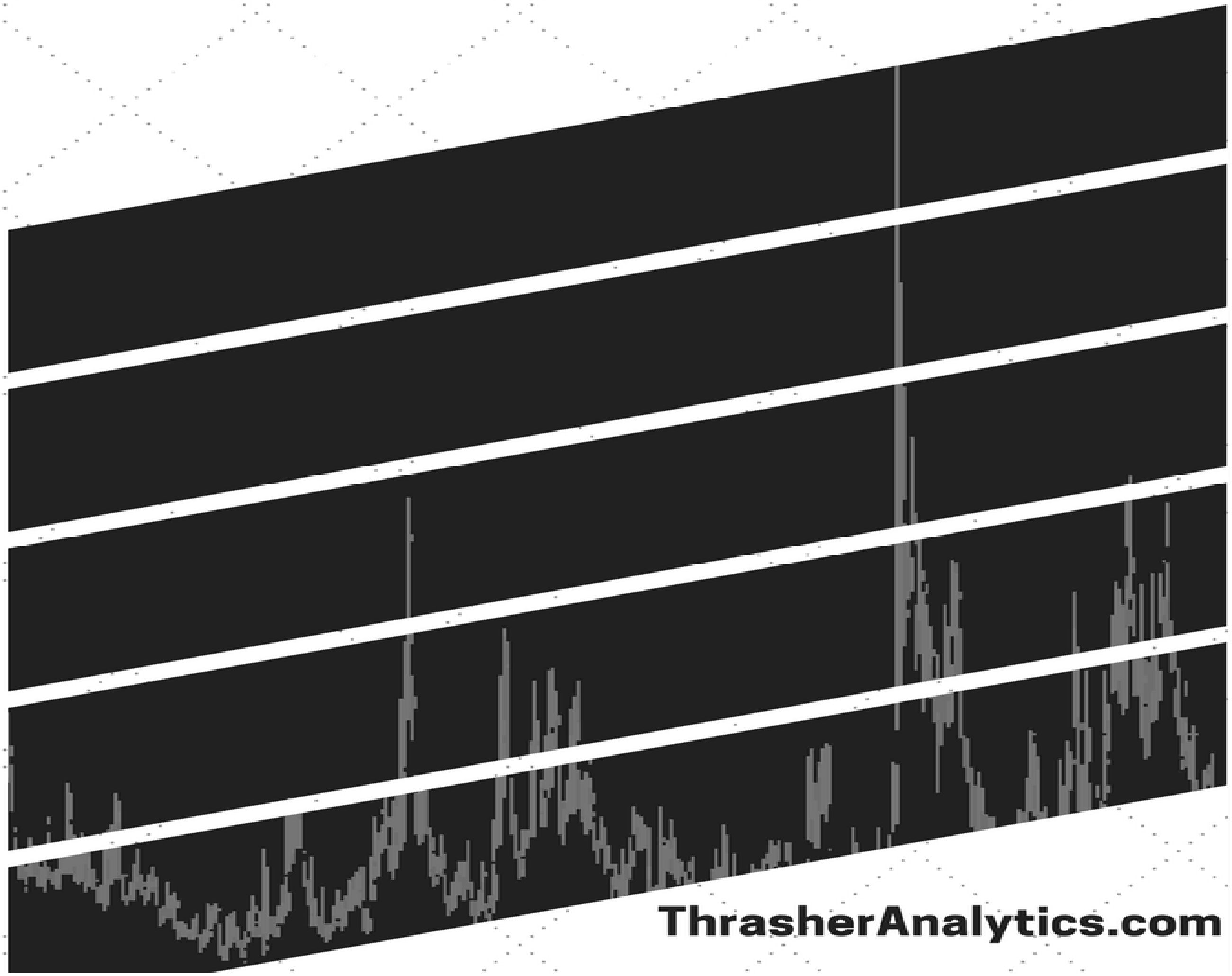
THRASHER ANALYTICS

BI-WEEKLY RESEARCH & ANALYSIS



ThrasherAnalytics.com

Thrasher Analytics Market Dashboard

THRASHER ANALYTICS

Sector Rotation: January	
Financial	XLF
Technology	XLK
Communications	XLC

Notable Breadth Data:	
SPX >50MA	69.50%
SPX >200MA	76.24%
Nasdaq >50MA	78.64%
Nasdaq >200MA	80.58%

Fixed Income Rotation: Q1	
20+ Treasury	TLT
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	

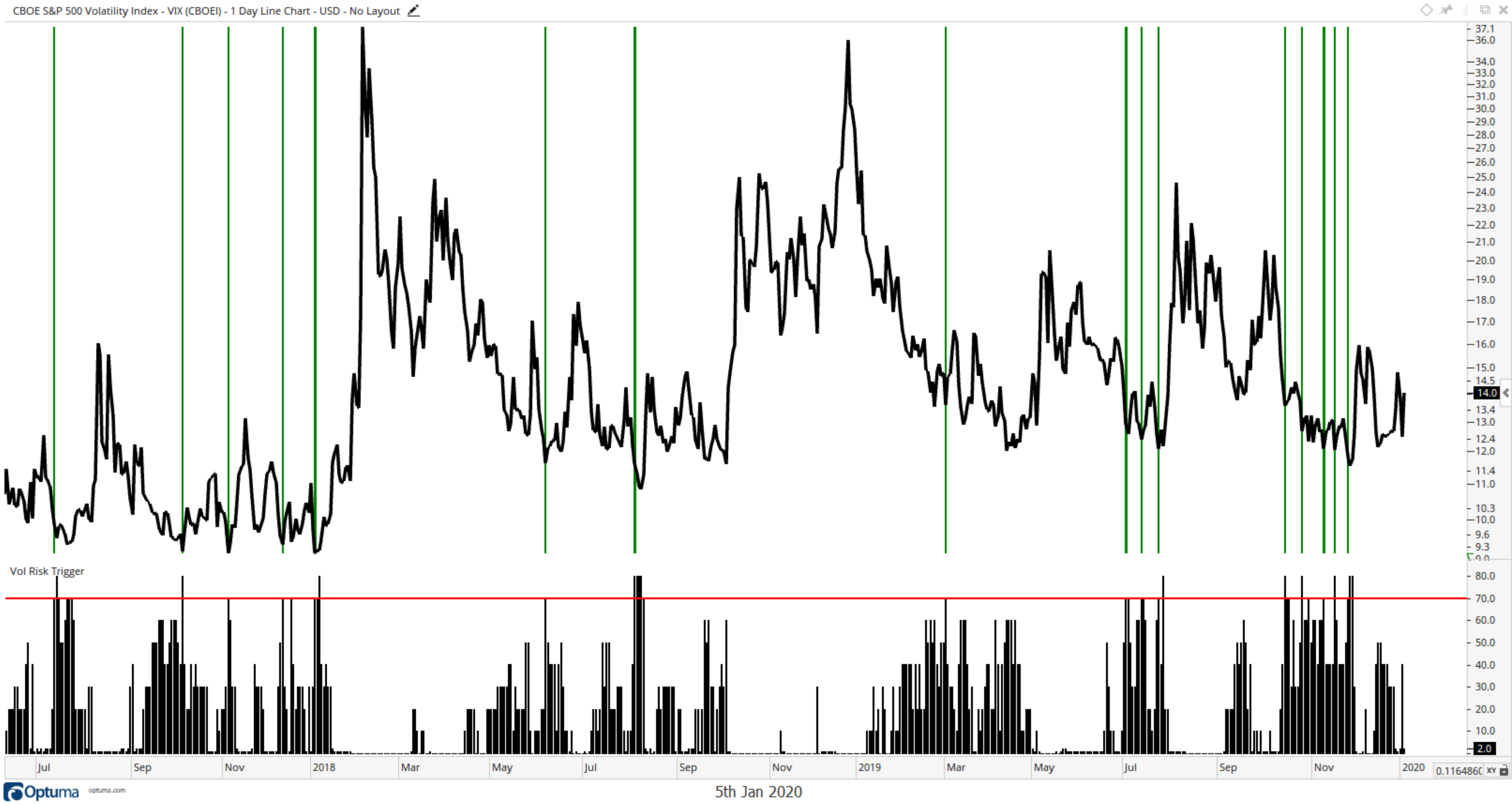
Daily Sentiment Index	% Bullish	5-day MA
S&P 500	77%	79%
Nasdaq 100	78%	81%
Nikkei	66%	72%
VIX	16%	13%
10yr Treasury	46%	38%
5yr Treasury	45%	41%
CRB Index	78%	72%
Gold	78%	63%
U.S. Dollar	45%	38%

**Green<25% Red>80%*

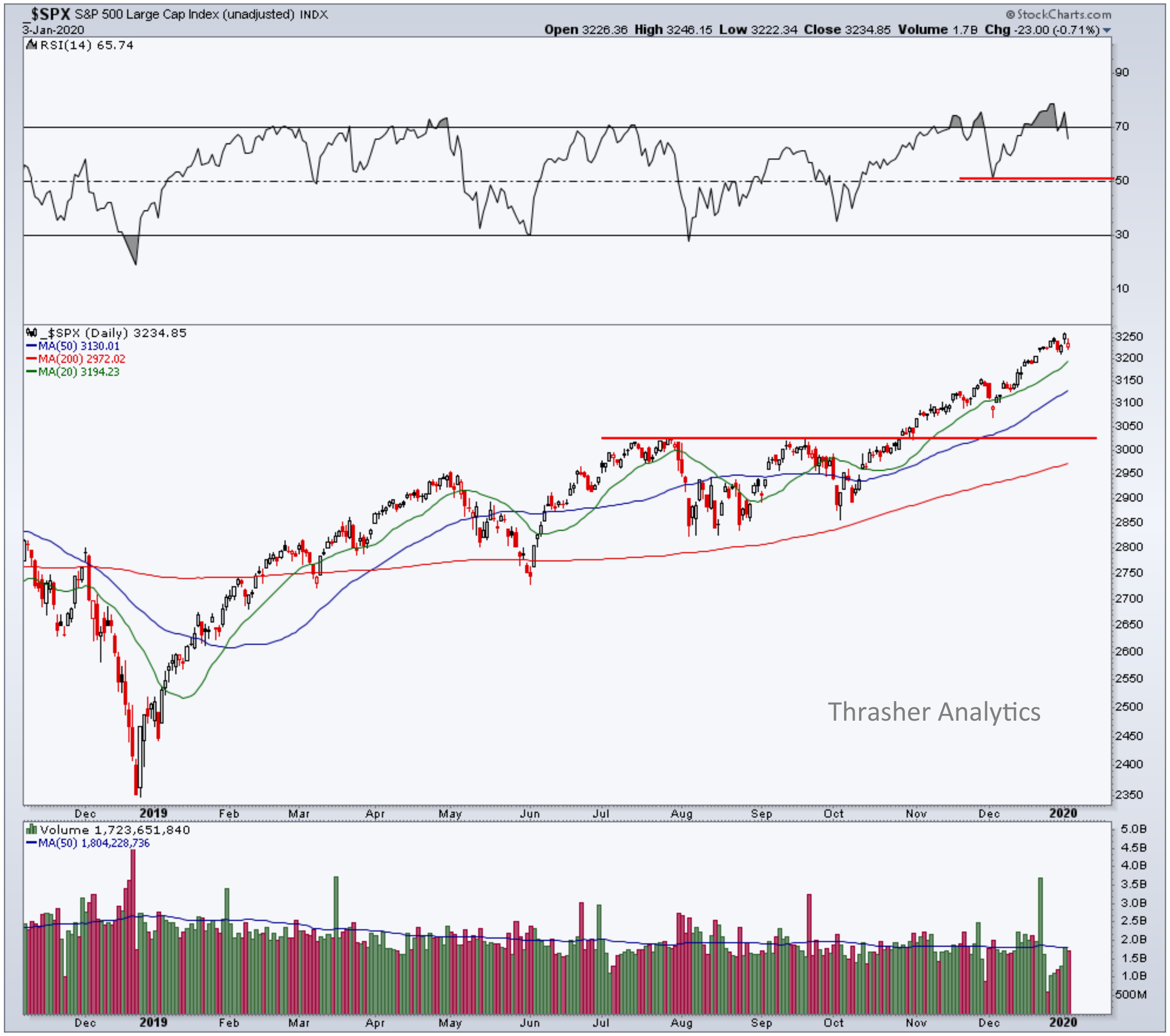
	Sector	> 50MA	> 200MA	1wk Perf	1mo Perf	3mo Perf	12mo Perf
✔	SPDR Industrial Select Sector Fund ETF	True	True	1.16%	3.81%	10.72%	31.99%
✔	SPDR Technology Select Sector Fund ETF	True	True	0.47%	7.21%	16.53%	56.8%
✔	SPDR Real Estate Select Sector Fund ETF	True	True	0.18%	0.65%	-1.84%	26.52%
✔	SPDR Financial Select Sector Fund ETF	True	True	-0.06%	4.10%	14.06%	30.96%
✔	S & P 500 Stock Index	True	True	-0.16%	4.58%	11.14%	32.15%
✔	SPDR Consumer Discretionary Select Sector Fund ETF	True	True	-0.17%	4.67%	6.54%	28.92%
✔	SPDR Communication Services Select Sector ETF	True	True	-0.33%	3.75%	10.58%	31.07%
✔	SPDR Utilities Select Sector Fund ETF	True	True	-0.68%	1.80%	0.09%	22.96%
✔	SPDR Consumer Staples Select Sector Fund ETF	True	True	-1.38%	0.55%	3.19%	24.29%
✔	SPDR Health Care Select Sector Fund ETF	True	True	-1.65%	2.44%	14.09%	21.29%
✔	SPDR Energy Select Sector Fund ETF	True	False	-2.08%	4.12%	5.93%	4.32%
✔	SPDR Materials Select Sector Fund ETF	False	True	-2.35%	1.12%	6.62%	21.04%

The best performing sectors over the last week was industrials and technology. Tech has now risen over 50% of the last twelve months, the only sector to have outperformed the S&P 500. All sectors except materials remain above their respective 50-day moving Average.

VOLATILITY RISK TRIGGER (VRT)

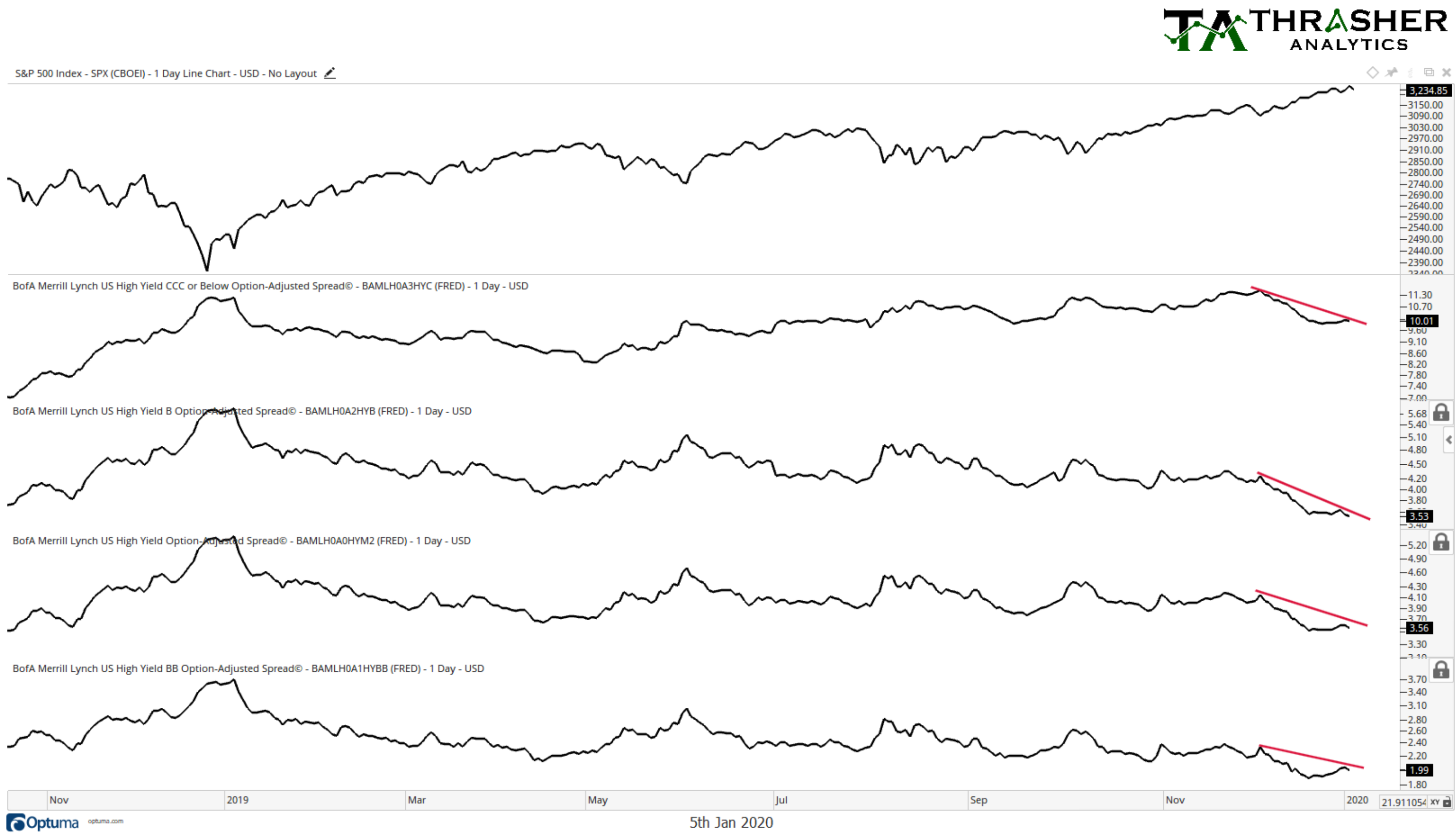


I previously mentioned the rise in correlation between the S&P 500 and the VIX which has led to the Volatility Index holding above 13 last week. While the VRT has not triggered since late-November when VIX went from 12 to 16, it is notable that the weekly dispersion for volatility has begun to contract to a significant level. However, daily volatility dispersion has not declined to a meaningful level. The sentiment towards volatility remains low, with the Daily Sentiment Index finishing the week at 16% bullish but hitting 9% on Thursday. Even though the VIX has held within its 2-month range, its bullish sentiment has declined back near historical lows.



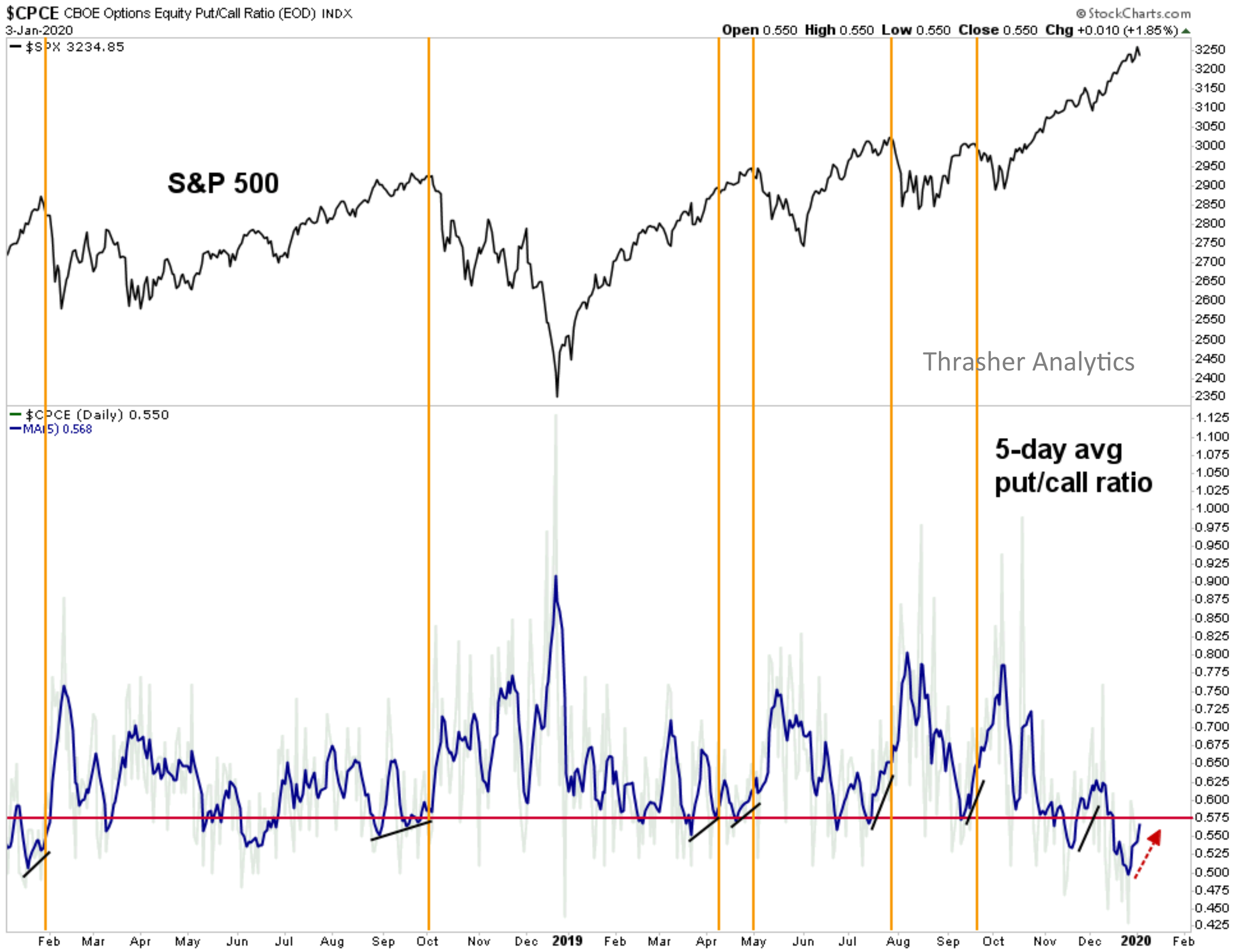
The S&P 500 continued to follow its bullish seasonal path last week, rising to finish out its 'Santa Claus' rally. While on the topic of seasonality, January is typically bullish for equities but SentimenTrader recently noted that historically when starting a new year after closing at an all-time high the SPX has typically consolidated or declining for the first 30 days of trading (through mid-February/early March). The three most recent occurrences were in 2015, 2014, and 1999 - each saw a 5-10% pullback before mostly continuing higher. If we do see a move lower in stocks as this historical precedence would suggest, I'll be watching the RSI if it holds above 50 and if price can hold its 50-day Moving Average, which we currently sit well above.

With the rise in equities the four primary components of Risk Appetite have begun (or continued) to falter. We've already well established the trend in under-performance of small cap stocks as shown by equal weight and the Russell 2000 unable to compete with the SPX but recently the high yield bond market and high beta stocks have also paused. High yield and high beta had been providing confirmation in risk appetite for up trend in equities over the last two months but the latest high in the S&P 500 did not see confirmation in a higher-high in these two ratio. Meanwhile, equal weight saw a new one year low in relative performance as traders continue to focus on the mega cap corners of the large cap index.

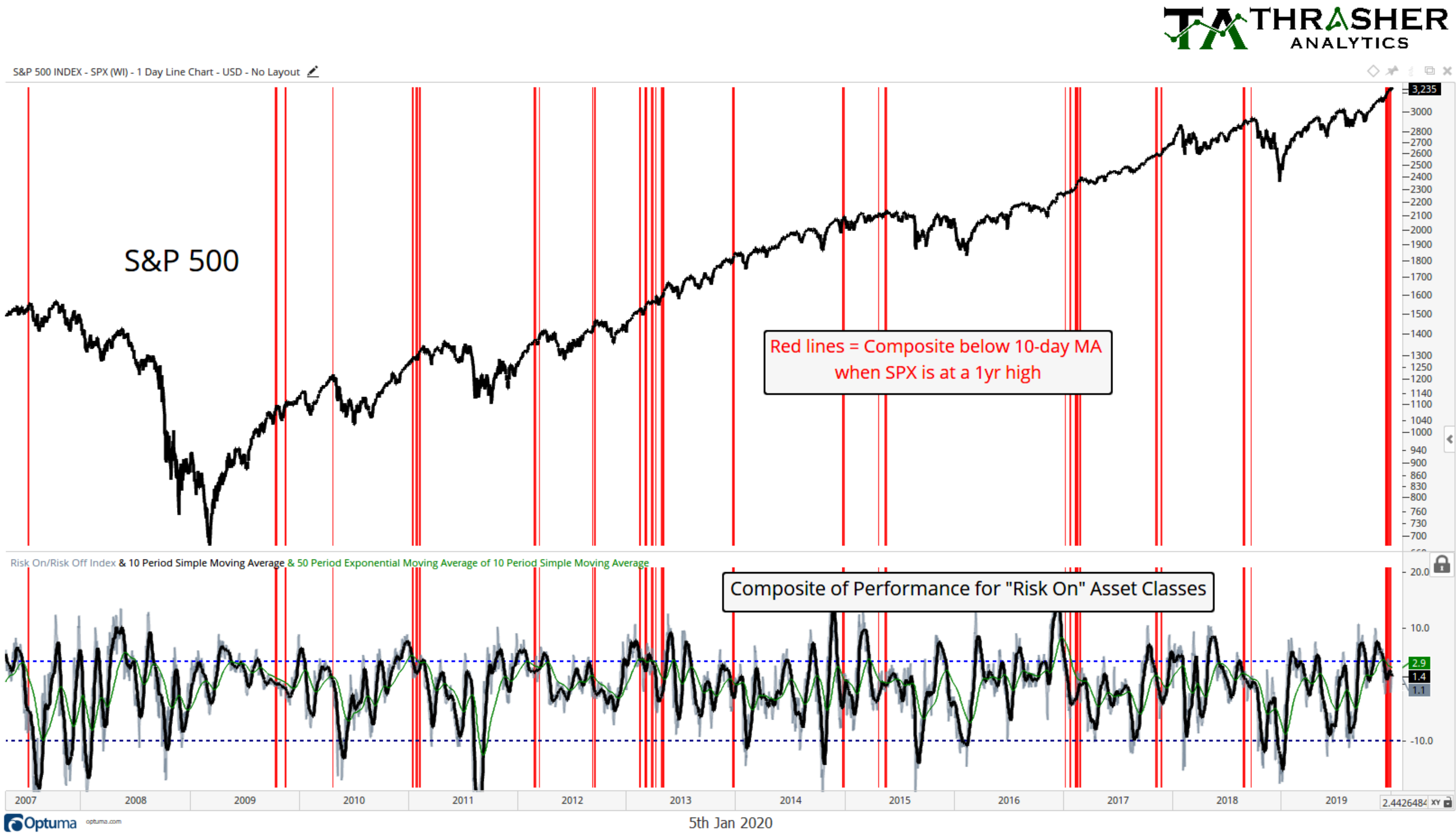


While high yield bond spreads started to cause some concern in the 4th quarter of last year, they've continued to resume their trends lower to close out 2019. Above are the CCC, B, BB, and HY indices, showing various angles of the junk bond market. When these spreads began to rise, as they did ahead of the Q4 '18 decline in equities, it's a sign the market has grown uneasy in fixed income land. That's not the case today with each index in a defined down trend and not showing signs of stress, a positive note for equities.

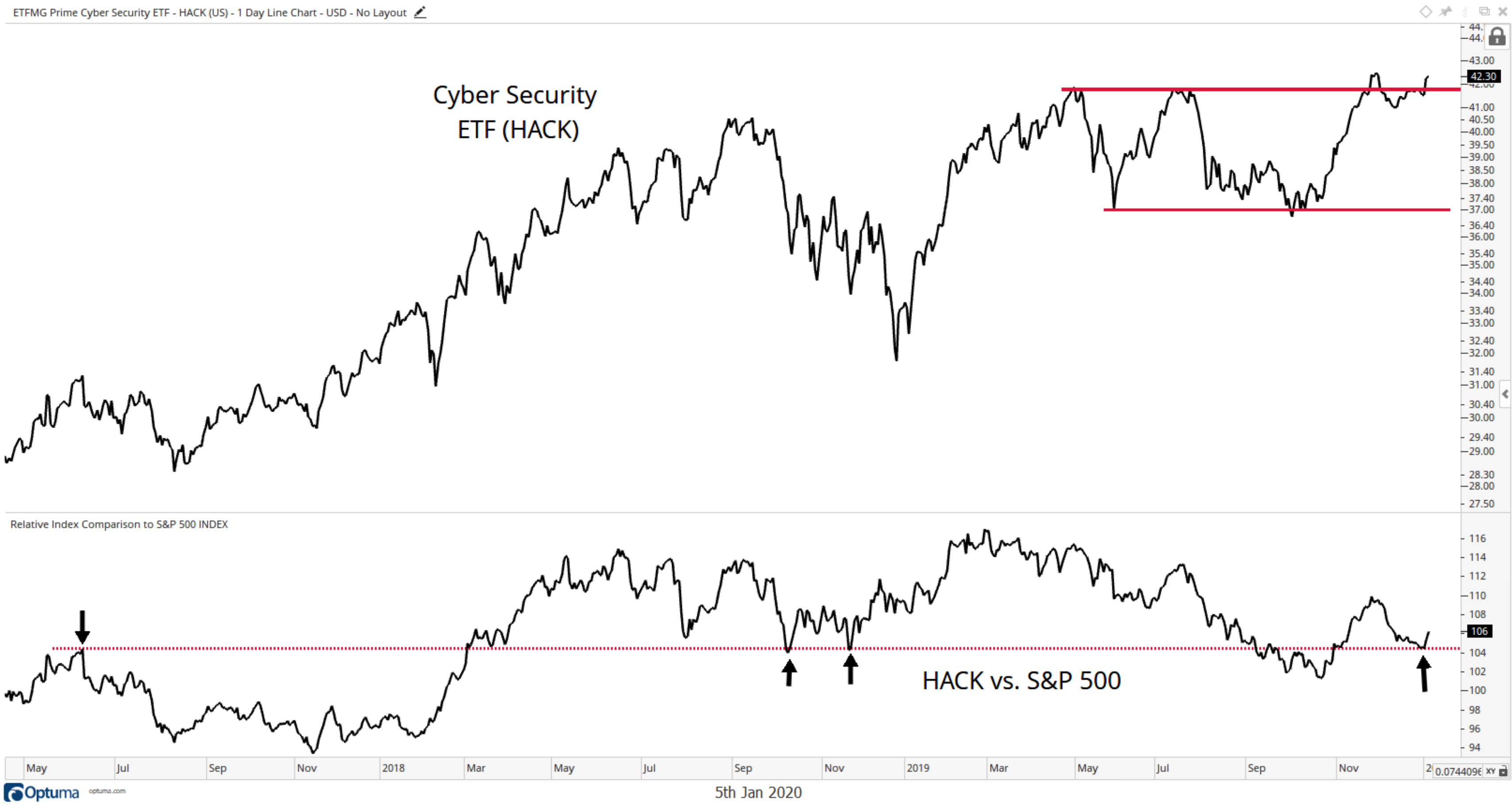
From a sector stand point, the picture remains bullish for U.S. equities. Offensive sectors have continued to lead their defensive counterparts over the last couple of months. The index in the top panel broke above its November prior high, confirming the up trend in equities. Traders remain interested in the offensive sectors such as tech and financials, which also has been where the Thrasher Analytics sector rotation model has shown an overweight in recent months.



I've shown this chart several times recently, and wrote a blog post about it last week. As I've previously mentioned but will repeat for those that are new to this letter, my focus on the put/call ratio is when it begins to rise and have a positive relationship with the S&P 500 after being at a very low level. The chart above shows vertical lines at prior turning points in the SPX, each occurring after the put/call ratio had risen off its low. May commentators got nervous when the ratio fell to a new year low at the end of December, but it was not a worry I shared. However, since then we've gotten new data and the ratio has in fact begun to rise - a sign that more puts are being purchased as traders potentially grow weary of the latest leg higher in stocks. We saw this in late-November also occur which was followed by just a 3-day drop in price before resuming the trend higher, so it's possible the same type of quick response and resumption of the trend occurs again. But I would think if we do see a response it'll be more protracted than that, as the ratio has risen off a low last seen in January 2018. The fact (as previously mentioned) that risk appetite has also begun to slow, it seems to suggest traders are ready to see this latest trend take a breather.

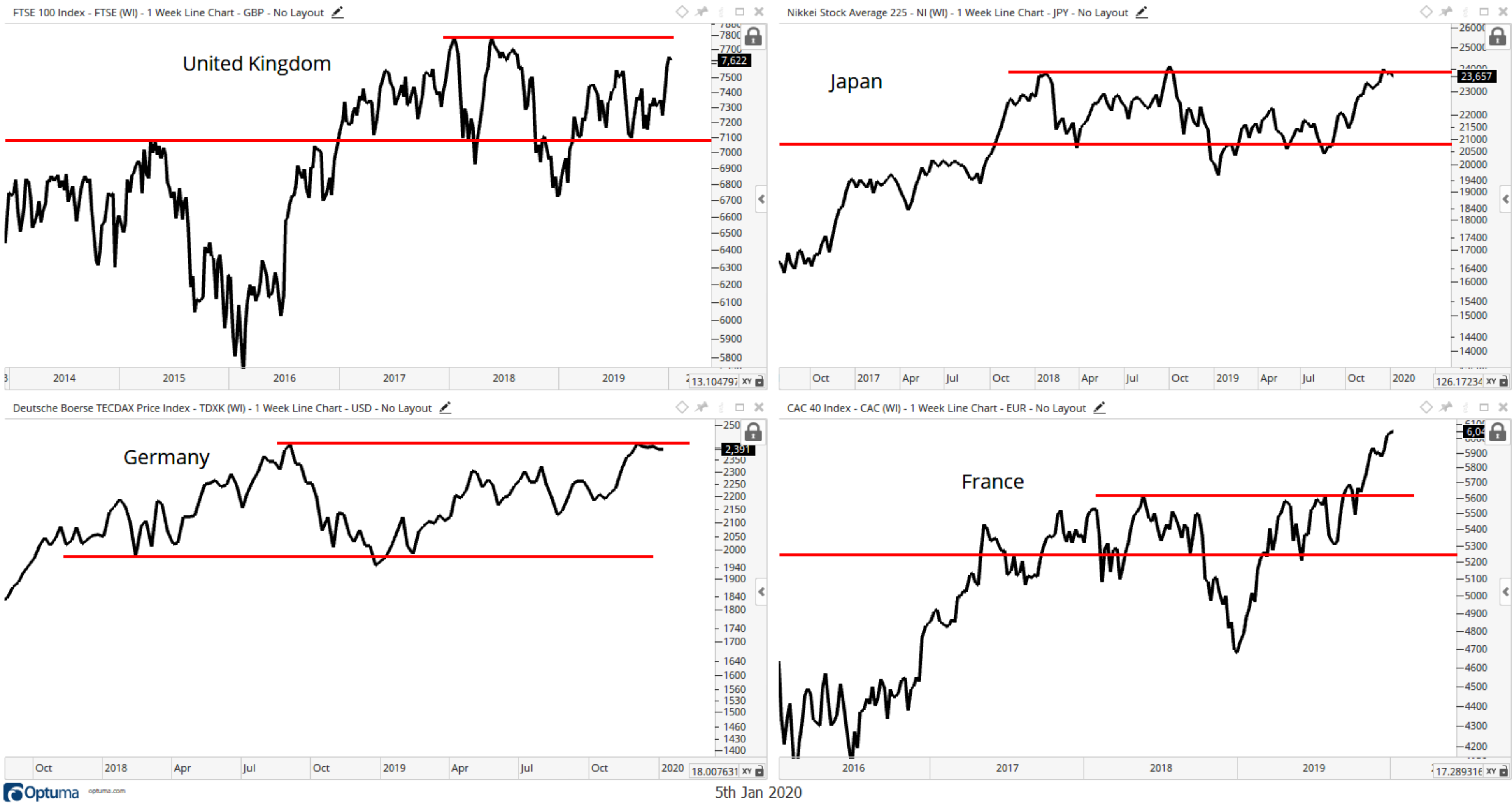


Above is the S&P 500 and the composite of performance for the ‘risk on’ asset classes, smoothed by a moving average. I noticed last week that the composite has begun to decline, even though the broad index was moving to a new high. The red lines show when this has occurred in the past, with the composite falling below a 10-day moving average when the index was at 1-yr high. This last occurred in the summer of 2008 but also before the late 2017 run up that saw a move higher in equities. The prior occurrences are mixed, with some seeing a short-term decline in price and others being ignored as the index powered higher. Many times this occurred and the index took a few steps higher before giving its last breadth ahead of a decline like we saw in 2011, 2012, and 2015.

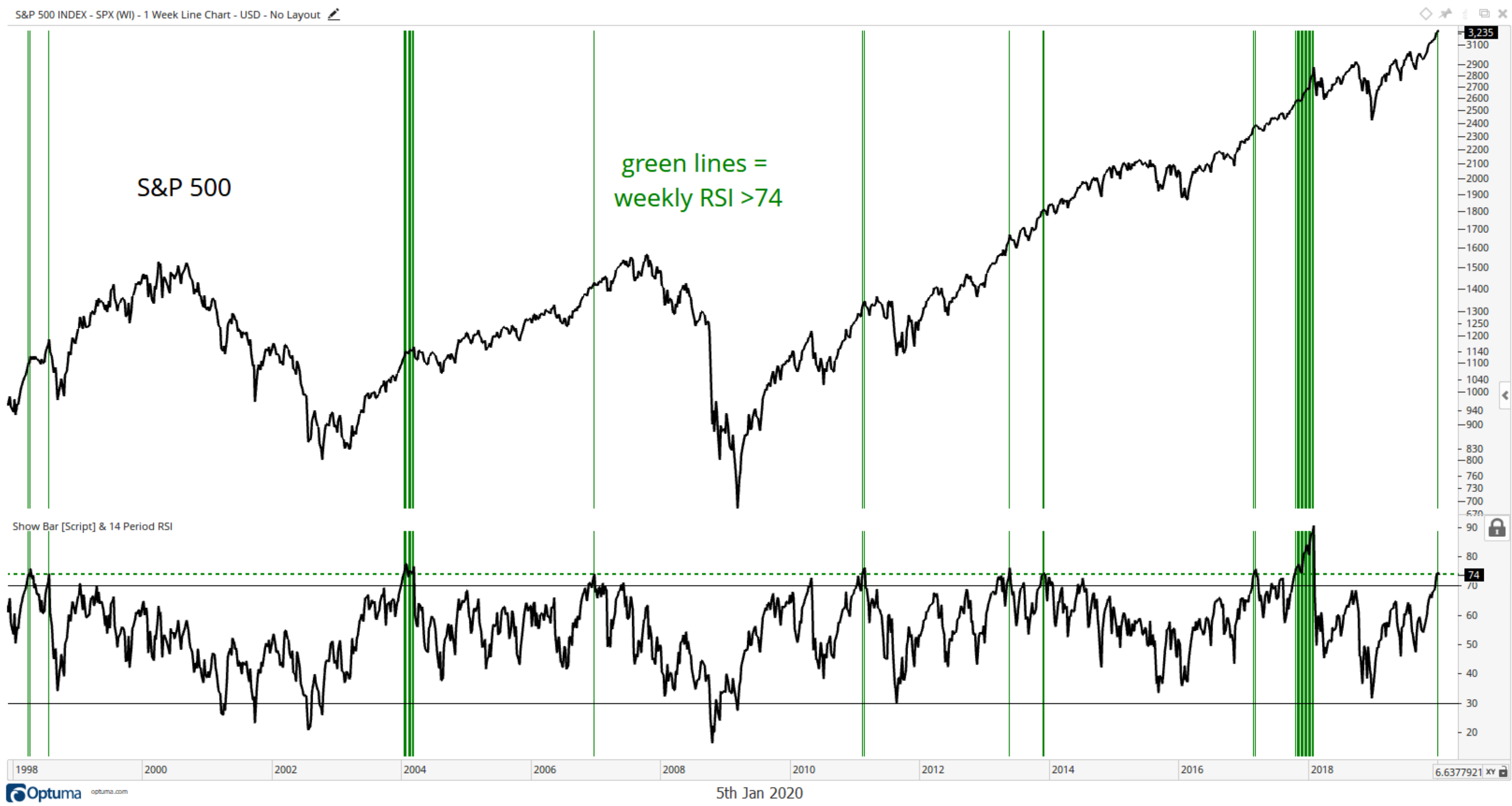


One pocket of the market I do like right now is cyber security. This interest increased with the latest int'l development in the assassination of Soleimani of Iran. The blow back this will have on the U.S. could be felt digitally through a cyber attack, increasing the importance of cyber security. Above is one of the two largest cyber security ETFs, HACK. Which recently broke above its early 2019 highs and sits just under its November high. The relative performance for HACK has also recently improved after (bottom panel) the relative performance tested the 2018 and 2017 turning points, holding as support. There are several specific names in this space I think look interesting but the broad sector is appealing as well, especially if HACK can break to a new all-time high. Many investors will focus on the defense contractor names, which will get pushed around in both directions as news comes out of the middle east, however cyber security's popularity has a more established growth trend and can sustain a bullish trend beyond what develops in in Iran and Iraq over the coming weeks.

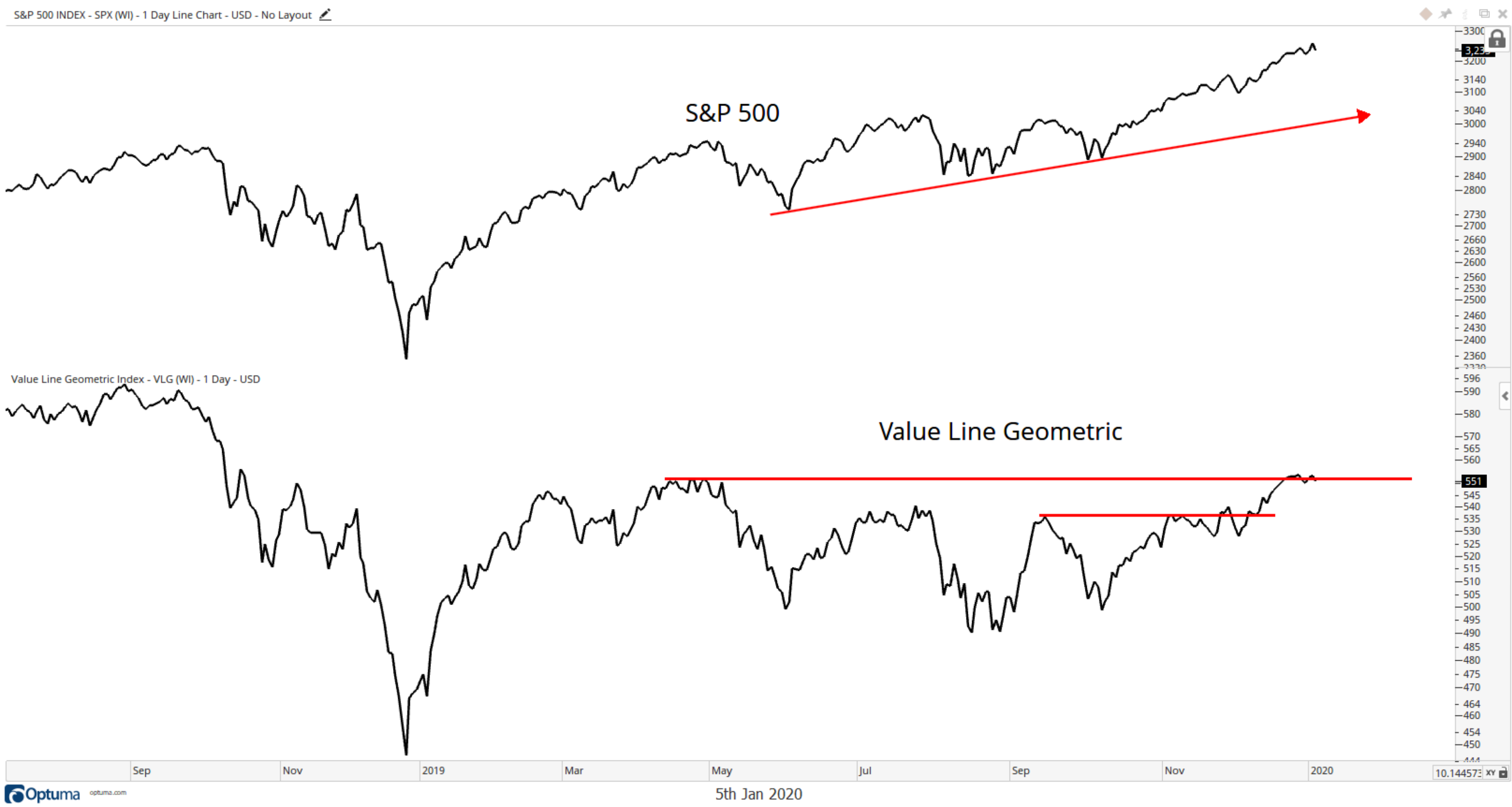
Major International Markets



The price action internationally hasn't changed much. I continue to be very focused on Germany and Japan as they remain below their prior highs, struggling to break out. While many other smaller markets have moved higher, these two have not, and in my view, matter a heck of a lot more. France remains the strongest of the four, continuing to climb and mirroring the U.S. equity market. The U.K. also remains under its 2018 high but is trying its best to approach it, if and when it does I'll be watching if its able to break out.



The 14-week Relative Strength Index (RSI) has continued to rise along with the price action, hitting its highest level since January 2018. This is also a level that we haven't seen breached very often in the last twenty years, which are marked by green vertical lines on the chart above. During the strong trend in 2013 the market ignored the frothy momentum levels and made a second push higher in 2011 and in 2007. While I don't believe 'overbought' momentum in a bad long-term development, what I'll be watching for is if we see a lower high, creating a bearish divergence, as price makes a higher high. This is what we saw play out in Q4 2018, 2011, and 2007. It also happened in 2015 but took much longer as price consolidated ahead of the bear market that ensued. This high reading in RSI can cause some short-term headwinds but long-term it's a positive until we see it not be sustained along with the up trend in price, which I'll of course document in this letter if it does occur. But at this point, momentum shows bullish confirmation for price.



Here's our good friend the Value Line Geometric Index (VLG), an index built with over 1,600 stocks that gives a good representation of the broad equity market. Typically the VLG confirms the moves seen in the S&P 500, but when it shows weakness, it can be a sign of bearish price action to come for the SPX as well. Lately the VLG has not been able to show the same degree of strength as the SPX but did try to break out in December above its May 2019 high. That breakout, so far, has failed to hold with VLG back under that price level. Because of this (current) false breakout, I'll be watching the VLG closely this week if SPX does continue to trend higher, hoping to see some bullish action come from the Value Line index as well. If it does not, and instead weakens further, that's a bearish sign for stocks and one we'll want to pay attention to.

Market	% Bullish	5MA	History
VIX DSI	16	13.4	
Orange Juice DSI	21	24.4	
Corn DSI	25	27.2	
Lean Hog DSI	28.00	34.60	
Cocoa DSI	31.00	31.80	
Natural Gas DSI	33.00	35.20	
British Pound DSI	35.00	39.80	
Swiss Franc DSI	39.00	40.40	
Euro DSI	40.00	45.40	
Australian Dollar DSI	40.00	46.00	
US Dollar DSI	45.00	38.20	
5YR DSI	45.00	41.80	
10Y DSI	46.00	38.60	
Cattle DSI	55.00	60.60	
Sugar DSI	62.00	63.80	
Lumber DSI	62.00	65.60	

Code	% Bullish	5MA	History
Copper DSI	62.00	67.40	
Coffee DSI	63.00	69.80	
EuroDollar DSI	65.00	65.00	
Nikkei DSI	66.00	72.80	
Wheat DSI	70.00	77.60	
Cotton DSI	71.00	70.00	
New Zealand Dollar DSI	73.00	80.4	
SPX DSI	77.00	79.80	
Silver DSI	78.00	70.80	
Nasdaq DSI	78.00	81.4	
Heating Oil DSI	78.00	74.20	
Gold DSI	78.00	63.20	
Crude Oil DSI	78.00	73.40	
CRB Index DSI	78.00	72.60	
Gasoline DSI	80	73.40	
Platinum DSI	81	75.20	
Palladium DSI	88	78.00	
Mexican Peso DSI	91	86.2	

Type Code or Name to add an item to the watchlist

Above is the DSI score for each of the futures markets. The VIX, Orange Juice, and Corn all have bullish readings at or below 25%. Meanwhile, Gasoline, Platinum, Palladium, and the Mexican Peso have bullish readings at or above 80%. Also note the 5-day average for the Nasdaq and NZ Dollar are also over 80%.


10 Year U.S. Treasury Notes - TYSpot (CBOT) - 1 Day Line Chart - USD - No Layout
10yr Treasury Bond
10Y DSI (DSI) - 1 Day - USD
129' 12 ½
46.00
Nov
2016
Mar
May
Jul
Sep
Nov
2017
Mar
May
Jul
Sep
Nov
2018
Mar
May
Jul
Sep
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2019
Mar
May
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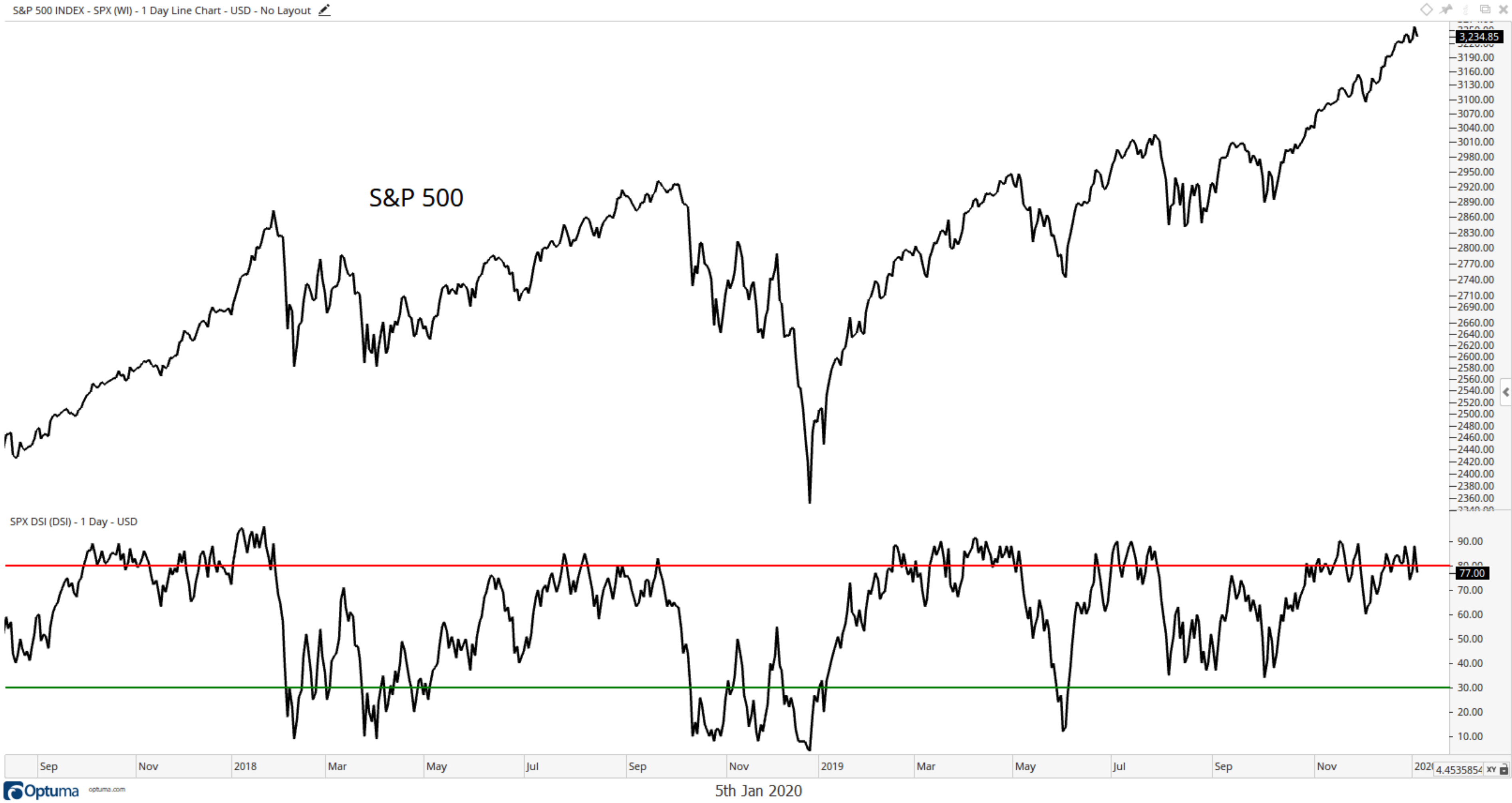
Sep
Nov
2020
5th Jan 2020


S&P 500 INDEX - SPX (WI) - 1 Day Line Chart - USD - No Layout
S&P 500
3,234.85
SPX DSI (DSI) - 1 Day - USD
77.00
Sep
Nov
2018
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May
Jul
Sep
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2019
Mar
May
Jul
Sep
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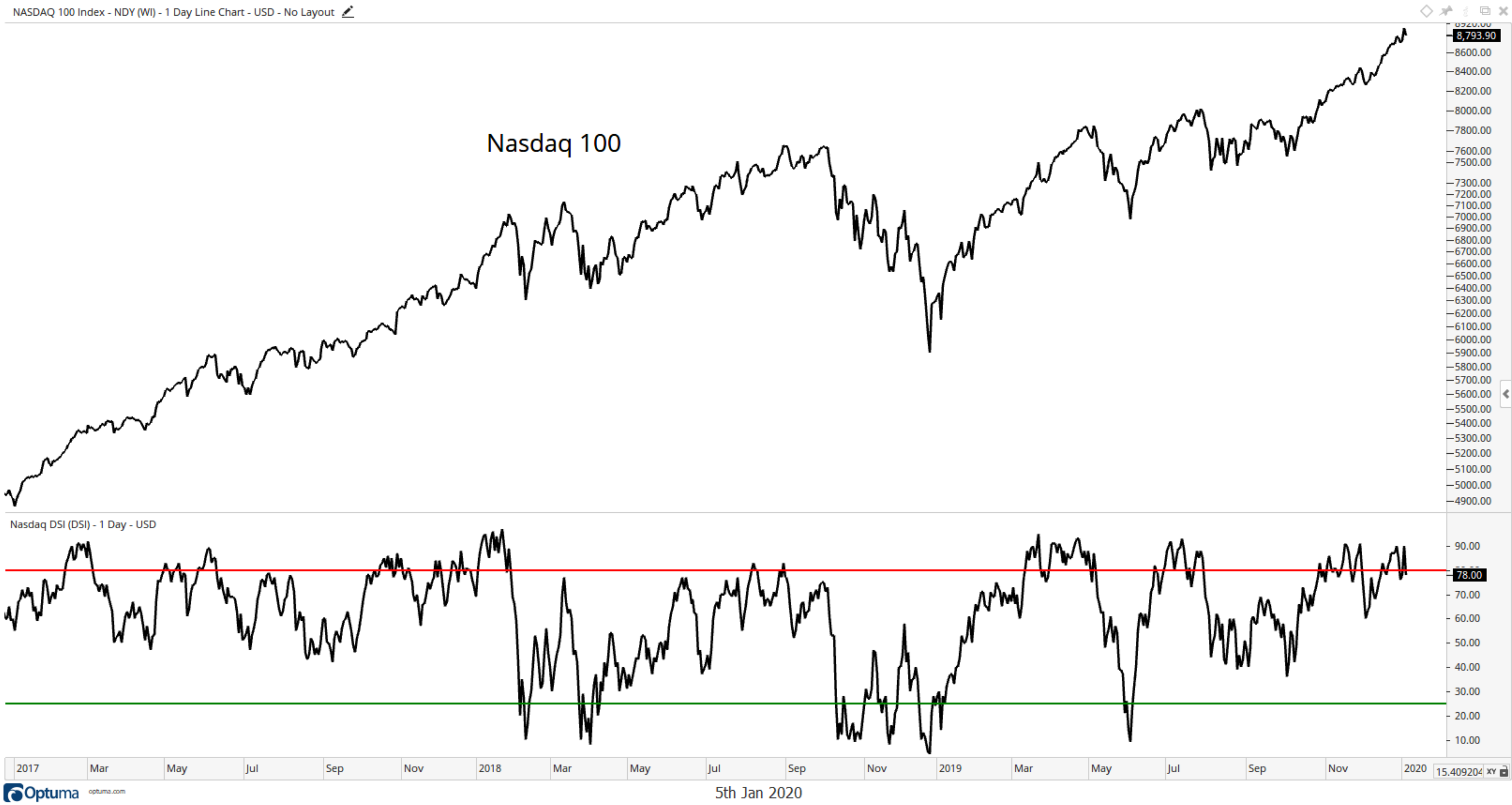
Optuma
5th Jan 2020

Daily Sentiment Index Nasdaq 100




Gold Futures - GCSpot (NYMEX) - 1 Day Line Chart - USD - No Layout
Gold
1,552.40
1540.00
1520.00
1500.00
1480.00
1460.00
1440.00
1420.00
1400.00
1380.00
1360.00
1340.00
1320.00
1300.00
1280.00
1260.00
1240.00
1220.00
1200.00
1180.00
1160.00
1140.00
Gold DSI (DSI) - 1 Day - USD
90.00
78.00
70.00
60.00
50.00
40.00
30.00
20.00
10.00
2017
Mar
May
Jul
Sep
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2018
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May
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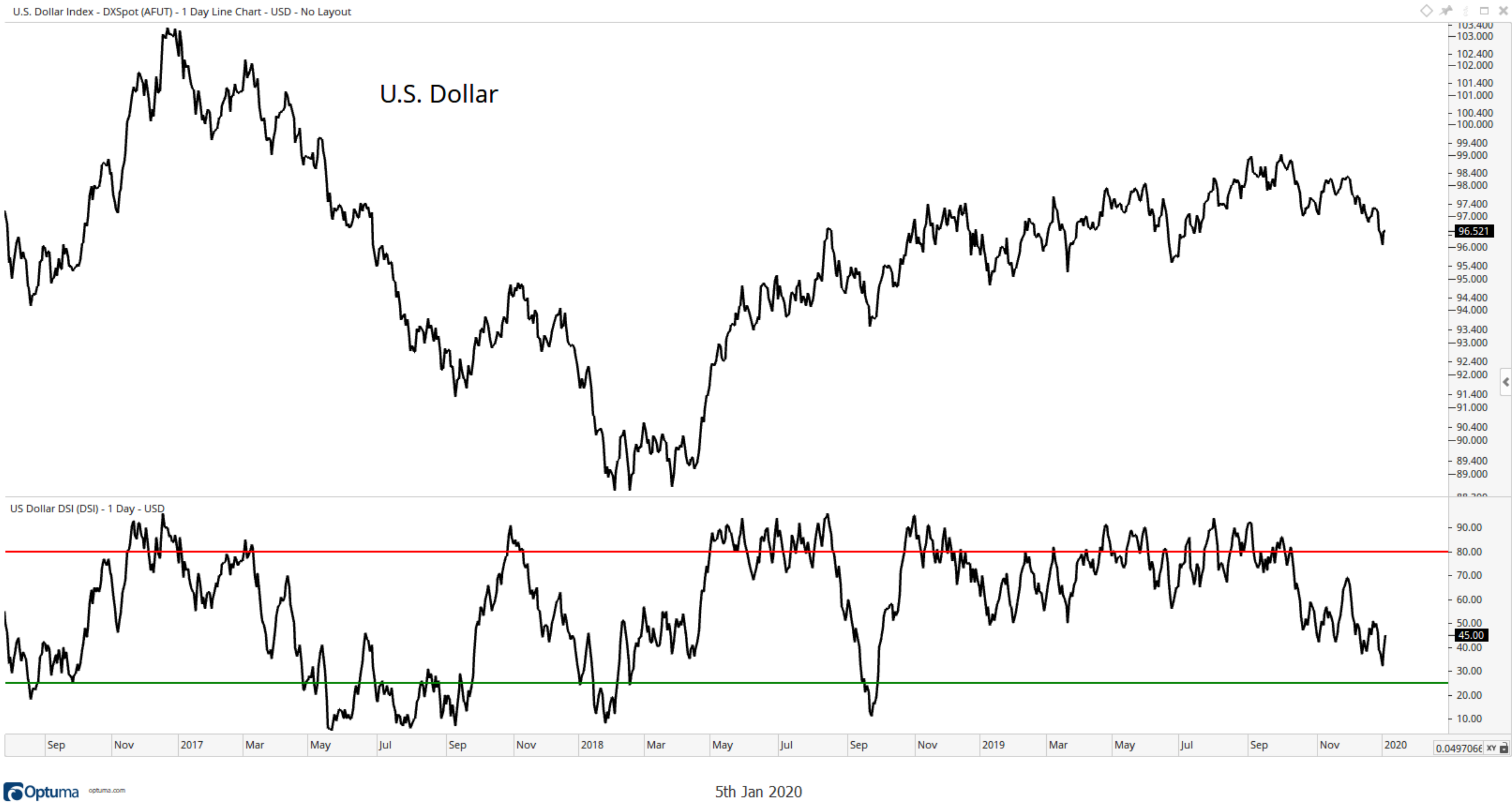
Sep
Nov
2020
5th Jan 2020

Daily Sentiment Index U.S. Dollar



5th Jan 2020


CBOE S&P 500 Volatility Index - VIX (CBOEI) - 1 Day Line Chart - USD - No Layout
VIX
VIX DSI (DSI) - 1 Day - USD
37.00
35.00
33.00
31.00
30.00
29.00
28.00
27.00
26.00
25.00
24.00
23.00
22.00
21.00
20.00
19.00
18.00
17.00
16.00
15.00
14.02
13.50
13.00
12.40
12.00
11.40
11.00
10.40
10.00
9.60
9.30
90.00
80.00
70.00
60.00
50.00
40.00
30.00
20.00
16.00
10.00
Jul
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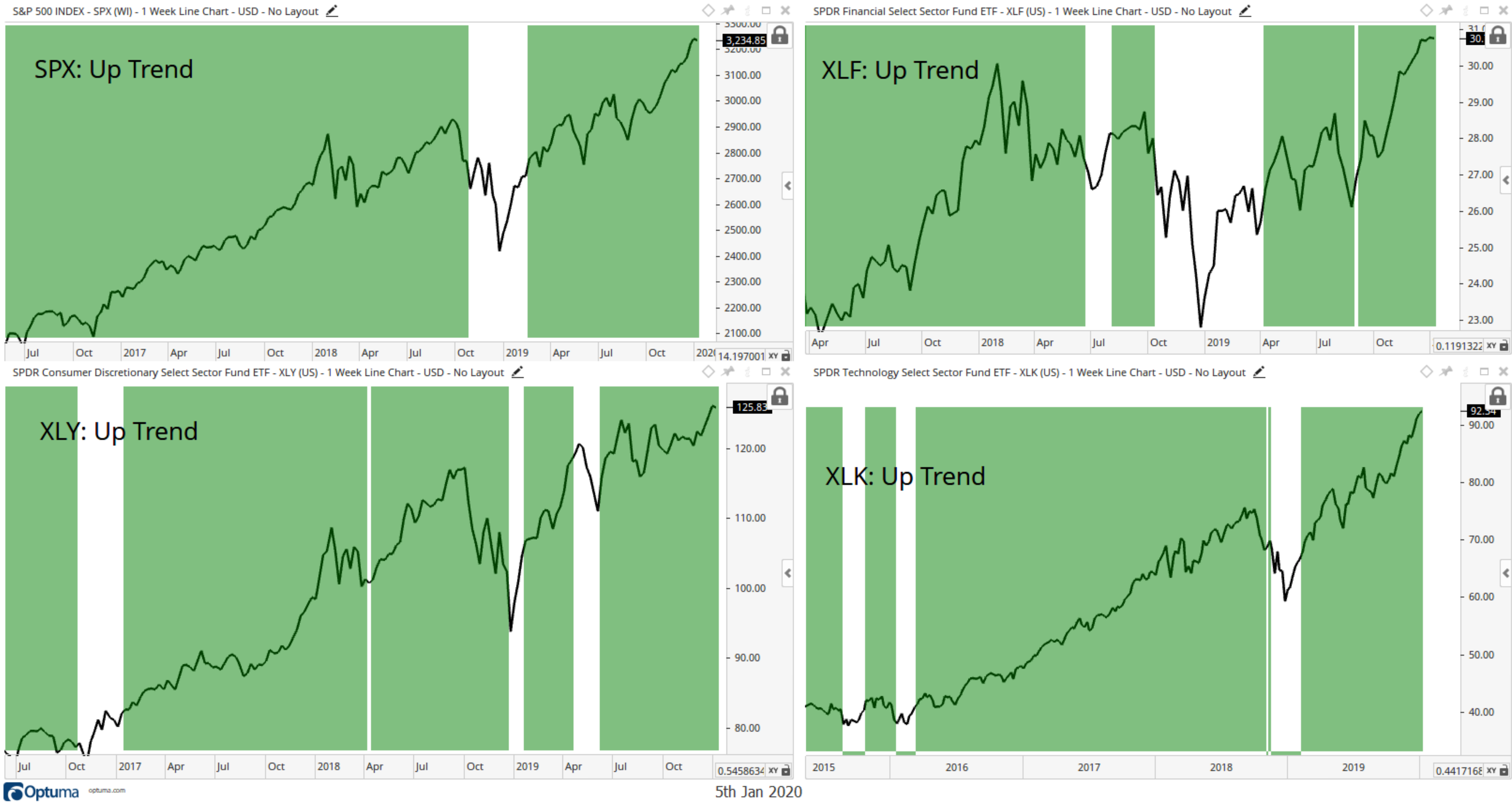
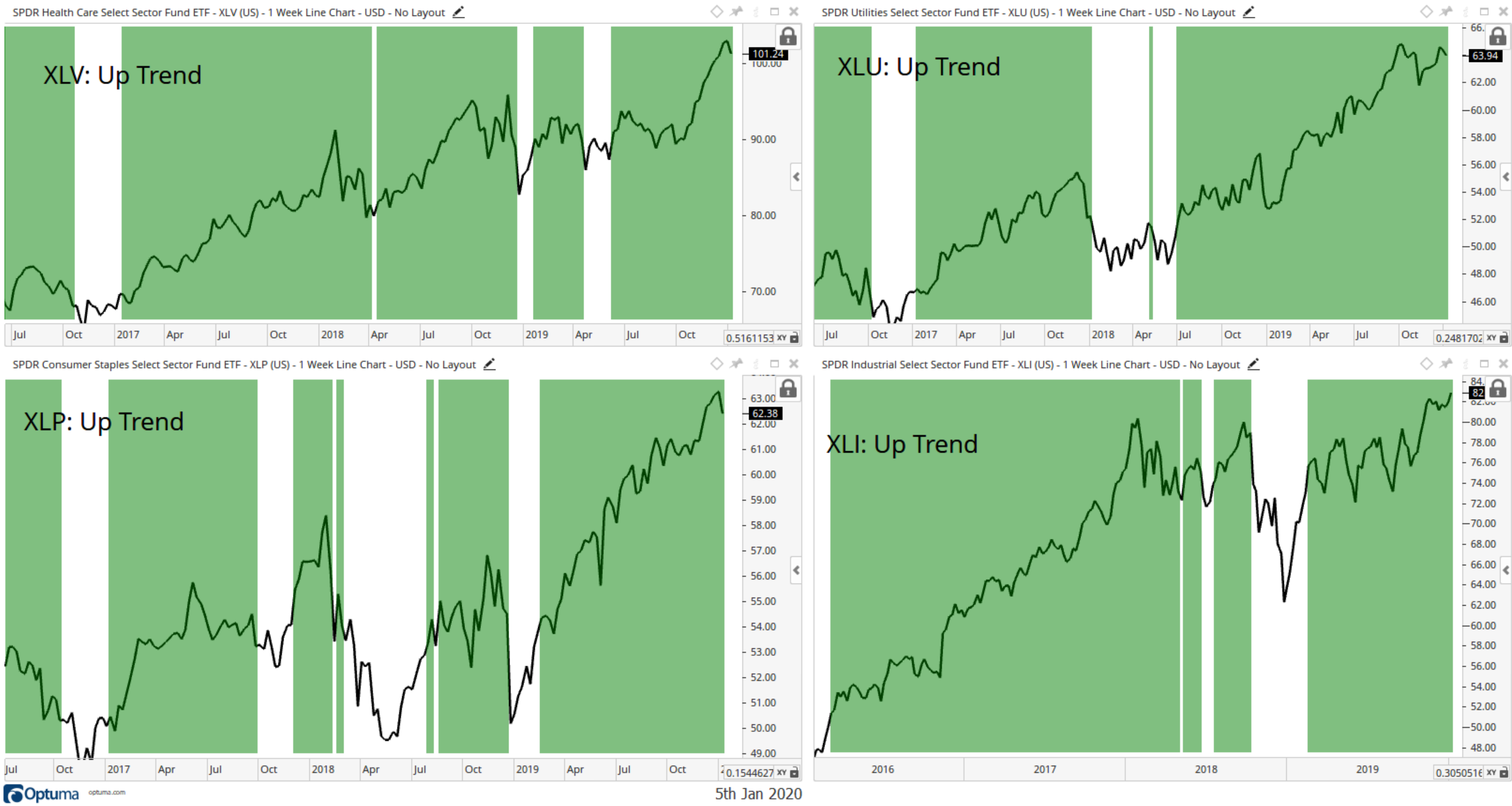
5th Jan 2020

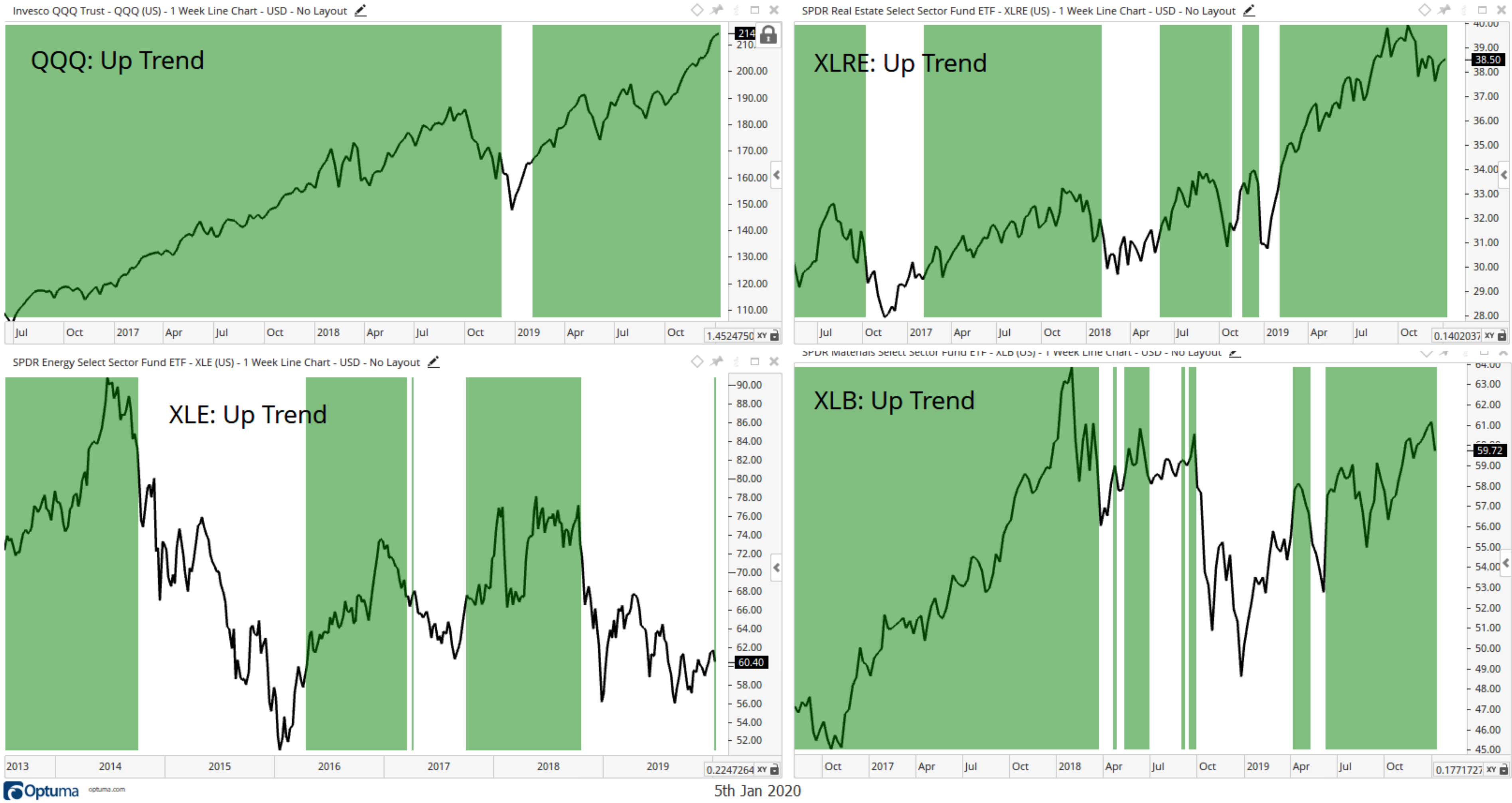
Daily Sentiment Index Nikkei 225



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



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

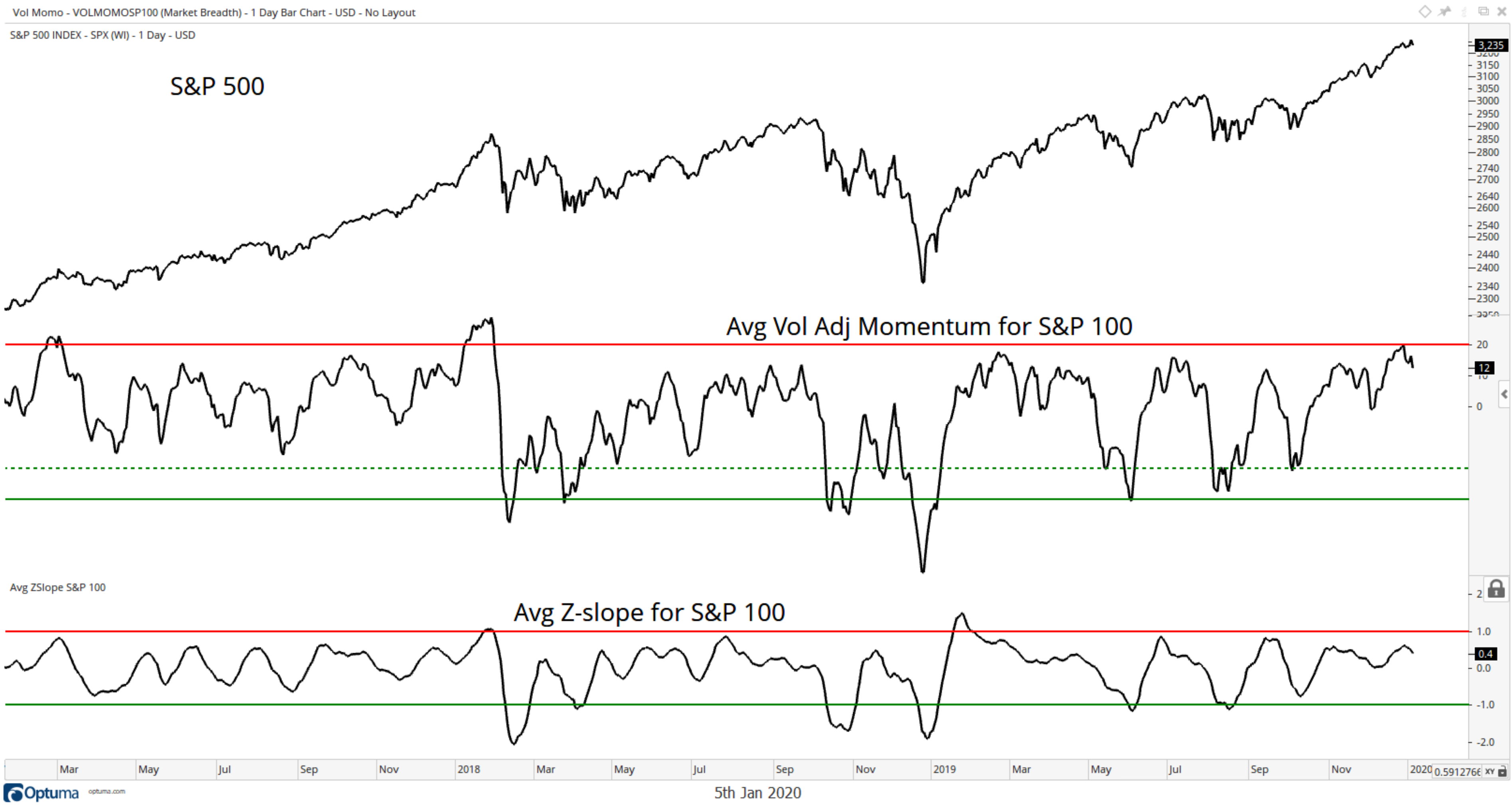


QQQ, XLRE, XLB , and XLE are in up trends. XLE has a new positive trend reading, hopefully we see it hold on.

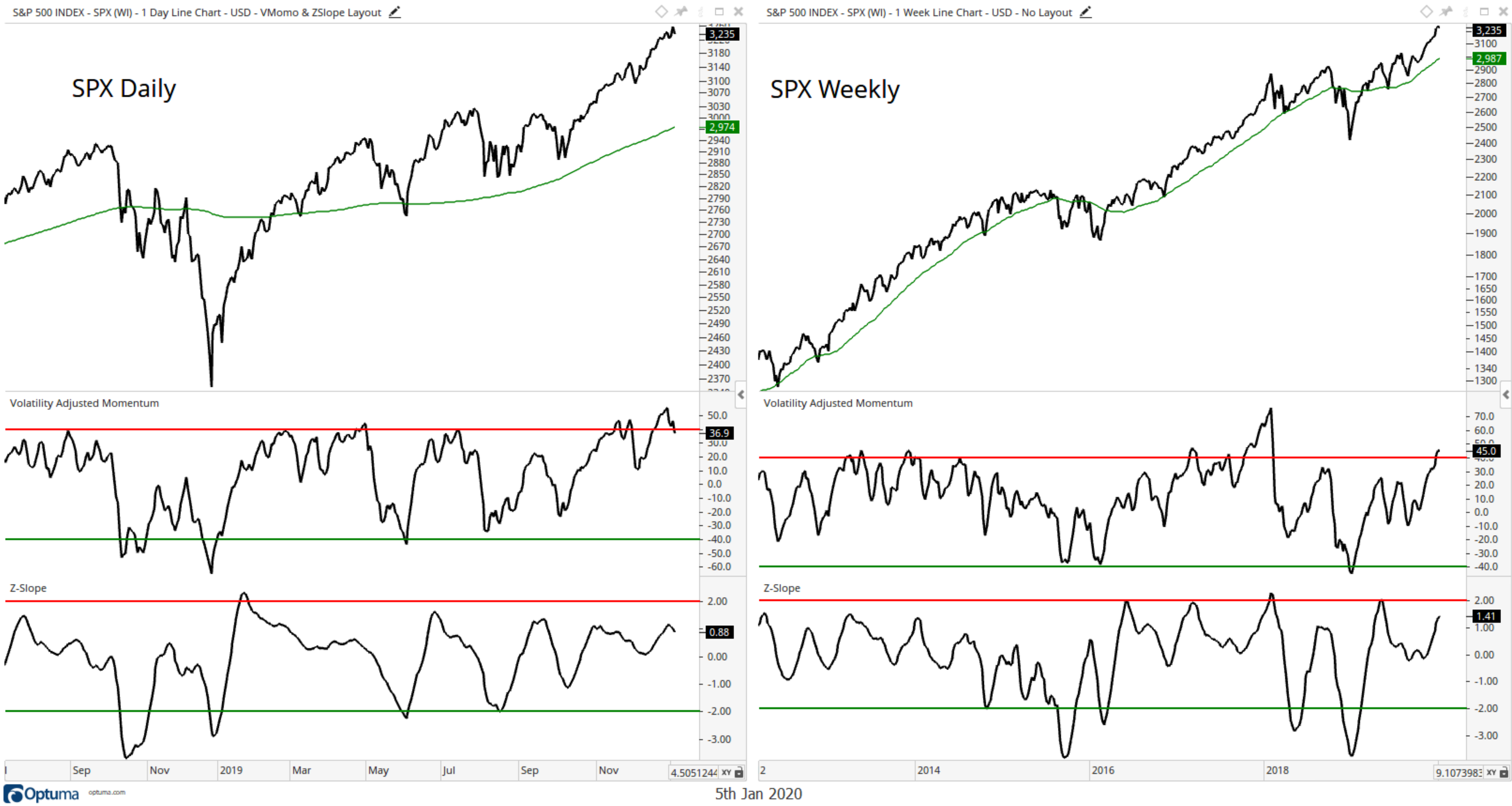
The following charts will become a regular installment for this, and future letters. Each page will include a daily and weekly chart with two indicators that are unique to Thrasher Analytics. With a focus on risk mitigation, the focus of these charts is on potential mean-reversion of each asset through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

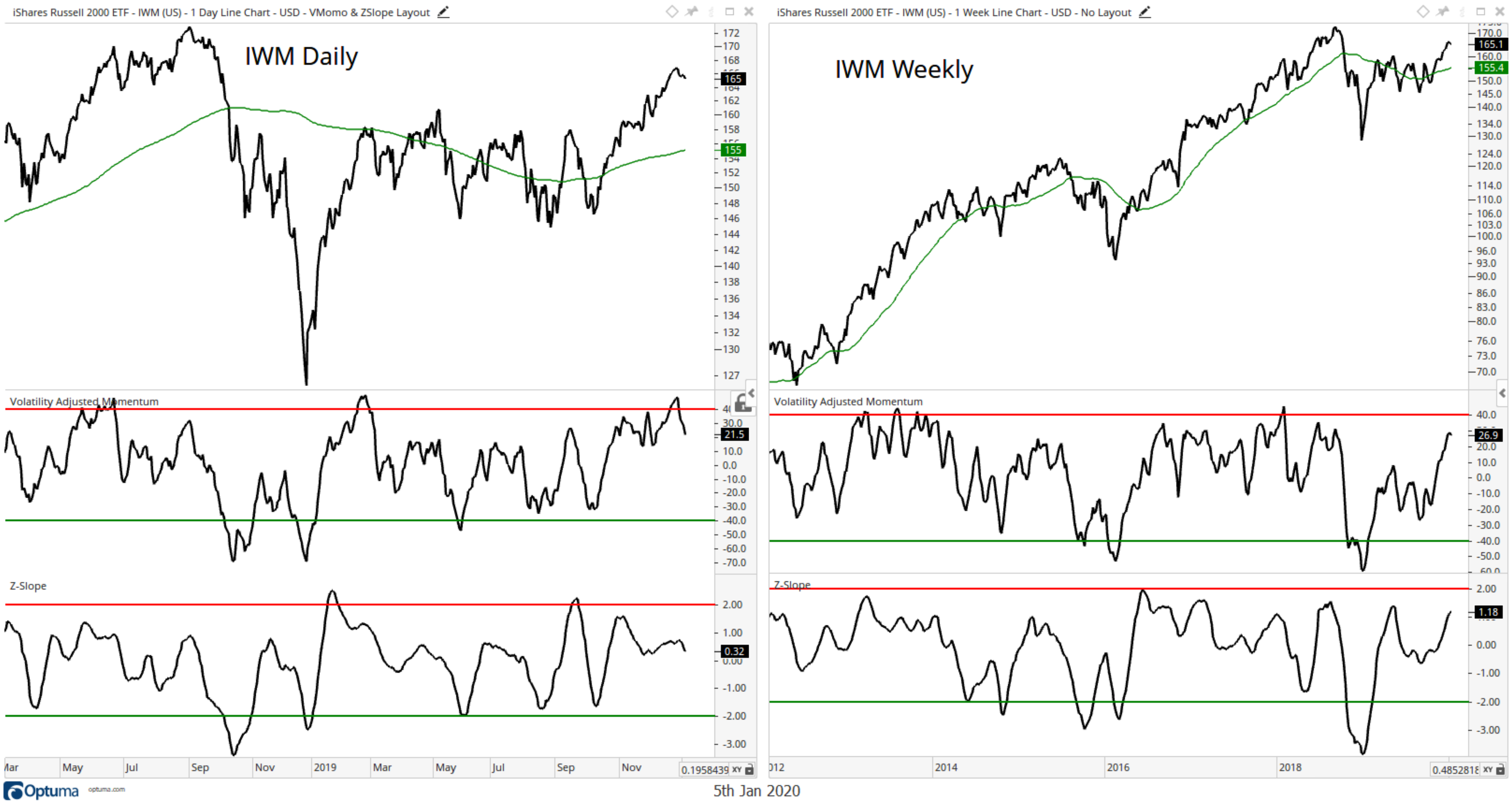
Volatility-Adjusted Momentum (VaM: This is a spin on the traditional measures of momentum, taking into account the volatility of the underlying asset into the calculation. By adjusting for volatility we can get a better look at potential mean-reversion signals when risk/ reward becomes unbalanced towards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

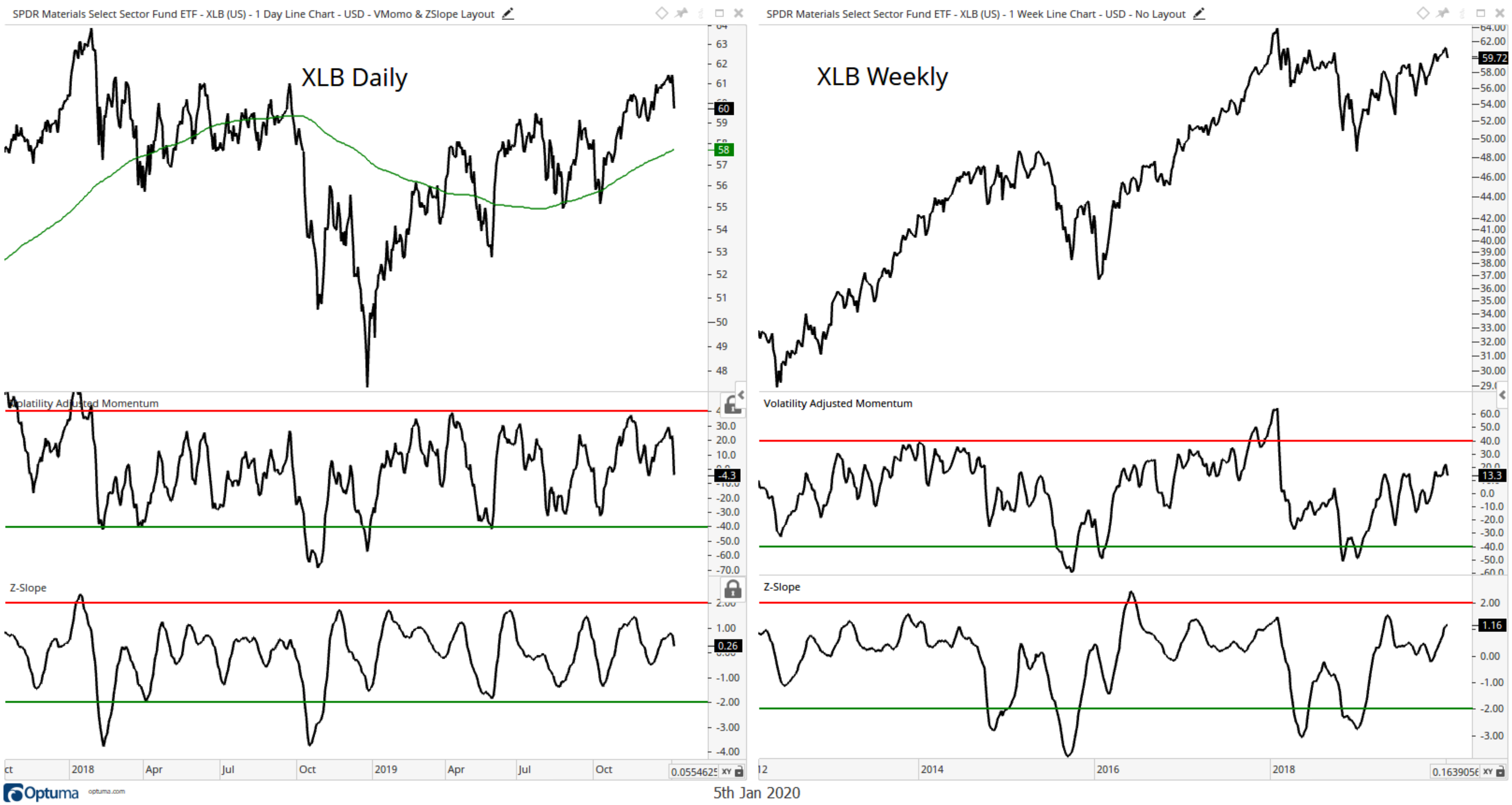

S&P 500 INDEX - SPX (WI) - 1 Day Line Chart - USD - VMomo & ZSlope Layout
SPX Daily
Volatility Adjusted Momentum
Z-Slope
S&P 500 INDEX - SPX (WI) - 1 Week Line Chart - USD - No Layout
SPX Weekly
Volatility Adjusted Momentum
Z-Slope
5th Jan 2020


iShares Russell 2000 ETF - IWM (US) - 1 Day Line Chart - USD - VMomo & ZSlope Layout
IWM Daily
Volatility Adjusted Momentum
Z-Slope
iShares Russell 2000 ETF - IWM (US) - 1 Week Line Chart - USD - No Layout
IWM Weekly
Volatility Adjusted Momentum
Z-Slope
Optuma
5th Jan 2020

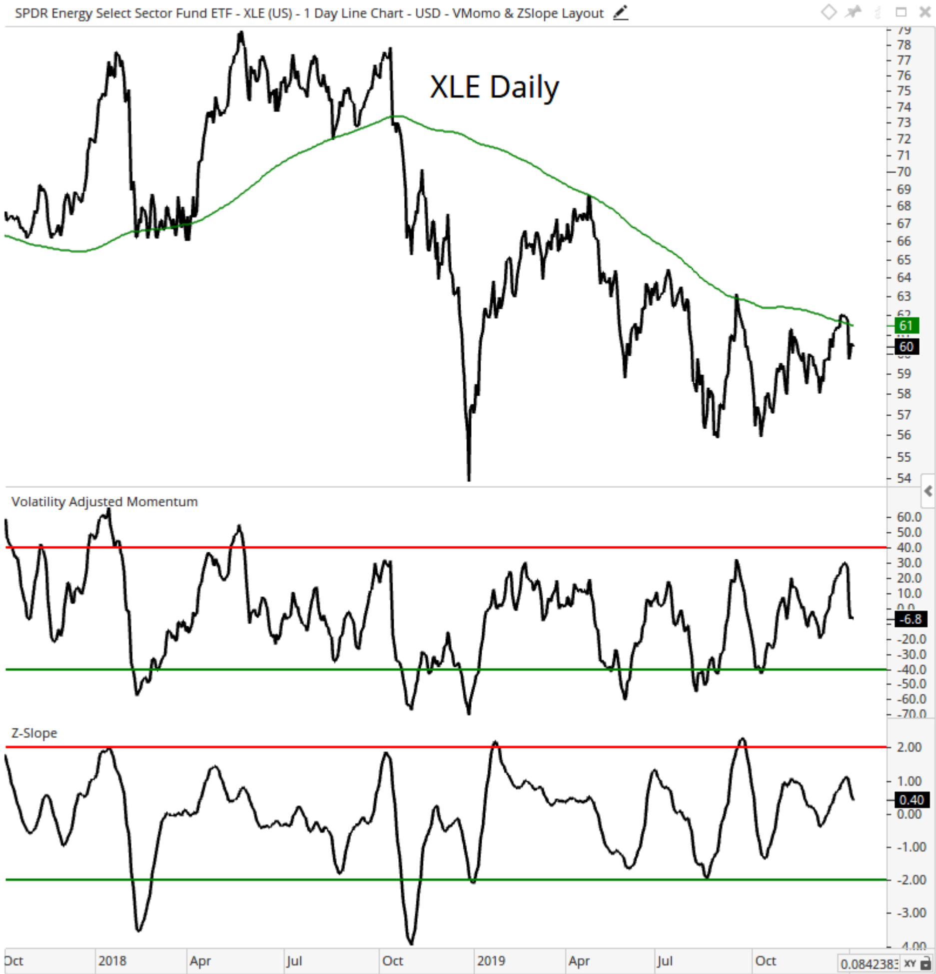
QQQ

5th Jan 2020

XLB



SPDR Materials Select Sector Fund ETF - XLB (US) - 1 Day Line Chart - USD - VMomo & ZSlope Layout
XLB Daily
Volatility Adjusted Momentum
Z-Slope
SPDR Materials Select Sector Fund ETF - XLB (US) - 1 Week Line Chart - USD - No Layout
XLB Weekly
Volatility Adjusted Momentum
Z-Slope
Optuma
5th Jan 2020



Optuma

5th Jan 2020


SPDR Communication Services Select Sector ETF - XLC (US) - 1 Day Line Chart - USD - VMomo & ZSlope Layout
XLC Daily
Volatility Adjusted Momentum
Z-Slope
Sep
Nov
2019
Mar
May
Jul
Sep
Nov
2020
Optuma


SPDR Communication Services Select Sector ETF - XLC (US) - 1 Week Line Chart - USD - No Layout
XLC Weekly
Volatility Adjusted Momentum
Z-Slope
Nov
2019
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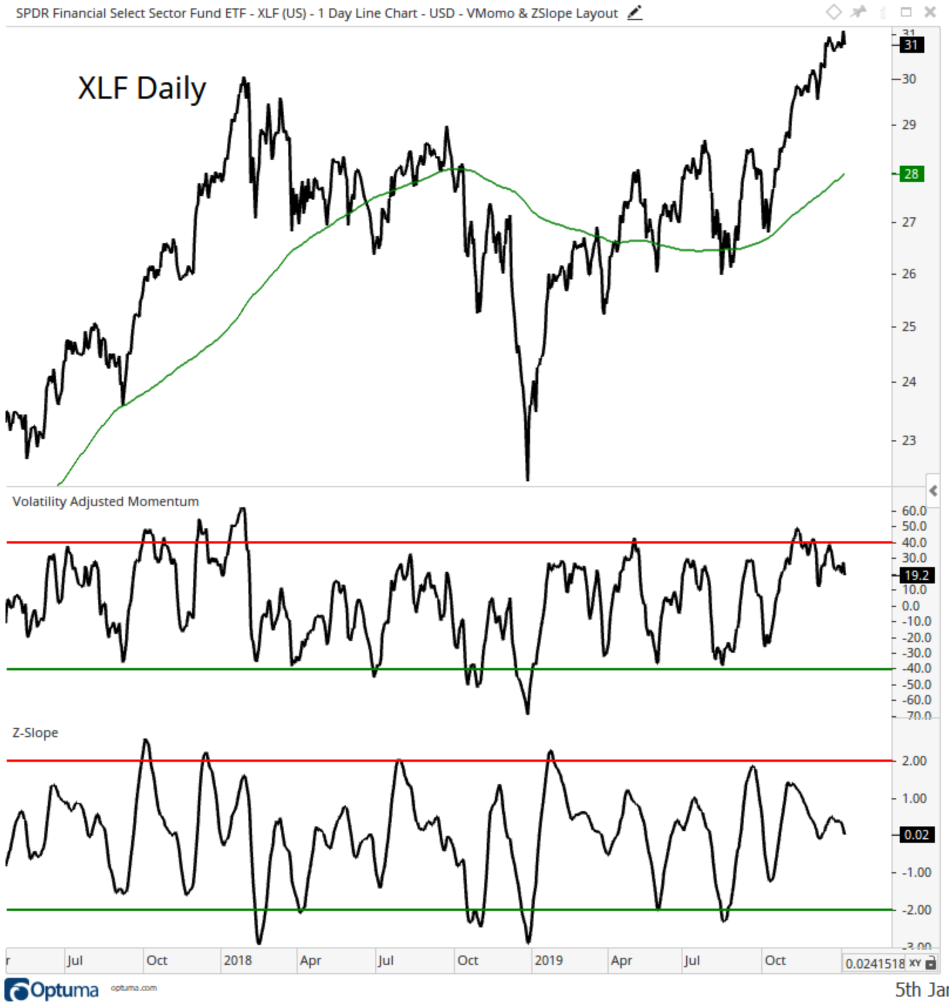
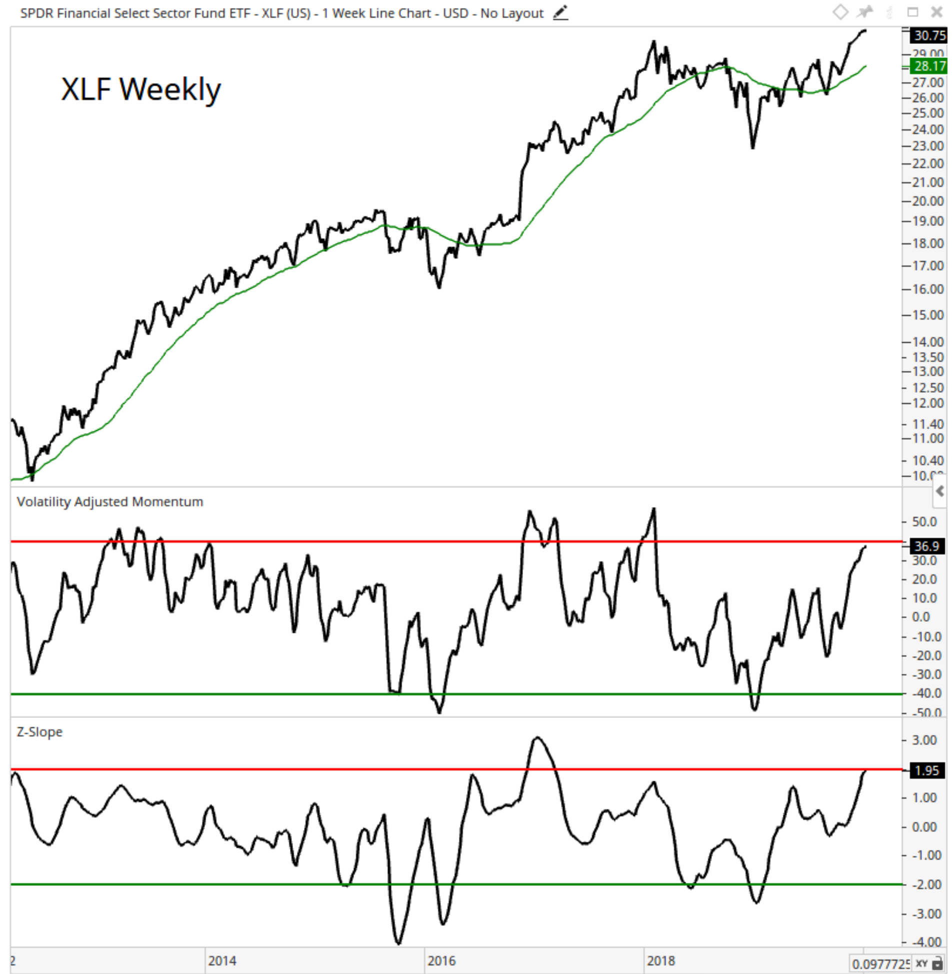
Sep
Nov
2020

5th Jan 2020

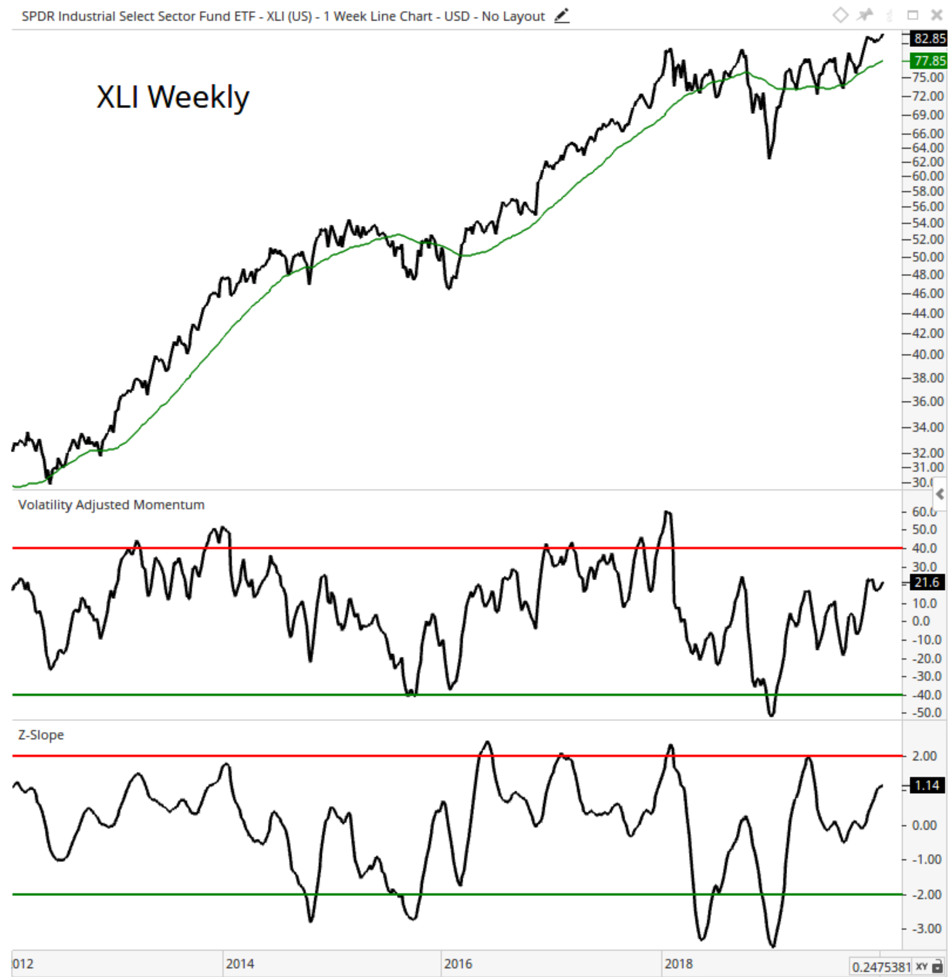

SPDR Financial Select Sector Fund ETF - XLF (US) - 1 Day Line Chart - USD - VMomo & ZSlope Layout
XLF Daily
Volatility Adjusted Momentum
Z-Slope
Optuma


SPDR Financial Select Sector Fund ETF - XLF (US) - 1 Week Line Chart - USD - No Layout
XLF Weekly
Volatility Adjusted Momentum
Z-Slope

5th Jan 2020

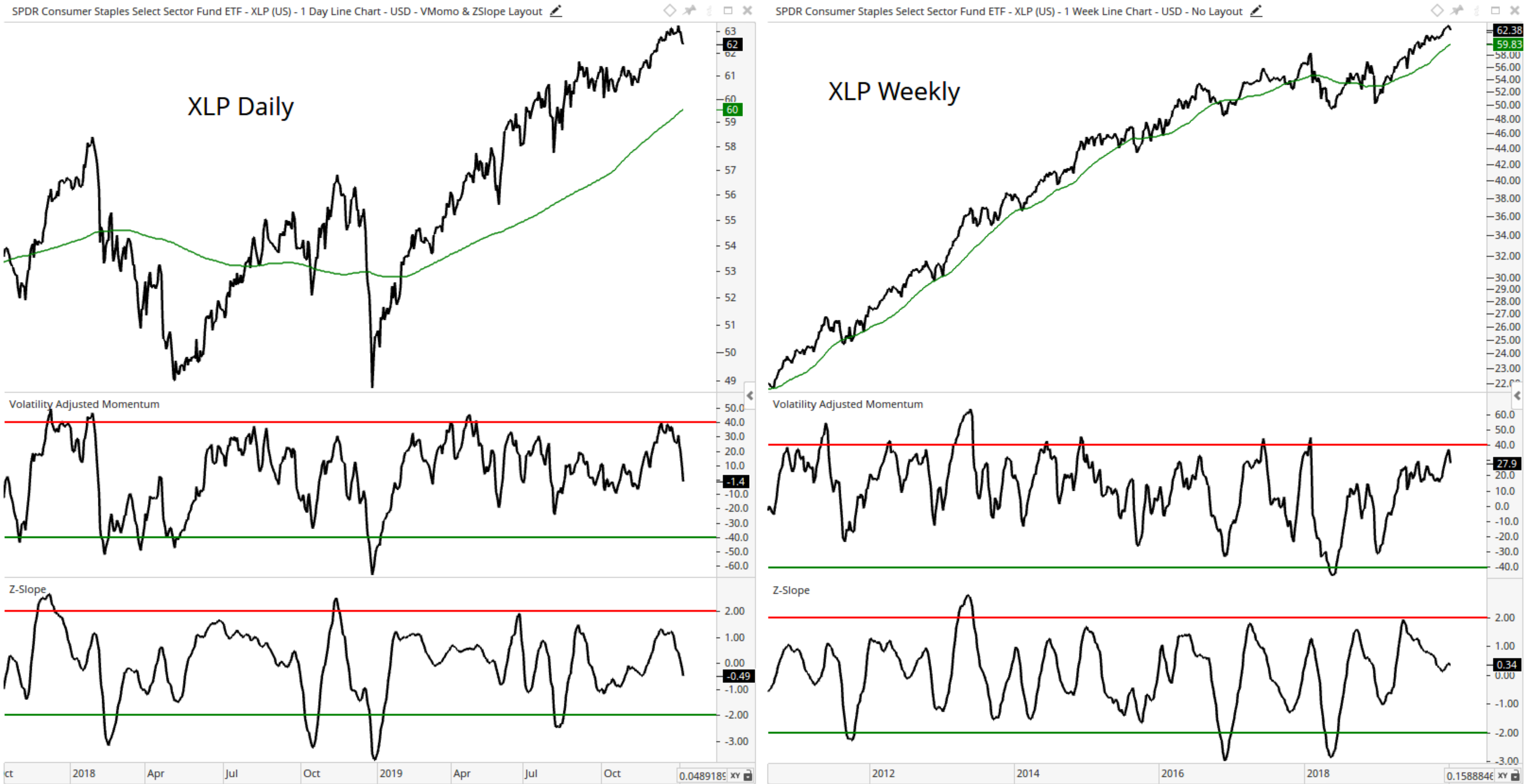

SPDR Technology Select Sector Fund ETF - XLK (US) - 1 Day Line Chart - USD - VMomo & ZSlope Layout
XLK Daily
Volatility Adjusted Momentum
Z-Slope
SPDR Technology Select Sector Fund ETF - XLK (US) - 1 Week Line Chart - USD - No Layout
XLK Weekly
Volatility Adjusted Momentum
Z-Slope
Optuma
5th Jan 2020


SPDR Industrial Select Sector Fund ETF - XLI (US) - 1 Day Line Chart - USD - VMomo & ZSlope Layout
XLI Daily
Volatility Adjusted Momentum
Z-Slope


SPDR Industrial Select Sector Fund ETF - XLI (US) - 1 Week Line Chart - USD - No Layout
XLI Weekly
Volatility Adjusted Momentum
Z-Slope

5th Jan 2020

XLP



5th Jan 2020

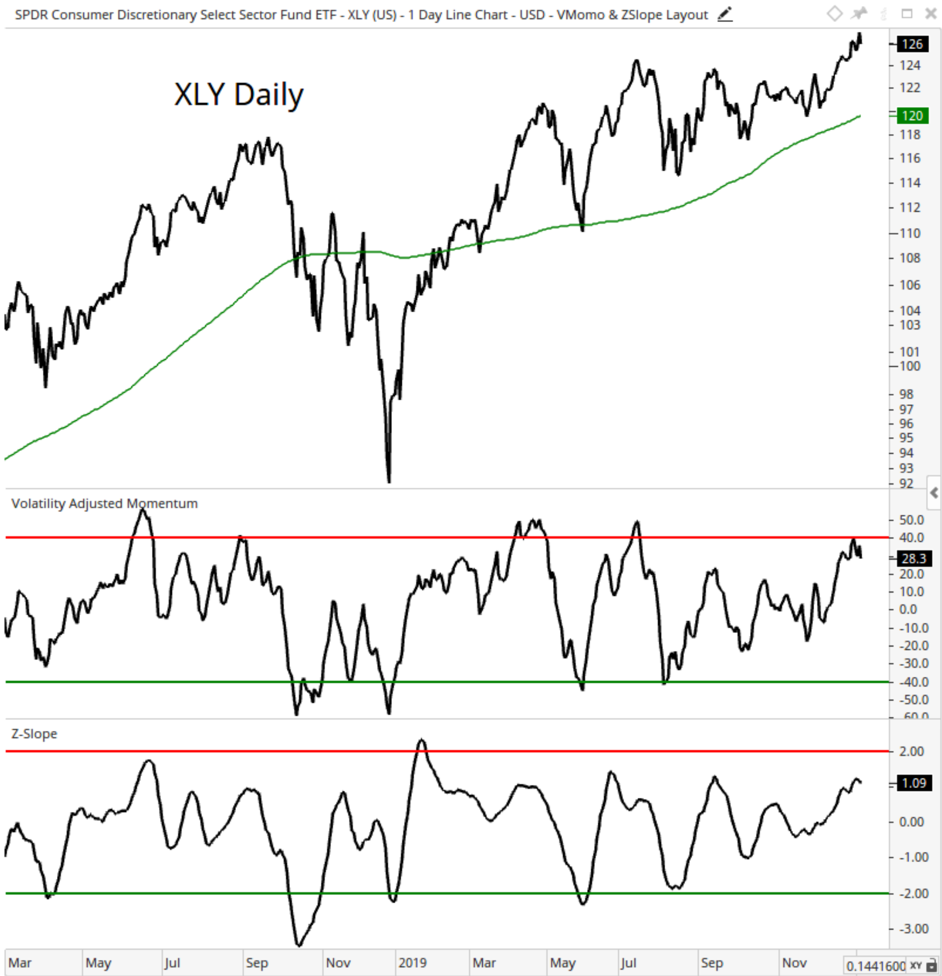
XLRE

5th Jan 2020


SPDR Utilities Select Sector Fund ETF - XLU (US) - 1 Day Line Chart - USD - VMomo & ZSlope Layout
XLU Daily
Volatility Adjusted Momentum
Z-Slope
Oct
2018
Apr
Jul
Oct
2019
Apr
Jul
Oct

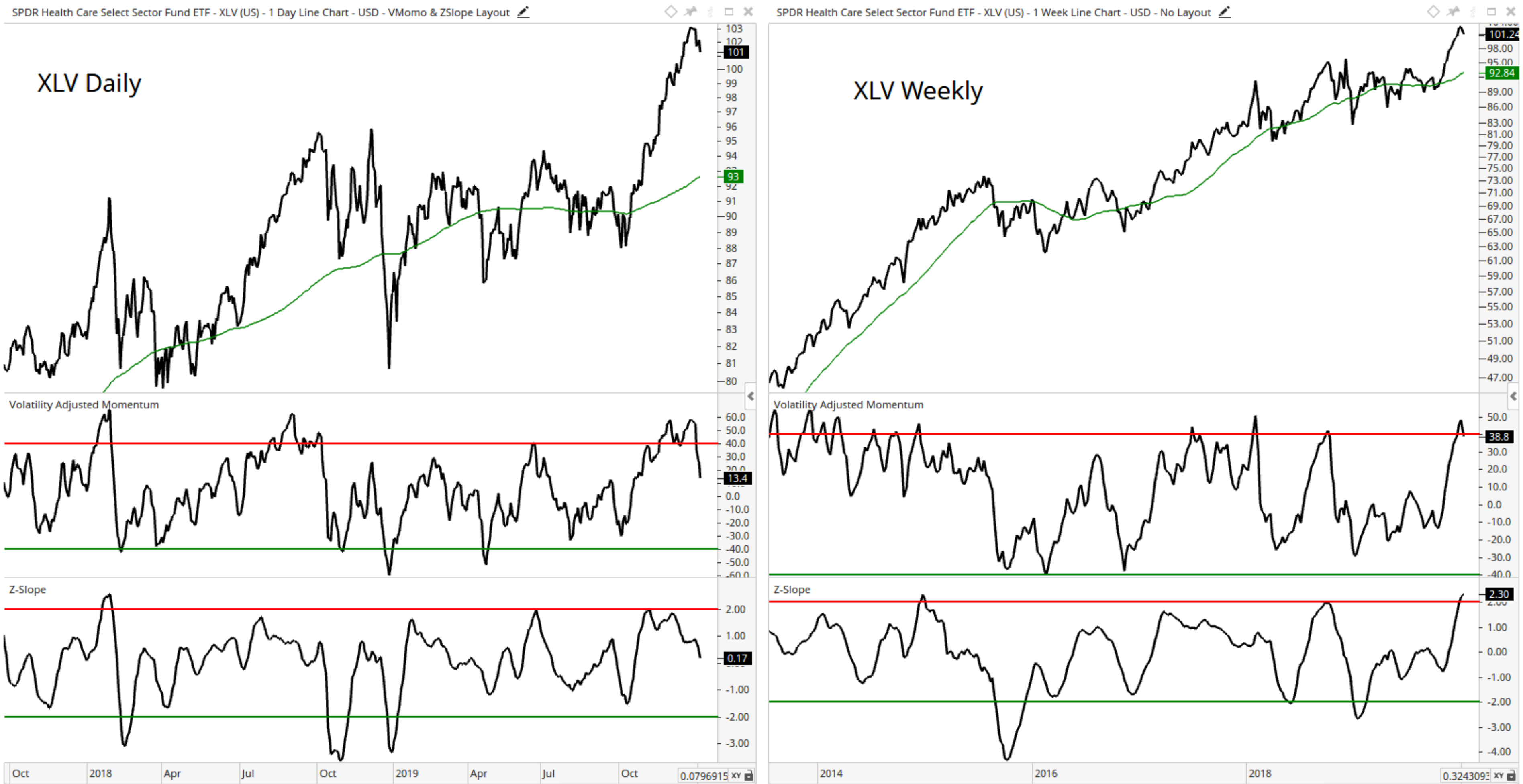

SPDR Utilities Select Sector Fund ETF - XLU (US) - 1 Week Line Chart - USD - No Layout
XLU Weekly
Volatility Adjusted Momentum
Z-Slope
2013
2014
2015
2016
2017
2018
2019

5th Jan 2020

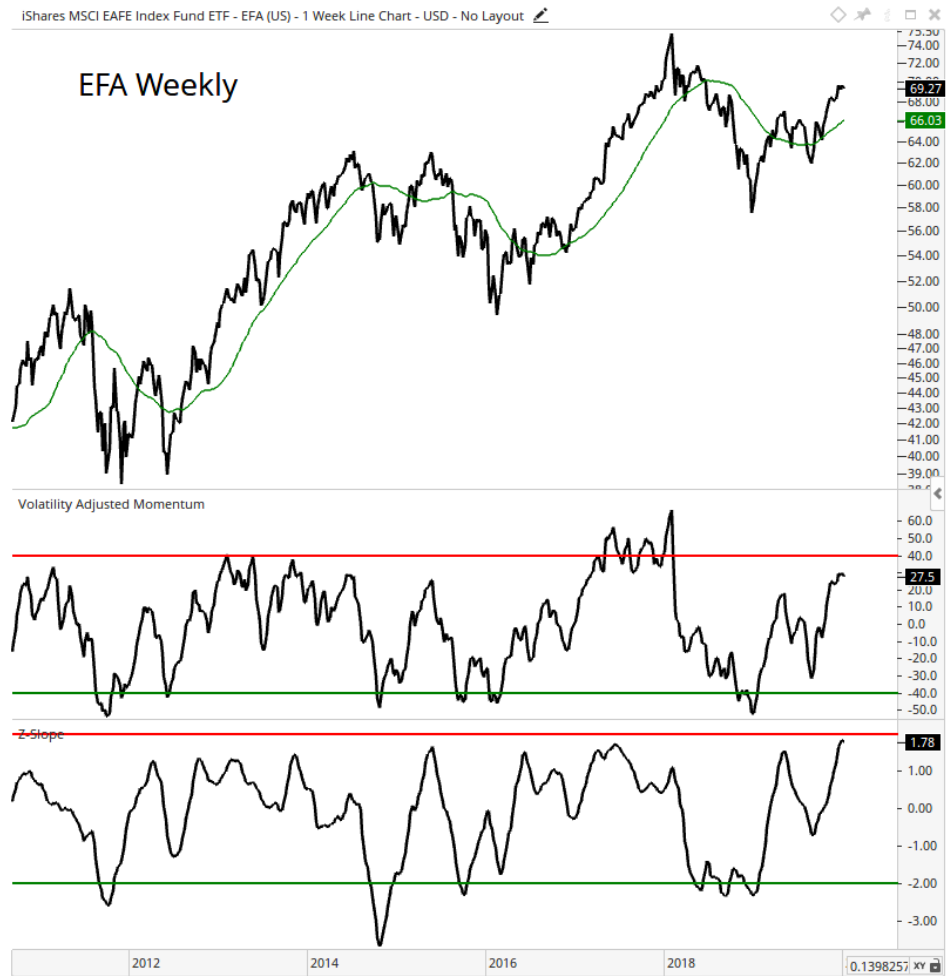

XLY Daily
Volatility Adjusted Momentum
Z-Slope


XLY Weekly
Volatility Adjusted Momentum
Z-Slope

5th Jan 2020

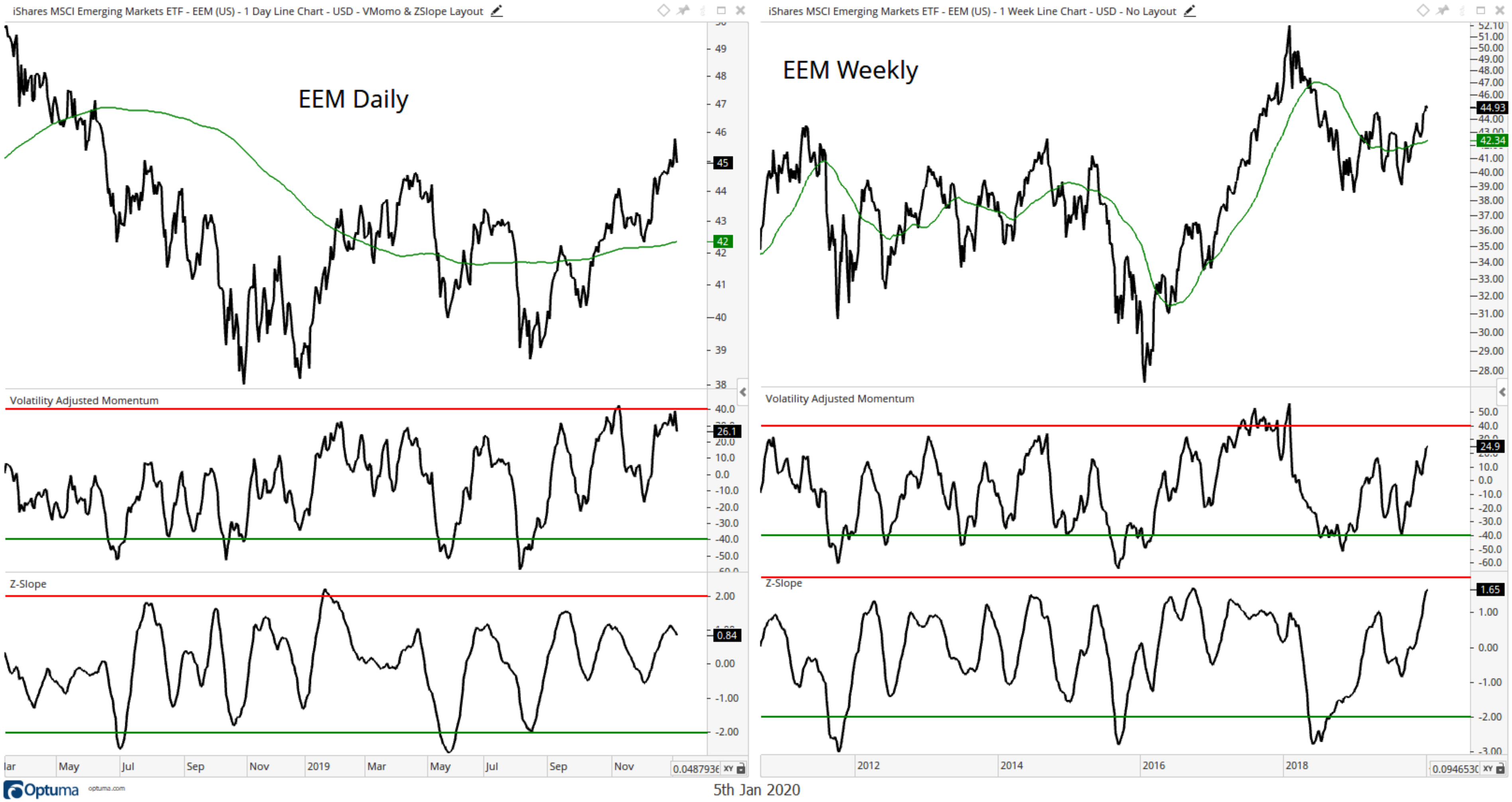

SPDR Health Care Select Sector Fund ETF - XLV (US) - 1 Day Line Chart - USD - VMomo & ZSlope Layout
XLV Daily
Volatility Adjusted Momentum
Z-Slope
Oct
2018
Apr
Jul
Oct
2019
Apr
Jul
Oct
SPDR Health Care Select Sector Fund ETF - XLV (US) - 1 Week Line Chart - USD - No Layout
XLV Weekly
Volatility Adjusted Momentum
Z-Slope
2014
2016
2018

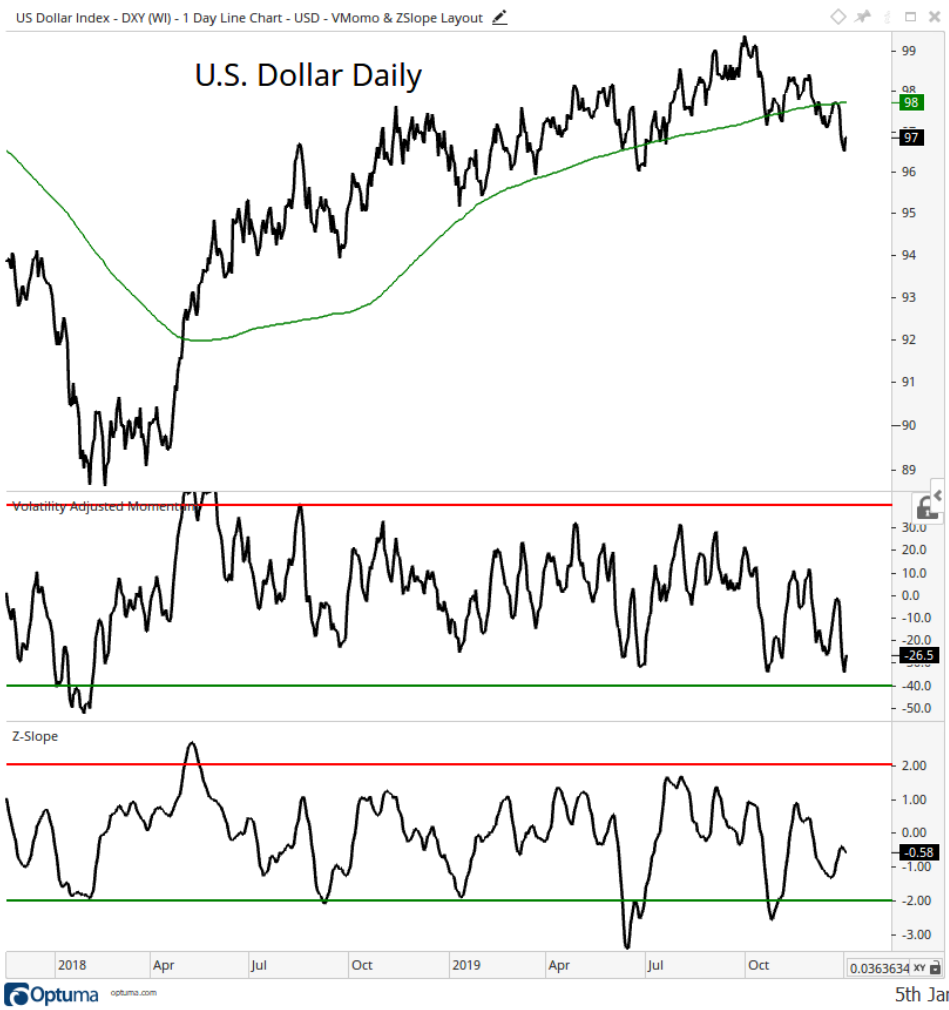
5th Jan 2020



Optuma

5th Jan 2020


iShares MSCI Emerging Markets ETF - EEM (US) - 1 Day Line Chart - USD - VMomo & ZSlope Layout
EEM Daily
Volatility Adjusted Momentum
Z-Slope
iShares MSCI Emerging Markets ETF - EEM (US) - 1 Week Line Chart - USD - No Layout
EEM Weekly
Volatility Adjusted Momentum
Z-Slope
Optuma
5th Jan 2020


US Dollar Index - DXY (WI) - 1 Day Line Chart - USD - VMomo & ZSlope Layout
U.S. Dollar Daily
Volatility Adjusted Momentum
Z-Slope
2018
Apr
Jul
Oct
2019
Apr
Jul
Oct
Optuma


US Dollar Index - DXY (WI) - 1 Week Line Chart - USD - No Layout
U.S. Dollar Weekly
Volatility Adjusted Momentum
Z-Slope
2014
2016
2018

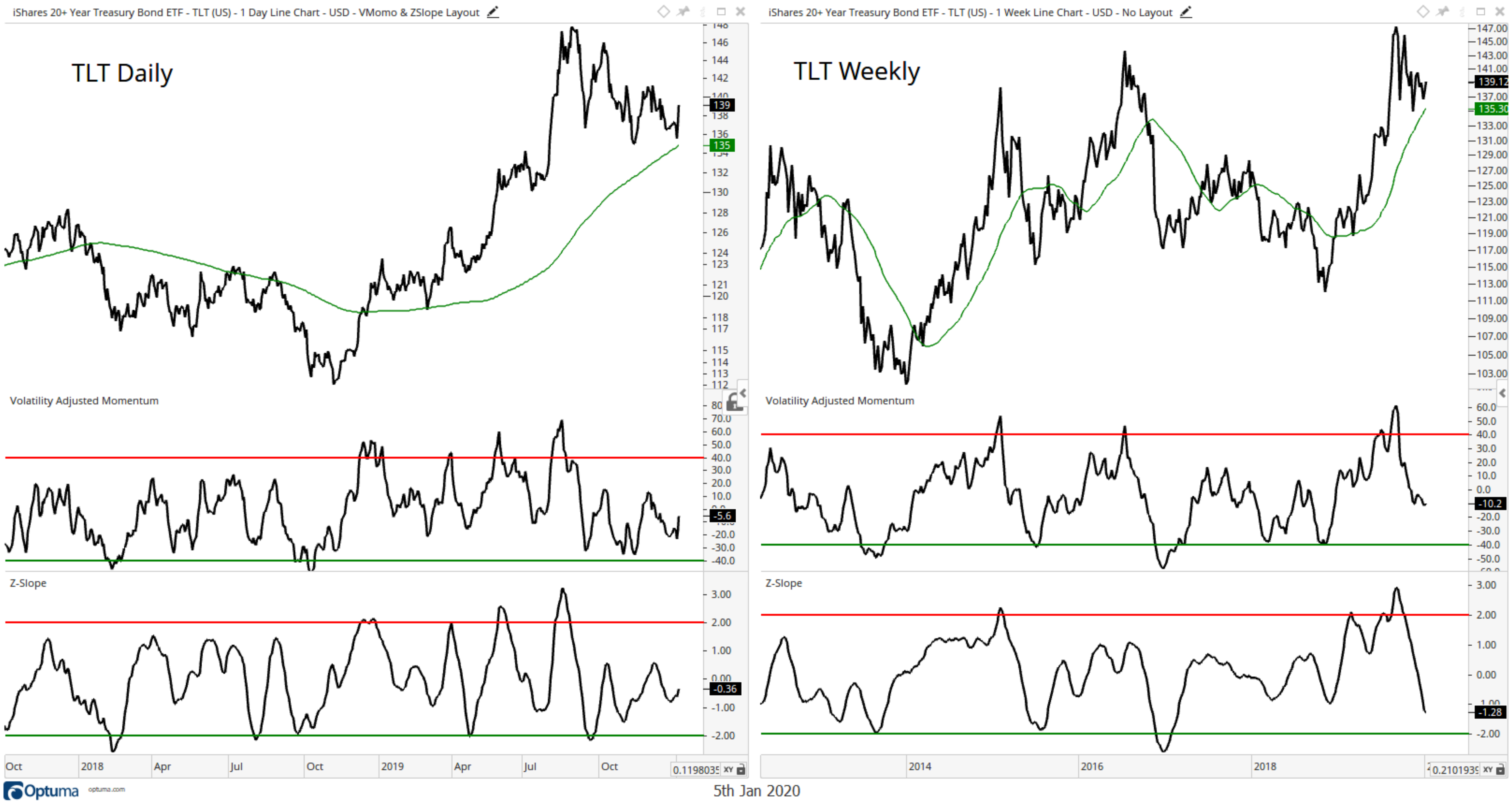
5th Jan 2020


Gold Futures - GCSpot (NYMEX) - 1 Day Line Chart - USD - VMomo & ZSlope Layout
Gold Daily
Volatility Adjusted Momentum
Z-Slope
Gold Futures - GCSpot (NYMEX) - 1 Week Line Chart - USD - No Layout
Gold Weekly
Volatility Adjusted Momentum
Z-Slope
Optuma
5th Jan 2020

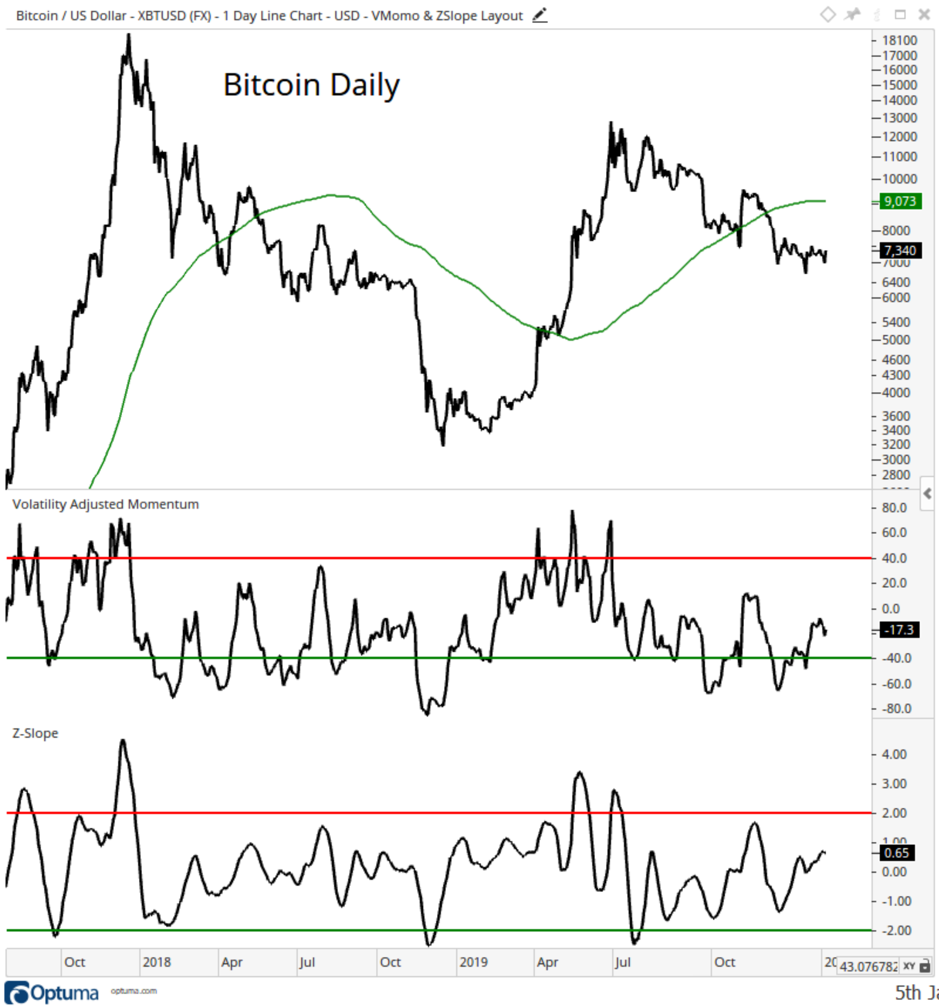
Optuma

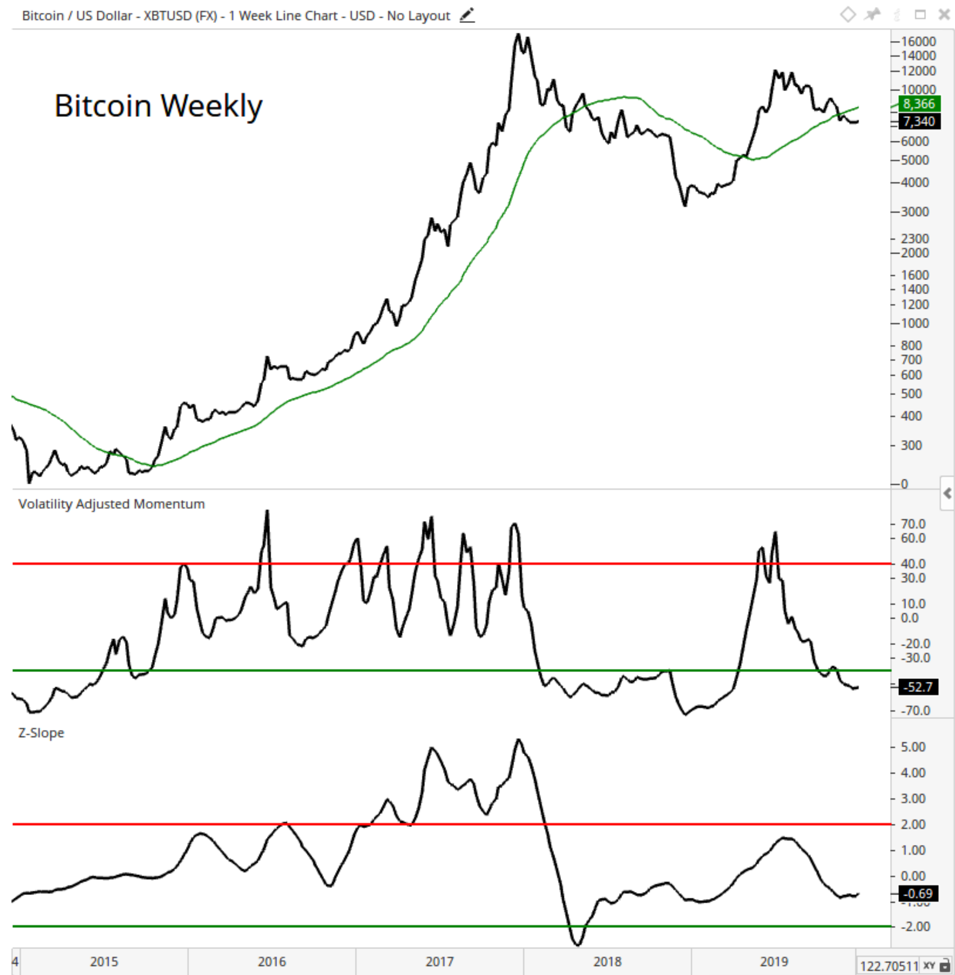
5th Jan 2020

TLT

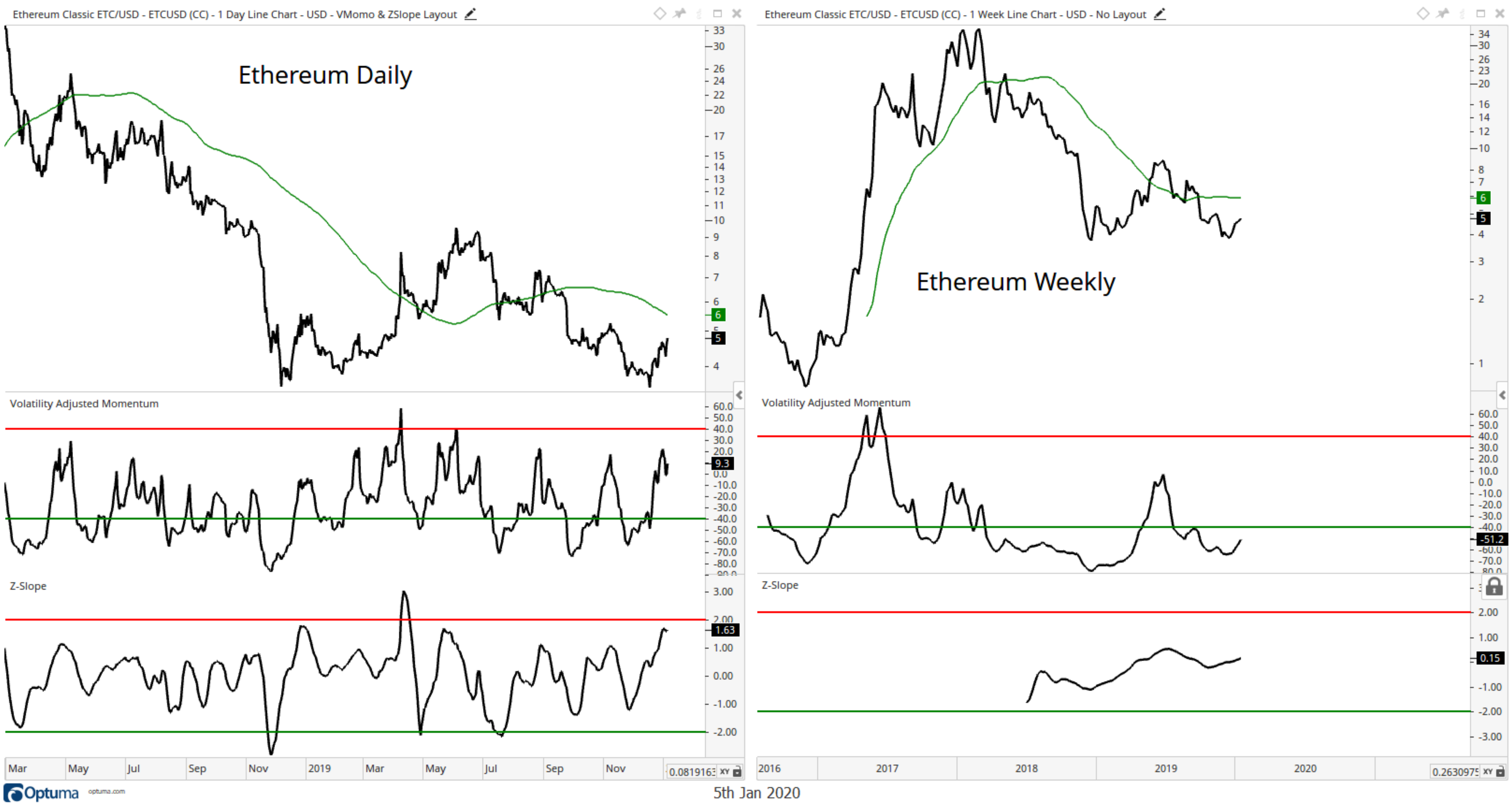


iShares 20+ Year Treasury Bond ETF - TLT (US) - 1 Day Line Chart - USD - VMomo & ZSlope Layout
TLT Daily
Volatility Adjusted Momentum
Z-Slope
Oct
2018
Apr
Jul
Oct
2019
Apr
Jul
Oct
iShares 20+ Year Treasury Bond ETF - TLT (US) - 1 Week Line Chart - USD - No Layout
TLT Weekly
Volatility Adjusted Momentum
Z-Slope
2014
2016
2018
Optuma
5th Jan 2020


Bitcoin / US Dollar - XBTUSD (FX) - 1 Day Line Chart - USD - VMomo & ZSlope Layout
Bitcoin Daily
9,073
7,340
Volatility Adjusted Momentum
-17.3
Z-Slope
0.65
Oct
2018
Apr
Jul
Oct
2019
Apr
Jul
Oct
Optuma


Bitcoin / US Dollar - XBTUSD (FX) - 1 Week Line Chart - USD - No Layout
Bitcoin Weekly
8,366
7,340
Volatility Adjusted Momentum
-52.7
Z-Slope
-0.69
2015
2016
2017
2018
2019

5th Jan 2020

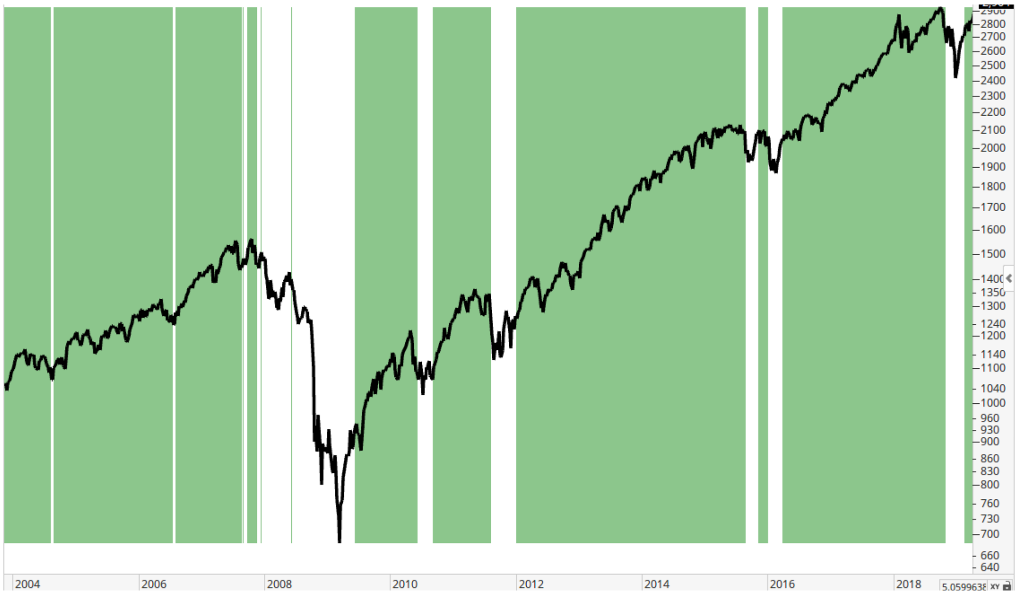


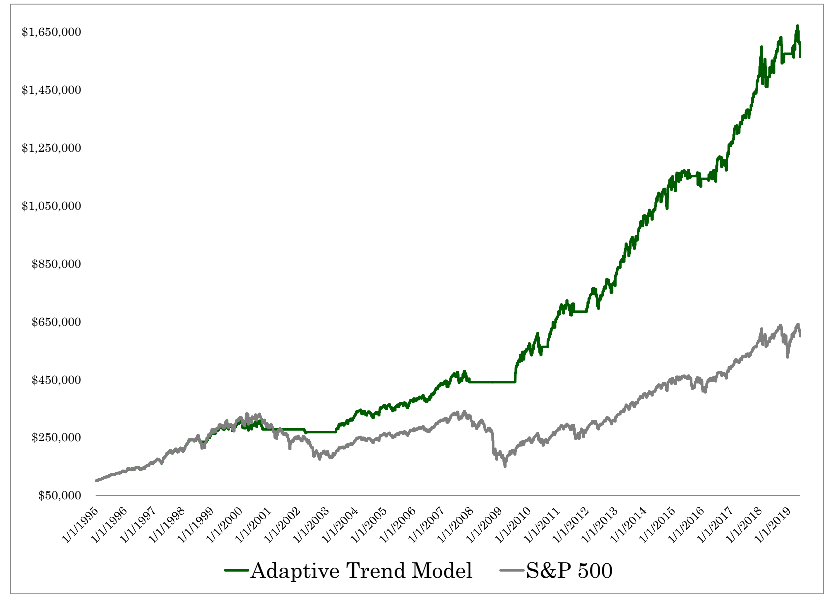
Ethereum Classic ETC/USD - ETCUSD (CC) - 1 Day Line Chart - USD - VMomo & ZSlope Layout
Ethereum Daily
Volatility Adjusted Momentum
Z-Slope
Mar
May
Jul
Sep
Nov
2019
Mar
May
Jul
Sep
Nov
Ethereum Classic ETC/USD - ETCUSD (CC) - 1 Week Line Chart - USD - No Layout
Ethereum Weekly
Volatility Adjusted Momentum
Z-Slope
2016
2017
2018
2019
2020
Optuma
5th Jan 2020

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.

Adaptive Trend Model



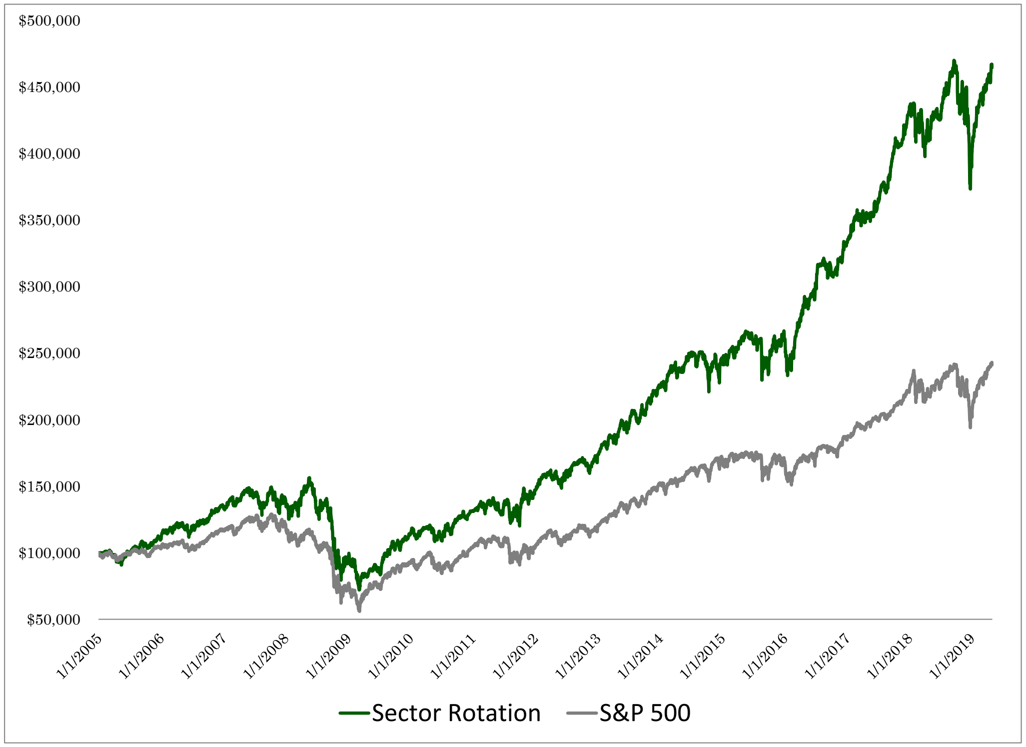


	Annualized Return	Annualized Volatility	Beta	Sharpe	Maximum Drawdown
Adaptive	12.5%	10.3%	0.47	0.97	14.1%
S&P 500	8.9%	15.3%	1	0.42	56.6%

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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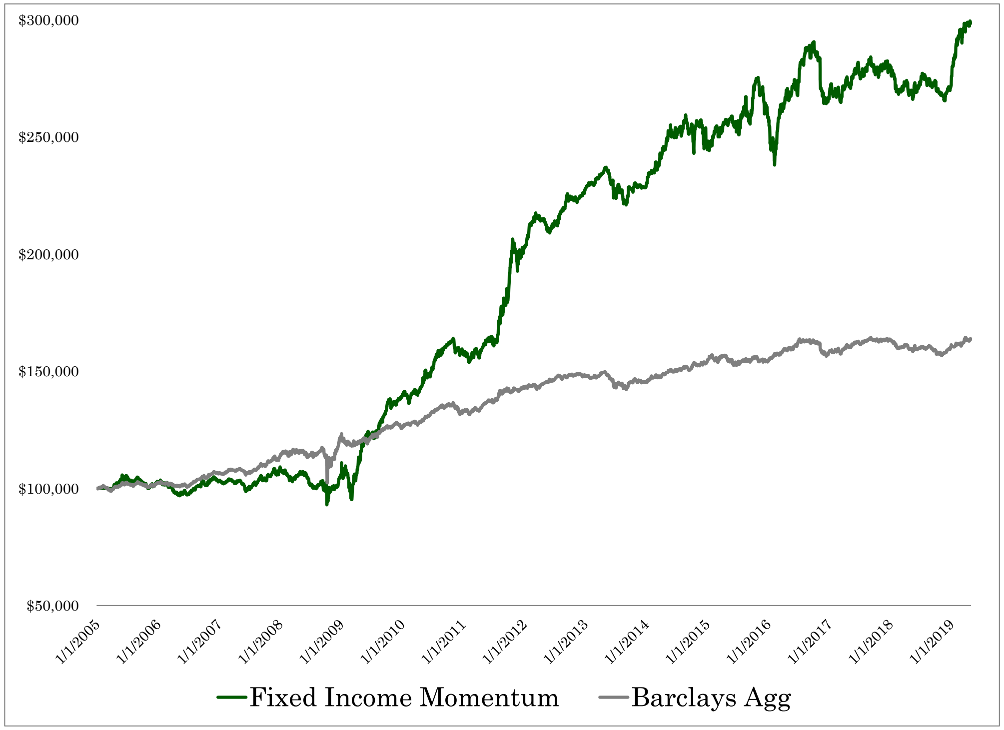
If equities are the speedboats in the sea of financial markets then fixed income securities are the tanker ships. While stocks can move violently in both directions, Thrasher Analytics research has shown that fixed income markets historically show consistent trends. Because of the tanker-like movements 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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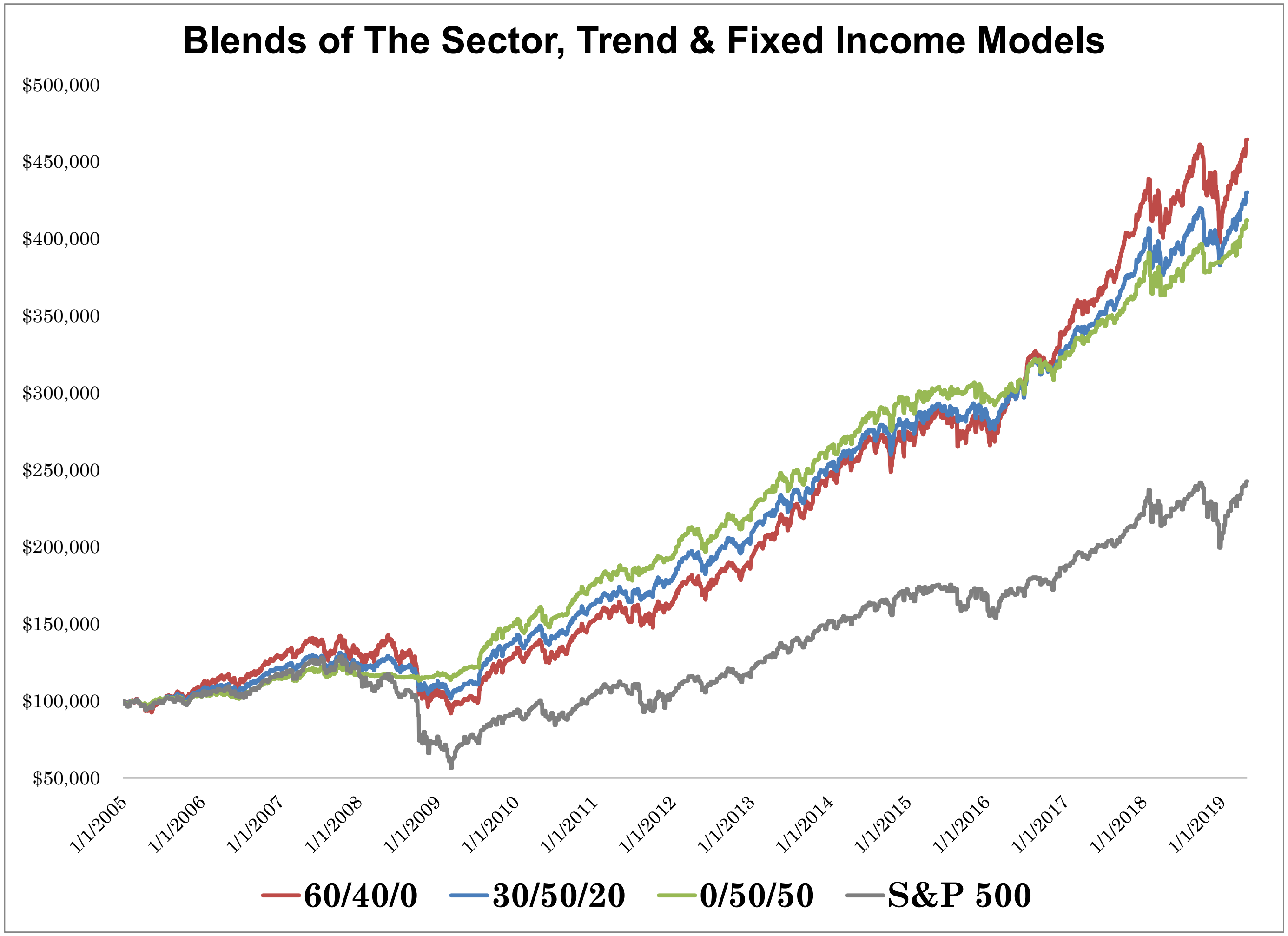
The concept of diversification is not new to financial markets. While many market participants focus on the diversification of the underlying holdings. This procedure is can be vastly skewed during periods of high market turmoil, in which correlations across asset classes tend to historically rise. Thrasher 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.

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.

Trend (weekly)	Sector Rotation (monthly)	Fixed Income Momentum (quarterly)
Positive	XLF	TLT
	XLK	AGG
	XLC	

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Back Test Disclaimer:

None of the content published by Thrasher Analytics LLC constitutes a recommendation that any particular security, portfolio of securities, transaction or investment strategy is suitable for any specific person. No representation is being made that the use of this strategy or any system or trading methodology will generate profits and no offer to buy or sell securities is being made.

Back tested performance is NOT an indicator of future actual results. The results reflect performance of a strategy not [historically] offered to investors and do NOT represent returns that any investor actually attained. Back tested results are calculated by the retroactive application of a model constructed on the basis of historical data and based on assumptions integral to the model which may or may not be testable and are subject to losses.

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.

DISCLAIMER: