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BI-WEEKLY RESEARCH & ANALYSIS

Sector Rotation: March	
Technology	XLK
Utilities	XLU
Communications	XLC

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	12%	23%
Nasdaq 100	15%	26%
Nikkei	20%	37%
VIX	66%	55%
10yr Treasury	92%	88%
5yr Treasury	82%	74%
CRB Index	19%	38%
Gold	63%	78%
U.S. Dollar	63%	76%

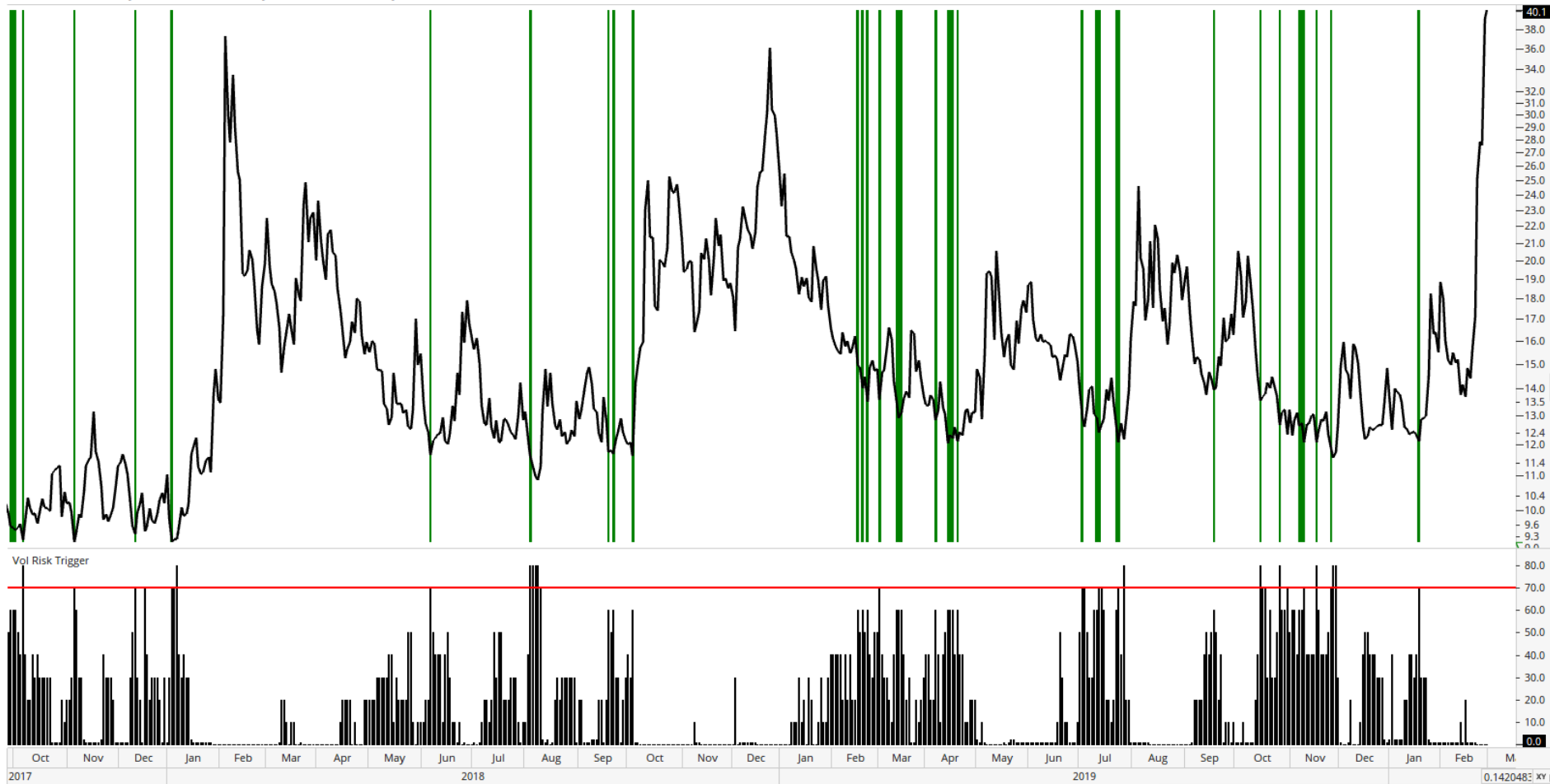
Notable Breadth Data:	
SPX >50MA	3.17%
SPX >200MA	23.46%
Nasdaq >50MA	9.71%
Nasdaq >200MA	42.72%

*Green <25% Red >80%

☐	Sector	> 50MA	> 200MA	1wk Perf ▼	1mo Perf	3mo Perf	12mo Perf
☑	SPDR Communication Services Select Sector ETF	False	False	-9.55%	-8.46%	-3.75%	10.54%
☑	SPDR Consumer Staples Select Sector Fund ETF	False	False	-10.3%	-8.63%	-6.5%	6.72%
☑	SPDR Health Care Select Sector Fund ETF	False	False	-10.46%	-9.37%	-7.24%	1.05%
☑	SPDR Consumer Discretionary Select Sector Fund ETF	False	False	-11.11%	-7.54%	-6.02%	5.1%
☑	SPDR Technology Select Sector Fund ETF	False	True	-11.13%	-8.83%	-0.06%	24.71%
☑	S & P 500 Stock Index	False	False	-11.49%	-9.83%	-6.32%	6.1%
☑	SPDR Utilities Select Sector Fund ETF	False	False	-11.59%	-9.19%	-1.47%	9.07%
☑	SPDR Real Estate Select Sector Fund ETF	False	False	-12.26%	-7.84%	-5.18%	5.99%
☑	SPDR Industrial Select Sector Fund ETF	False	False	-12.57%	-11.42%	-11.33%	-4.27%
☑	SPDR Materials Select Sector Fund ETF	False	False	-12.63%	-10.81%	-12.51%	-4.23%
☑	SPDR Financial Select Sector Fund ETF	False	False	-13.58%	-12.16%	-11.95%	0.26%
☑	SPDR Energy Select Sector Fund ETF	False	False	-16.38%	-18.14%	-23.9%	-30.62%

Communicator and Consumer Staples were the best performing sectors last week. Tech remains the only sector still above its respective 200-day Moving Average. Industrials, Materials, and Energy are now negative YoY.

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

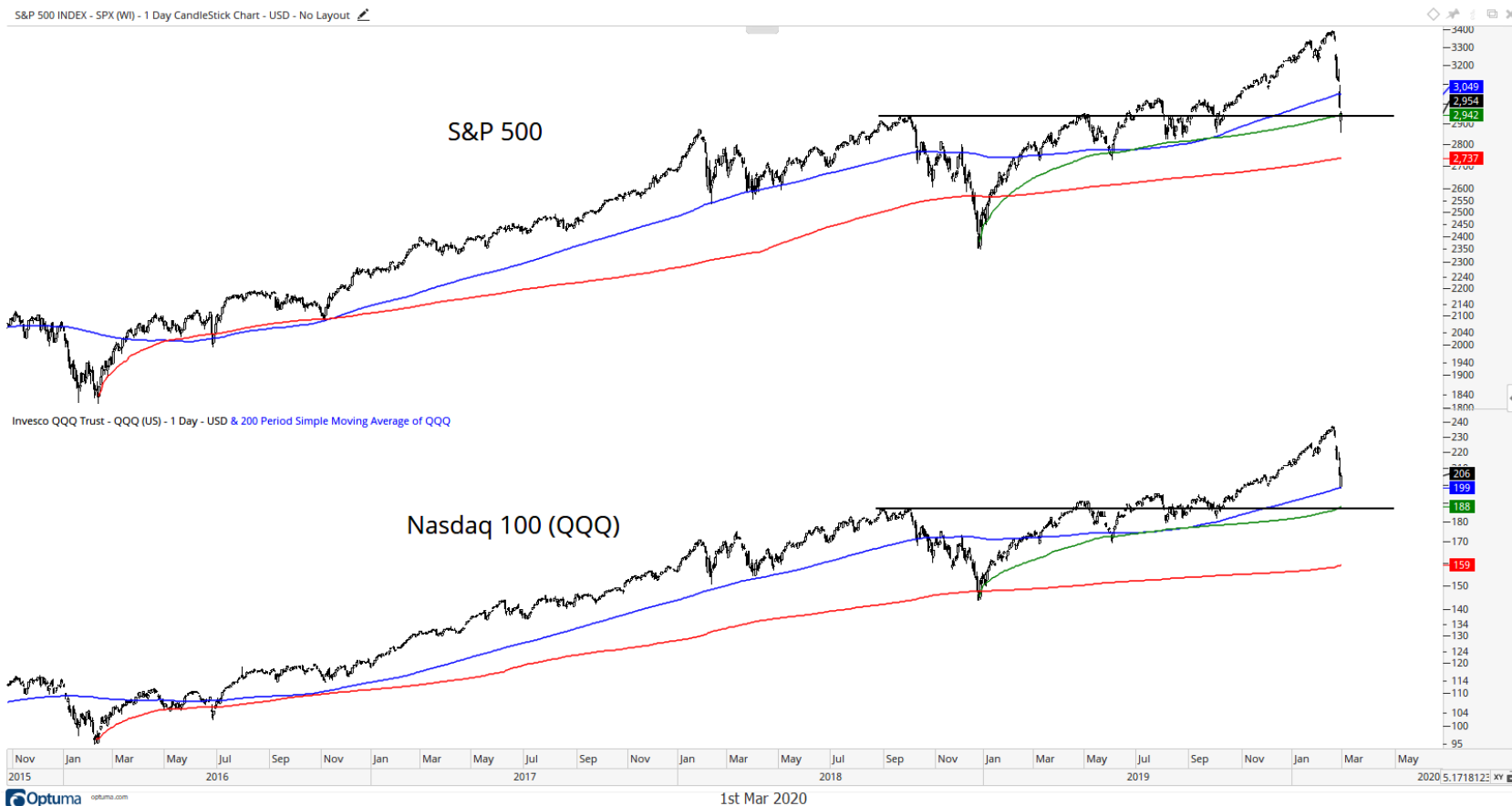


The VRT began to rise ahead of this spike but did not get to a point to trigger a signal. Volatility has now risen near a decade high on the back of Coronavirus fears and its impact on the global economy.



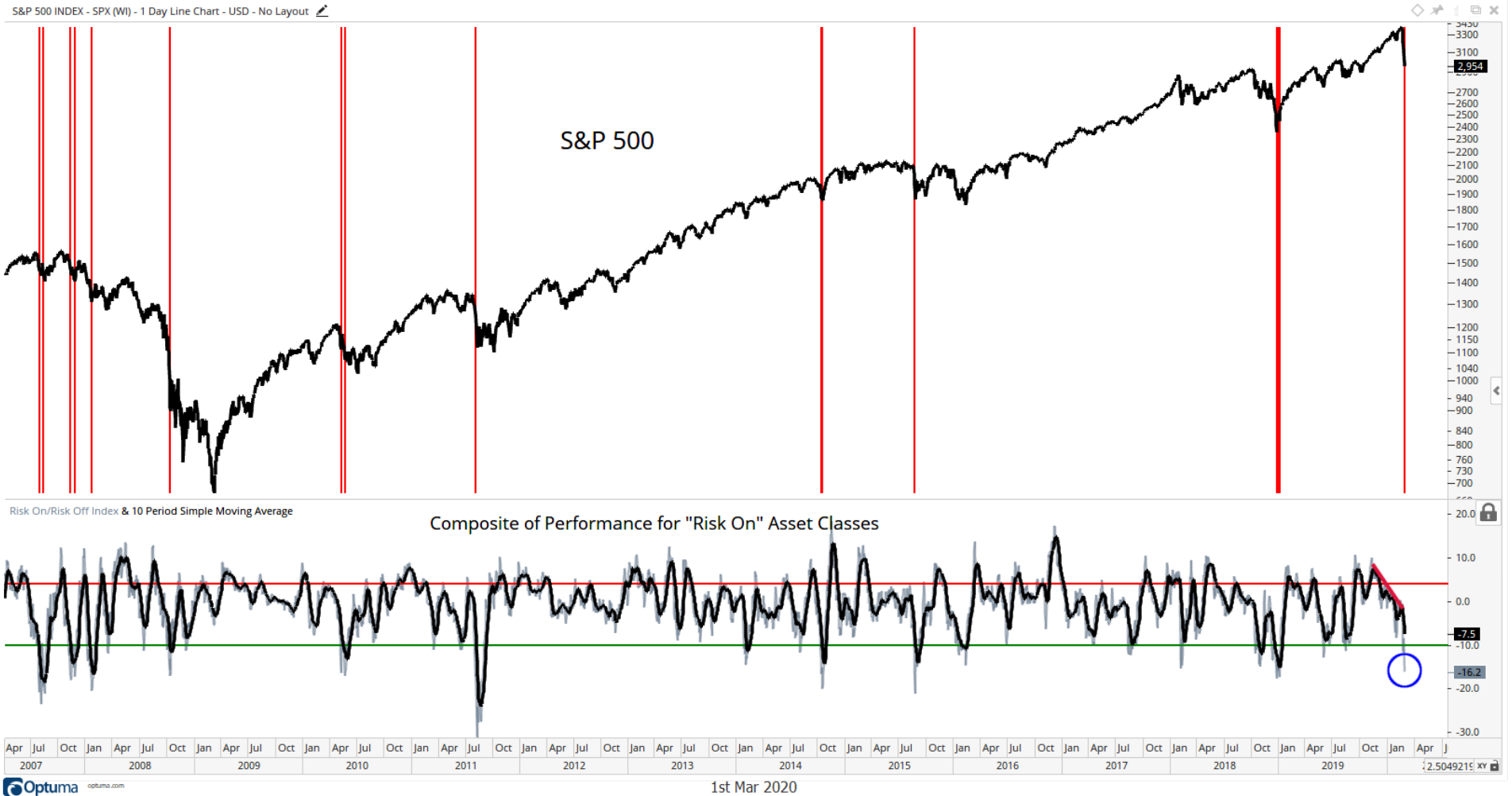
A waterfall-like decline in equities has erased gains from fourth quarter of last year in a matter of days in the S&P 500, half of the gains since the Dec. '18 low. The SPX sits near the consolidation period in August '19 with Friday's print showing the largest volume day in a year. I'll be covering many angles of the sell off in the letter.

I appreciate the feedback I've gotten from several of you about giving a heads up to the sell-off based on my prior letters. I had no idea we'd see the markets respond like they have (no one did!) but the data strongly suggested a decline was likely in equities.



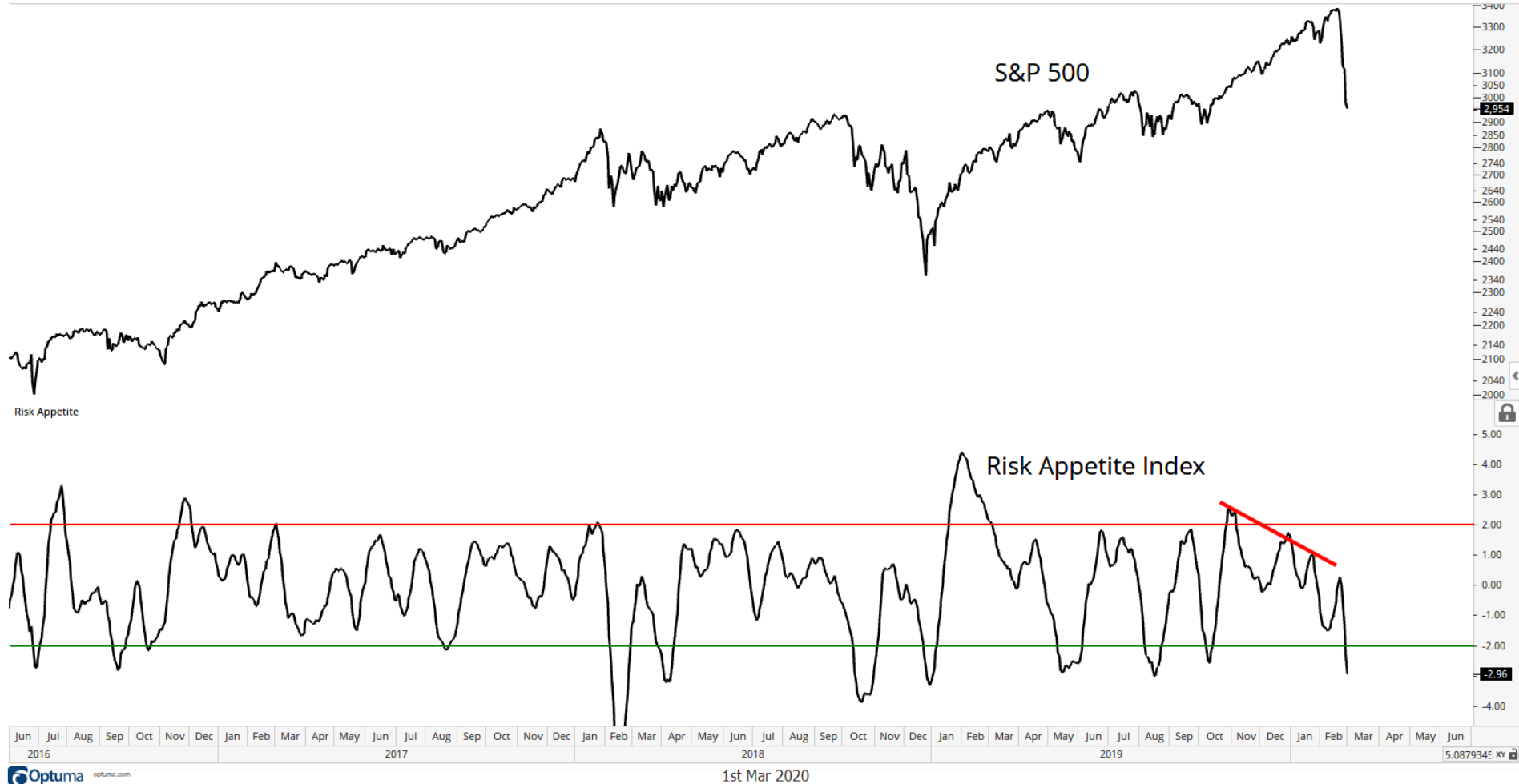
Above are the four levels I'm watching for the S&P 500 and the Nasdaq 100 (QQQ).

1. On Thursday the SPX broke below its 200-day MA while Nasdaq tested it as support on Friday. (blue line)
2. Both indices are still holding above their VWAP (volume-weighted average price) from the Dec. '18 low, which helped act as support several times last week. (green line)
3. SPX is now under its Sept. '18 high but Nasdaq is still above. (black line)
4. The VWAP from 2016, which was support for Nasdaq in Dec. 18. (red line)

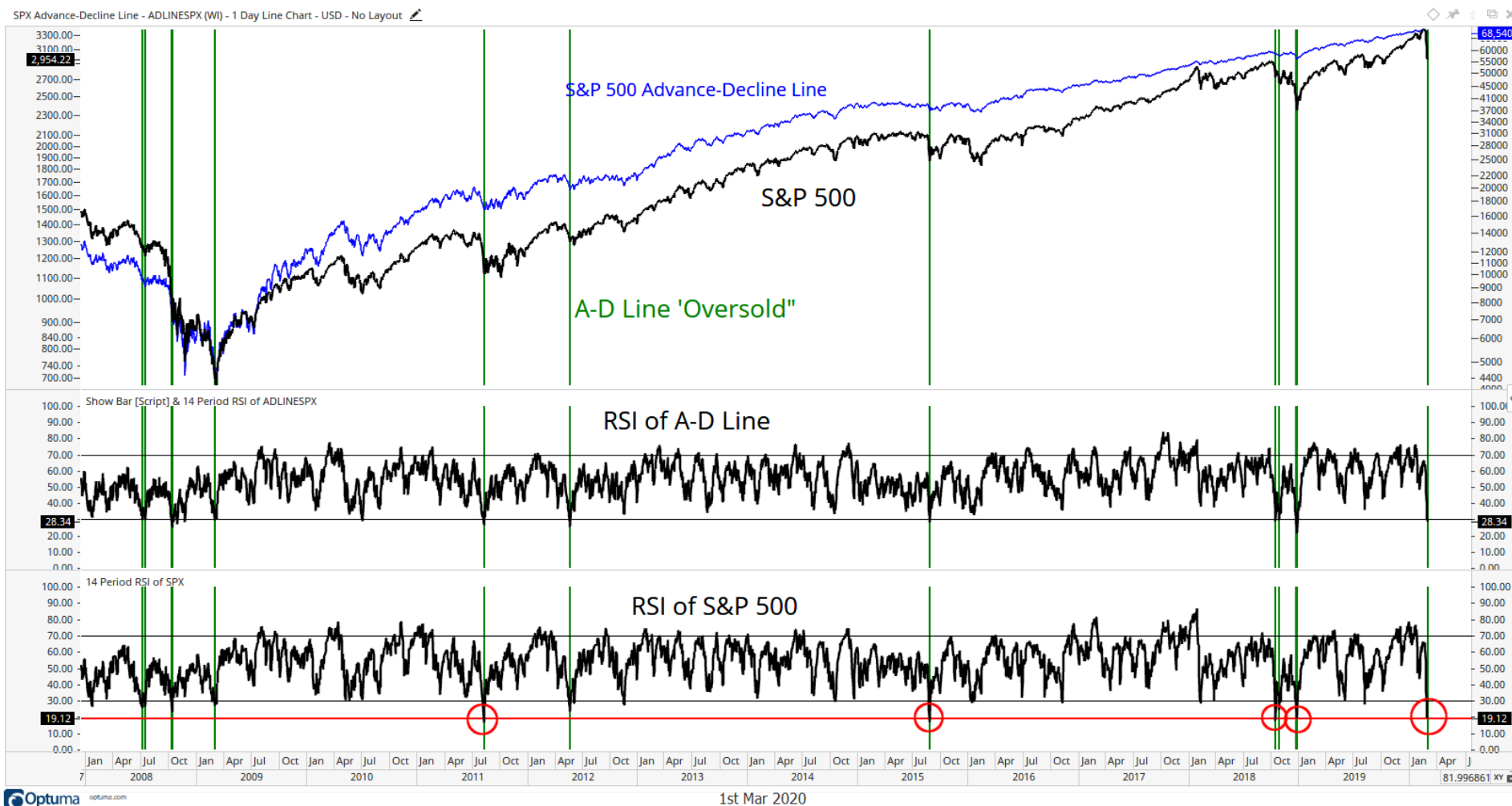


The Performance of Risk On/Off Assets has fallen to an extreme low. I've shown red horizontal times when we've been at such a level in the past, the most recent example being Dec. '18. When 'risk on' assets have fallen this much relative to 'risk off' assets, we often saw stocks rebound, unless it was during the Great Financial Crisis and at this point I don't think we're entering a major recession.

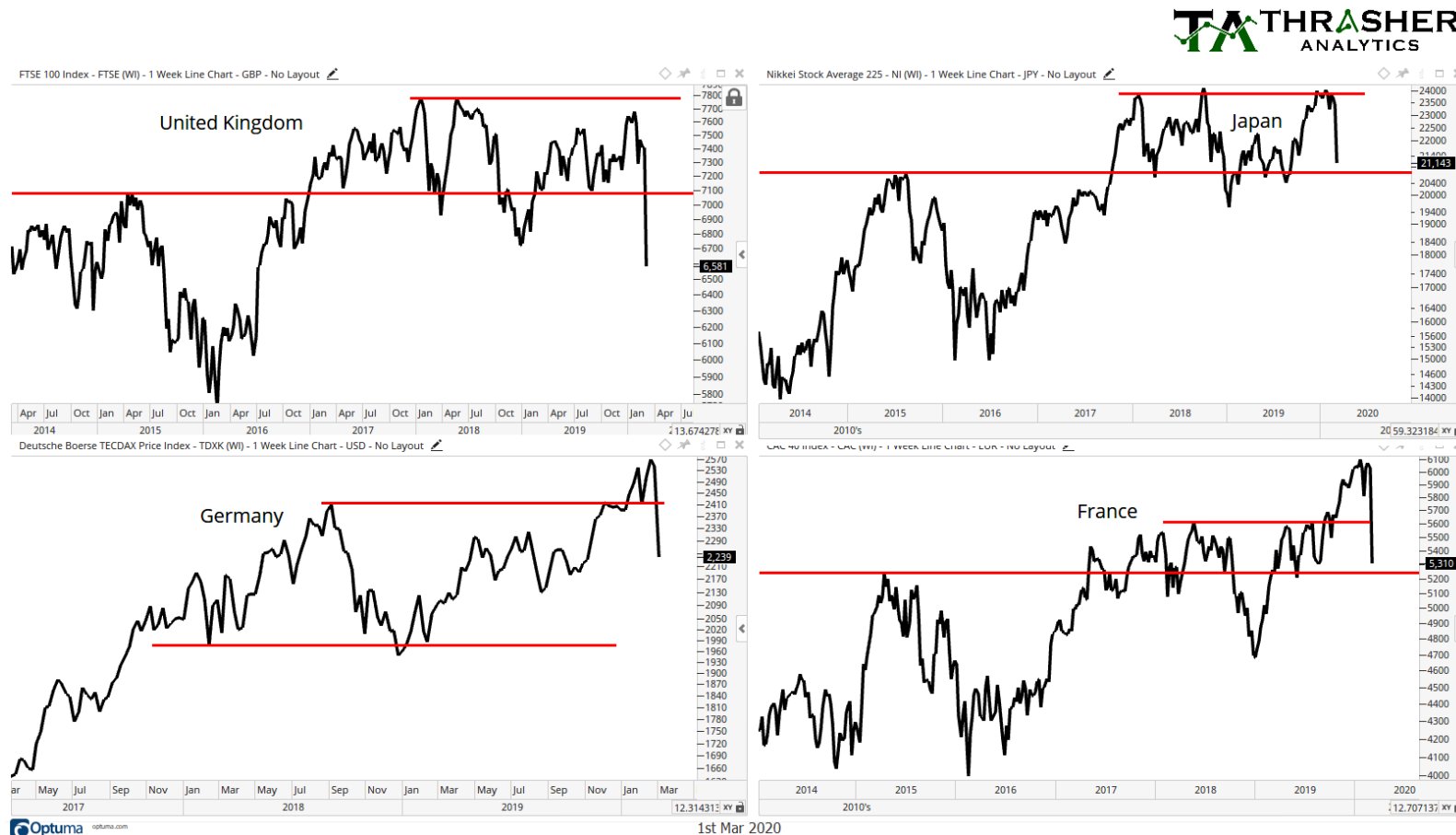
S&P 500 INDEX - SPX (W1) - 1 Day Line Chart - USD - No Layout



The Risk Appetite Index (RAI) put in a defined bearish divergence with stocks since November of last year and that's now been confirmed by price with this recent decline. We now have RAI 'oversold' at its lowest level since the August '19 low. I'll start looking for signs of risk appetite returning to get a better idea that the selling has begun to slow and a bottom may be in the near future.



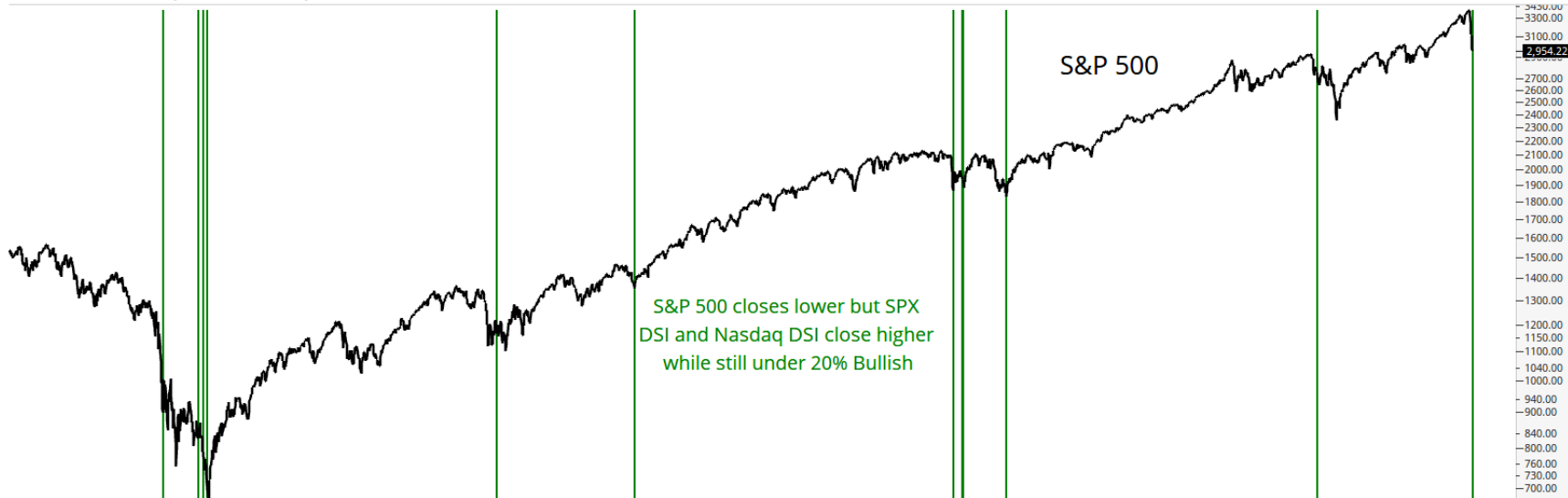
Price isn't the only thing that has become 'oversold', the S&P 500 Advance-Decline Line has also seen its momentum fall. While the A-D Line trends with price most of the time, it's momentum doesn't see a break into 'oversold' territory very often, past occurrences shown by green vertical lines. I've put the RSI for the S&P 500 also on the chart, with circles in the bottom panel of when price momentum has been at or below current levels. When breadth and price were both oversold to this extreme, 2011, 2015, and 2018, price bounced. We saw a failed signal in 2008 and a little early in 2012 but price momentum was well above where it is now. From a breadth perspective, traders have thrown just about everything out with the bathwater which has historically been a positive risk/reward opportunity



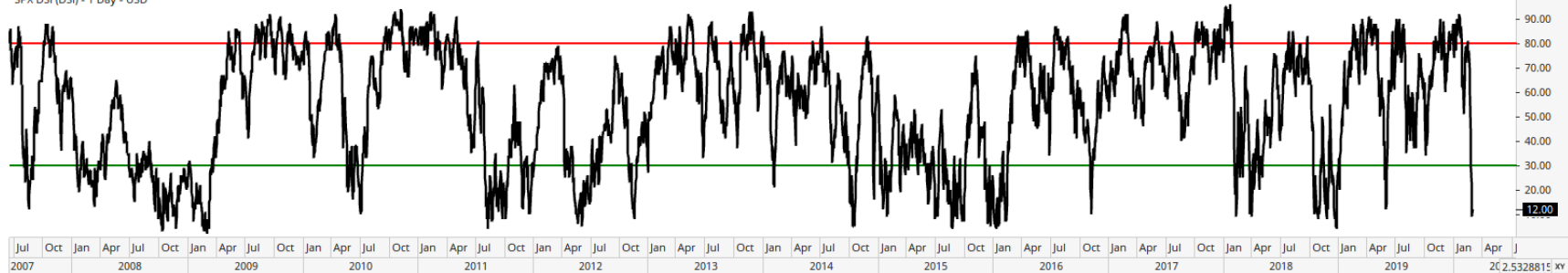
Looking overseas, the major four have all seen major support levels broken. The UK has taken the largest brunt of the selling damage on its chart, falling back below the 2015 high. Japan and Germany both have put in false breakouts and France is approaching its 2015 high as support.



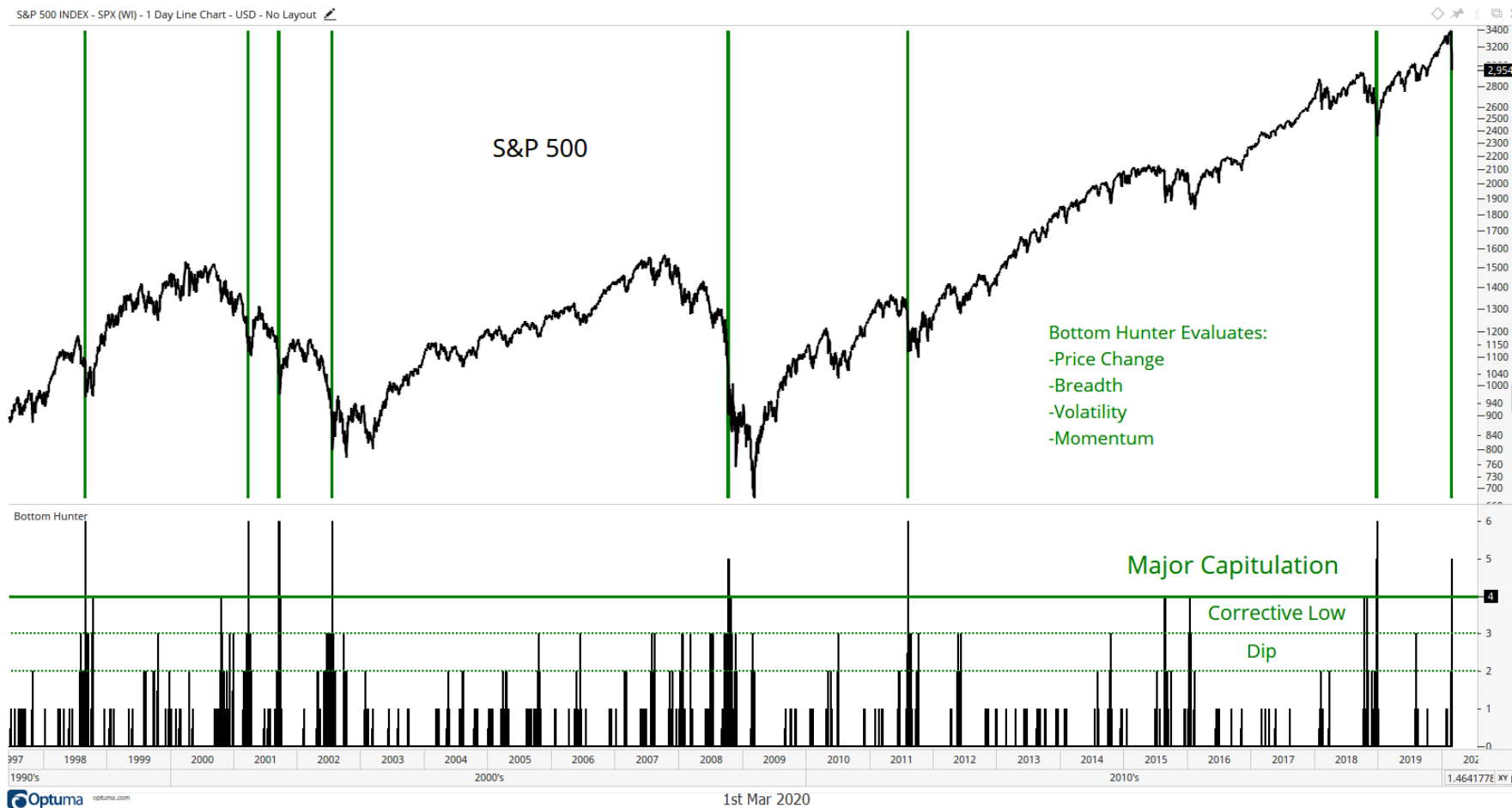
S&P 500 INDEX - SPX (W) - 1 Day Line Chart - USD - No Layout



SPX DSI (DSI) - 1 Day - USD



The Daily Sentiment Index for the S&P 500 and Nasdaq both fell to single digits last week. But interestingly, they both rose on Friday even with the continued selling in equity markets. The Nasdaq % Bullish rose 5 points to 15% and the S&P saw its rise to 12%. The green lines on the chart show when the DSI for the two indices rise but still remain under 20% when the S&P 500 was down that day. This happened early in the Q4 '18 sell off and at the major lows in '15, '16, '12, and after the first low in '11 .



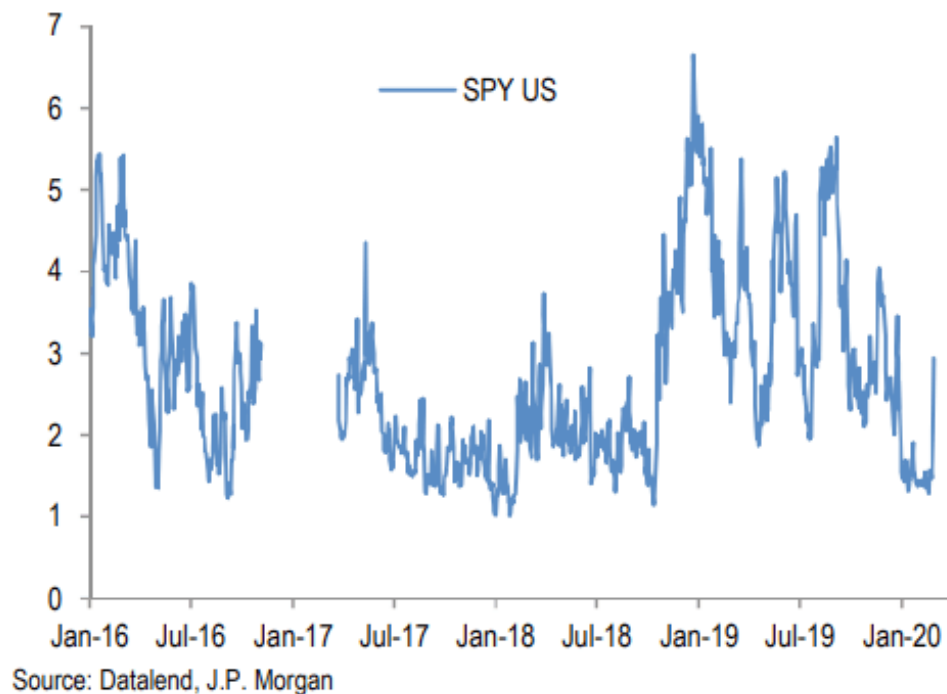
The above show shows my ‘Bottom Hunter’ Indicator that looks for capitulation in equities based on price, breadth, volatility, and momentum. It rose to 5 on Thursday before dropping back to 4 on Friday. Green line show prior 5 readings being reached, which we saw in December ‘18, 2011, ahead of the ‘09 low and several times during the 2000s bear market. We don’t see this type of major capitulation very often, suggesting a reflex rally would make sense in U.S. equites. It may not market the final low, but I think we’ve very close to a getting a good risk/reward opportunity as I wrote on Thursday night last week.



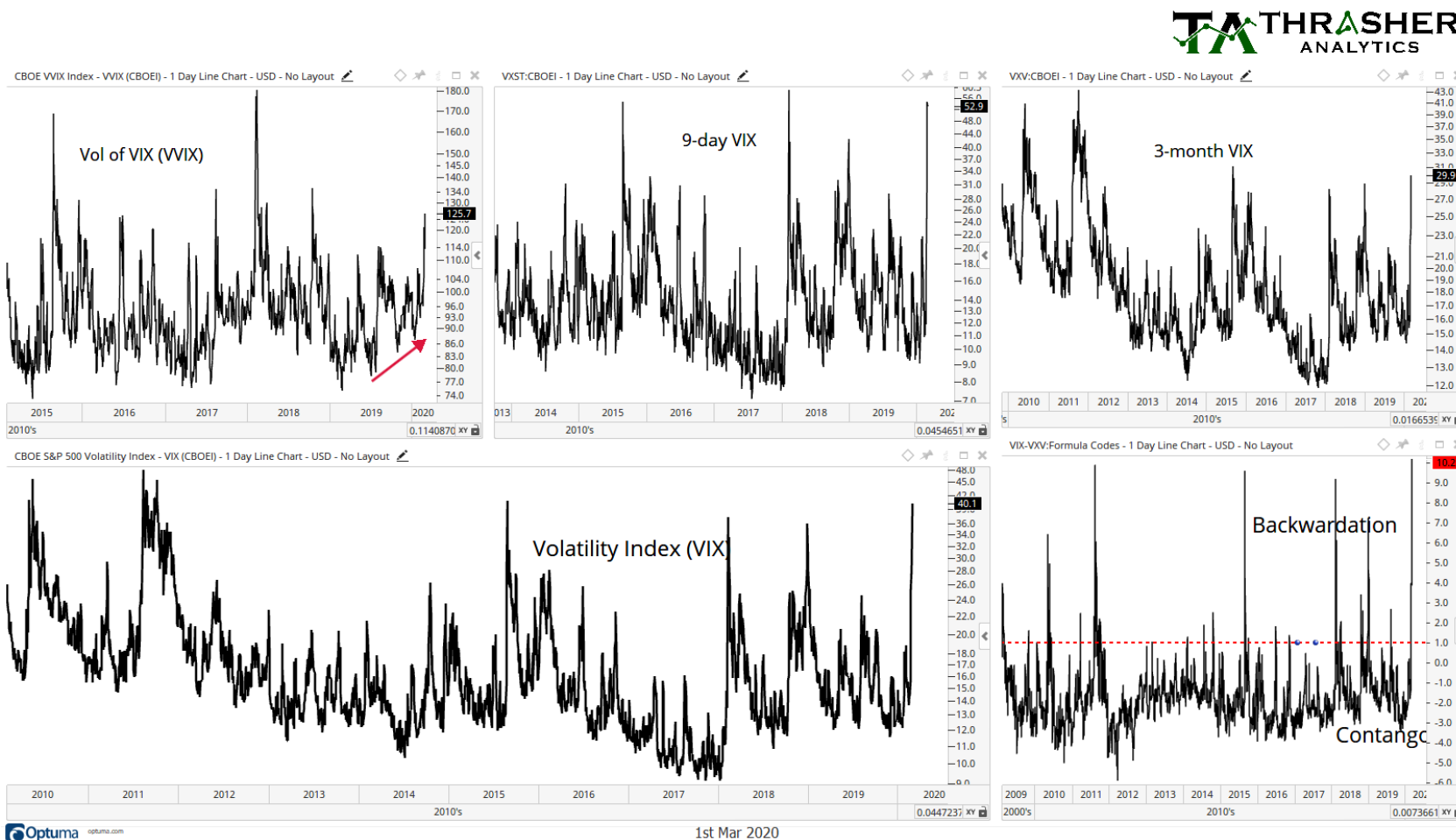
The market leader, semiconductors, have held up extremely well during this sell off. Even though Technology took a beating and S. Korea and China (two major producers of chips) have been a focal point of the Coronavirus, the semi industry has shown relative strength against the S&P 500 at a stronger clip than many would have expected. Both the ETF and the Index are holding above support and not that far off their prior highs in relative performance. I believe this is a bullish development and may suggest investors are not selling strength during the de-risking that took place last week.

Figure 4: Quantity-On-Loan of the SPY US ETF

On loan quantity as a % share of share outstanding. Last obs is for 27th Feb 2020.



This chart from JPM shows the short interest based on quantity of SPY shares on loan going back to 2016. Notice that the current trend higher is still well off the highs from prior declines in equities. While investors may have sold shares, it doesn't appear an offensive trade of outright shorting the S&P 500 ETF (SPY) has become a primary tool taken advantage of last week. We saw nearly twice as many shares on loan to short at the bottom in '18 than we do today. This could be viewed as bullish or bearish: Either investors think this decline will be short-lived and not needing to increase hedges or bet directly against falling prices or that the true panic and selling hasn't taken place yet and more shorting of equities is to come, sending prices even lower. Which way do I think it is? I honestly couldn't tell you, it'd be a pure guess. But after the severe selling I am surprised more shares of SPY weren't shorted, if I had to pick I'd lean more bullish on this data but we'll have to see how this week plays out.



Above is a chart of the VVIX, 9-day VIX, 3-month VIX, 30-day VIX, and the spread between 30-day and 3 month. While 9-day and 30-day volatility are near decade highs, 3-month and VVIX remain relative subdued in comparison. I believe the lack of increase in VVIX is due to the already pricing in of volatility ahead of this spike, VVIX was already well off its prior low before last week. Looking at longer-term vol, the focus of the selling has been on the Coronavirus which many believe will be short-term in nature and we can't get a clear readthrough on its economic impact so the focus of volatility has been on the front month contracts which we can see by the bottom right chart, which has the spread at one the largest in recent history. Panic often finds itself in the front part of the VIX curve and this sell-off has been no different.

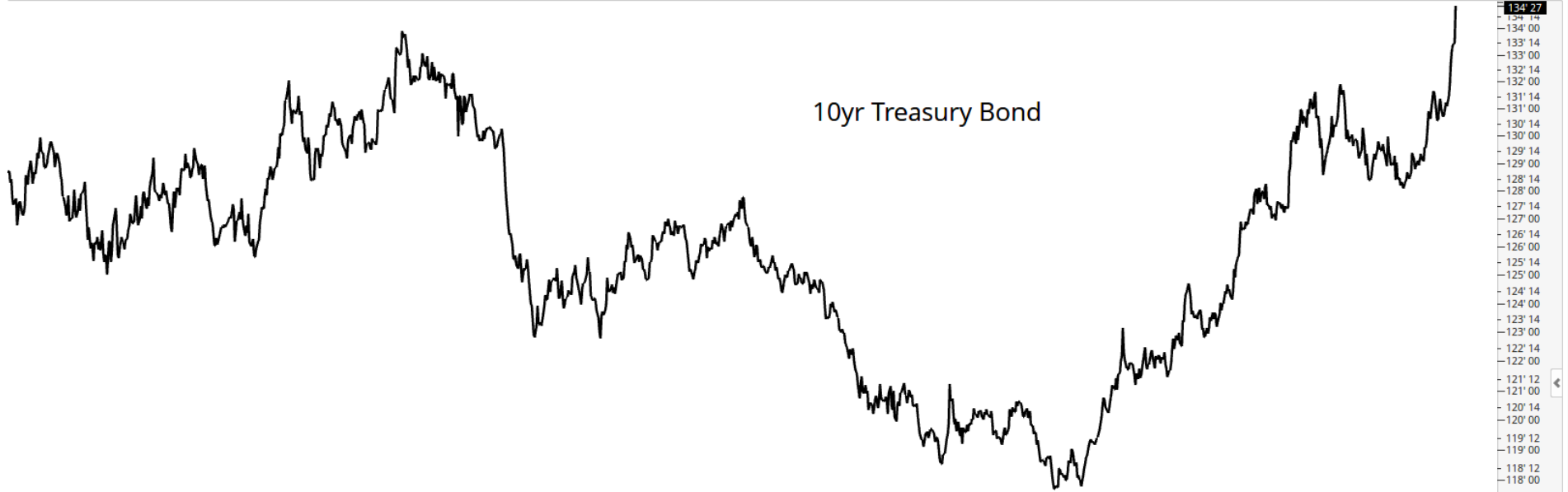
Market	% Bullish ▲	5MA	History 📊
<input type="checkbox"/> Cattle DSI	5	9.6	
<input type="checkbox"/> Crude Oil DSI	9	15.8	
<input type="checkbox"/> Lean Hog DSI	10	16.2	
<input type="checkbox"/> Australian Dollar DSI	10	11.4	
<input type="checkbox"/> Corn DSI	11	10.6	
<input type="checkbox"/> SPX DSI	12	23.2	
<input type="checkbox"/> Natural Gas DSI	12	14.6	
<input type="checkbox"/> Orange Juice DSI	13	11.8	
<input type="checkbox"/> Heating Oil DSI	13	13.8	
<input type="checkbox"/> Nasdaq DSI	15	25.60	
<input type="checkbox"/> British Pound DSI	17	23	
<input type="checkbox"/> CRB Index DSI	19	38.20	
<input type="checkbox"/> Nikkei DSI	20	37.40	
<input type="checkbox"/> Cotton DSI	22	38.40	
<input type="checkbox"/> Gasoline DSI	24	34.80	
<input type="checkbox"/> New Zealand Dollar DSI	25	32.00	
<input type="checkbox"/> Copper DSI	33.00	36.00	

Code	% Bullish ▲	5MA	History 📊
<input type="checkbox"/> Platinum DSI	35.00	56.60	
<input type="checkbox"/> Coffee DSI	38.00	31.20	
<input type="checkbox"/> Cocoa DSI	38.00	48.40	
<input type="checkbox"/> Swiss Franc DSI	40.00	29.00	
<input type="checkbox"/> Euro DSI	41.00	29.40	
<input type="checkbox"/> Silver DSI	44.00	65.80	
<input type="checkbox"/> Mexican Peso DSI	44.00	52.60	
<input type="checkbox"/> Lumber DSI	44.00	62.40	
<input type="checkbox"/> Wheat DSI	55.00	56.00	
<input type="checkbox"/> US Dollar DSI	63.00	75.60	
<input type="checkbox"/> Gold DSI	63.00	78.40	
<input type="checkbox"/> Sugar DSI	65.00	72.80	
<input type="checkbox"/> VIX DSI	66.00	54.60	
<input type="checkbox"/> Palladium DSI	77.00	88.8	
<input type="checkbox"/> 5YR DSI	82	74.00	
<input type="checkbox"/> EuroDollar DSI	90	83.4	
<input type="checkbox"/> 10Y DSI	92	87.8	

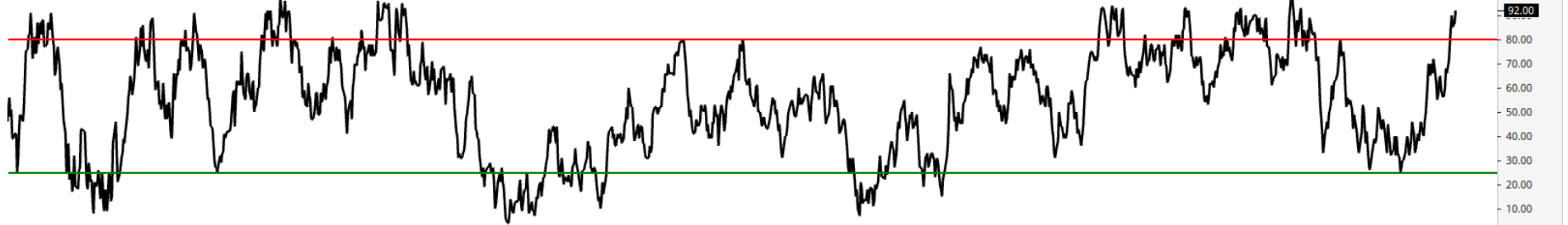
Above is the DSI score for each of the futures markets.



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



10Y DSI (DSI) - 1 Day - USD



Mar 2015 May Jul Sep Nov Jan Mar May Jul Sep Nov Jan Mar May Jul Sep Nov Jan Mar May Jul Sep Nov Jan Mar May Jul Sep Nov Jan Mar 2019 20 0.040689C XY



1st Mar 2020

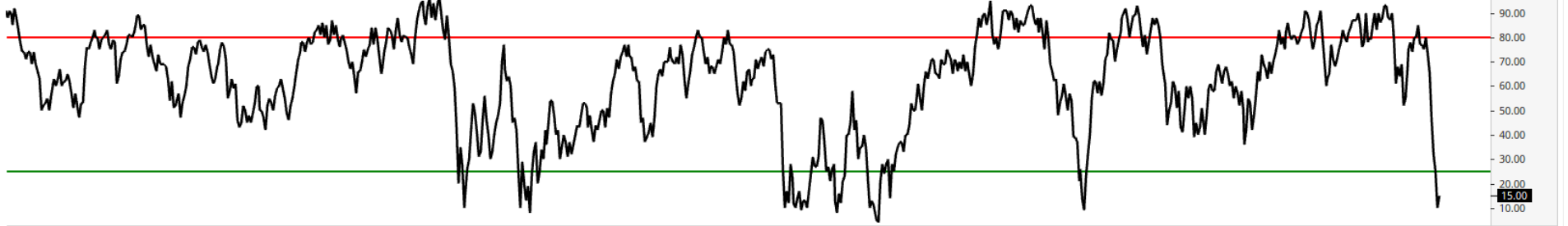


NASDAQ 100 Index - NDY (W1) - 1 Day Line Chart - USD - No Layout

Nasdaq 100



Nasdaq DSI (DSI) - 1 Day - USD



Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar
2017										2018						2019						20		

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



Gold DSI (DSI) - 1 Day - USD

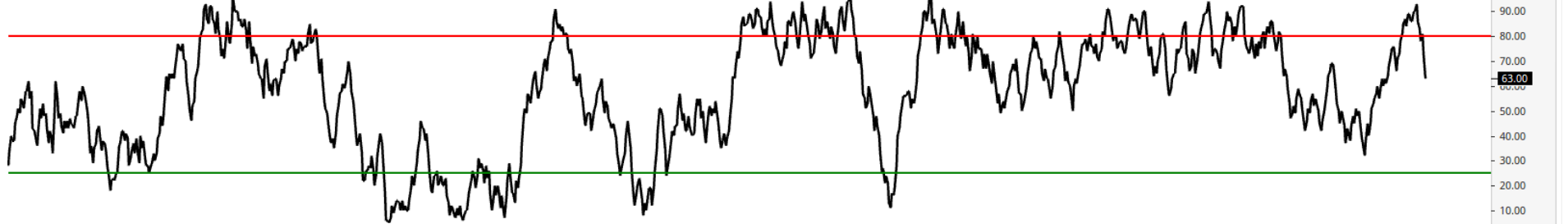




U.S. Dollar Index - DXSpot (AFUT) - 1 Day Line Chart - USD - No Layout



US Dollar DSI (DSI) - 1 Day - USD



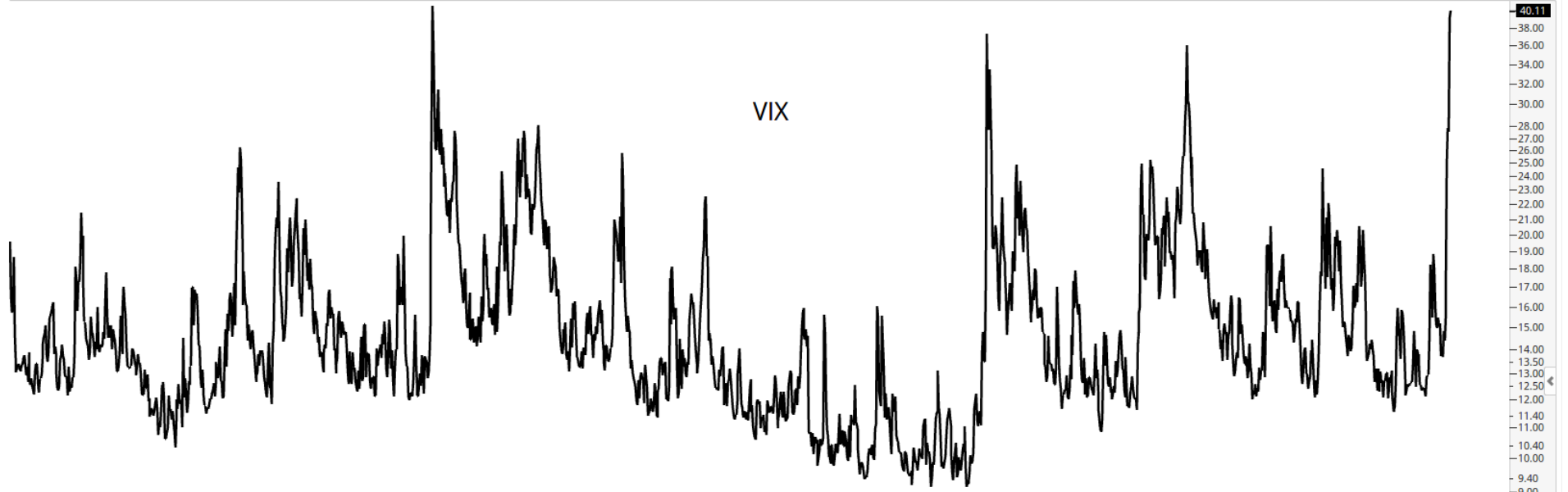
May 2016 Jun Jul Aug Sep Oct Nov Dec 2016 Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec 2017 Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec 2018 Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec 2019 Jan Feb Mar Apr 20 0.0443437 xy



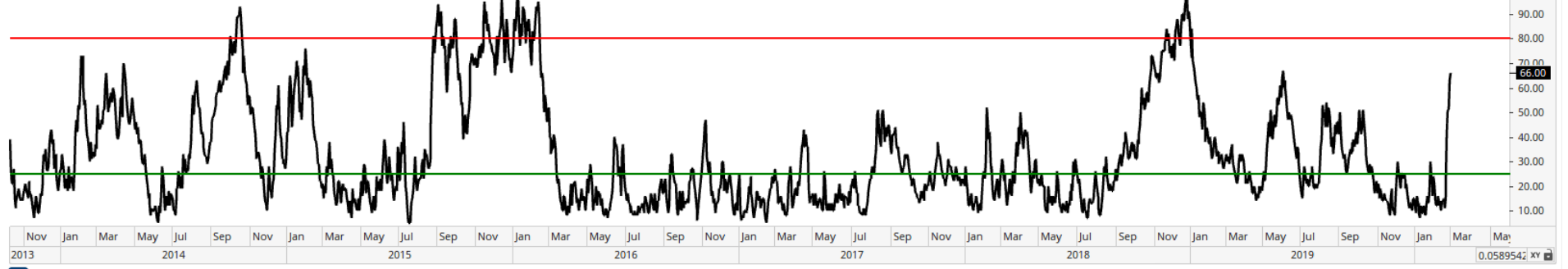
1st Mar 2020



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

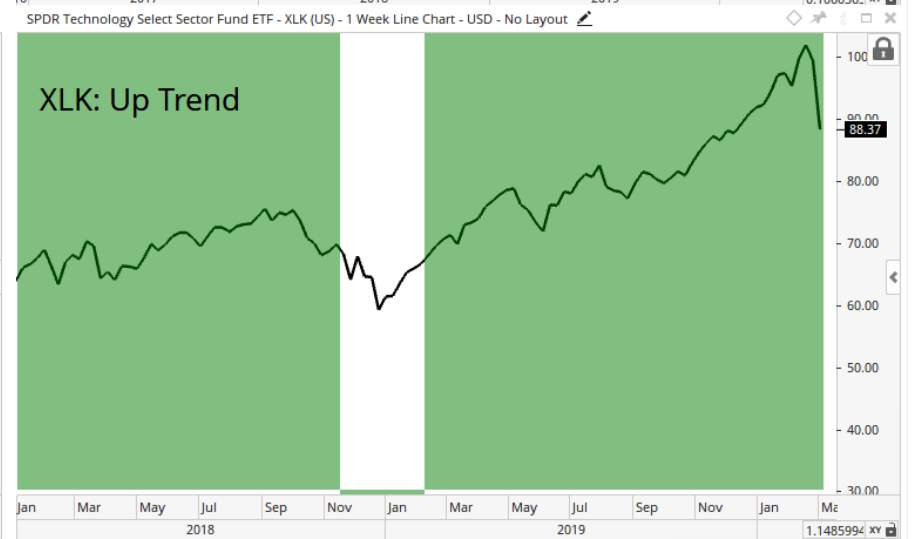
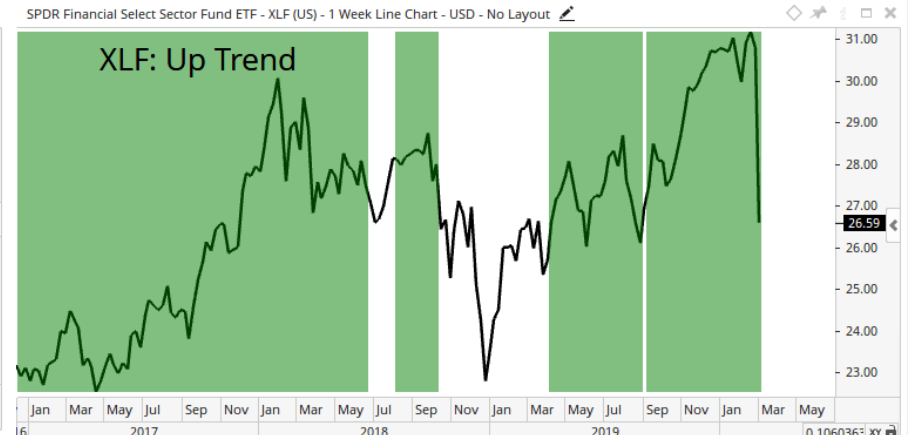
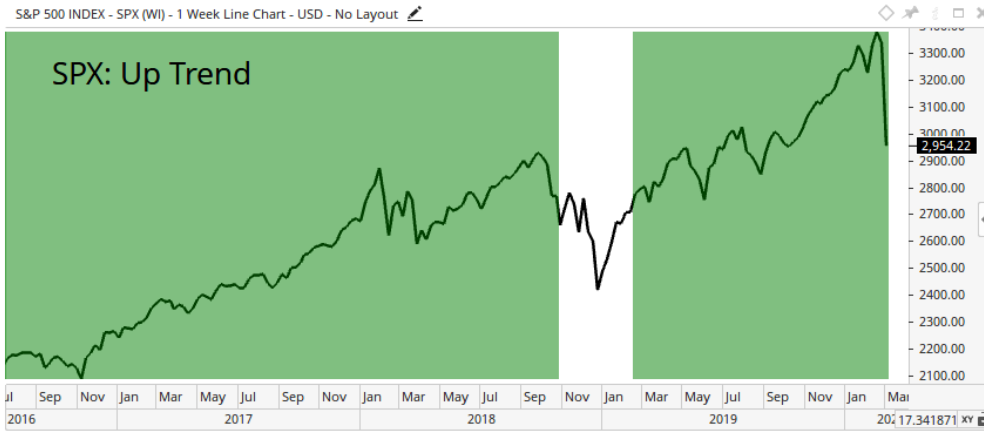


VIX DSI (DSI) - 1 Day - USD



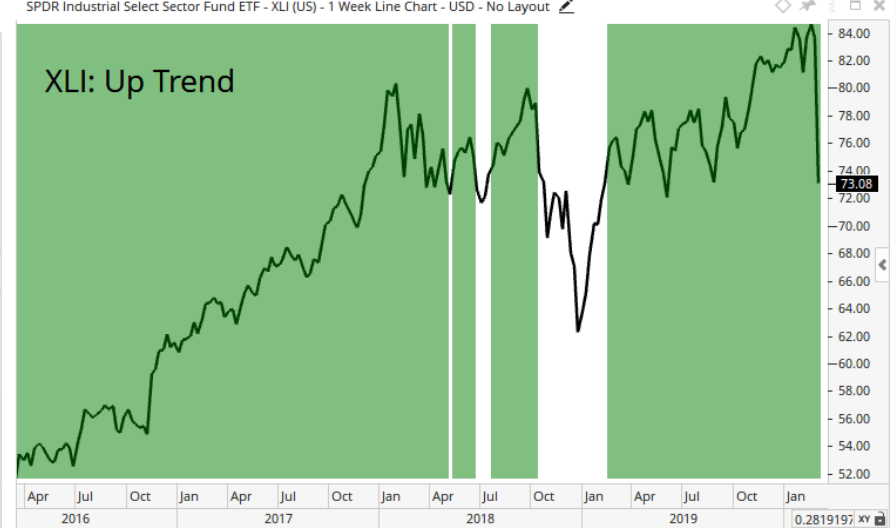
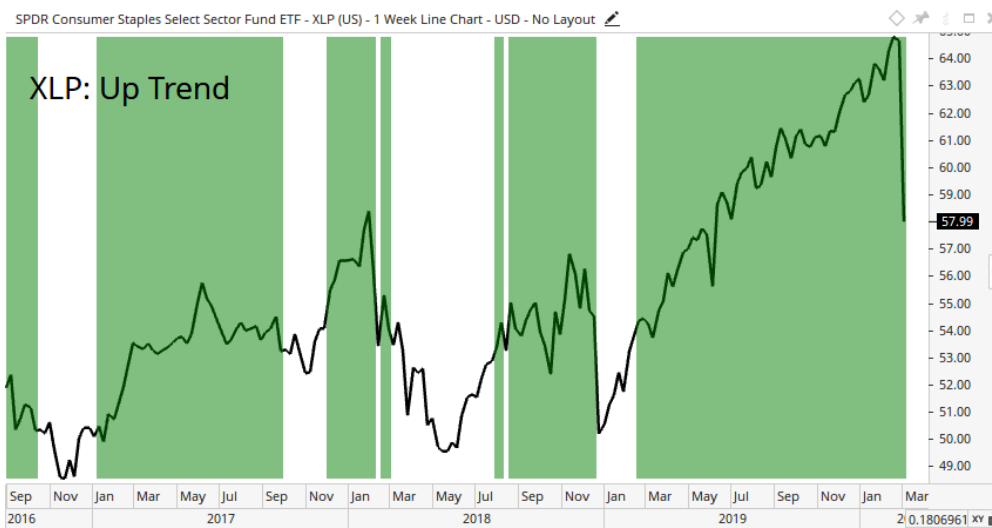
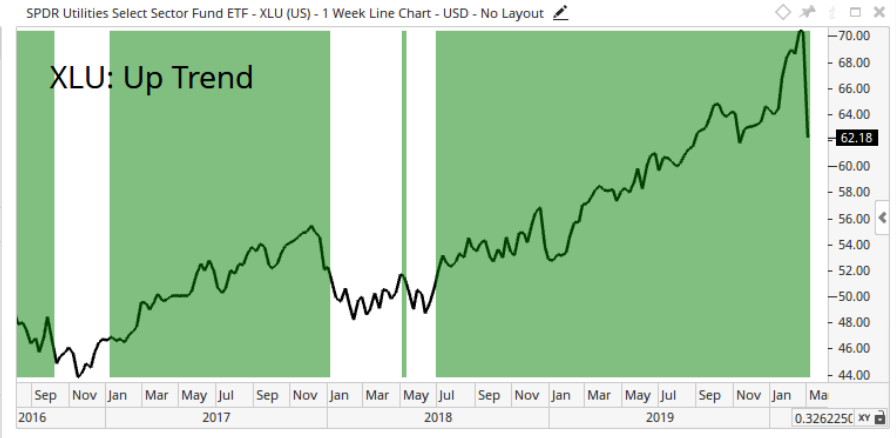
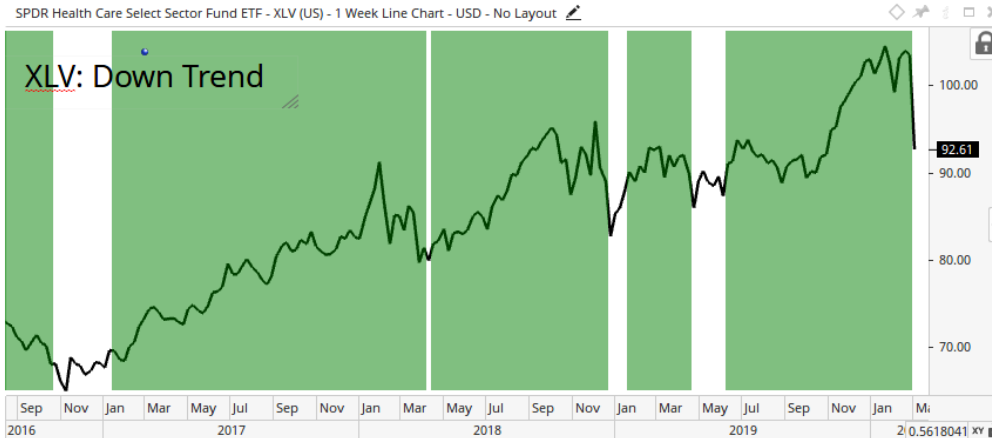
NIKKEI 225 INDEX - NYCash (CME) - 1 Day Line Chart - USD - No Layout



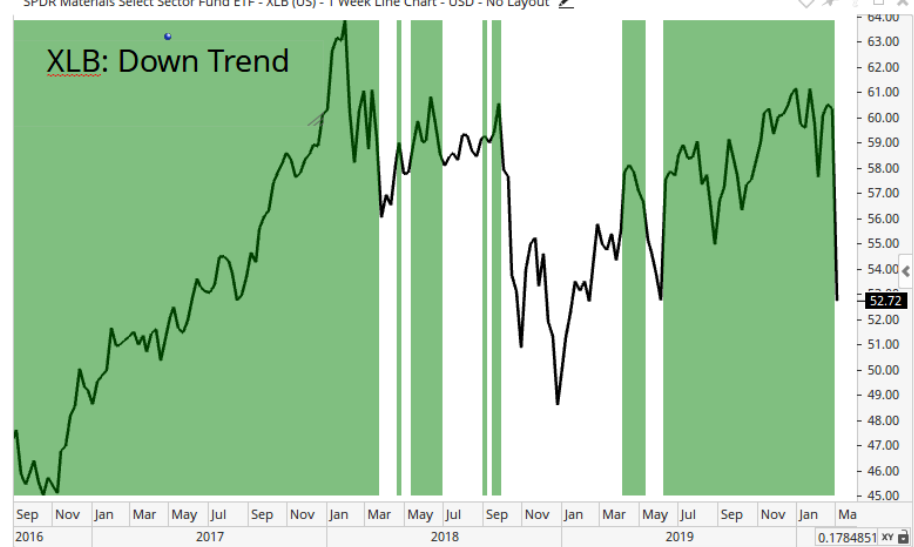
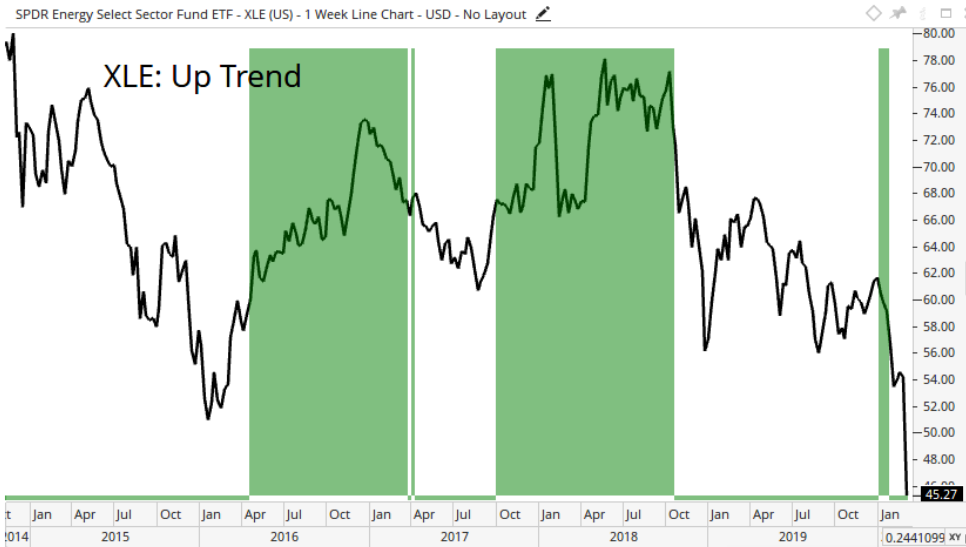
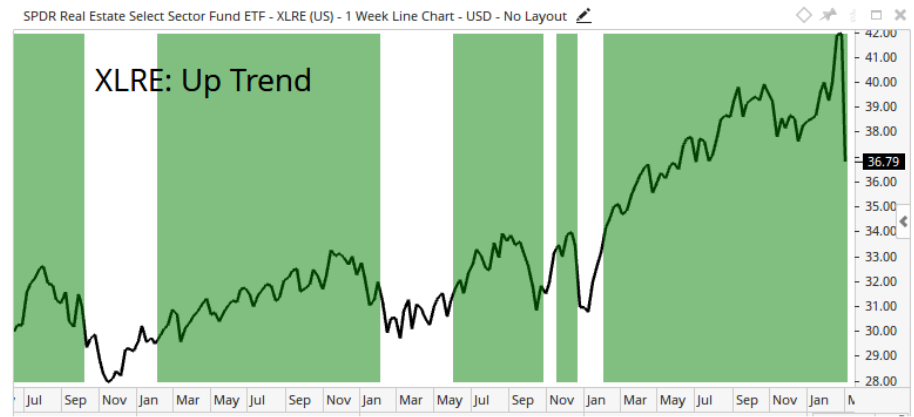
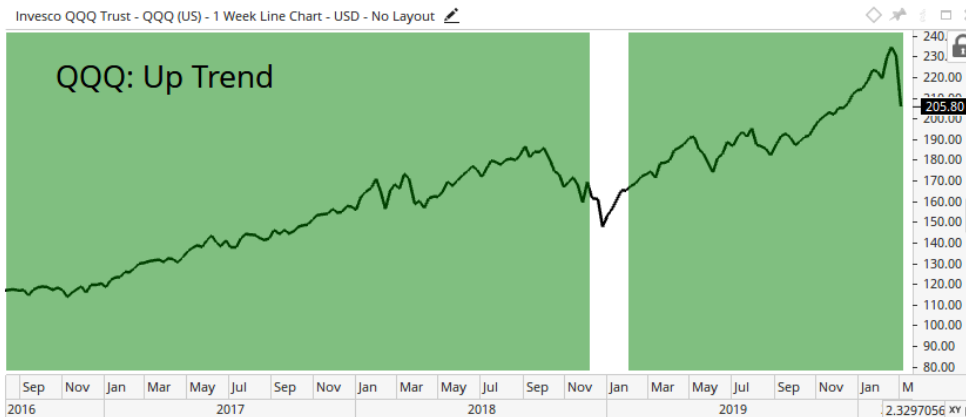


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SPX, XLF, and XLK are all in up trends. XLY is in a down trend.



XLU, XLP, and XLI are all in up trends. XLV is in a down trend



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

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.

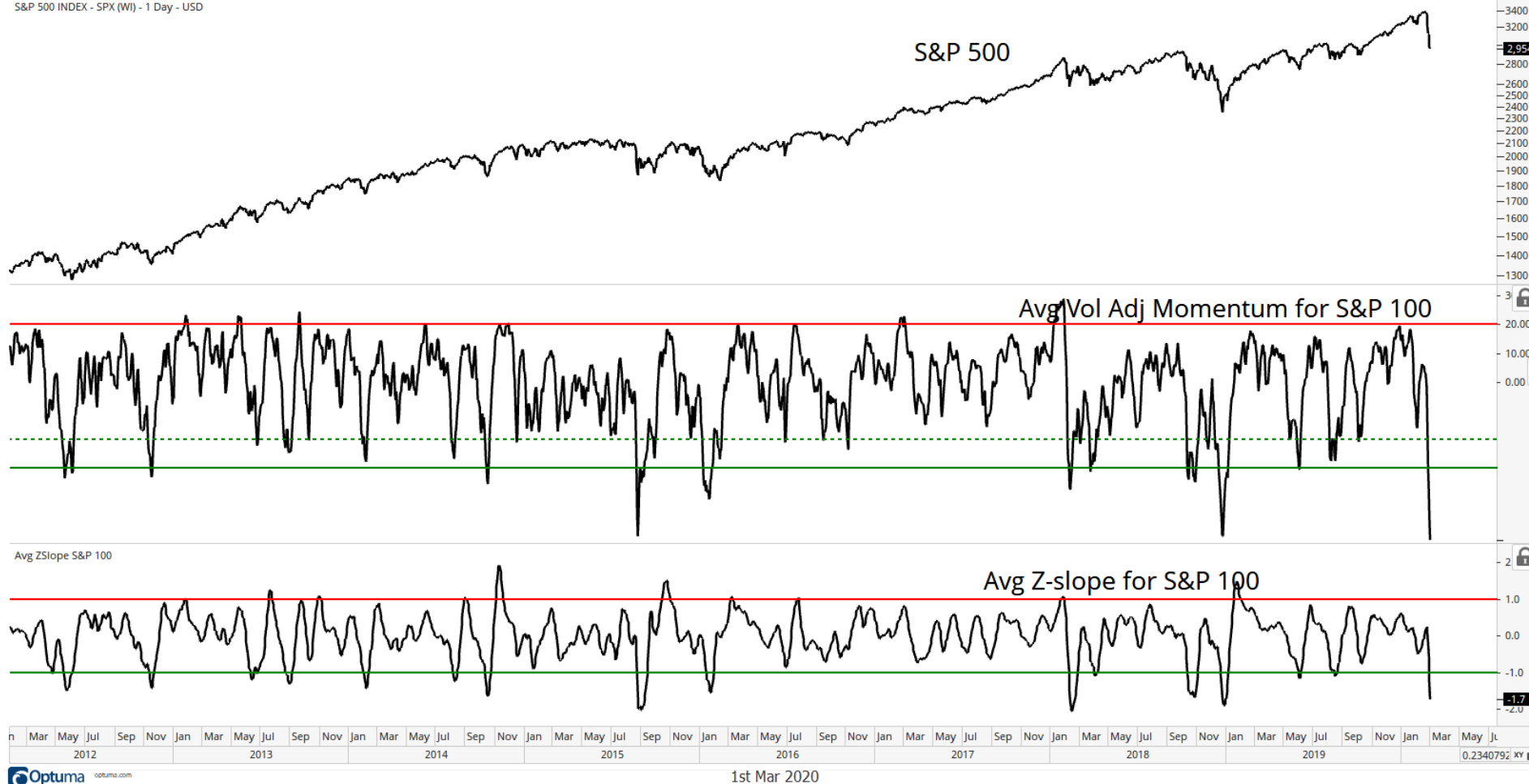
Volatility-Adjusted Momentum (VaM): This is a spin on the traditional measures of momentum, taking into account the volatility of the underlying asset into the calculation. By adjusting for volatility we can get a better look at potential mean-reversion signals when risk/reward becomes unbalanced towards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



Vol Momo - VOLMOMOSP100 (Market Breadth) - 1 Day Bar Chart - USD - No Layout

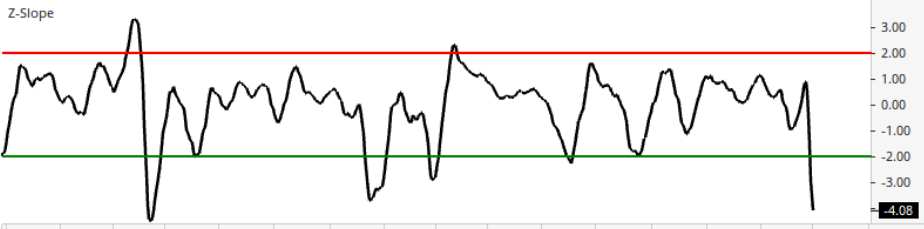
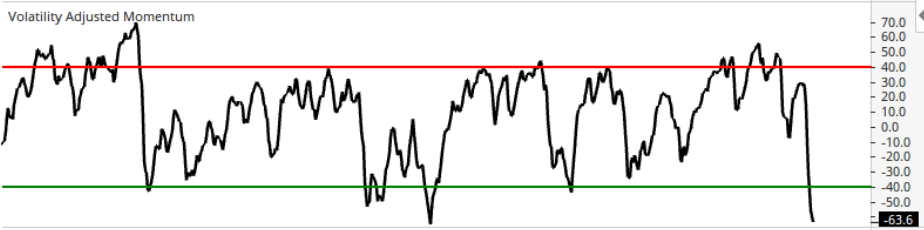
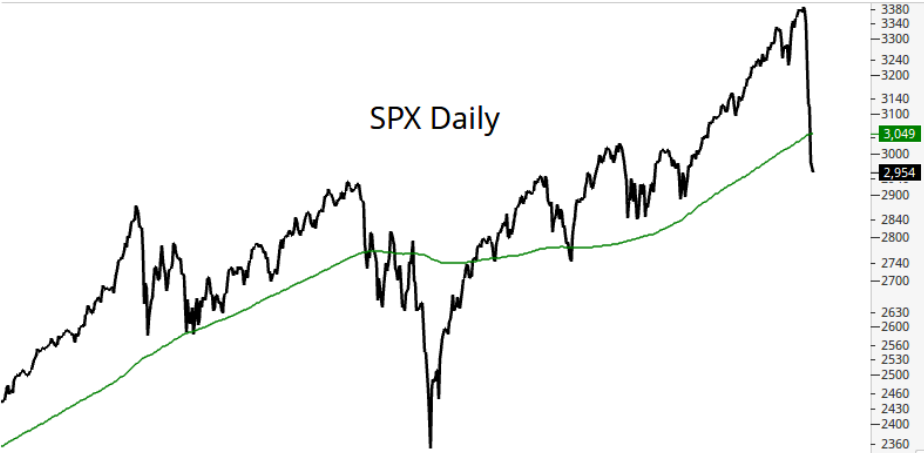
S&P 500 INDEX - SPX (WI) - 1 Day - USD



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



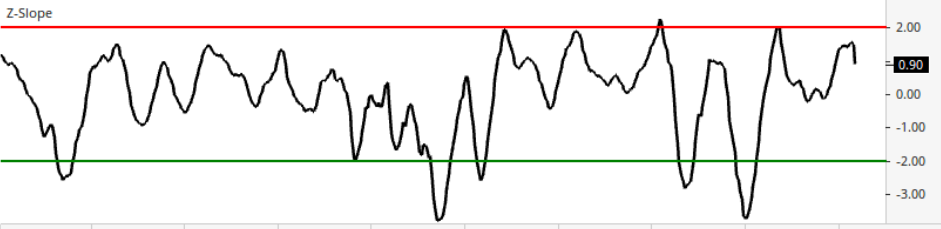
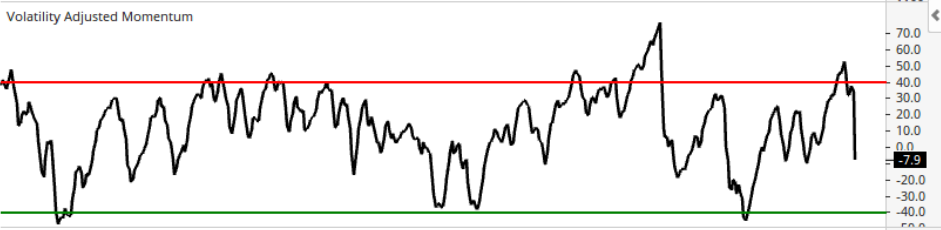
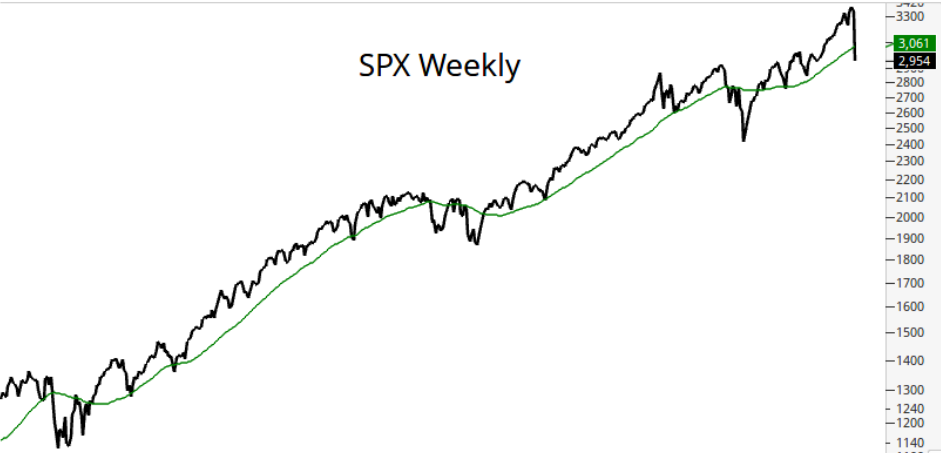
S&P 500 INDEX - SPX (W) - 1 Day Line Chart - USD - VMomo & ZSlope Layout



Sep Nov Jan Mar May Jul Sep Nov Jan Mar May Jul Sep Nov Jan Mar
 2017 2018 2019 3.014892, xv



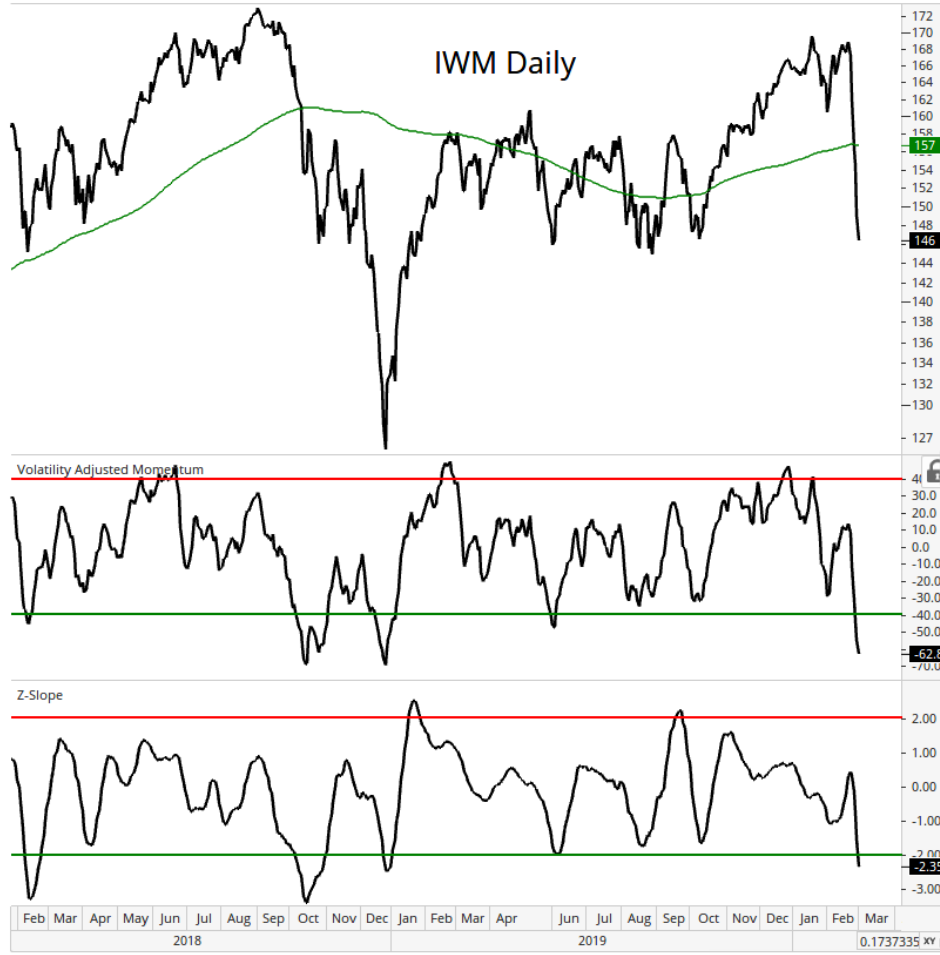
S&P 500 INDEX - SPX (W) - 1 Week Line Chart - USD - No Layout



2011 2012 2013 2014 2015 2016 2017 2018 2019 2020
 2010's 9.1604521, xv

1st Mar 2020

iShares Russell 2000 ETF - IWM (US) - 1 Day Line Chart - USD - VMomo & ZSlope Layout



iShares Russell 2000 ETF - IWM (US) - 1 Week Line Chart - USD - No Layout

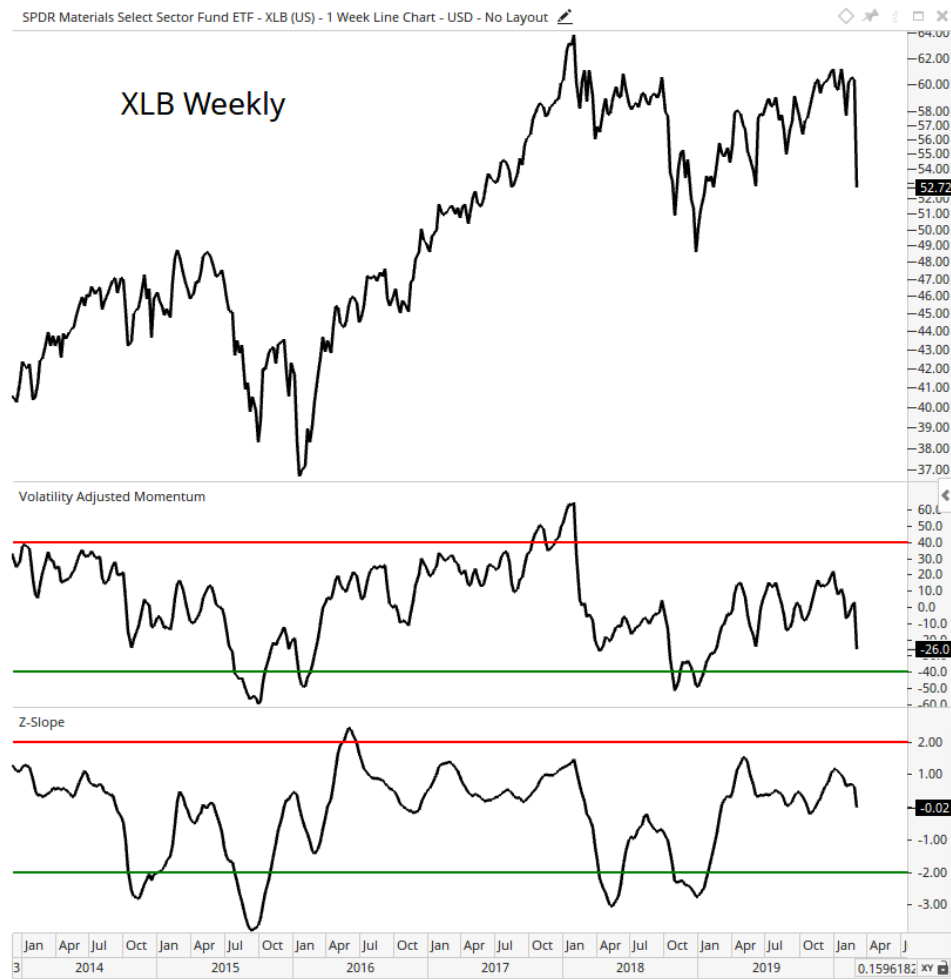


Invesco QQQ Trust - QQQ (US) - 1 Day Line Chart - USD - VMomo & ZSlope Layout

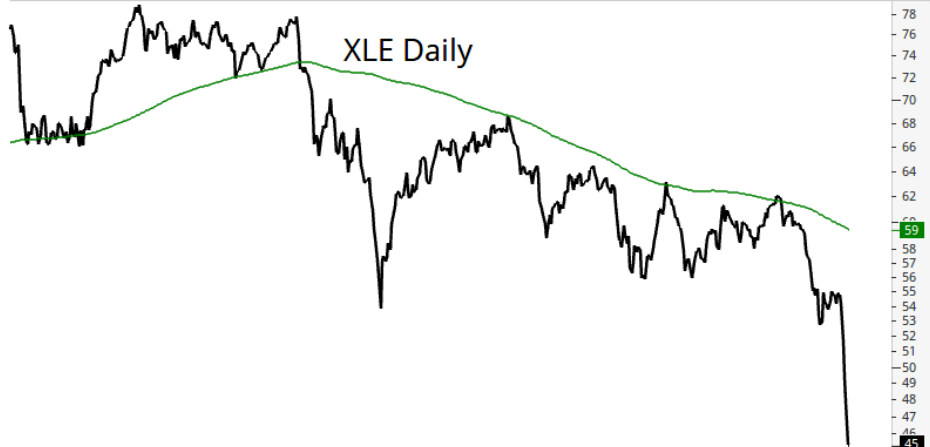


Invesco QQQ Trust - QQQ (US) - 1 Week Line Chart - USD - No Layout

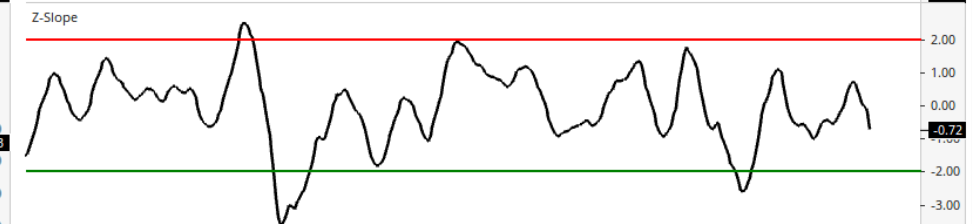
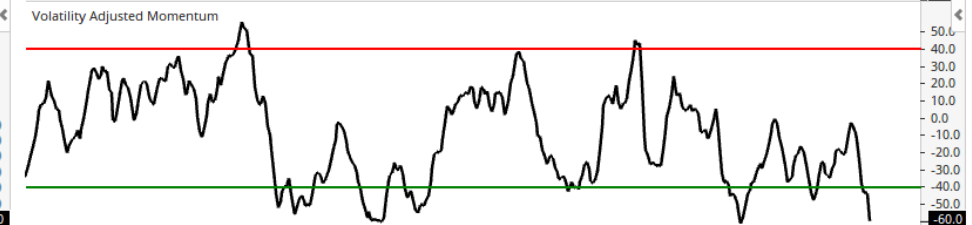
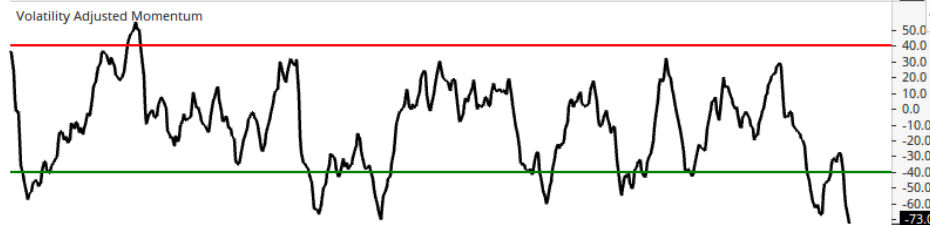
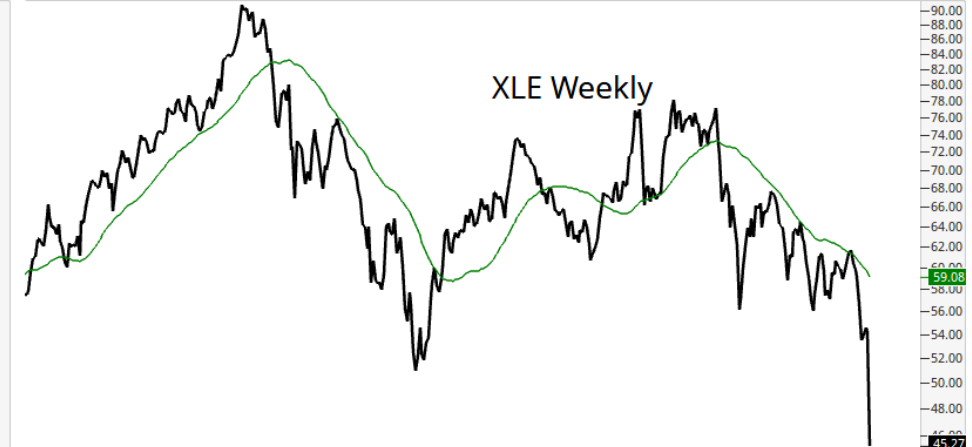




SPDR Energy Select Sector Fund ETF - XLE (US) - 1 Day Line Chart - USD - VMomo & ZSlope Layout



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



Mar May Jul Sep Nov Jan Mar May Jul Sep Nov Jan Mar
2018 2019 0.122834€ XY

2012 2013 2014 2015 2016 2017 2018 2019 2020
2010's 0.218143€ XY

SPDR Communication Services Select Sector ETF - XLC (US) - 1 Day Line Chart - USD - VMomo & ZSlope Layout

SPDR Communication Services Select Sector ETF - XLC (US) - 1 Week Line Chart - USD - No Layout





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



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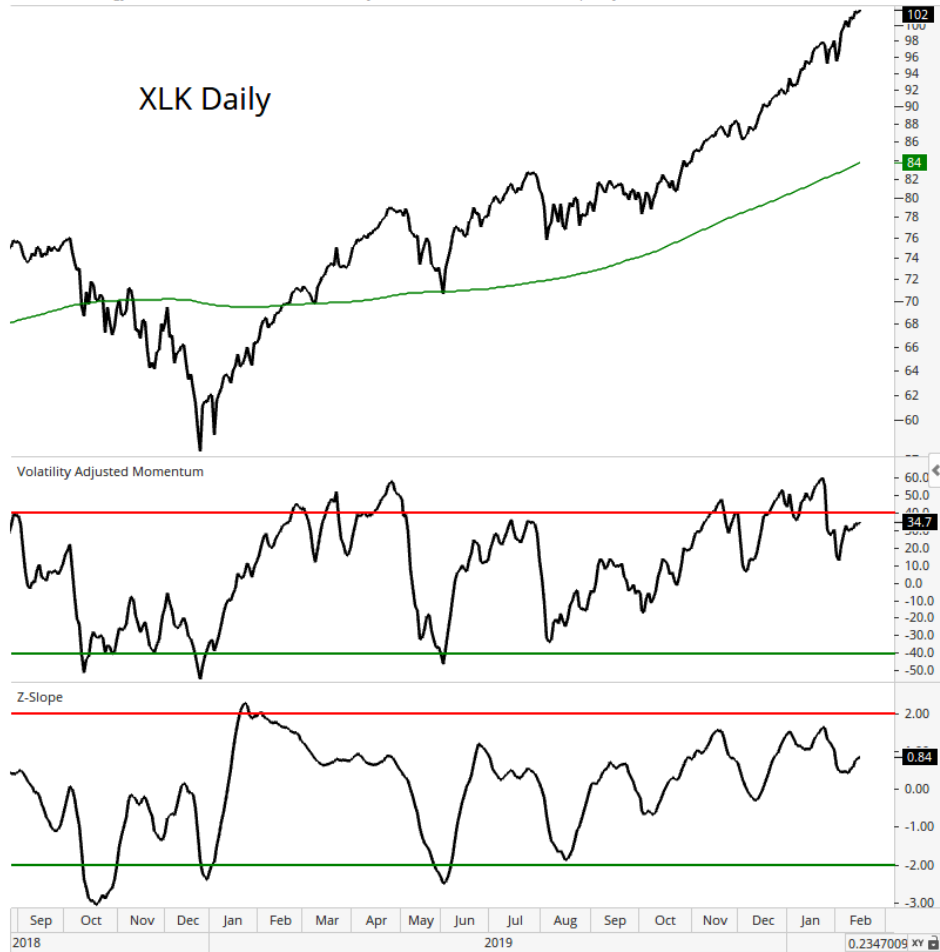
SPDR Financial Select Sector Fund ETF - XLF (US) - 1 Week Line Chart - USD - No Layout



0.0895902 xy

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

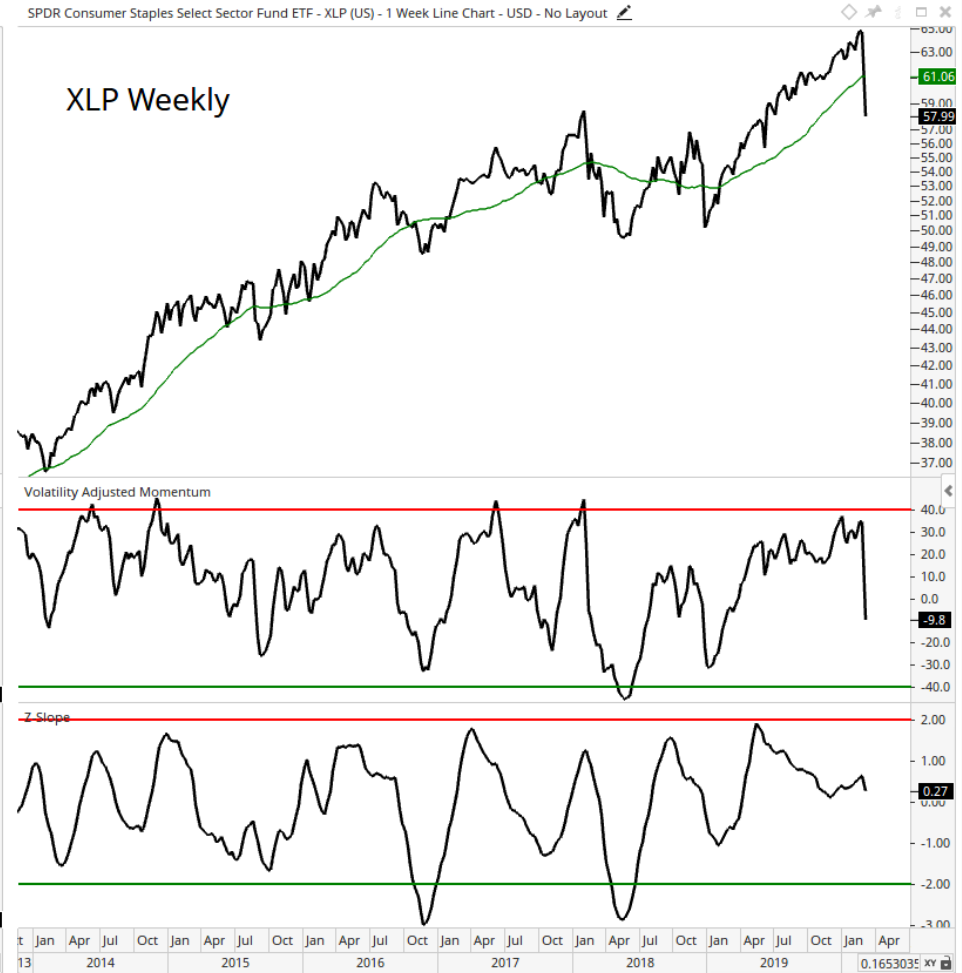
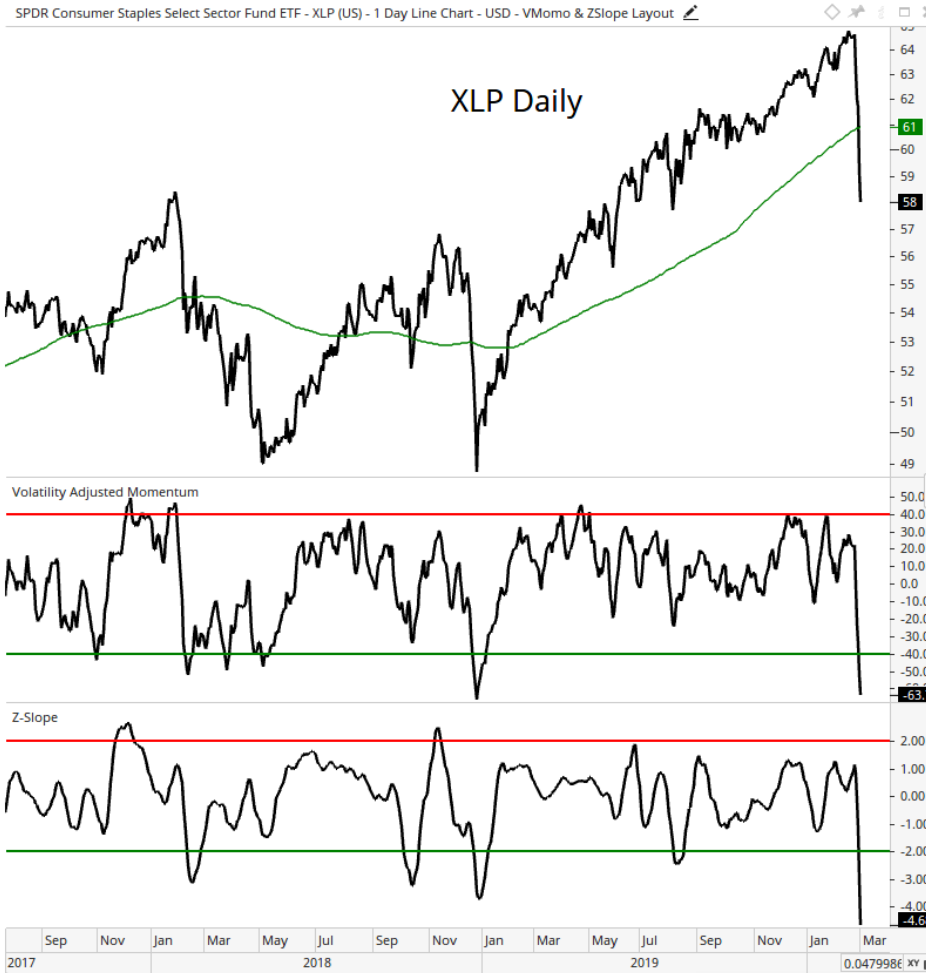
SPDR Technology Select Sector Fund ETF - XLK (US) - 1 Week Line Chart - USD - No Layout



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





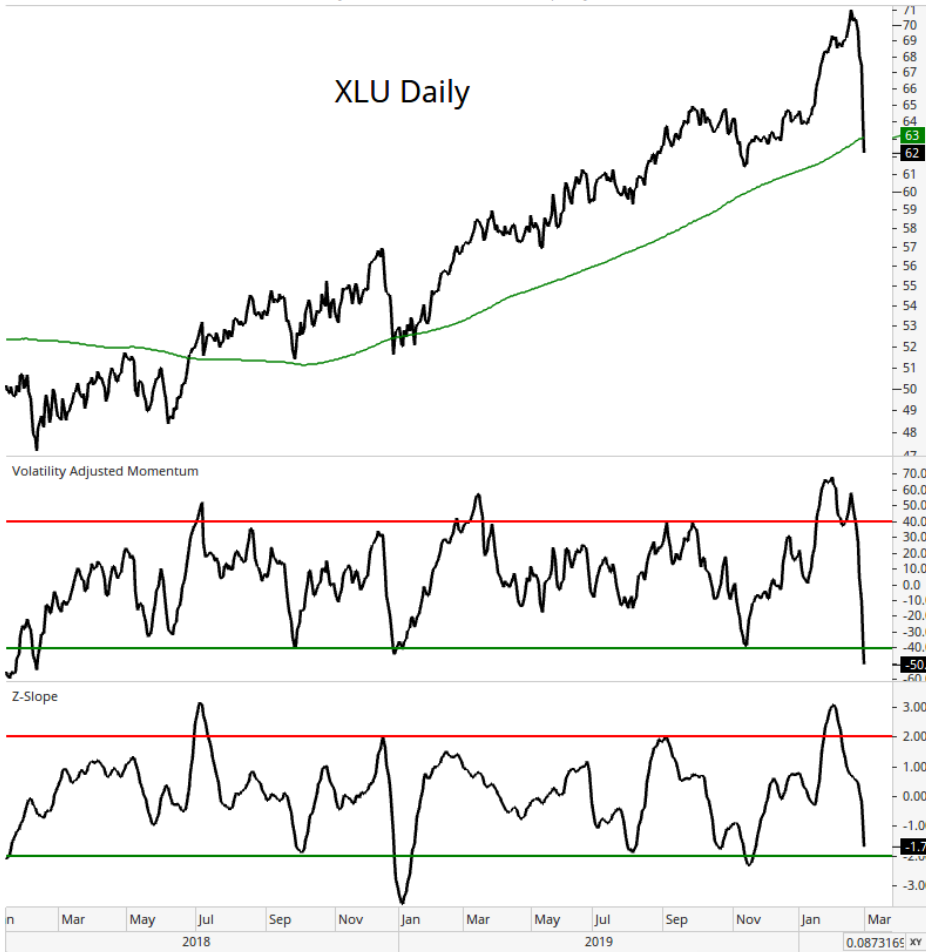
SPDR Real Estate Select Sector Fund ETF - XLRE (US) - 1 Day Line Chart - USD - VMomo & ZSlope Layout



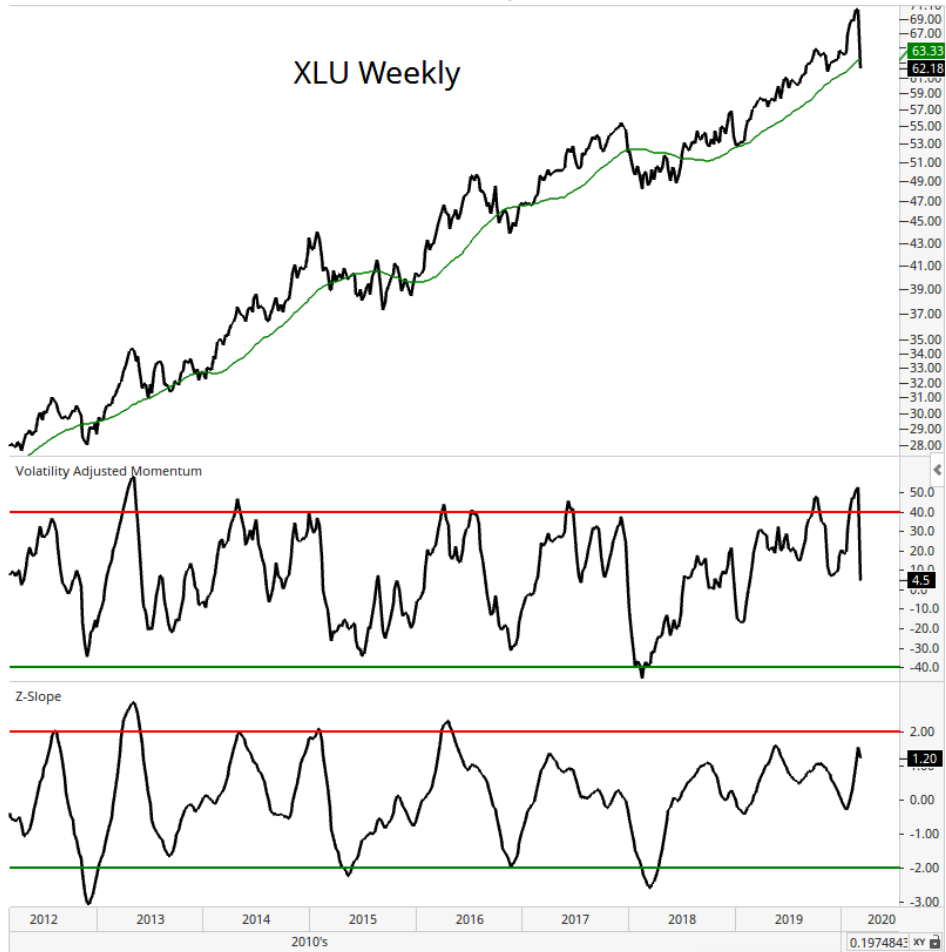
SPDR Real Estate Select Sector Fund ETF - XLRE (US) - 1 Week Line Chart - USD - No Layout



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



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

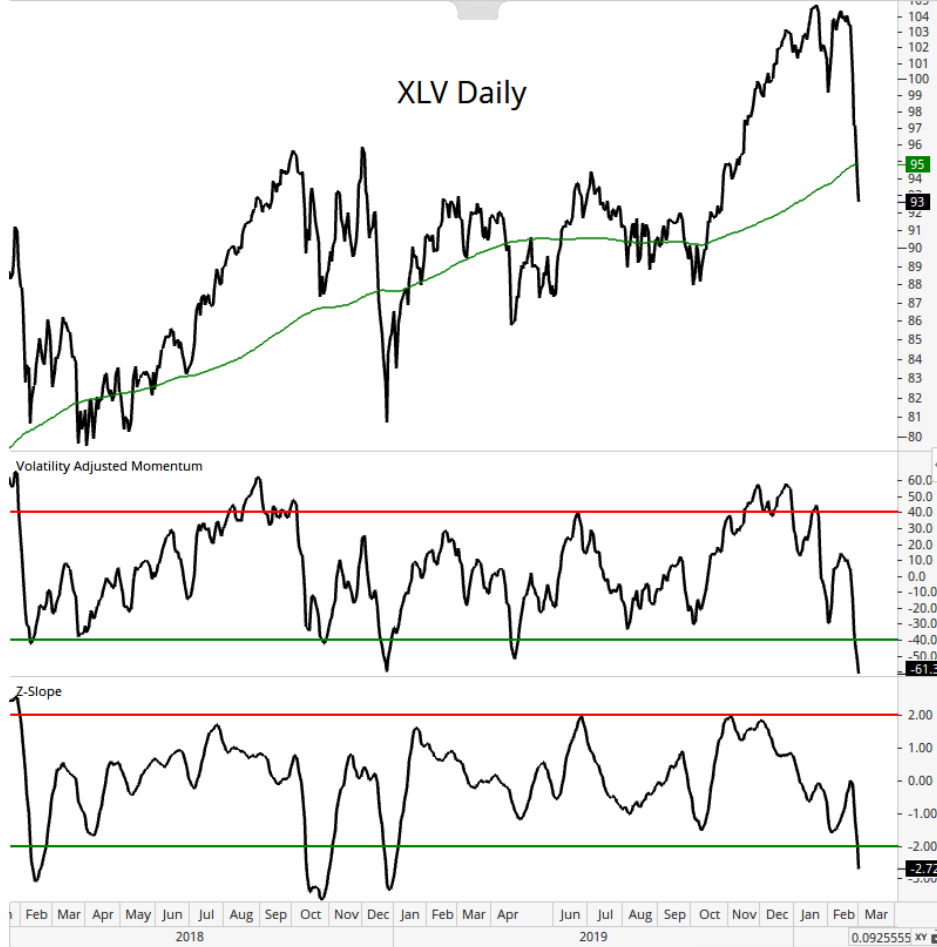




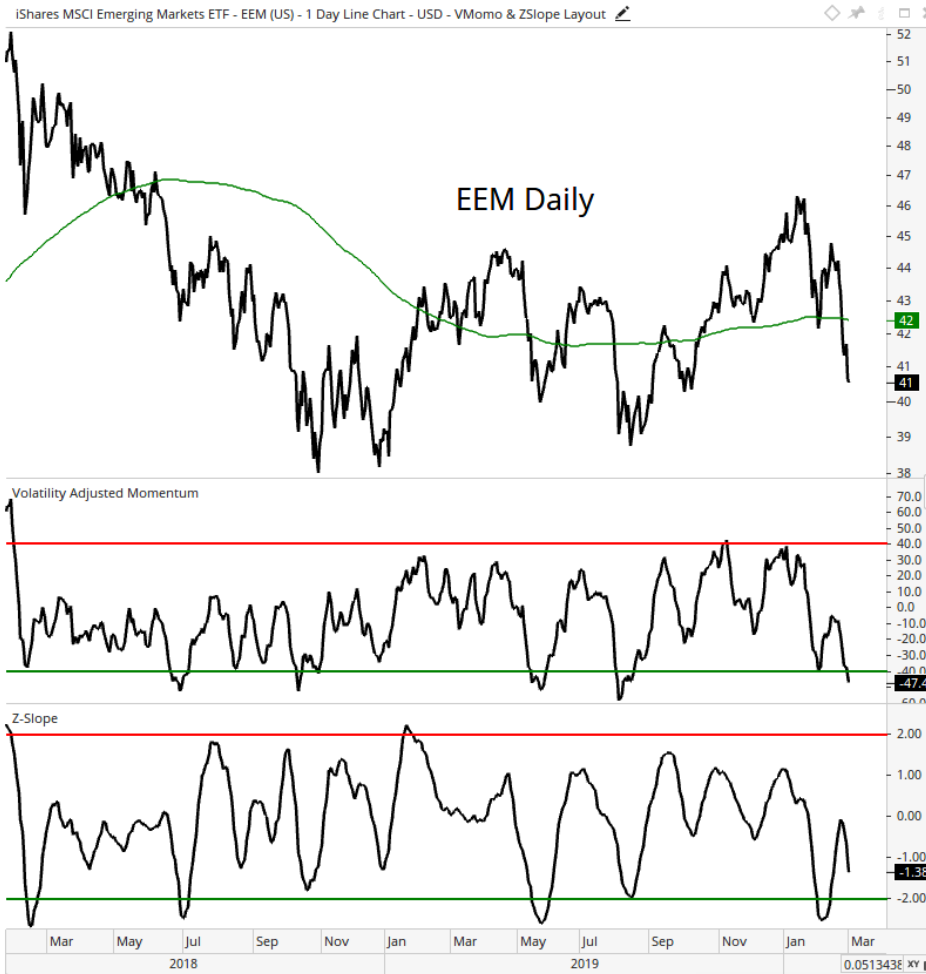


SPDR Health Care Select Sector Fund ETF - XLV (US) - 1 Day Line Chart - USD - VMomo & ZSlope Layout

SPDR Health Care Select Sector Fund ETF - XLV (US) - 1 Week Line Chart - USD - No Layout



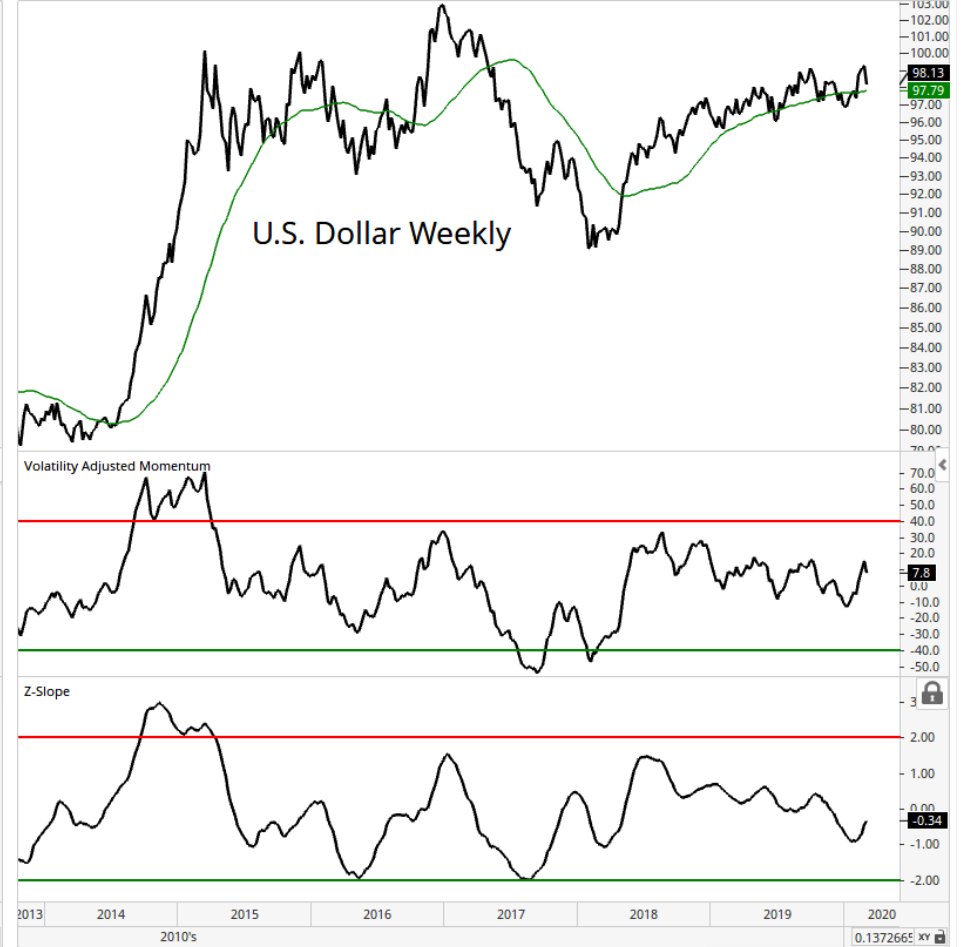
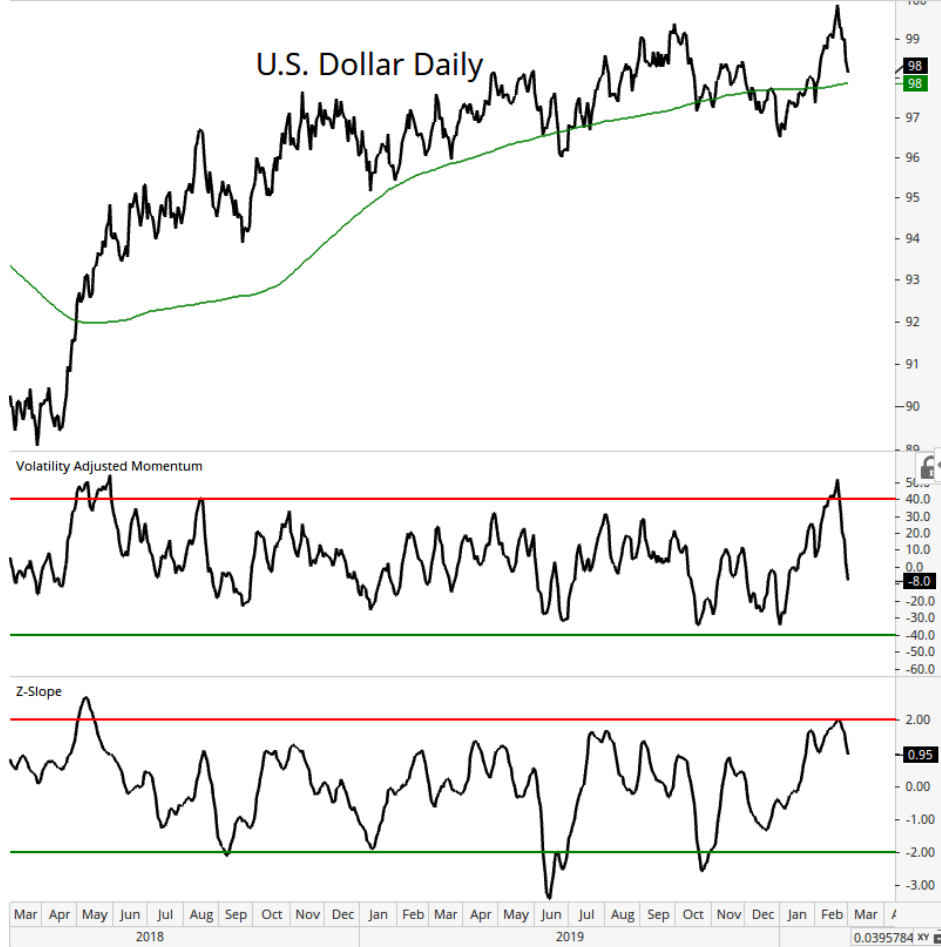






US Dollar Index - DXY (W1) - 1 Day Line Chart - USD - VMomo & ZSlope Layout

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



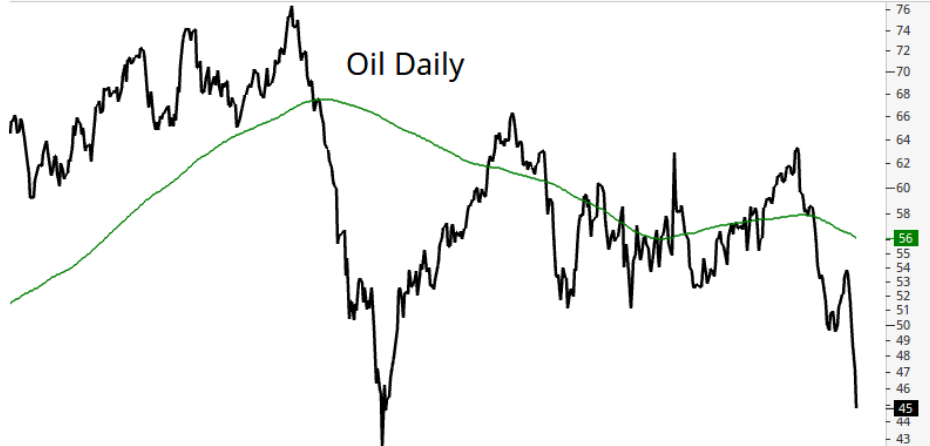


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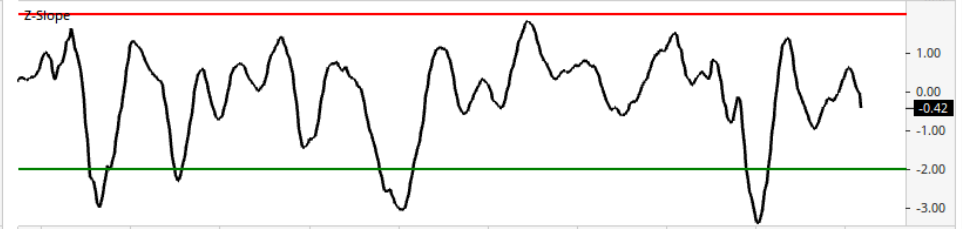
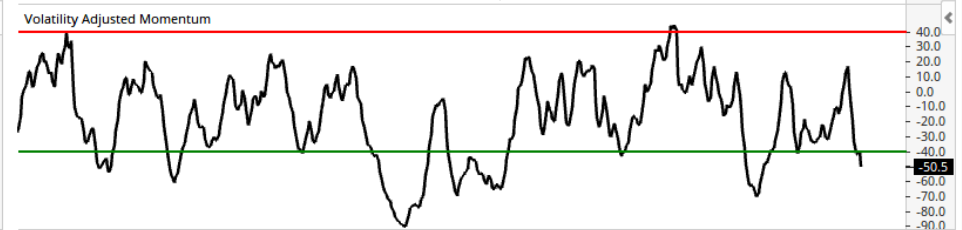
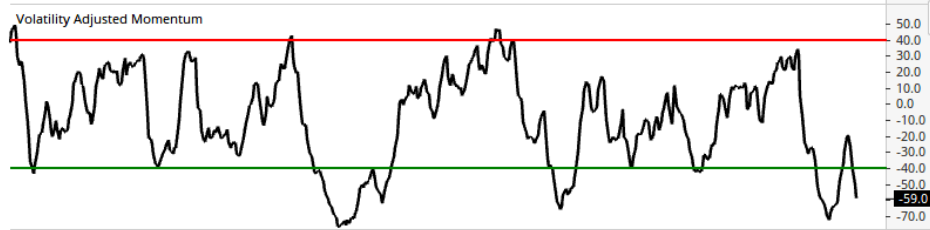




Light, Sweet Crude Oil Futures - CL2Spot (Cmnty) - 1 Day Line Chart - USD - VMomo & ZSlope Layout

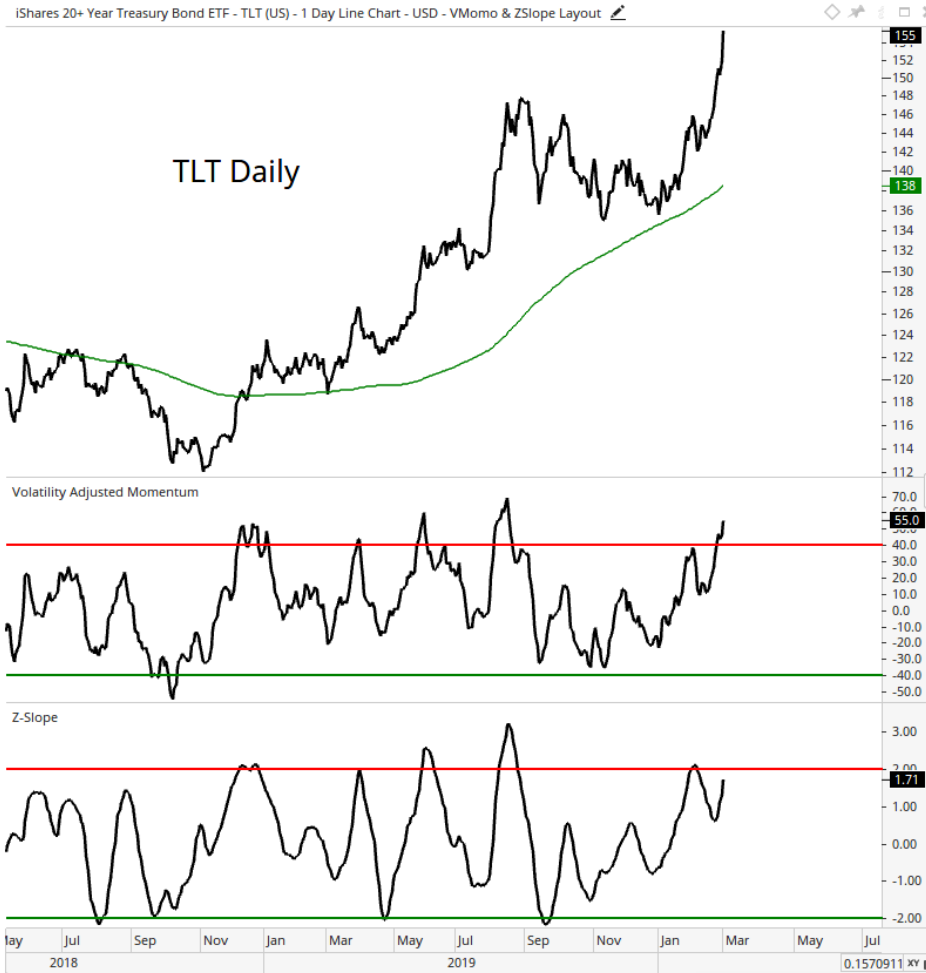


Light, Sweet Crude Oil Futures - CL2Spot (Cmnty) - 1 Week Line Chart - USD - No Layout



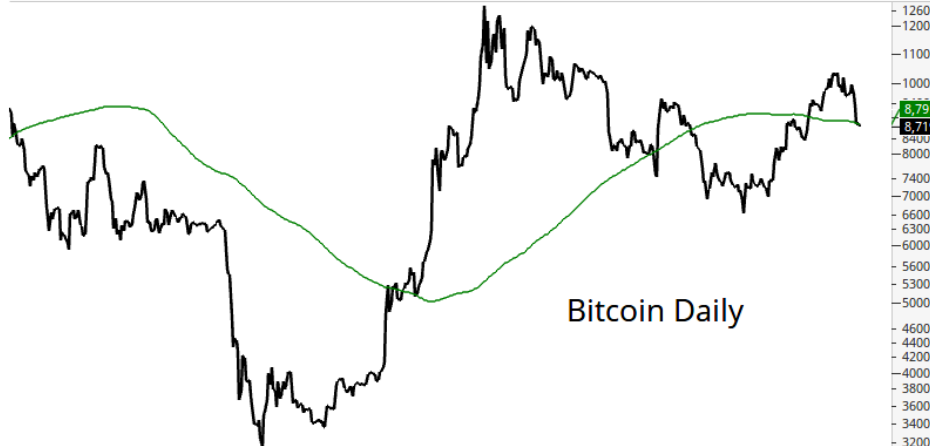
Mar May Jul Sep Nov Jan Mar May Jul Sep Nov Jan Mar 2018 2019 0.122887 XY

010 2011 2012 2013 2014 2015 2016 2017 2018 2019 2020 0.328029C XY





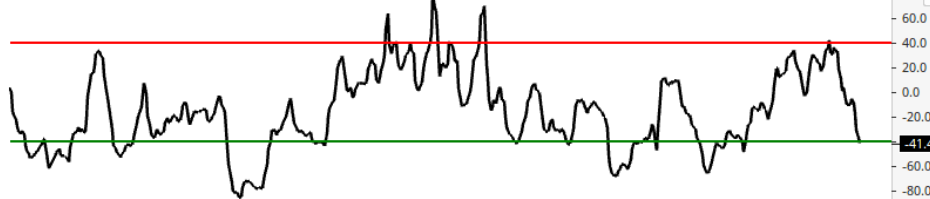
Bitcoin / US Dollar - XBTUSD (FX) - 1 Day Line Chart - USD - VMomo & ZSlope Layout



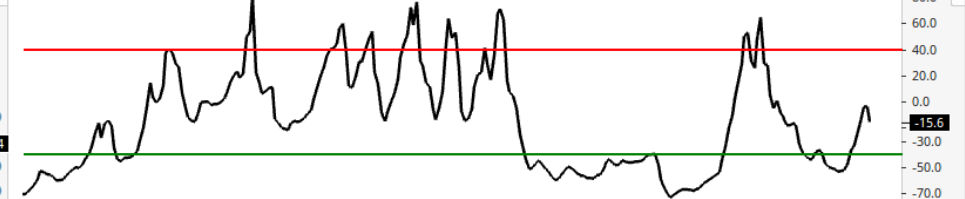
Bitcoin / US Dollar - XBTUSD (FX) - 1 Week Line Chart - USD - No Layout



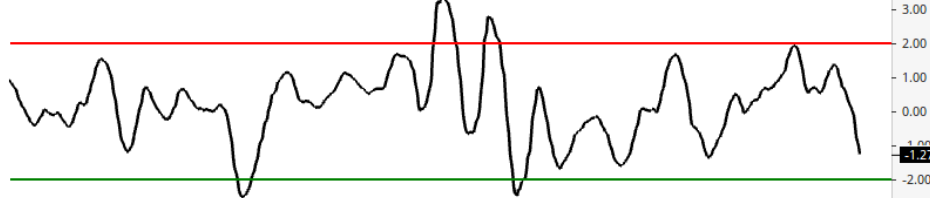
Volatility Adjusted Momentum



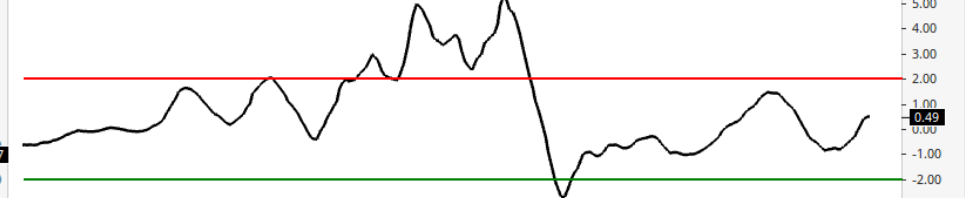
Volatility Adjusted Momentum



Z-Slope



Z-Slope



May Jun Jul Aug Sep Oct Nov Dec Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec Jan Feb Mar 2018 2019 35.20778(x) y

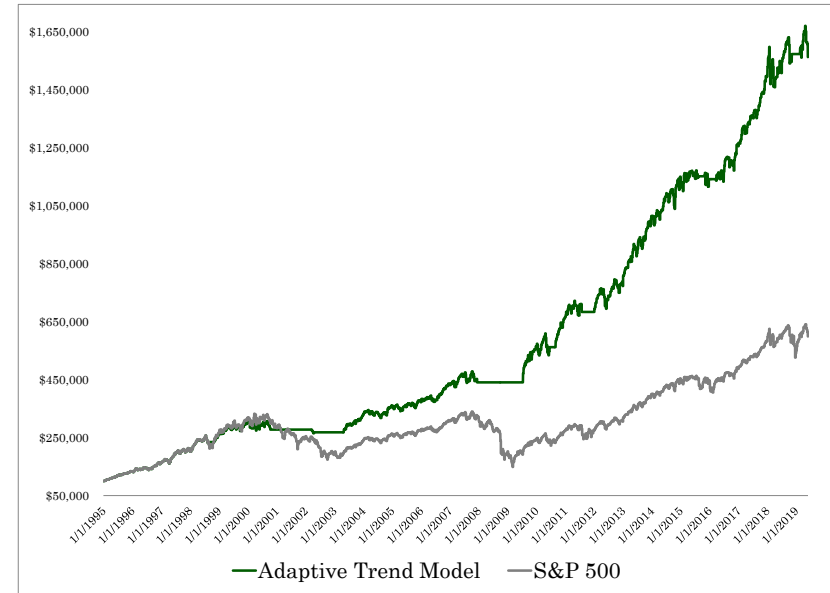
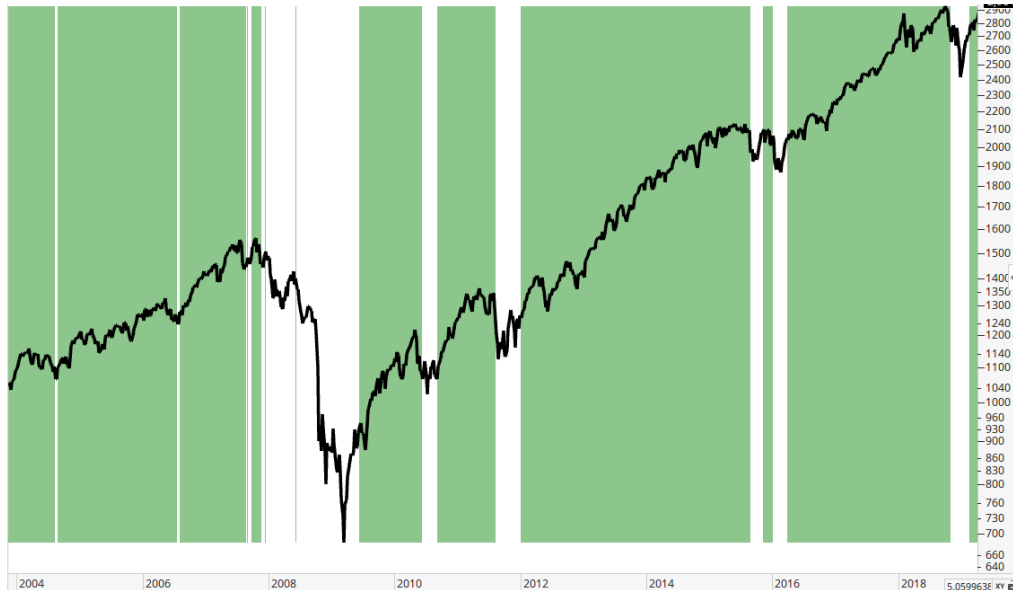
Apr Jul Oct Jan Apr Jul Oct Jan Apr Jul Oct Jan Apr Jul Oct Jan Apr Jul Oct Jan Ap 2015 2016 2017 2018 2019 125.2118(x) y



1st Mar 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.

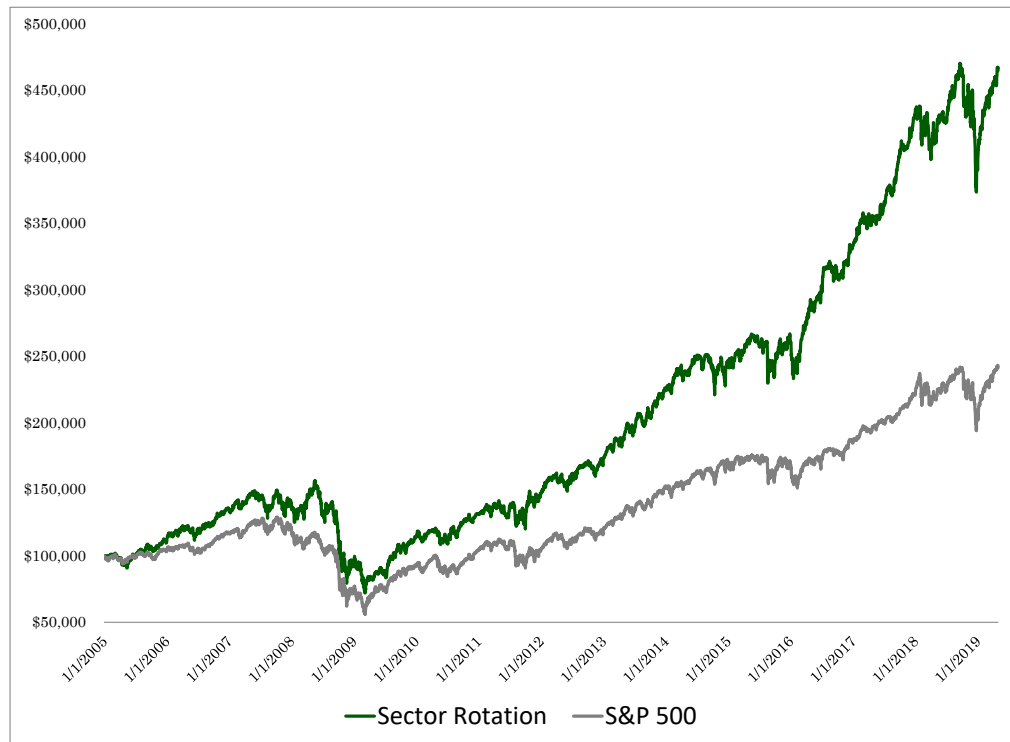


	Annualized Return	Annualized Volatility	Beta	Sharpe	Maximum Drawdown
Adaptive	12.5%	10.3%	0.47	0.97	14.1%
S&P 500	8.9%	15.3%	1	0.42	56.6%

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.

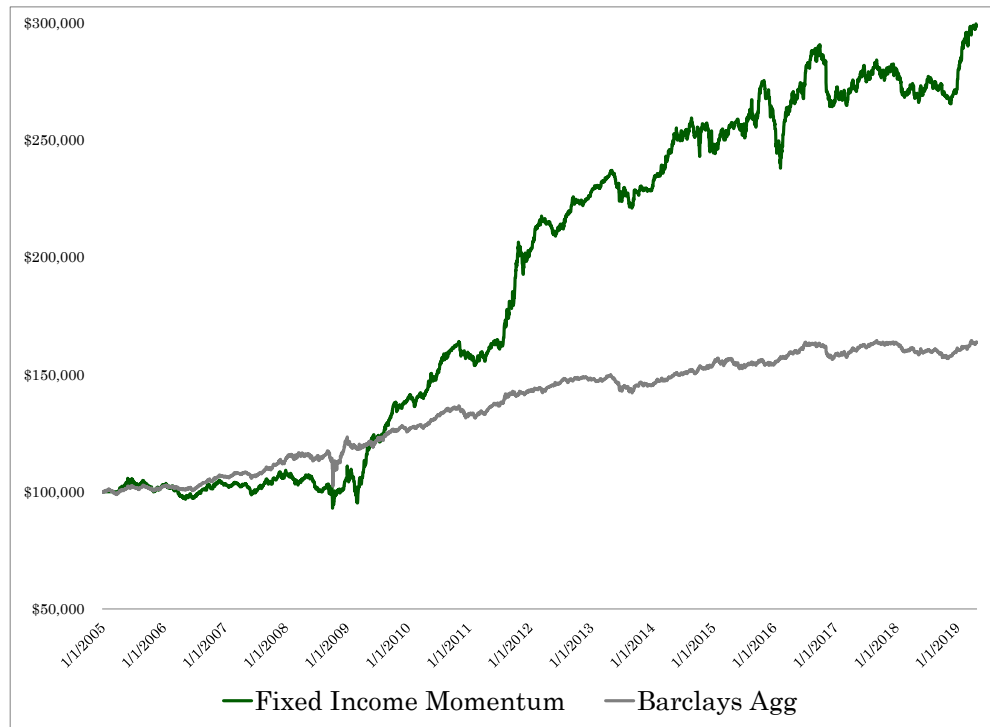


	Annualized Return	Annualized Volatility	Beta	Sharpe	Maximum Drawdown
Sector	12.7%	15.9%	0.96	0.64	53.9%
S&P 500	7.5%	14.8%	1	0.34	56.6%

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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.

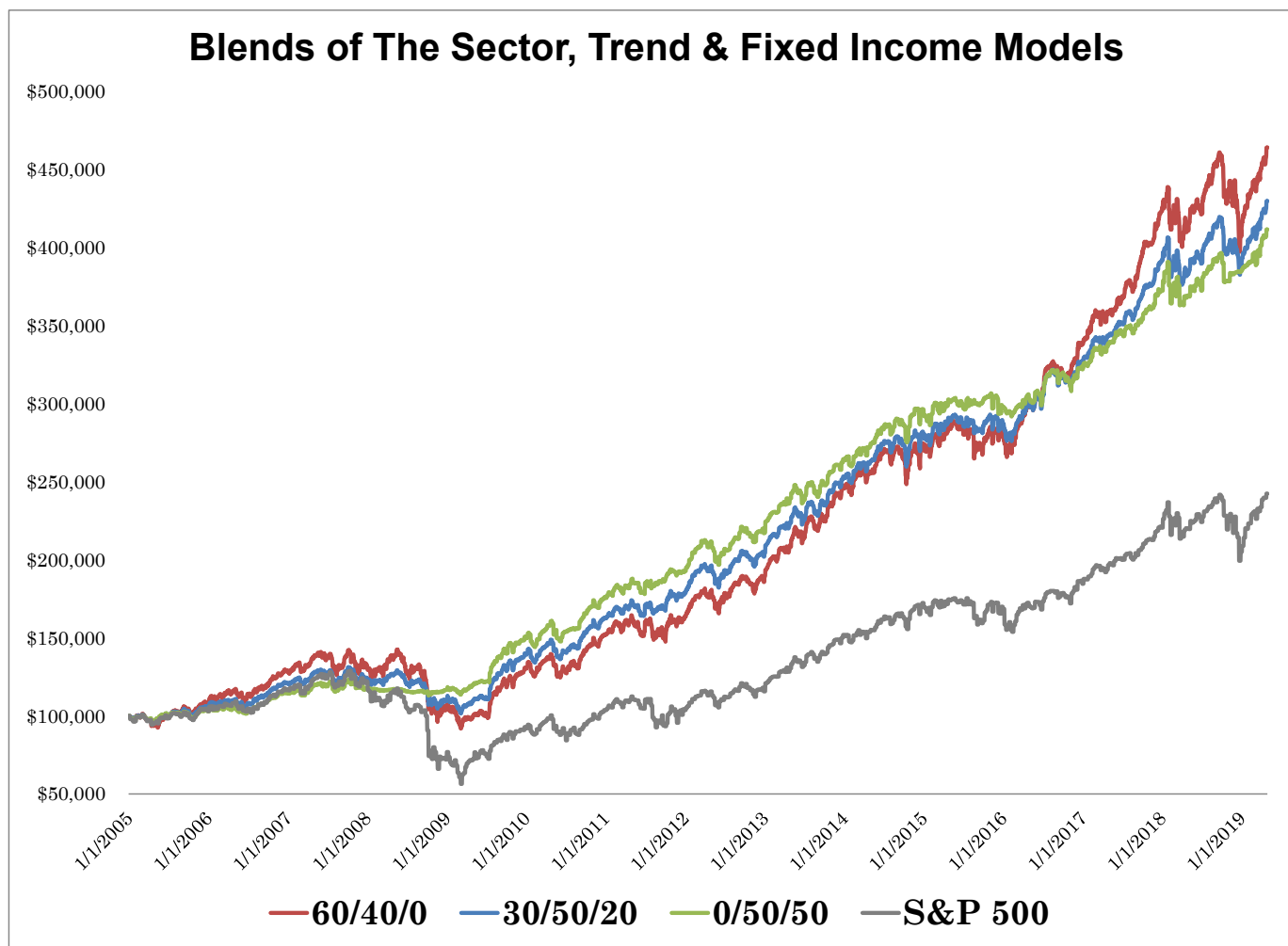


	Annualized Return	Annualized Volatility	Beta	Sharpe	Maximum Drawdown
Fixed Income	8.3%	8.2%	1.04	0.7	14.9%
Barclays Agg	3.6%	3.7%	1	0.29	11.0%

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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	XLU XLK XLC	TLT 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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