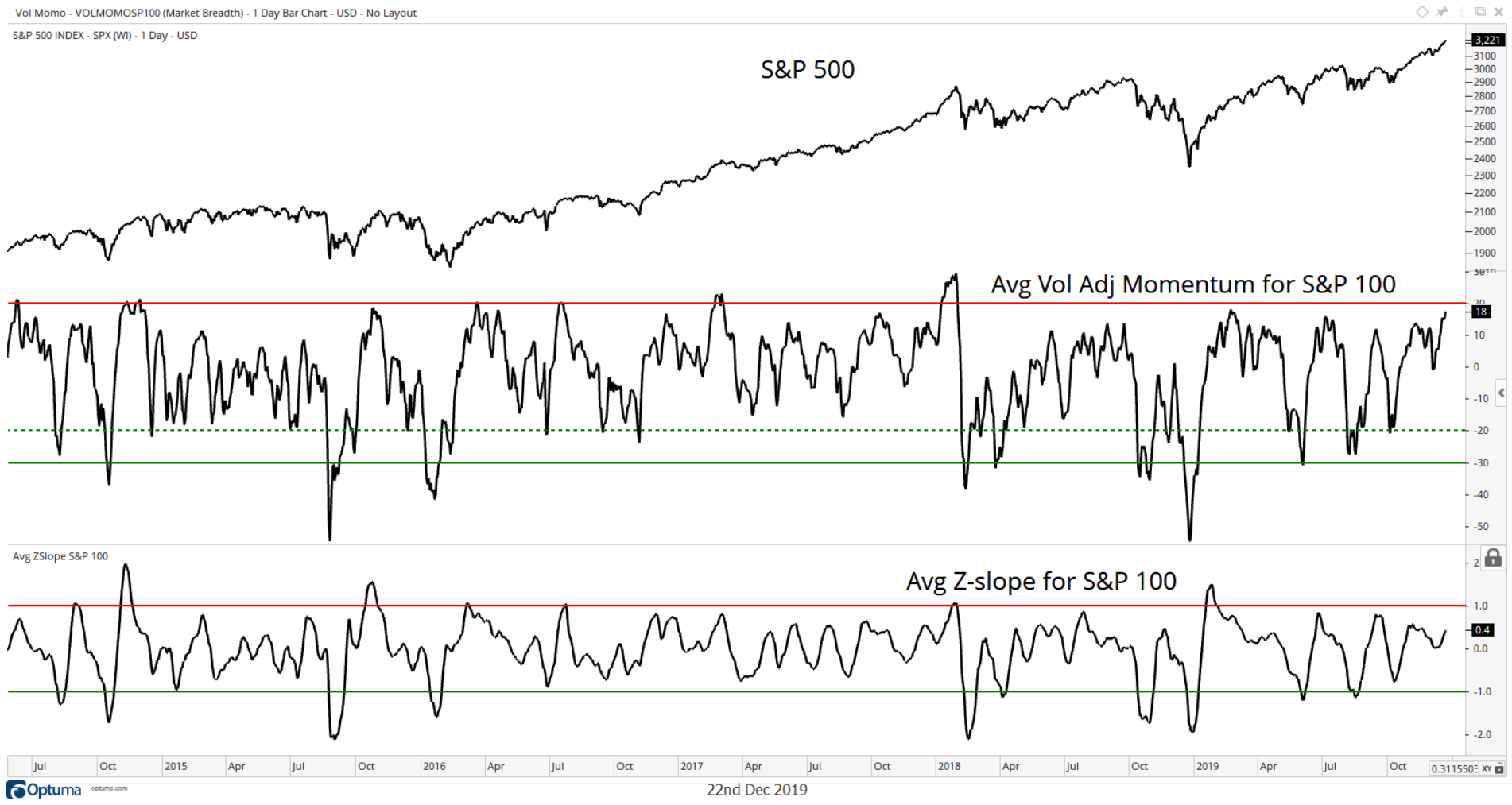


QQQ, XLRE, and XLB are in up trends. XLE is in a down trend.

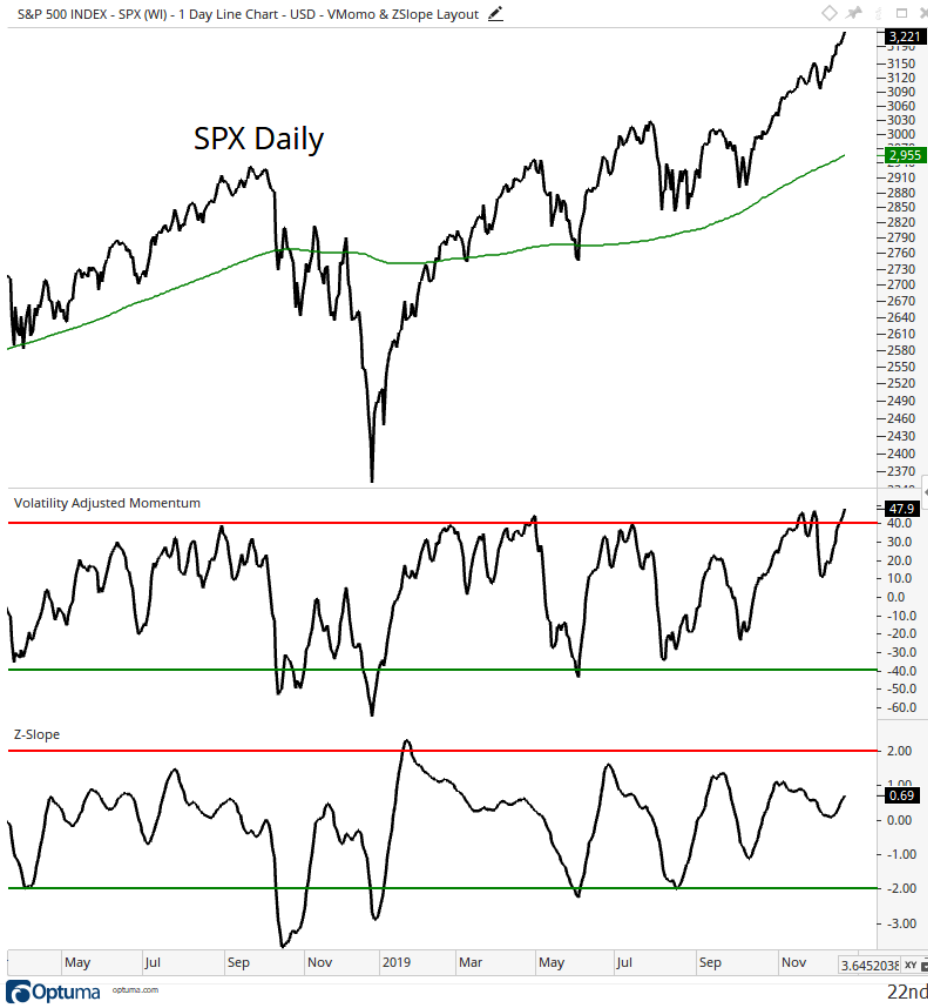
The following charts will become a regular installment for this, and future letters. Each page will include a daily and weekly chart with two indicators that are unique to Thrasher Analytics. With a focus on risk mitigation, the focus of these charts is on potential mean-reversion of each asset through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

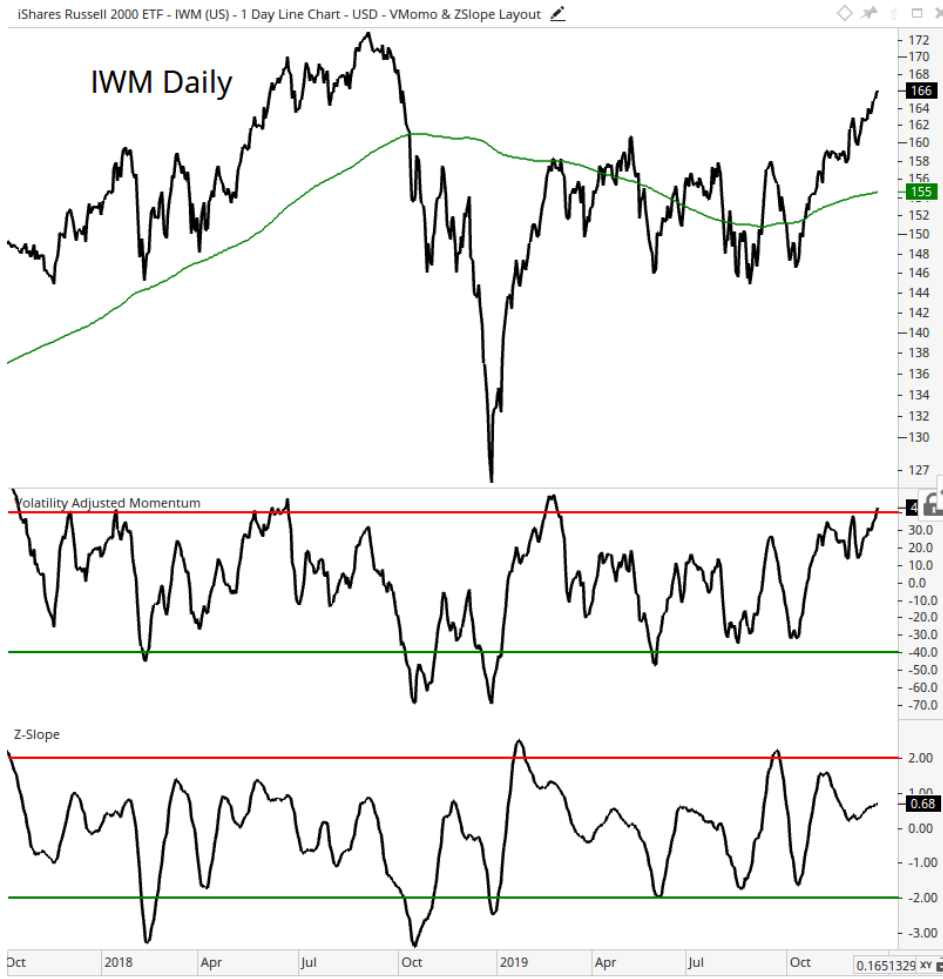
**Z-Slope:** This indicator takes two lookback periods, one long and one short, for calculating the slope and evaluates the z-score of the difference. This provides insight into whether the current slope of the trend fits within the long-term price history of the security. If a z-score breaks above 2, 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 is neutral but daily and weekly VaM are both 'overbought'

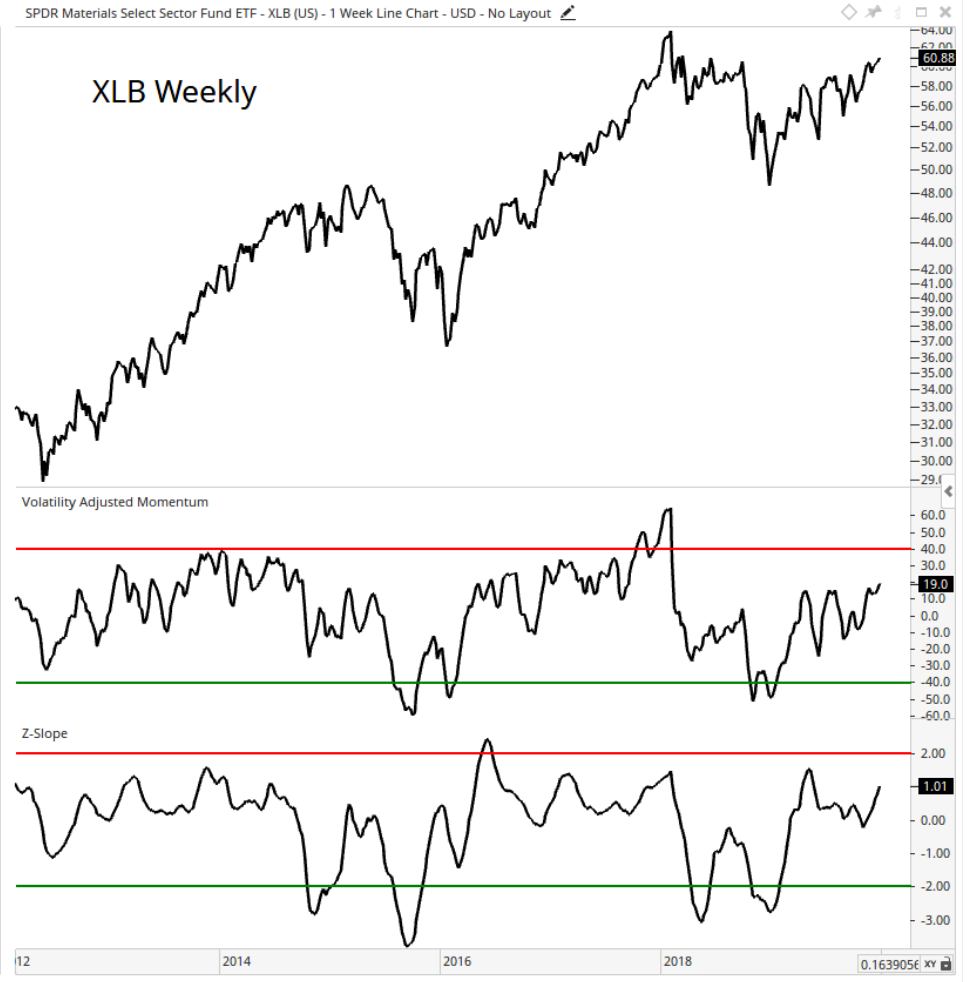


22nd Dec 2019

Daily Z-Slope is neutral but daily VaM is 'overbought'

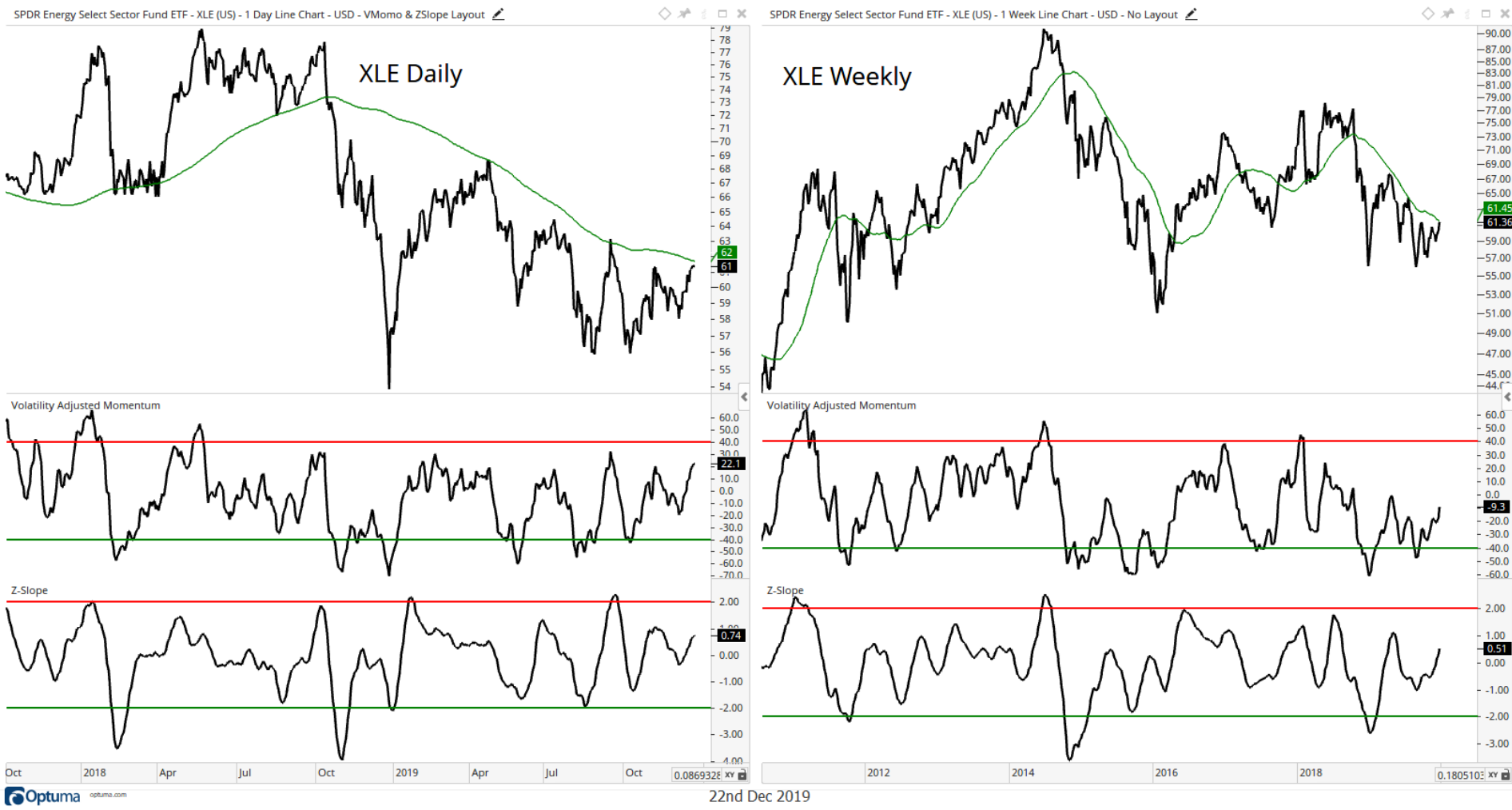


Daily Z-Slope is neutral but daily and weekly VaM are both 'overbought'

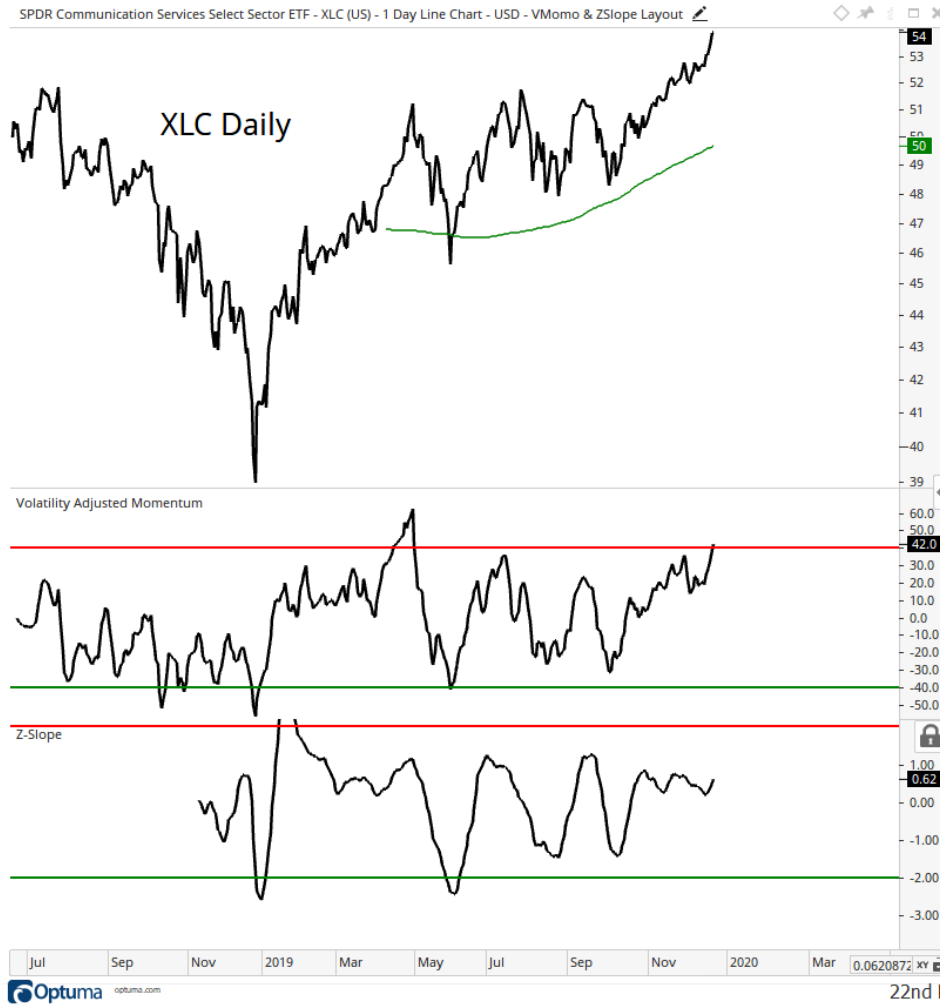


Neutral readings for both VaM and Z-slope.

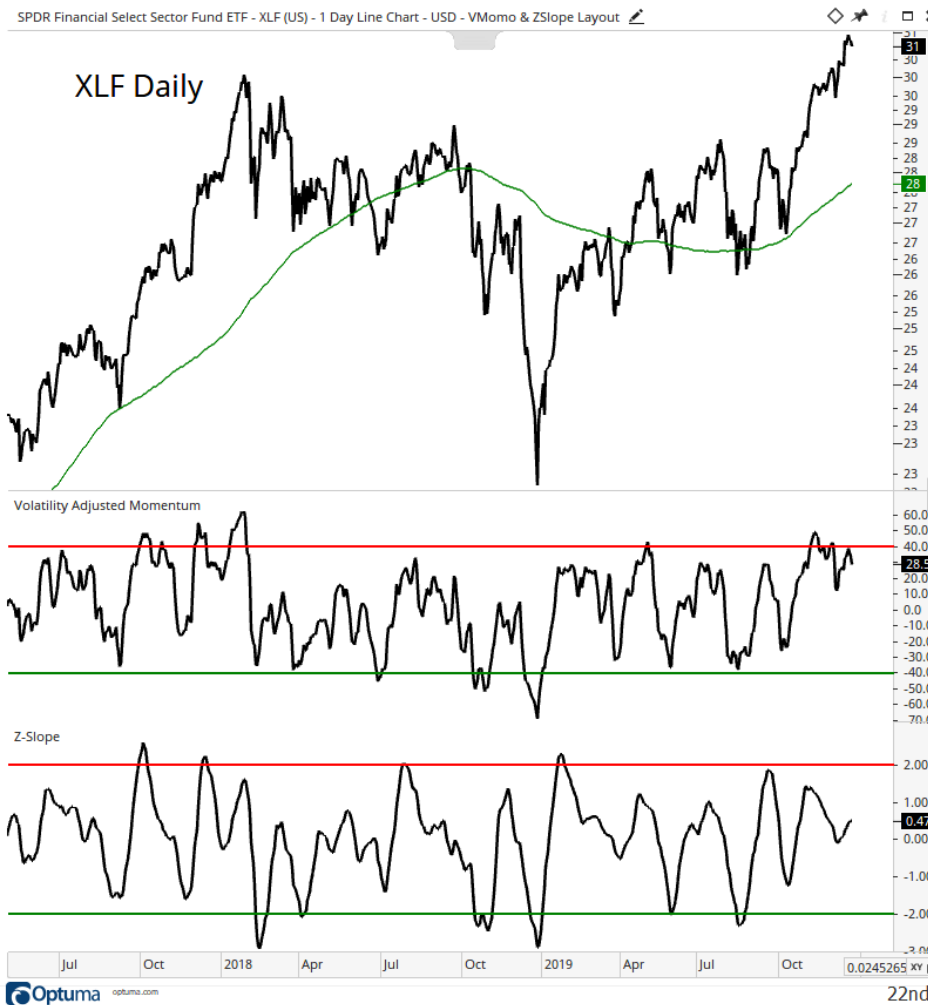




Neutral readings for both VaM and Z-slope.



Neutral readings for Z-Slope and VaM is 'overbought'



Daily Z-Slope and VaM both are neutral



Daily Z-Slope is neutral but daily and weekly VaM are both 'overbought'



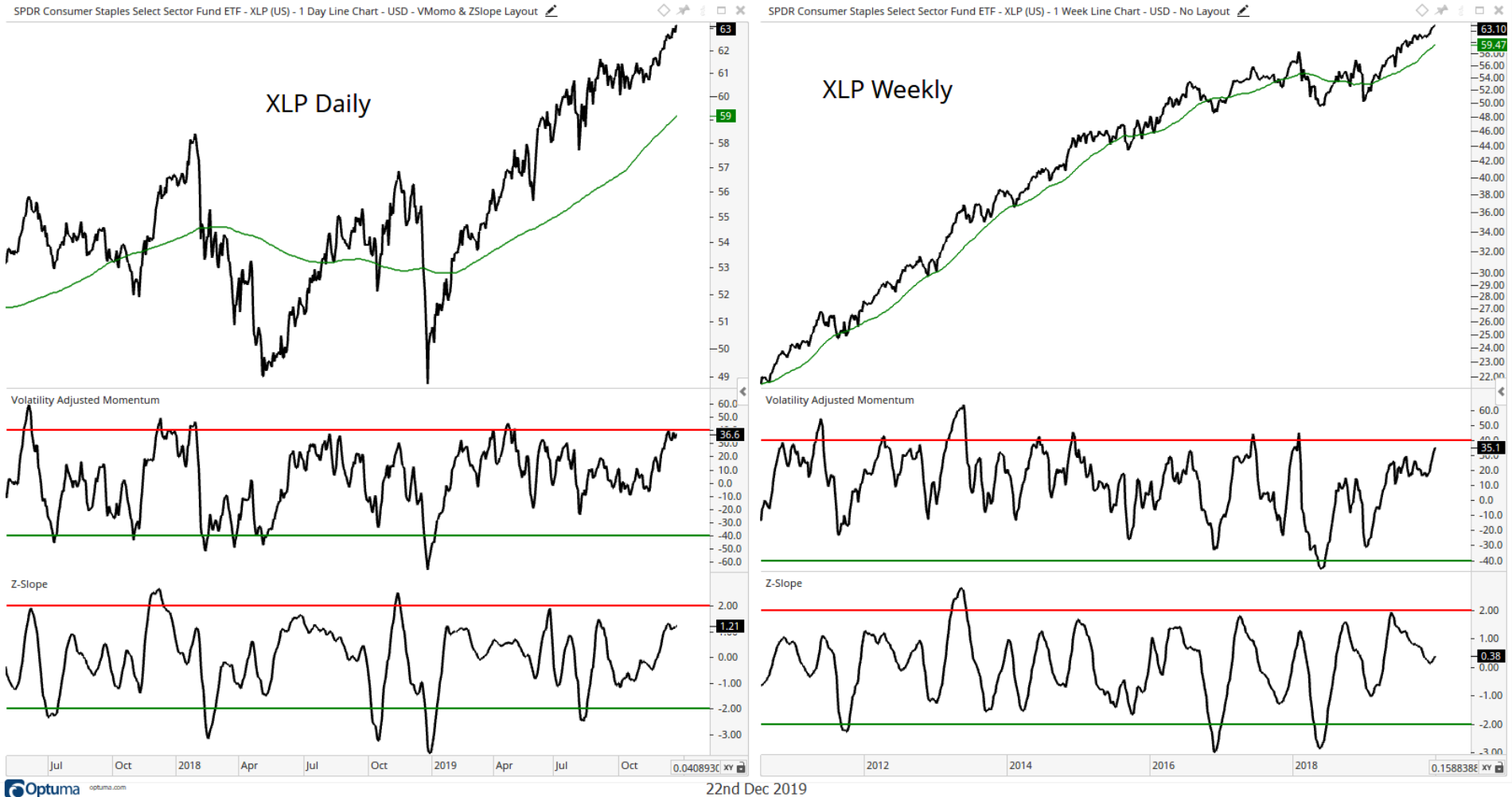
SPDR Industrial Select Sector Fund ETF - XLI (US) - 1 Day Line Chart - USD - VMomo & ZSlope Layout



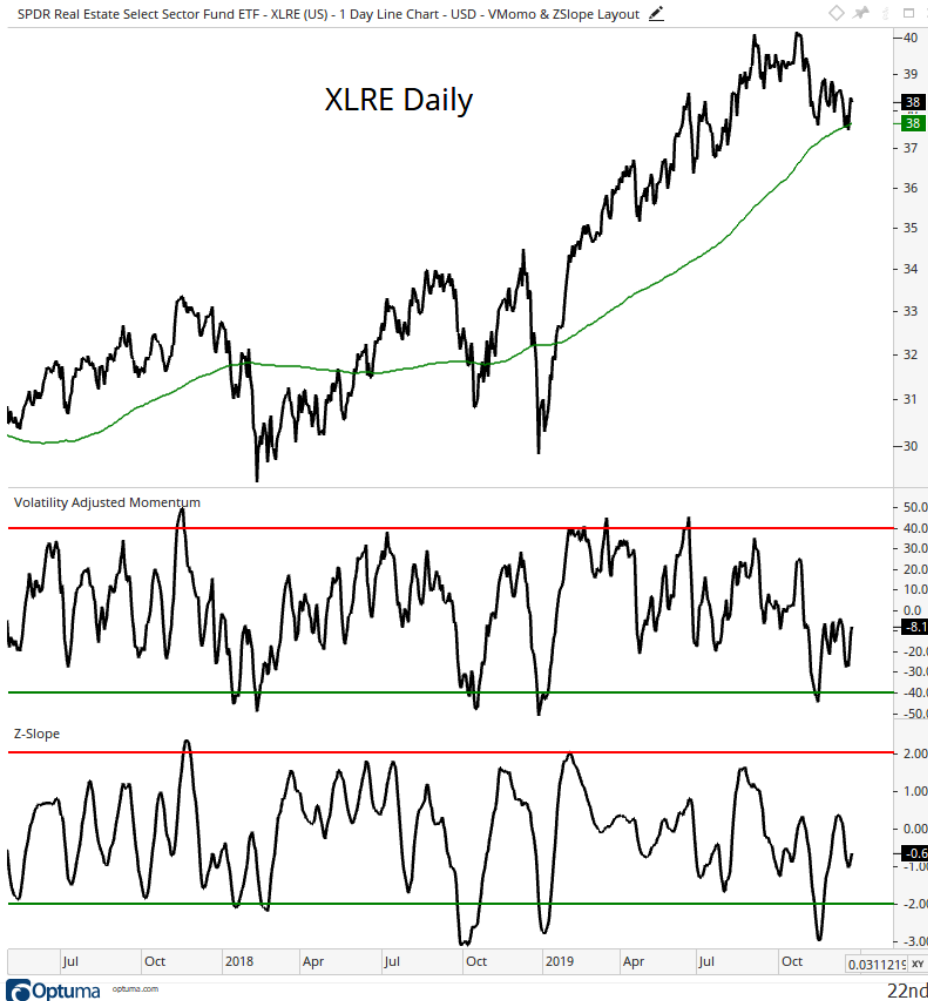
SPDR Industrial Select Sector Fund ETF - XLI (US) - 1 Week Line Chart - USD - No Layout



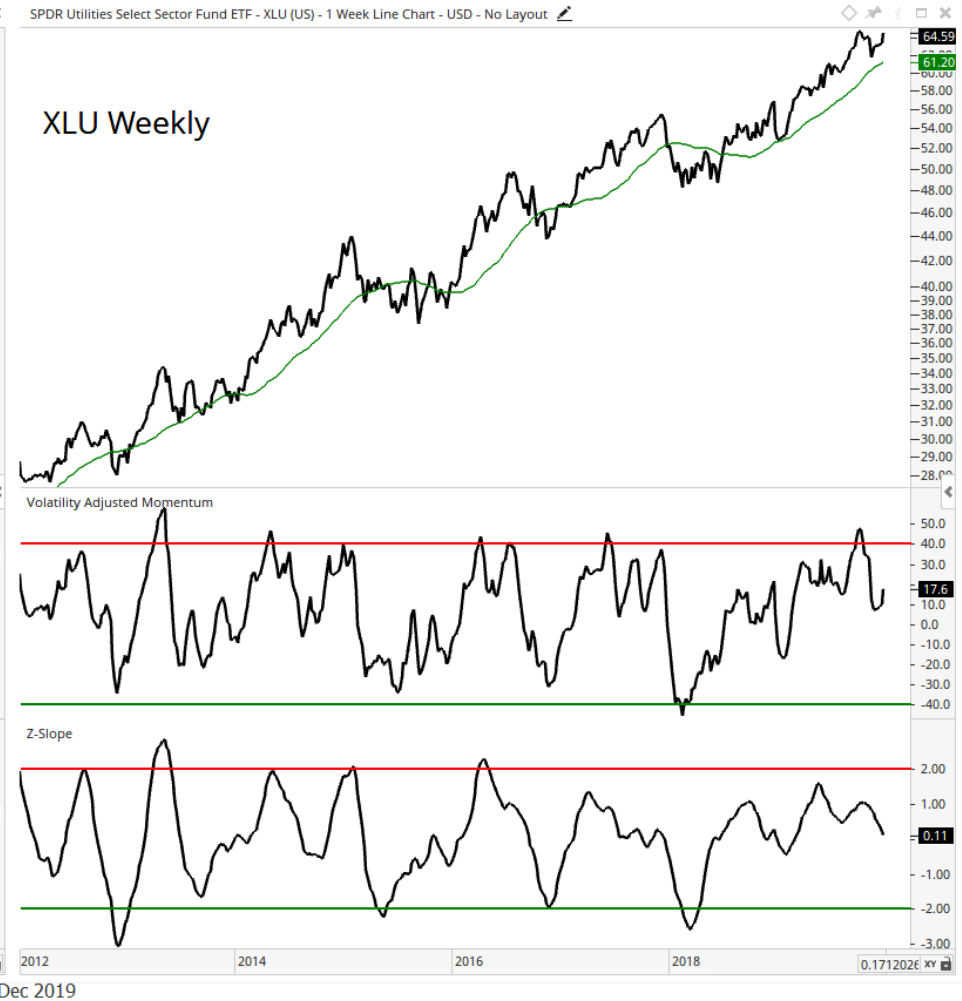
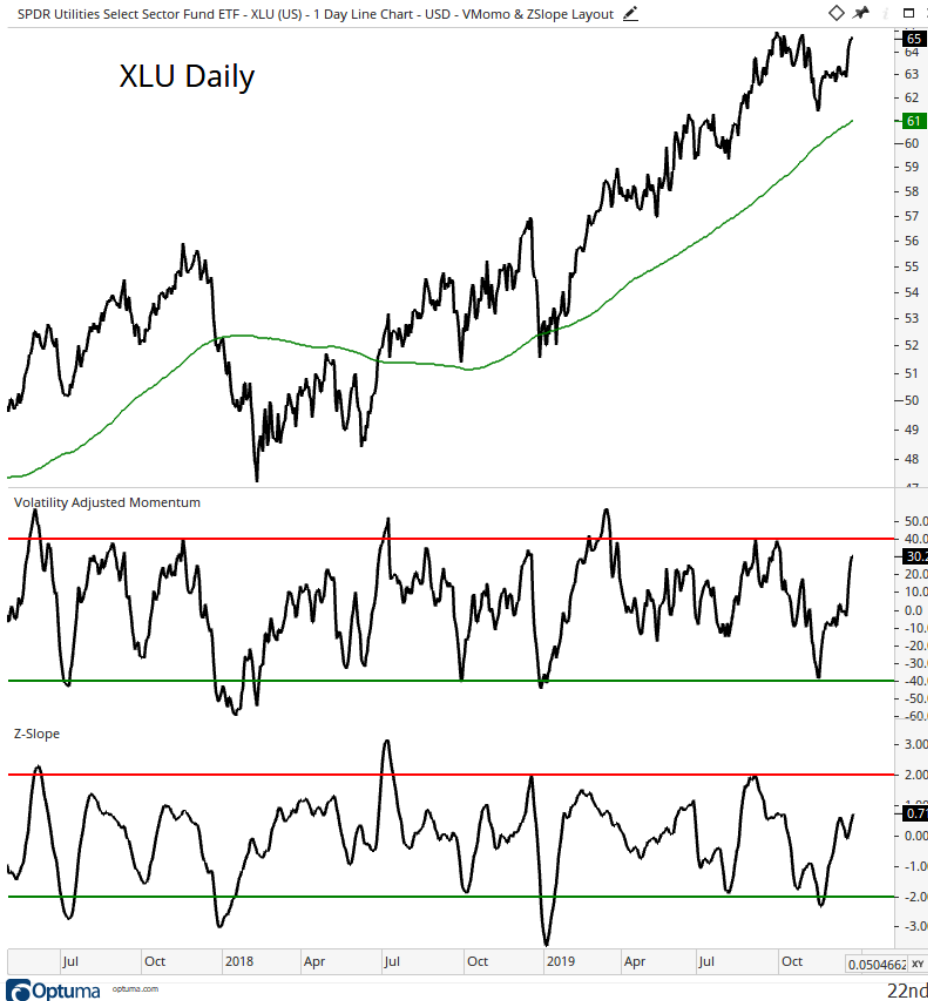
Daily Z-Slope and VaM both are neutral



Neutral readings for both VaM and Z-slope.



Both Z-slope and VaM are neutral

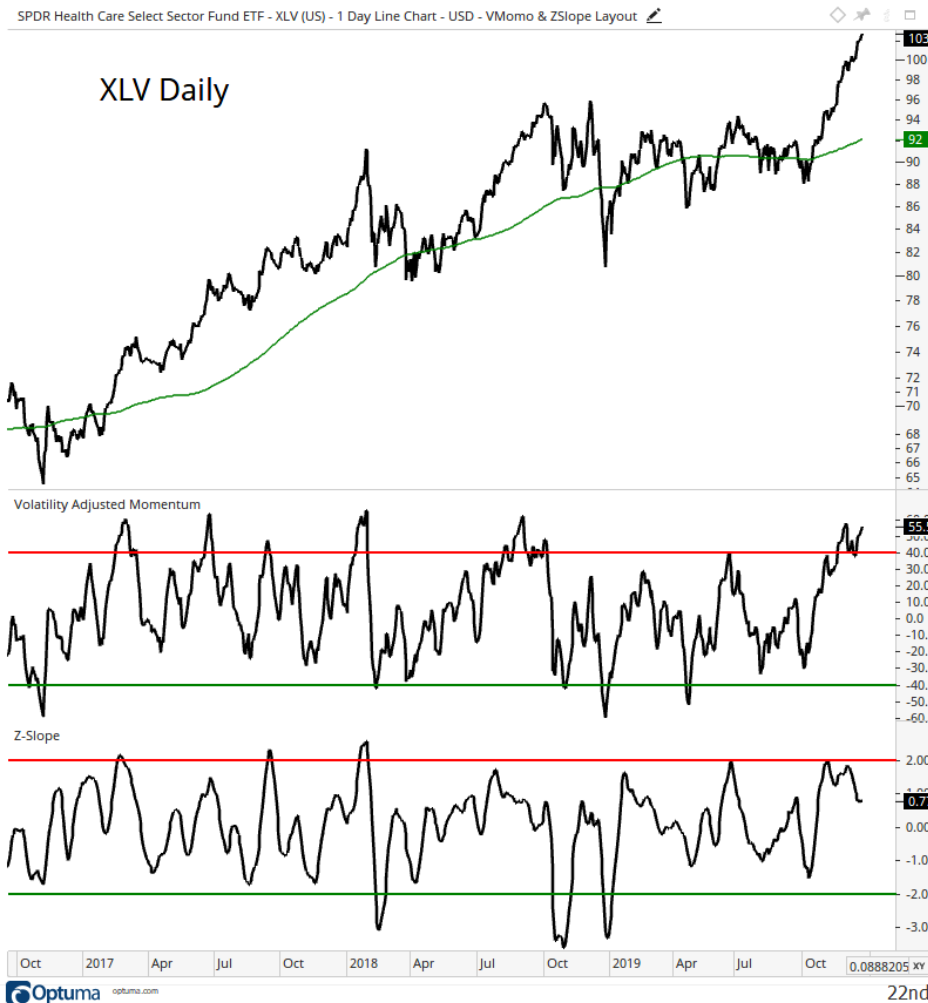


Neutral readings for both VaM and Z-slope.



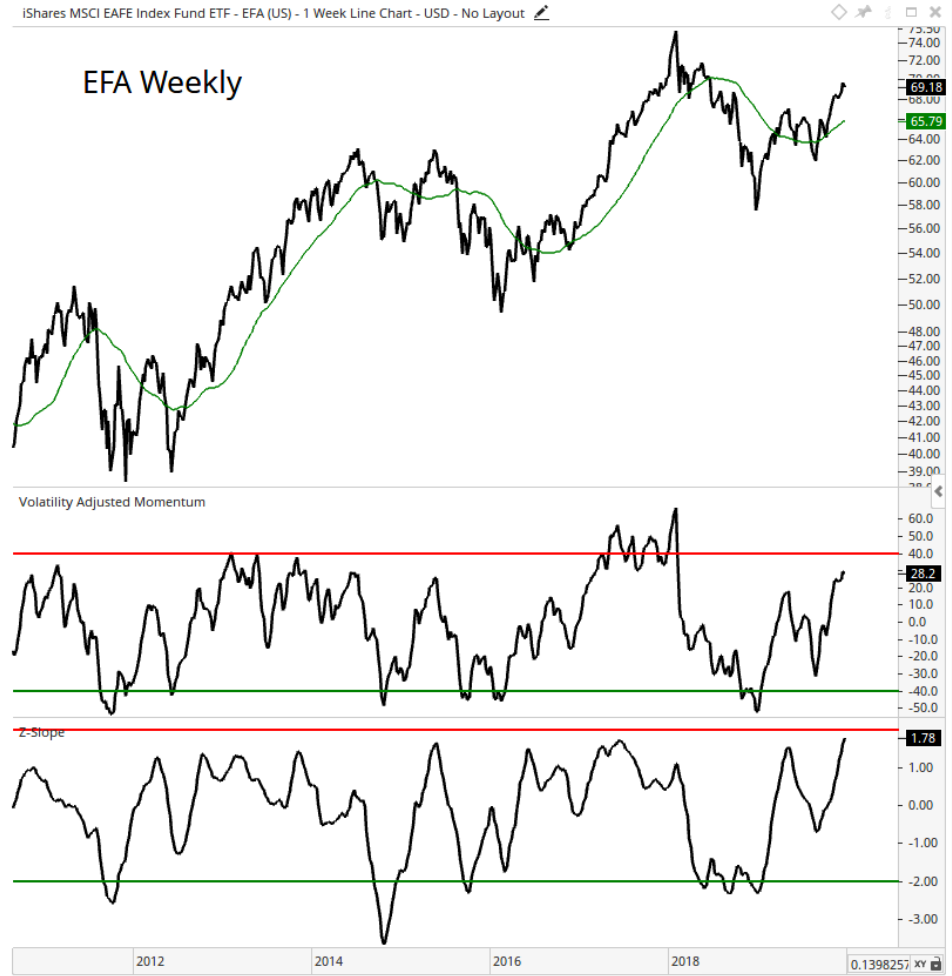
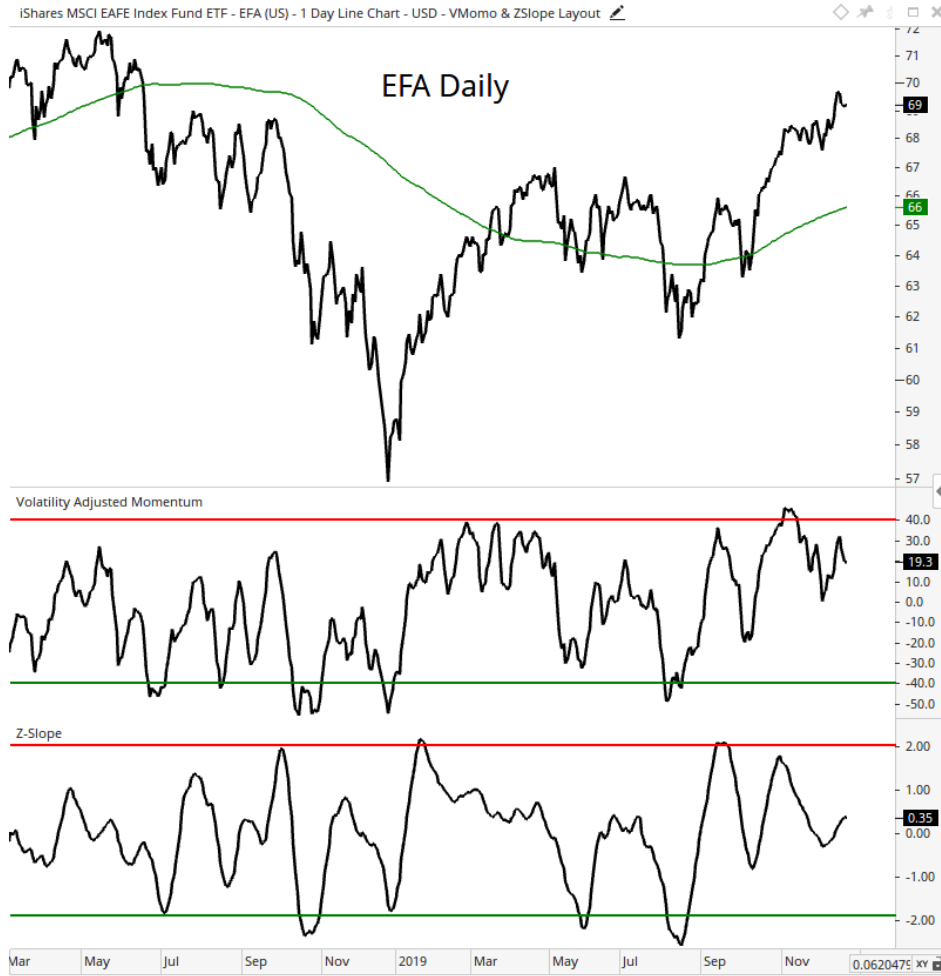


Neutral readings for both VaM and Z-slope.



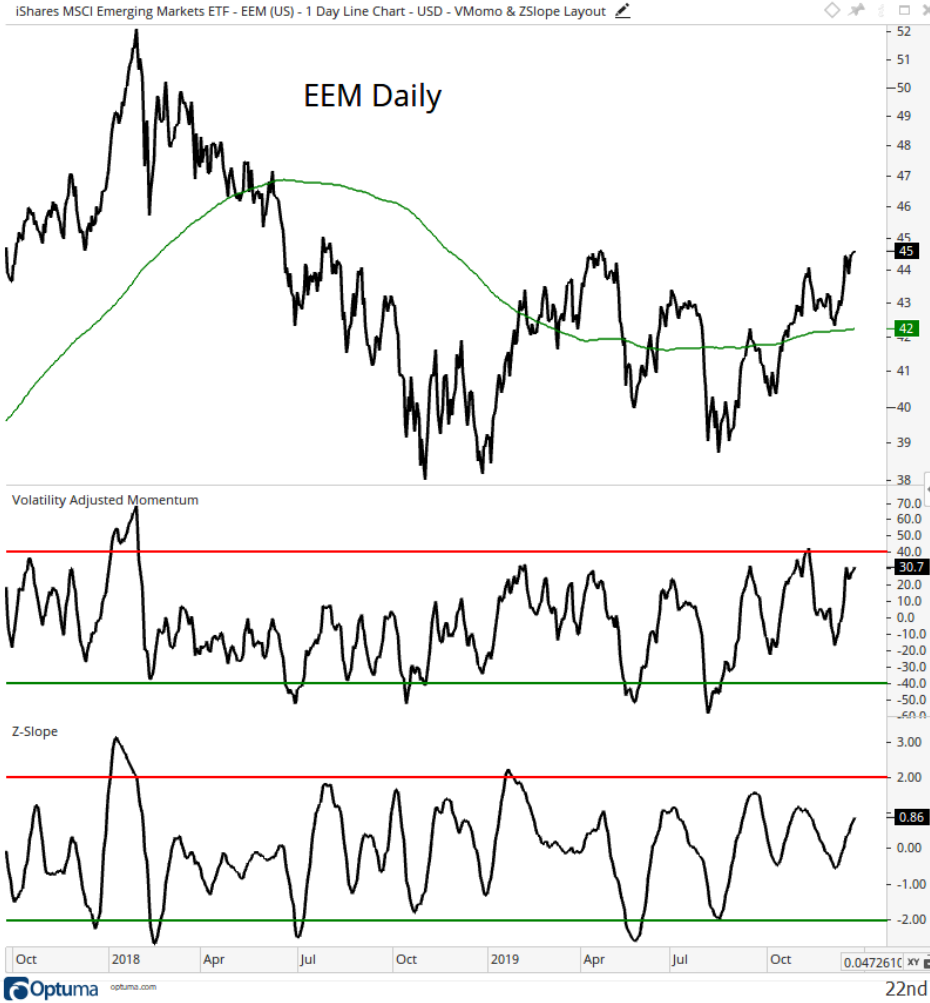
22nd Dec 2019

Daily Z-Slope is neutral but daily and weekly VaM are both 'overbought' as is the weekly z-slope.



22nd Dec 2019

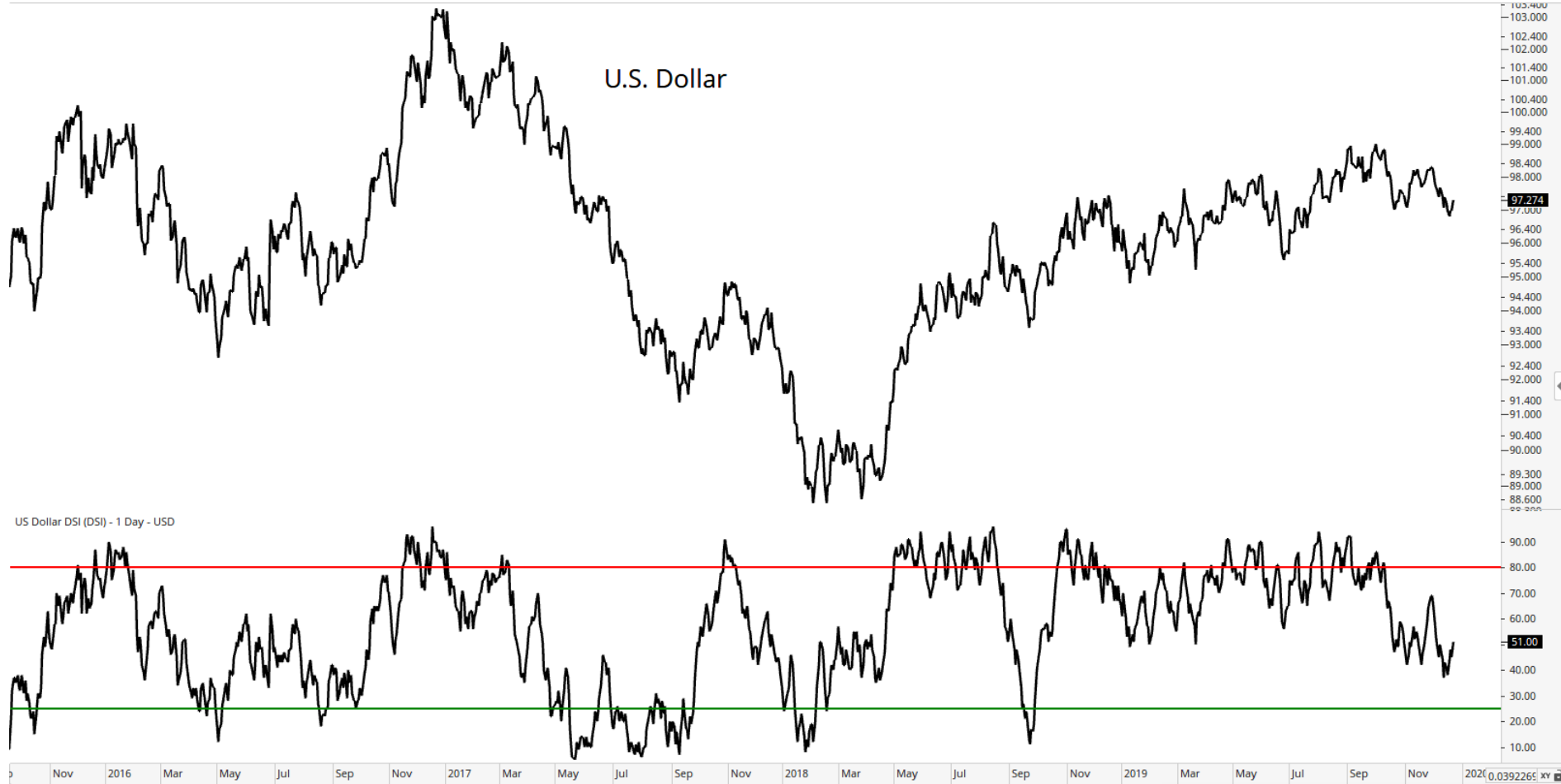
Neutral reading for z-slope and VaM.



Neutral readings for both VaM and Z-slope.



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



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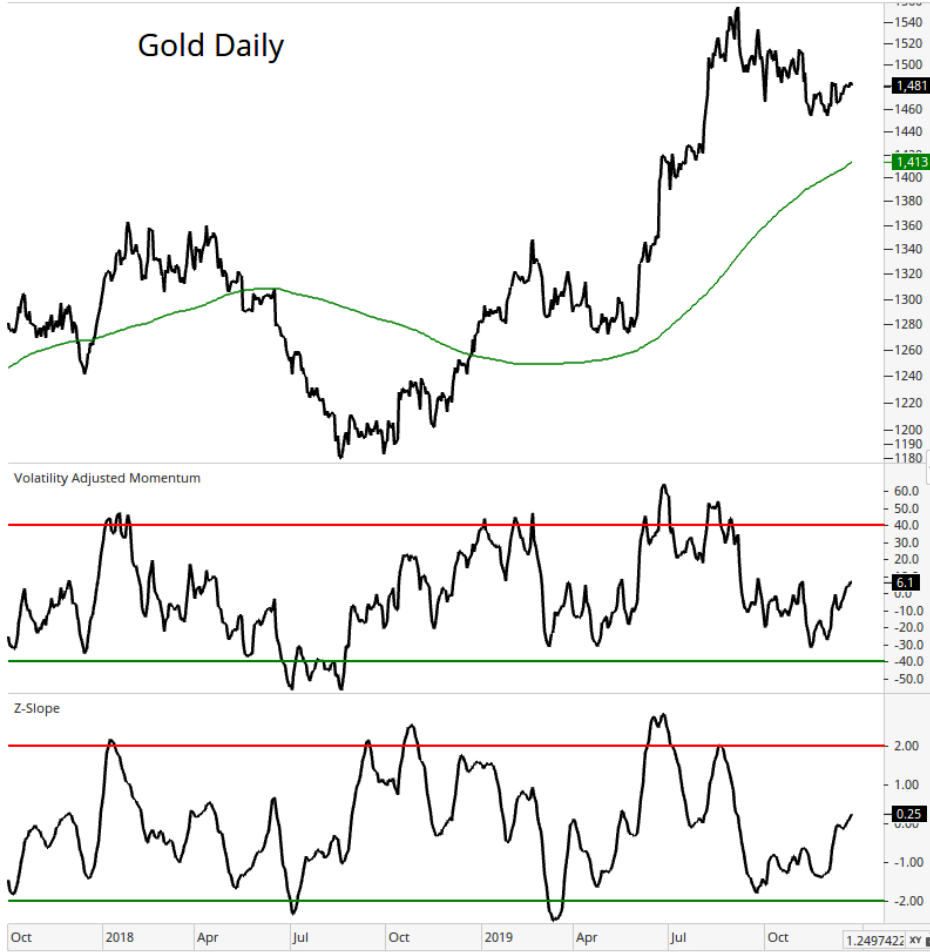
22nd Dec 2019

Neutral readings VaM and Z-slope.



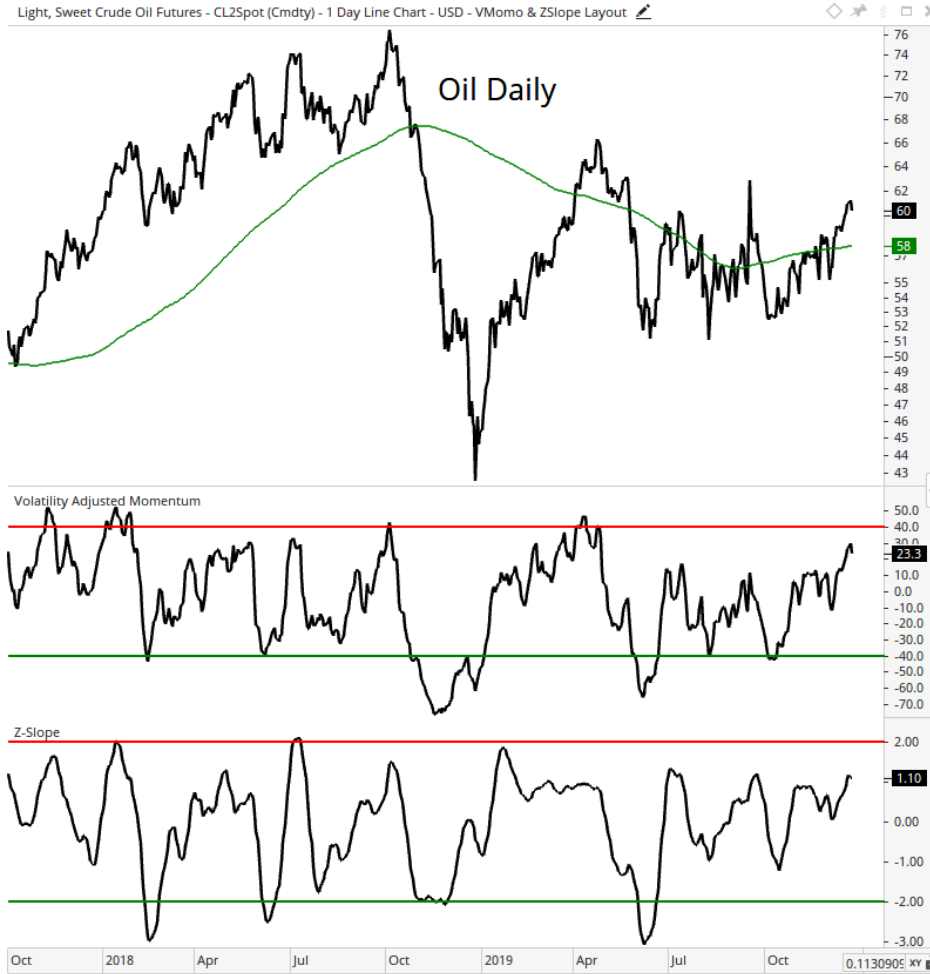
Gold Futures - GCSpot (NYMEX) - 1 Day Line Chart - USD - VMomo & ZSlope Layout

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



22nd Dec 2019

Neutral readings for both VaM and Z-slope.

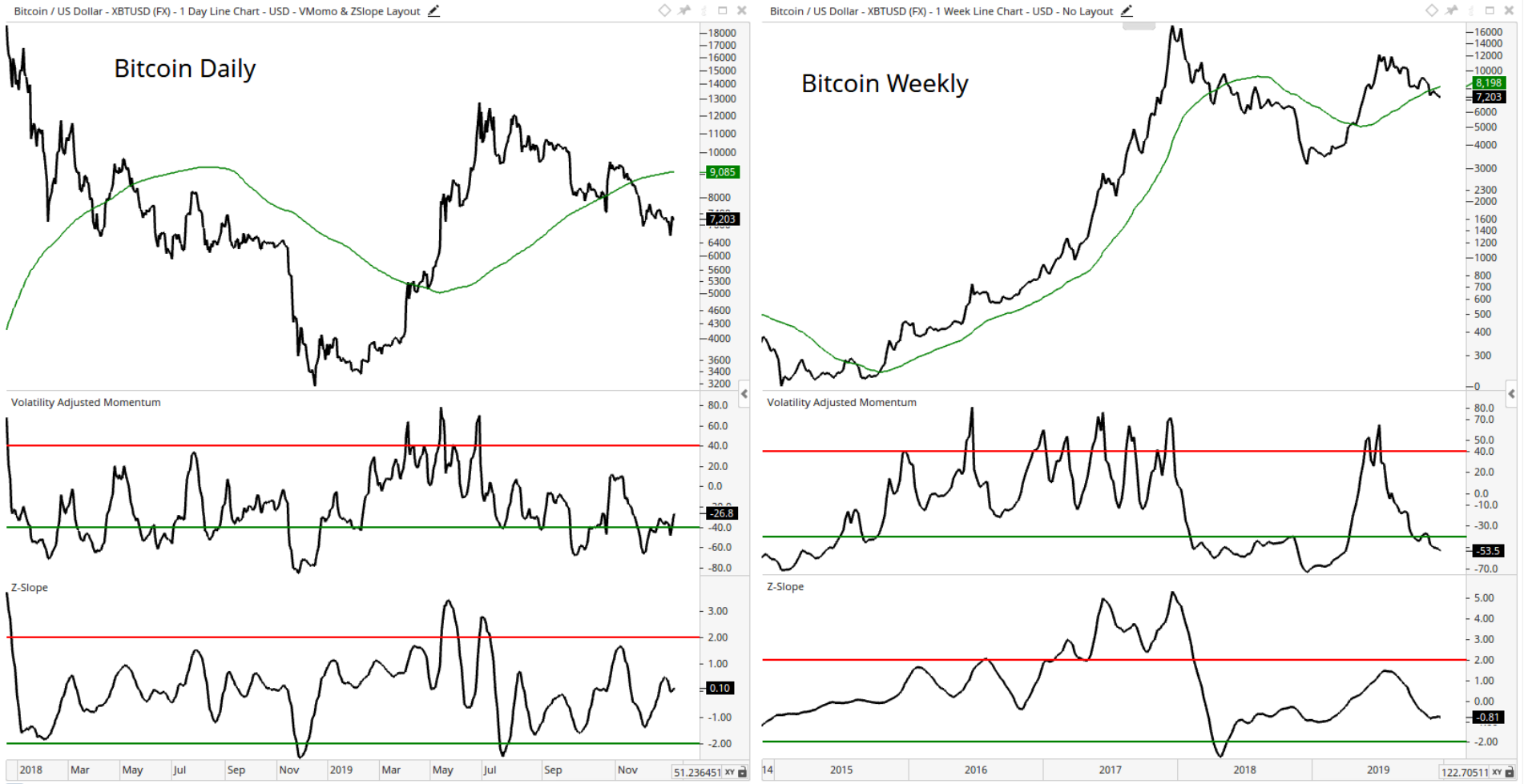


Neutral readings for both VaM and Z-slope.

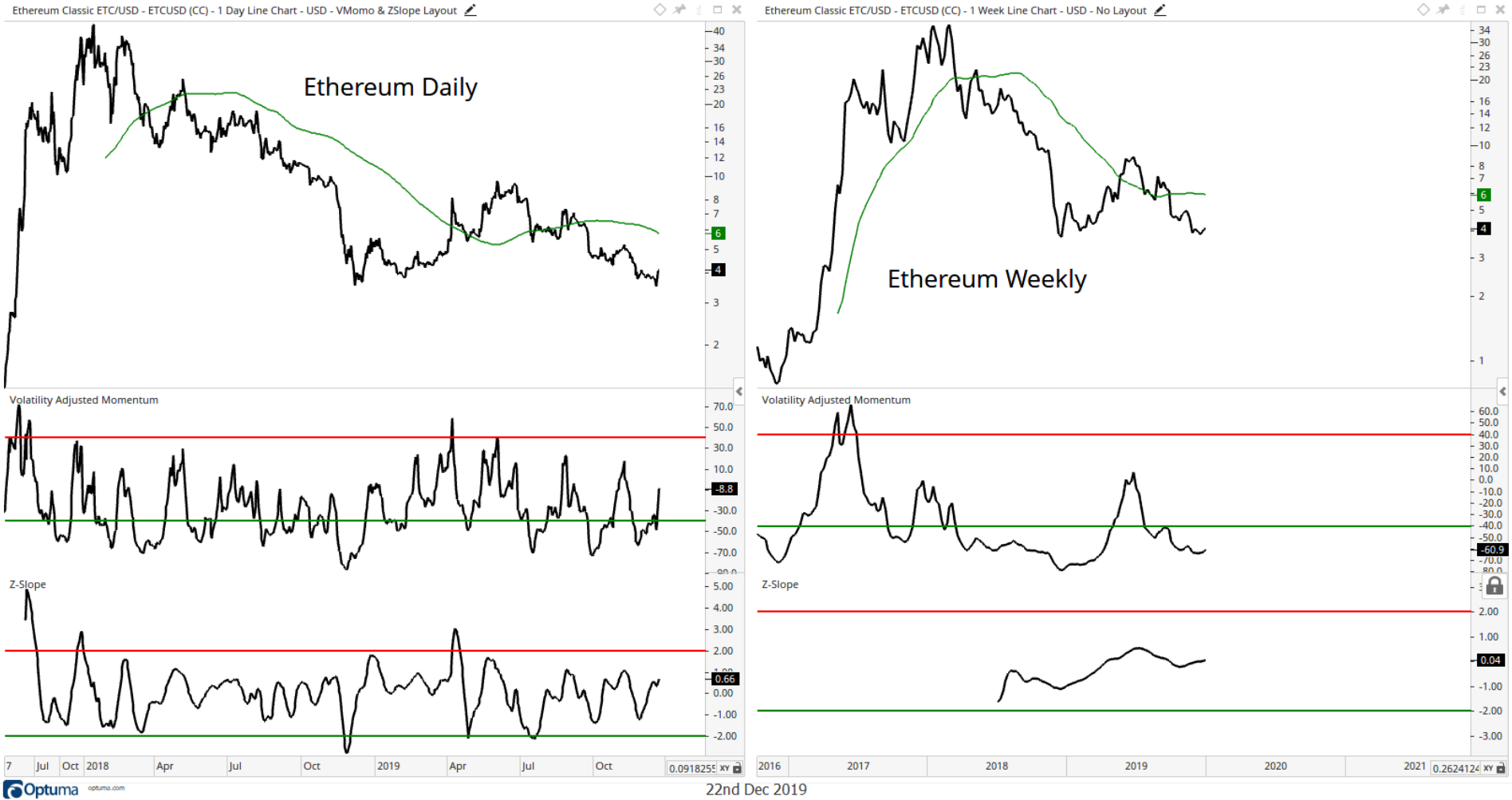


Neutral readings for both VaM and Z-slope.





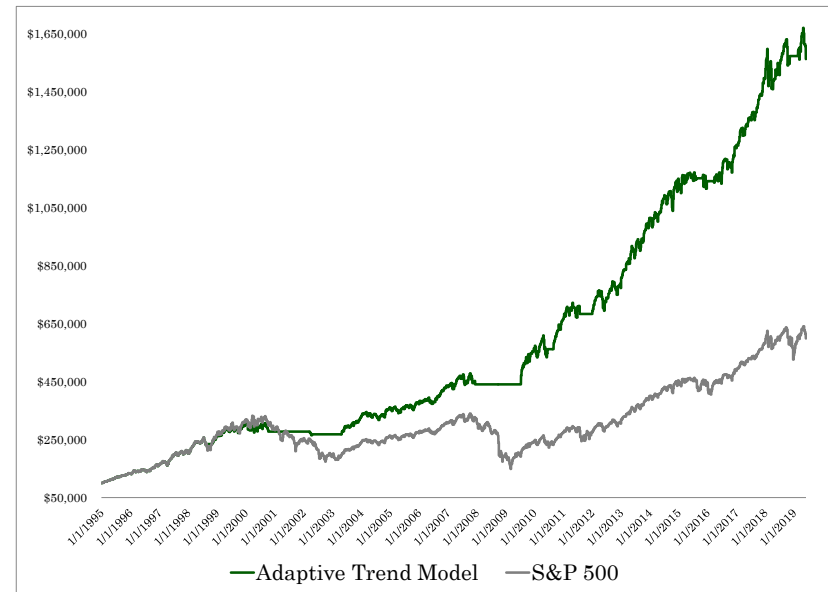
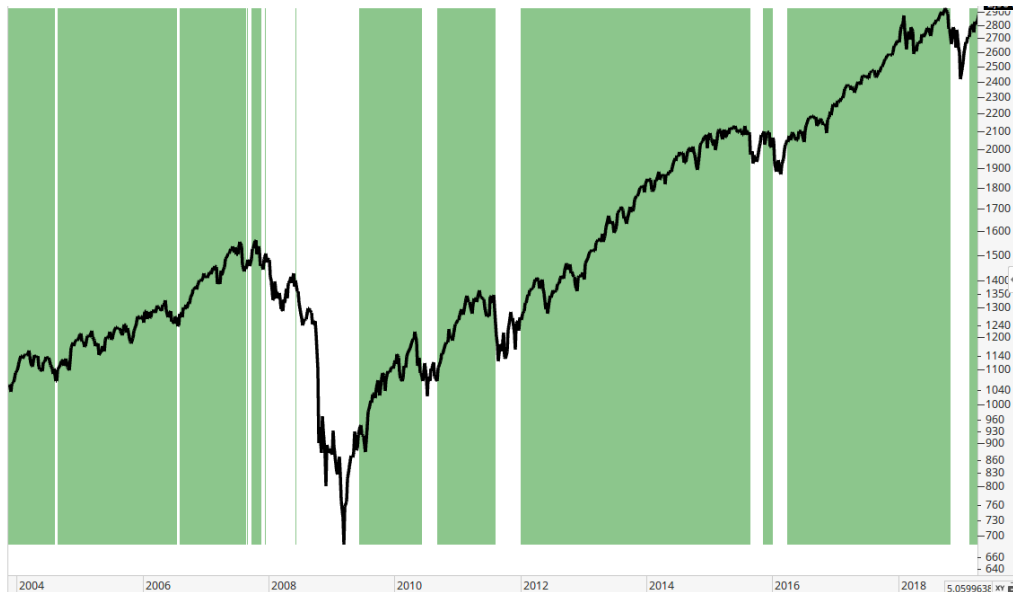
Neutral reading for z-slope and VaM is close to oversold.



Neutral reading for z-slope and VaM

**T**rend-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.

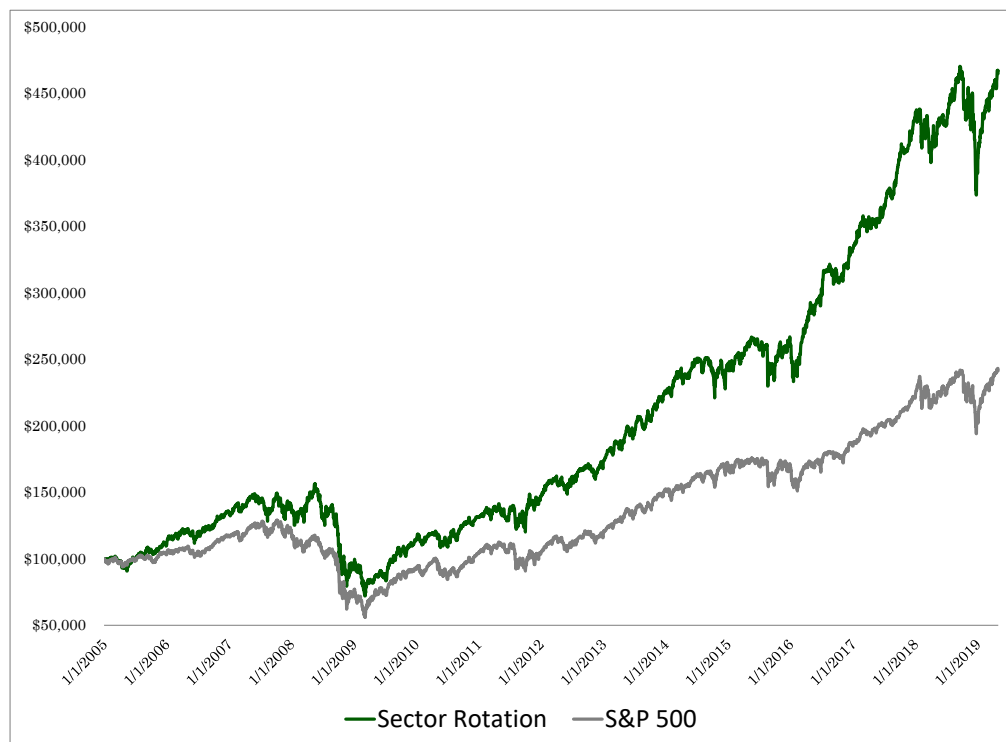


	<b>Annualized Return</b>	<b>Annualized Volatility</b>	<b>Beta</b>	<b>Sharpe Ratio</b>	<b>Maximum Drawdown</b>
<b>Adaptive Trend</b>	12.5%	10.3%	0.47	0.97	14.1%
<b>S&amp;P 500</b>	8.9%	15.3%	1	0.42	56.6%

*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.*

**T**hrasher 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.

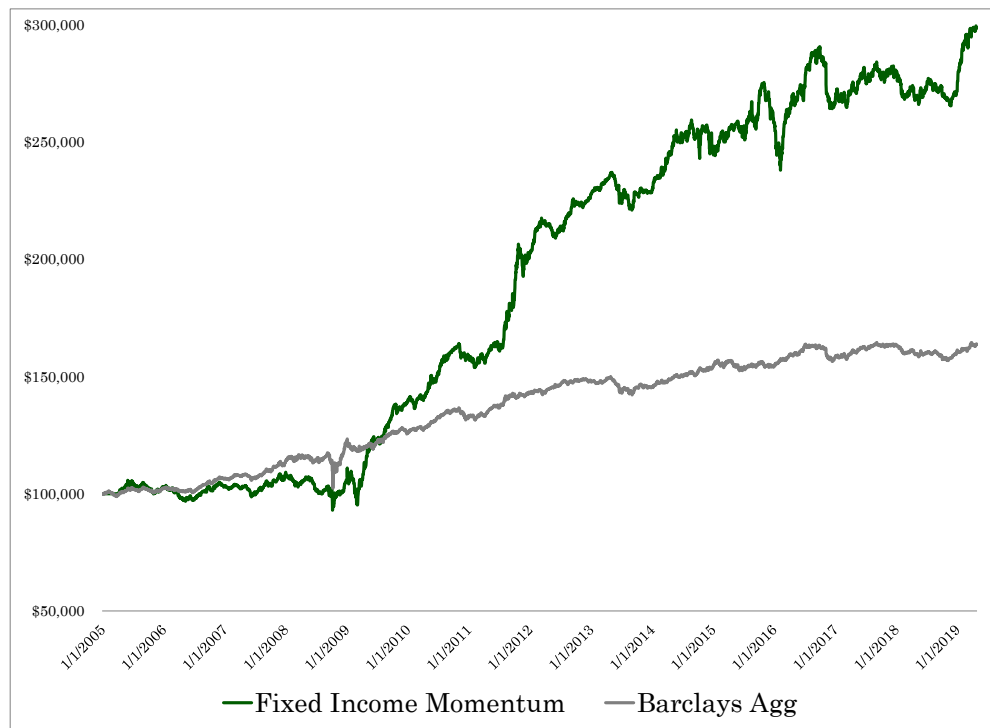


	<b>Annualized Return</b>	<b>Annualized Volatility</b>	<b>Beta</b>	<b>Sharpe Ratio</b>	<b>Maximum Drawdown</b>
<b>Sector Rotation</b>	12.7%	15.9%	0.96	0.64	53.9%
<b>S&amp;P 500</b>	7.5%	14.8%	1	0.34	56.6%

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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.



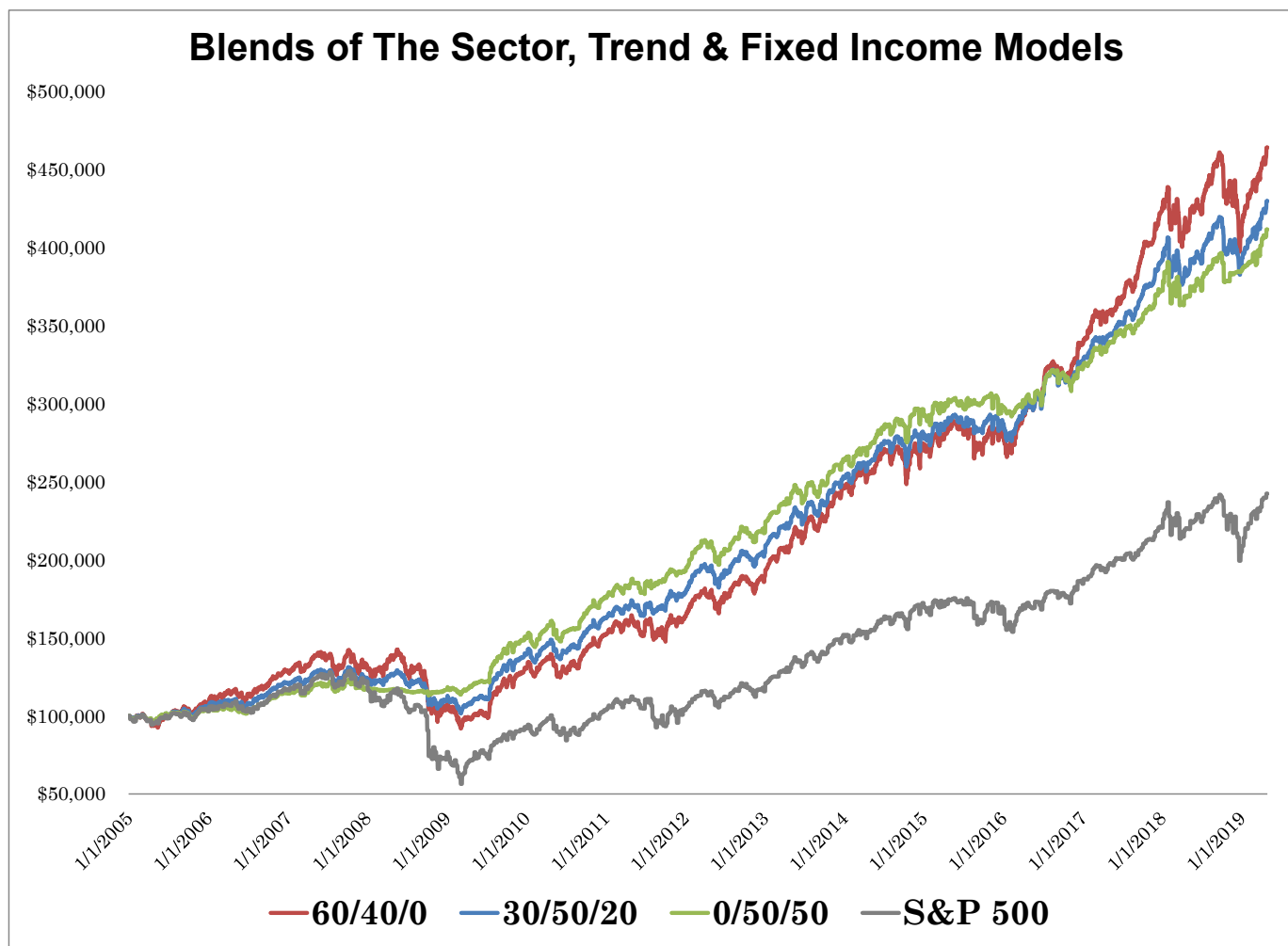
	<b>Annualized Return</b>	<b>Annualized Volatility</b>	<b>Beta</b>	<b>Sharpe Ratio</b>	<b>Maximum Drawdown</b>
<b>Fixed Income Momentum</b>	8.3%	8.2%	1.04	0.7	14.9%
<b>Barclays Agg</b>	3.6%	3.7%	1	0.29	11.0%

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**T**he 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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<b>Trend</b> <b>(weekly)</b>	<b>Sector</b> <b>Rotation</b> <b>(monthly)</b>	<b>Fixed Income</b> <b>Momentum</b> <b>(quarterly)</b>
Positive	XLF XLK XLB	JNK AGG

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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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