# TA THRASHER
## ANALYTICS

ThrasherAnalytics.com

## Sector Rotation: February

| Technology | XLK |
|---|---|
| Financial | XLF |
| Communications | XLC |

## Notable Breadth Data:

| | |
|---|---|
| SPX >50MA | 45.35% |
| SPX >200MA | 67.79% |
| Nasdaq >50MA | 55.34% |
| Nasdaq >200MA | 74.76% |

## 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 | 51% | 62% |
| Nasdaq 100 | 52% | 63% |
| Nikkei | 52% | 63% |
| VIX | 24% | 23% |
| 10yr Treasury | 72% | 69% |
| 5yr Treasury | 60% | 56% |
| CRB Index | 25% | 26% |
| Gold | 88% | 87% |
| U.S. Dollar | 66% | 72% |

*Green<25%    Red>80%*

1 Day - Watch List - No Layout

| Sector | > 50MA | > 200MA | 1wk Perf | 1mo Perf ⌄ | 3mo Perf | 12mo Perf |
|---|---|---|---|---|---|---|
| SPDR Utilities Select Sector Fund ETF | True | True | 0.91% | 6.75% | 7.36% | 25.97% |
| SPDR Technology Select Sector Fund ETF | True | True | -2.16% | 3.99% | 13.94% | 43.83% |
| SPDR Real Estate Select Sector Fund ETF | True | True | -1.9% | 1.45% | -0.25% | 14.27% |
| SPDR Communication Services Select Sector ETF | True | True | -3.2% | 0.52% | 6.5% | 16.87% |
| SPDR Consumer Staples Select Sector Fund ETF | True | True | -0.64% | 0.32% | 3.3% | 18.34% |
| SPDR Consumer Discretionary Select Sector Fund ETF | True | True | -0.5% | -0.08% | 3.7% | 15.21% |
| S & P 500 Stock Index | True | True | -2.12% | -0.16% | 6.19% | 19.28% |
| SPDR Industrial Select Sector Fund ETF | False | True | -2.92% | -0.44% | 3.31% | 13.01% |
| SPDR Financial Select Sector Fund ETF | False | True | -1.41% | -2.66% | 4.39% | 15.5% |
| SPDR Health Care Select Sector Fund ETF | False | True | -3.24% | -2.67% | 4.63% | 9.34% |
| SPDR Materials Select Sector Fund ETF | False | False | -3.53% | -6.17% | -0.96% | 8.02% |
| SPDR Energy Select Sector Fund ETF | False | False | -5.62% | -10.99% | -7.8% | -16.21% |

Utilities, technology, and real estate were the best performing sectors in January with energy and materials being the worst sectors for the month.

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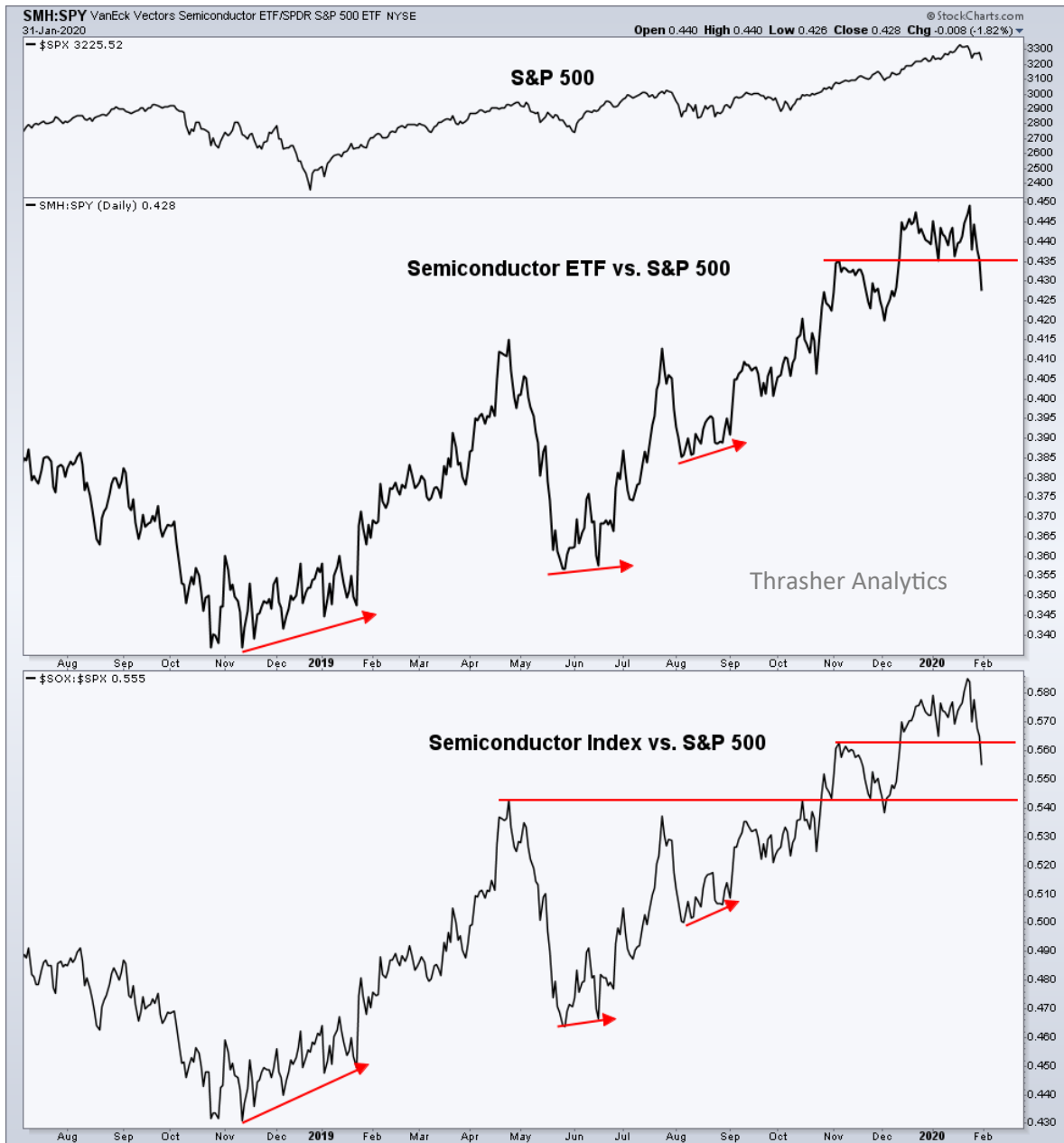
Vol Risk Trigger

2nd Feb 2020
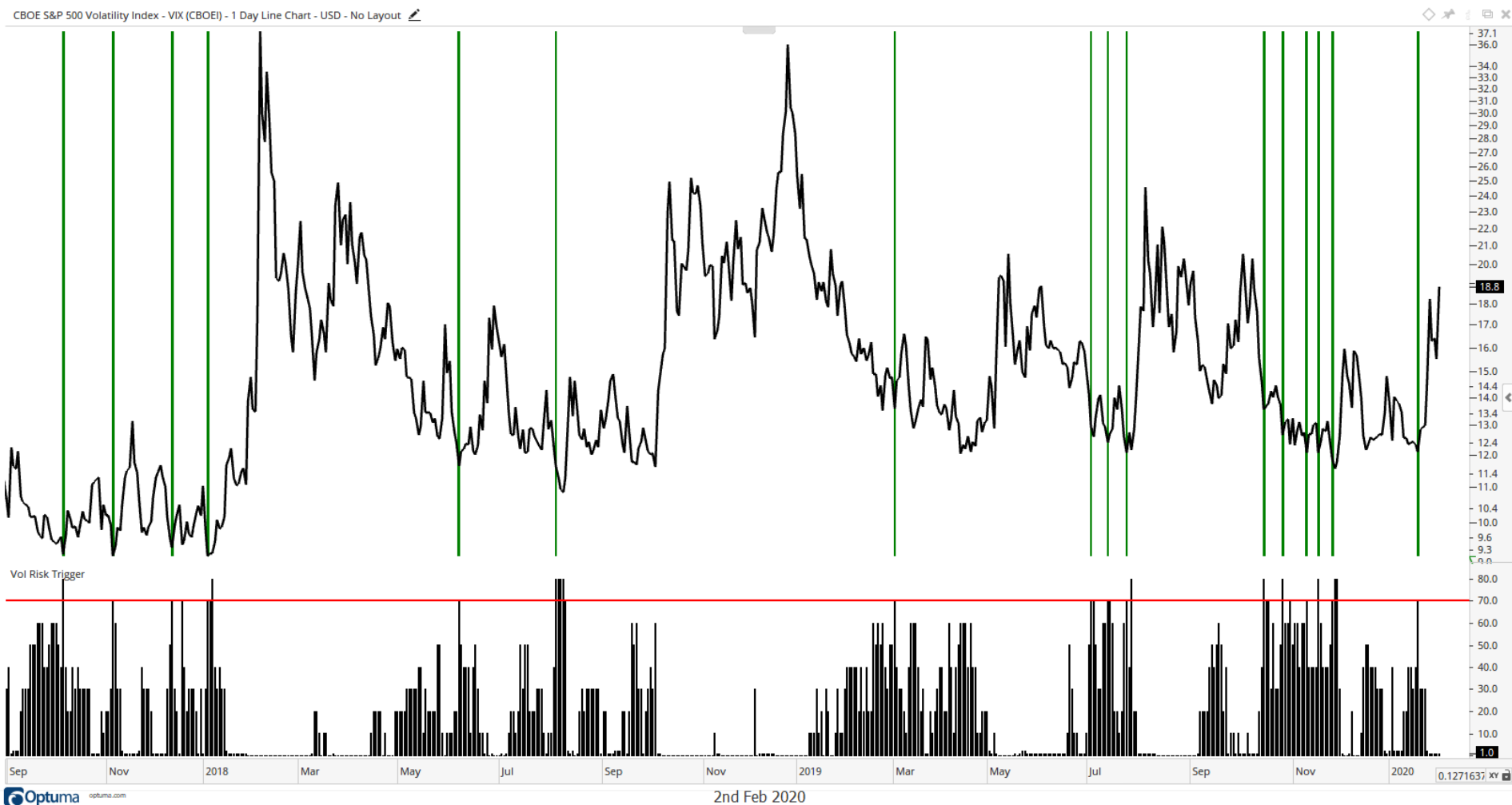
Many traders were caught off guard by the rise in volatility over the last two weeks, fortunately readers of this letters were not (or at least shouldn't have been!) one of them. The VRT did an excellent job at triggering volatility risk at the low just before the VIX started moving from 12 to above 19. On Friday, the VIX made a slightly higher-high close but it was not matched by VVIX, so that divergence is something to watch this week if we don't see VVIX confirm the strength in spot volatility - it could signal a short-term high in the VIX as traders back off VIX options.

Note the DSI chart later in the letter for VIX, it has stayed stubbornly low, not breaking above 30% during this move higher. Finishing Friday at just 24%, which is quite surprising and suggests there's not enough traders chased out of the bearish vol camp just yet.

$SPX S&P 500 Large Cap Index (unadjusted) INDX
31-Jan-2020                                           Open 3282.33 High 3282.33 Low 3214.68 Close 3225.52 Volume 2.7B Chg -58.14 (-1.77%) ▼

RSI(14) 43.44

_$SPX (Daily) 3225.52
—MA(50) 3211.30
—MA(200) 3011.88
—MA(20) 3279.22

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Volume 2,670,960,640
MA(50) 1,852,650,496
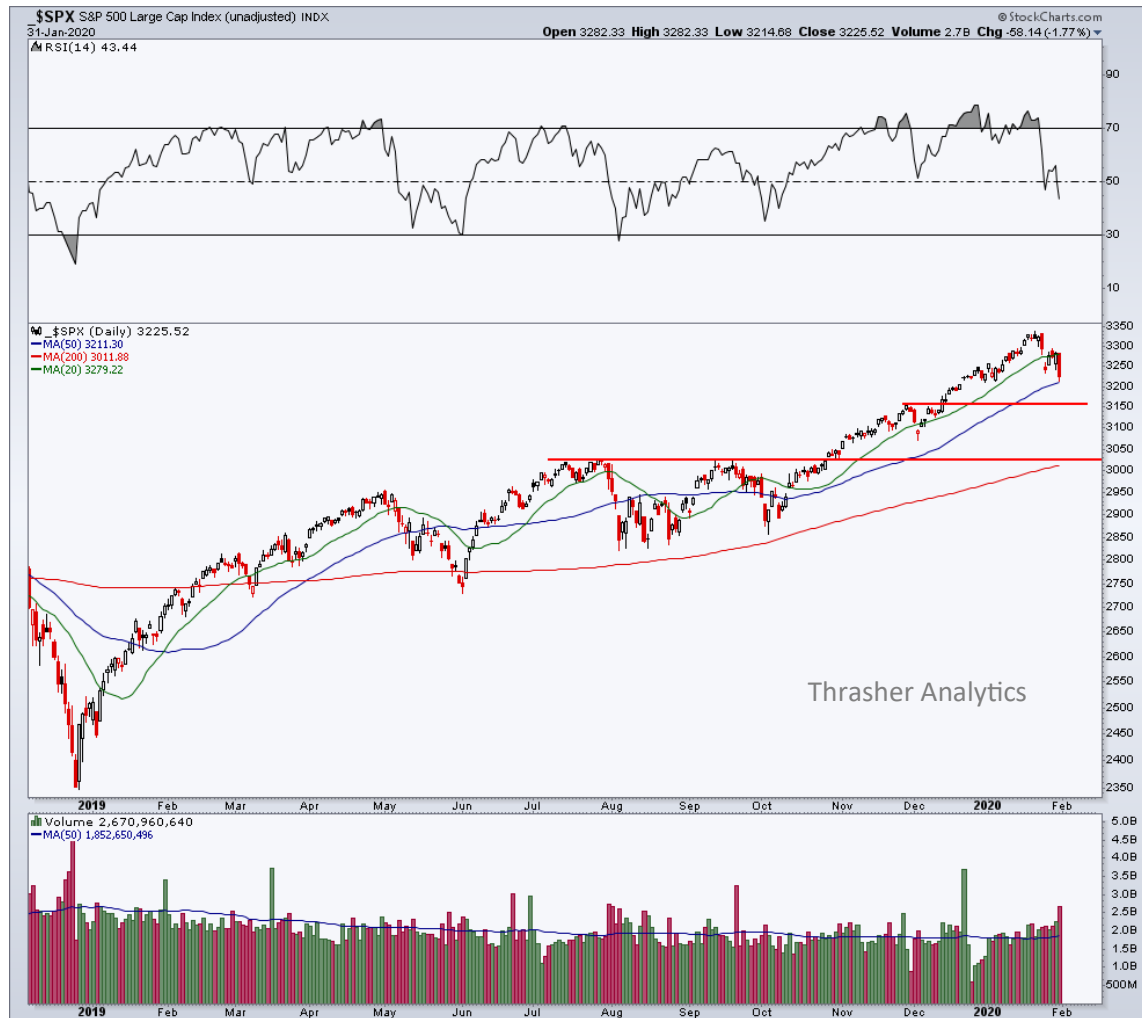
The S&P 500 dropped to test the 50-day moving average last week, with its 14-day RSI making a new multi-month low. Volume was well above average on Friday, the highest down day since September. If we see the equity index continue lower I'll be watching the pivot high in late-November as possible support, then we have the 3,000 which was the high in July and September and just above the 200-day MA. There hasn't been enough sign of capitulation in the data to suggest a low has been formed just yet, and we don't have any bullish diverges to highlight so the best bet is to be patient and wait for support to hold until the data gives some kind of edge

SMH:SPY VanEck Vectors Semiconductor ETF/SPDR S&P 500 ETF NYSE
31-Jan-2020          Open 0.440 High 0.440 Low 0.426 Close 0.428 Chg -0.008 (-1.82%) ▾
— $SPX 3225.52                                                        @ StockCharts.com

S&P 500

— SMH:SPY (Daily) 0.428

Semiconductor ETF vs. S&P 500

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— $SOX:$SPX 0.555

Semiconductor Index vs. S&P 500

Semiconductors are an area of the market I talk a lot about because they were such strong market leaders and gave great insight into risk appetite for the market, especially in technology. The relative performance of both the ETF and the Index have broken down recently, underperforming the broad market.

This is not a bullish development as the strength that brought the market higher has now been abandoned, likely as traders take profits off the table during the broad market weakness. This is still a place I turn to in order to find leadership, if we start seeing sems regain relative strength then we can potentially start getting bullish again on stocks, but that's not the sign we're getting just yet.

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S&P 500 INDEX - SPX (WI) - 1 Day Line Chart - USD - No Layout
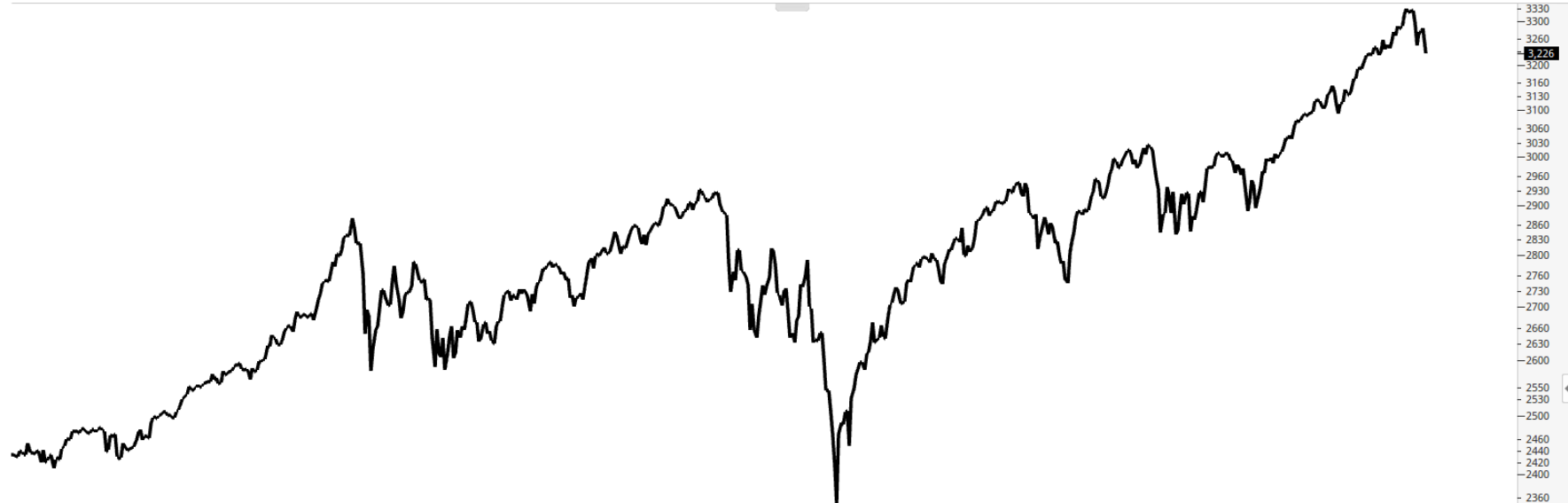
Risk On/Risk Off Index & 10 Period Simple Moving Average
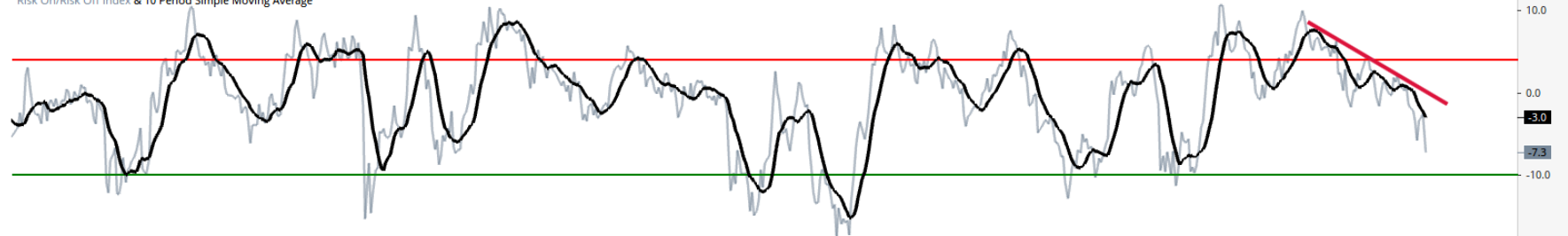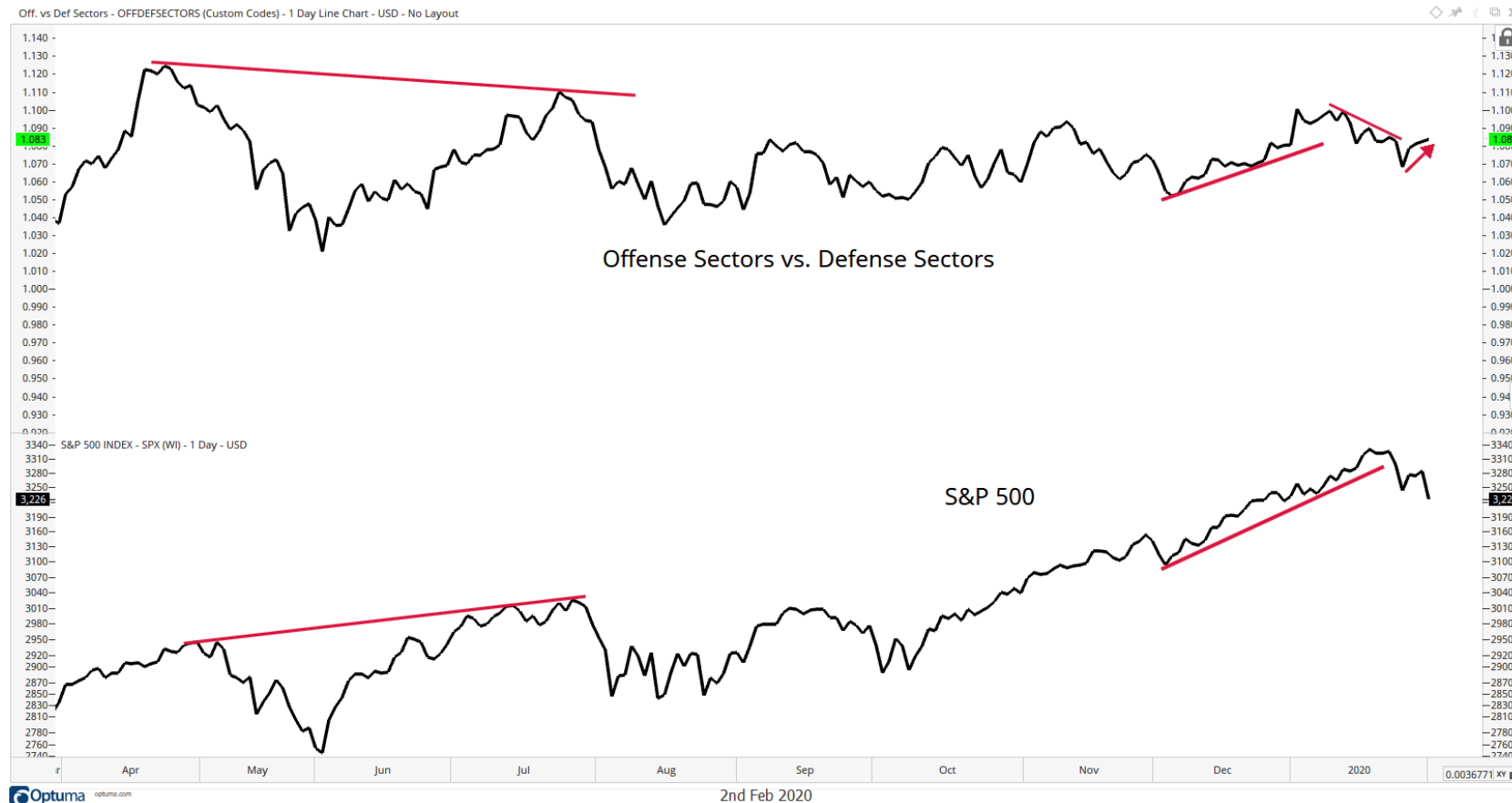
2nd Feb 2020

The Composite of Risk On/Off Assets has continued to decline, this provided a bearish divergence for about two months before equities peaked. This indicator is not yet to 'oversold' levels like we saw in November and December 2018 or in may and July of last year.
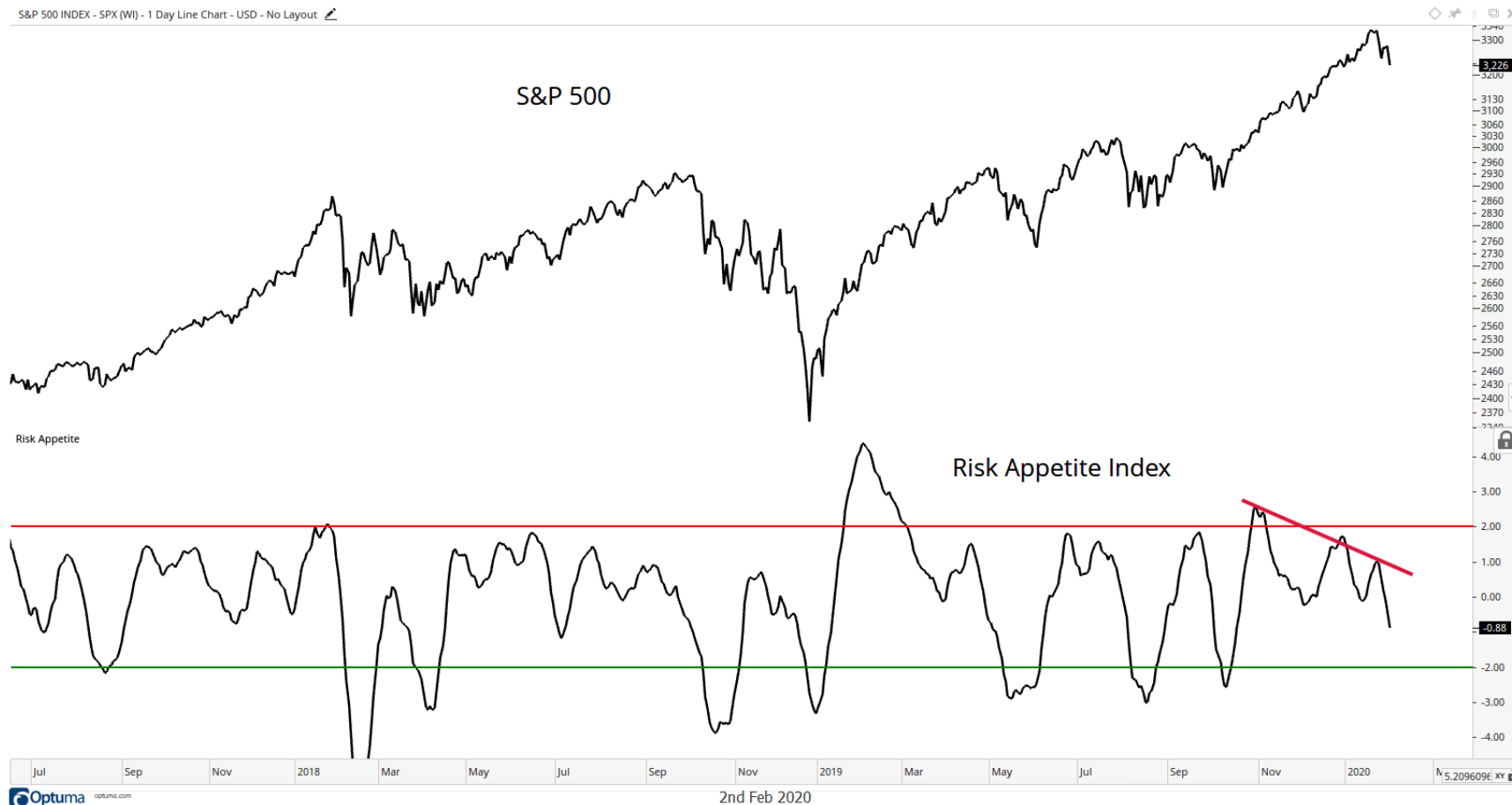
The Risk Appetite Index also did a good job at telling us that the internals of the market were not performing as bullish as the broad index was suggesting, making lower highs as the S&P 500 inched higher. Like the Risk On/Off Index, the Risk Appetite Index has not reached 'oversold' levels like we've seen at most major lows.
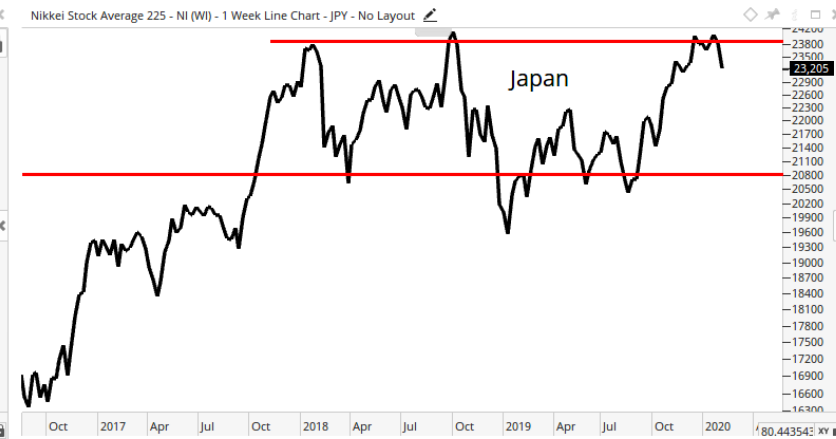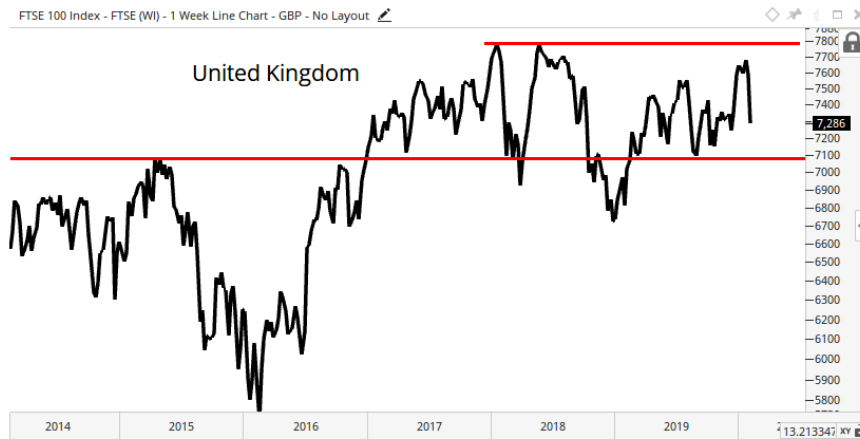
Off. vs Def Sectors - OFFDEFSECTORS (Custom Codes) - 1 Day Line Chart - USD - No Layout

Offense Sectors vs. Defense Sectors

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

S&P 500

2nd Feb 2020

While the relative performance of offensive vs. defense sectors diverged into the high in stocks, during the selling we actually saw this index turn up, with offense showing some strength. I'll watch if this continues this week and if we see sectors like consumer discretionary and technology continue to show strength or if it was just a blip due to Amazon's earnings and Apple's earnings. We get Google reporting On Monday, so that will have an impact on how well Tech holds up for this week.

Copper - HG2Spot (Cmdty) - 1 Day Line Chart - USD - No Layout

14 Period RSI of HG2Spot

Copper DSI (DSI) - 1 Day - USD

2nd Feb 2020

Copper has been one spot that's just gotten beaten up hard due to the Coronavirus and the slowing down if many major Asian countries. If China is on lockdown then they aren't needing to buy a lot of raw materials like copper, thus the price drops along with the expected fall in demand. That's taken copper prices back near the low-end of the multi-year range, giving a potential level of support around $2.5. The 14-day RSI has fallen to 20.33, the lowest level in multiple years, a sign that momentum has practically been left for dead. When coming off a low level like this, momentum will often put in a series of higher lows before price finally bottoms. It doesn't HAVE to follow that game plan, but that's historically what we see happen vs. just a straight V-shaped bounce. Sentiment, based on the bottom panel Daily Sentiment Index (DSI), for copper has fallen to 22% bullish. This has bottomed out near single digits at recent lows but there's clearly few bulls left in the copper market.
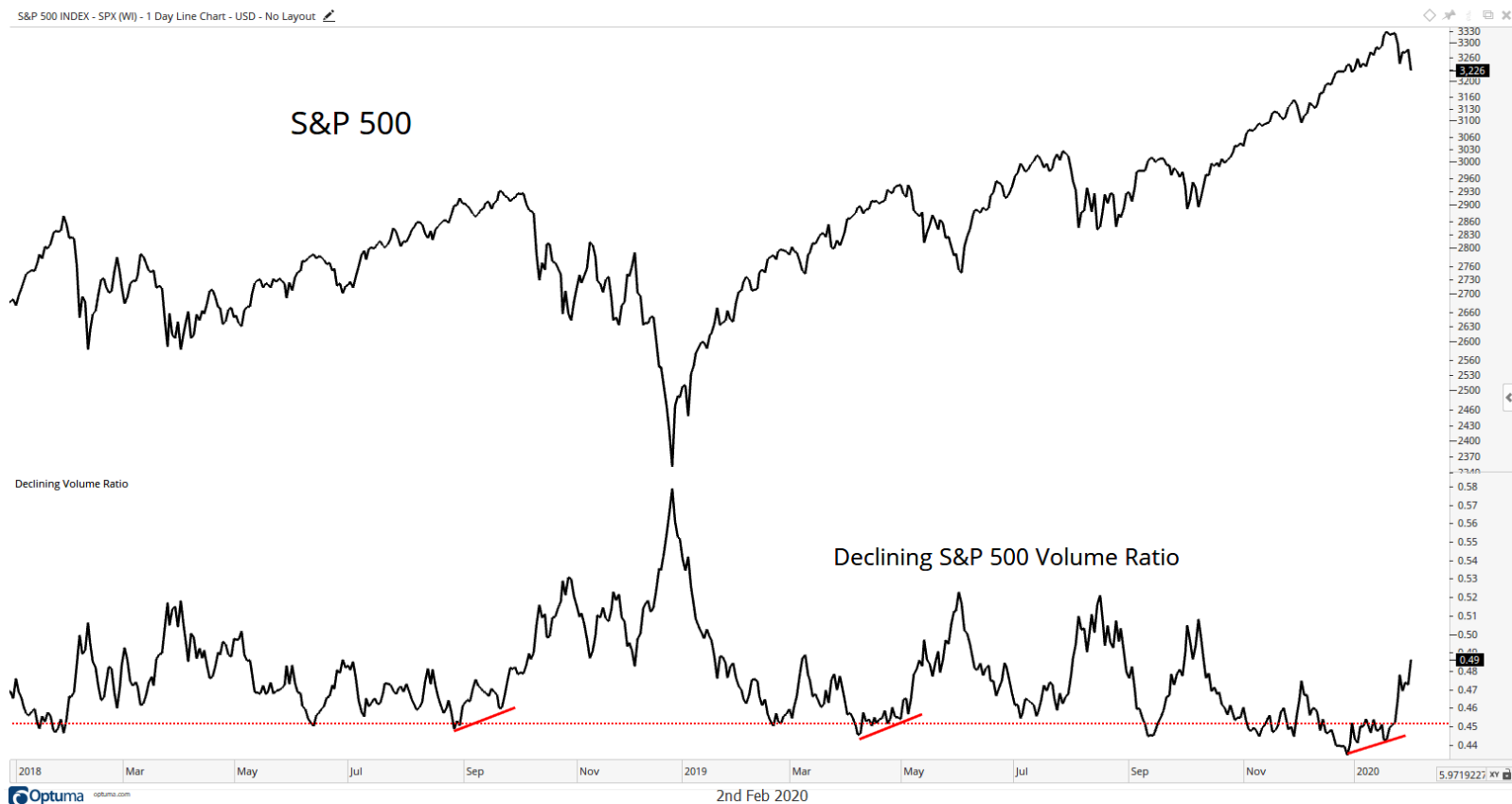
If China comes out with a big infrastructure plan (as they've done in the past to stoke economic growth) then copper will likely catch some buyers and we could see a snapback rally. Keep an eye on copper and industrial metters.

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FTSE 100 Index - FTSE (WI) - 1 Week Line Chart - GBP - No Layout

United Kingdom

Nikkei Stock Average 225 - NI (WI) - 1 Week Line Chart - JPY - No Layout

Japan

Deutsche Boerse TECDAX Price Index - TDXR (WI) - 1 Week Line Chart - USD - No Layout

Germany

CAC 40 Index - CAC (WI) - 1 Week Line Chart - EUR - No Layout

France
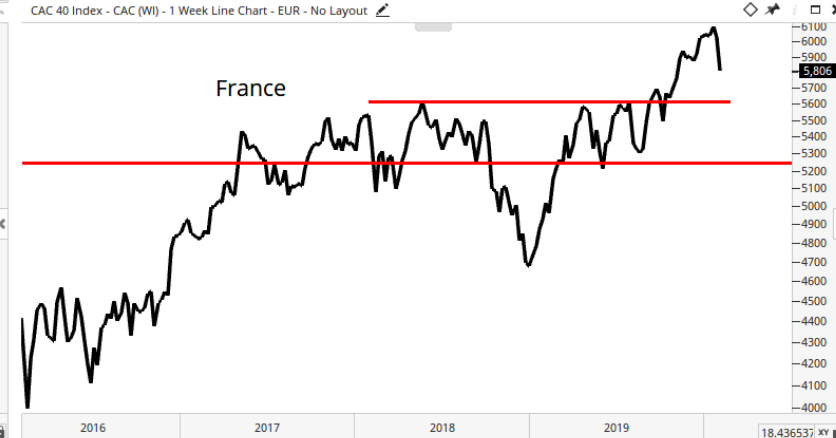
2nd Feb 2020

While we were seeing some breakouts Internationally, those have quickly reversed with last week's sell-off. Germany has fallen back to its breakout point and Japan's break has failed. The UK is moving lower as it digests the Brexit that's finally taken place at the end of January. France has also weakened but is still above its 2018 breakout point. Internationally, things don't look too hot until we see these levels regained in Germany and Japan.

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

S&P 500

Declining Volume Ratio

Declining S&P 500 Volume Ratio

2nd Feb 2020

The ratio of declining volume vs. advancing volume for the S&P 500 began picking up in mid-January, a sign of weakness internally. This ratio has typically peaked out around 0.54 and got up 0.57 at the bottom in Dec. '18. I share this chart to show we haven't seen a major move higher from a declining volume perspective in this short-term sell-off. Suggesting we may still have some pain to endure.

S&P 500 (Monthly)

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

14 Period RSI

2nd Feb 2020
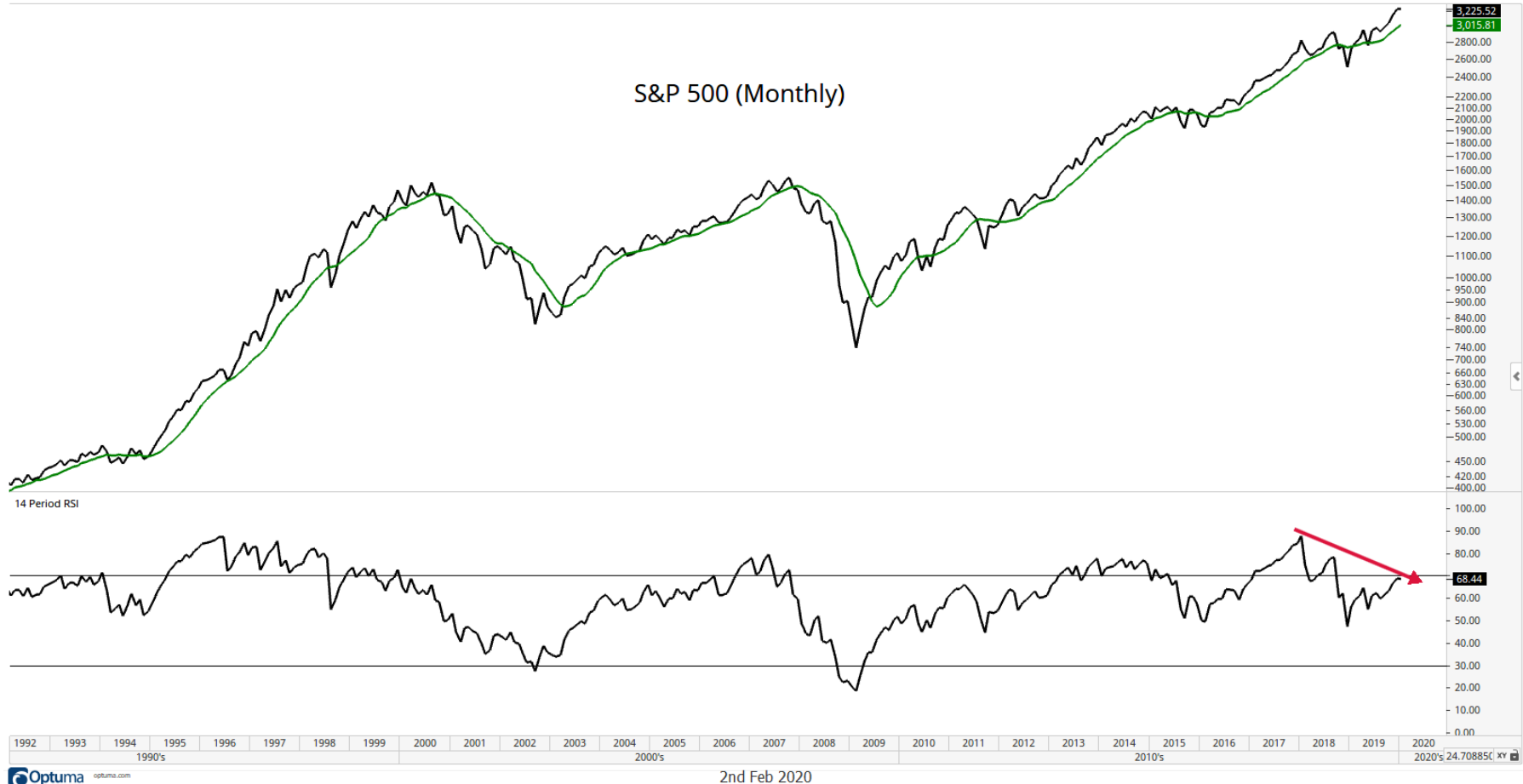
As we close out the first month of the year, there's been many calls for "as January goes, so goes the year" which may have some historical significance but the data shows that January has just as much (or as little as) predicative power as just about any other month, so I don't put a lot of weight on this metric. What I do put weight, is the continued decline in monthly momentum. The 14-month RSI continues to make lower-highs, a bearish divergence with the index. Historically, when this type of divergence develops with the RSI under 70 (as it did in 2000, 2007, and 2015) it was the break of the 10-month moving average (green line) that was the final straw to end the up trend. We remain above this level right now and still have some price 'cushion' before a break occurs, but the RSI has begun to roll over with January's tick lower, hopefully it doesn't continue in February - we'll see.

| Market | % Bullish ^ | 5MA | History |
|---|---|---|---|
| Lean Hog DSI | 7 | 14.2 | |
| Australian Dollar DSI | 13 | 16.8 | |
| Orange Juice DSI | 17 | 17.4 | |
| Corn DSI | 17 | 17.6 | |
| Heating Oil DSI | 20 | 25 | |
| Natural Gas DSI | 21 | 21.8 | |
| Crude Oil DSI | 21 | 25.80 | |
| Coffee DSI | 21 | 23.2 | |
| Copper DSI | 22 | 24.4 | |
| VIX DSI | 24 | 22.6 | |
| CRB Index DSI | 25 | 25.60 | |
| Euro DSI | 26.00 | 18.6 | |
| Cattle DSI | 26.00 | 32.80 | |
| Swiss Franc DSI | 33.00 | 28.60 | |
| Gasoline DSI | 41.00 | 43.00 | |
| British Pound DSI | 43.00 | 33.20 | |

| Code | % Bullish ^ | 5MA | History |
|---|---|---|---|
| SPX DSI | 51.00 | 61.80 | |
| Nikkei DSI | 52.00 | 62.60 | |
| Nasdaq DSI | 52.00 | 62.80 | |
| Cotton DSI | 52.00 | 61.60 | |
| New Zealand Dollar DSI | 55.00 | 61.00 | |
| Cocoa DSI | 55.00 | 54.00 | |
| 5YR DSI | 60.00 | 55.60 | |
| Wheat DSI | 62.00 | 71.20 | |
| Platinum DSI | 65.00 | 68.00 | |
| US Dollar DSI | 66.00 | 72.40 | |
| Sugar DSI | 69.00 | 74.20 | |
| Silver DSI | 70.00 | 65.80 | |
| EuroDollar DSI | 70.00 | 66.80 | |
| Mexican Peso DSI | 71.00 | 74.60 | |
| 10Y DSI | 72.00 | 68.60 | |
| Lumber DSI | 75.00 | 71.00 | |
| Palladium DSI | 77.00 | 74.60 | |
| Gold DSI | 88 | 86.8 | |

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

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10yr Treasury Bond

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

10Y DSI (DSI) - 1 Day - USD

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

3,225.52

S&P 500

SPX DSI (DSI) - 1 Day - USD

51.00

| Mar | May | Jul | Sep | Nov | 2019 | Mar | May | Jul | Sep | Nov | 2020 |

5.9125077  XY

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

Nasdaq 100

8,991.51

Nasdaq DSI (DSI) - 1 Day - USD

52.00

2017    Mar    May    Jul    Sep    Nov    2018    Mar    May    Jul    Sep    Nov    2019    Mar    May    Jul    Sep    Nov    2020    17.242126

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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

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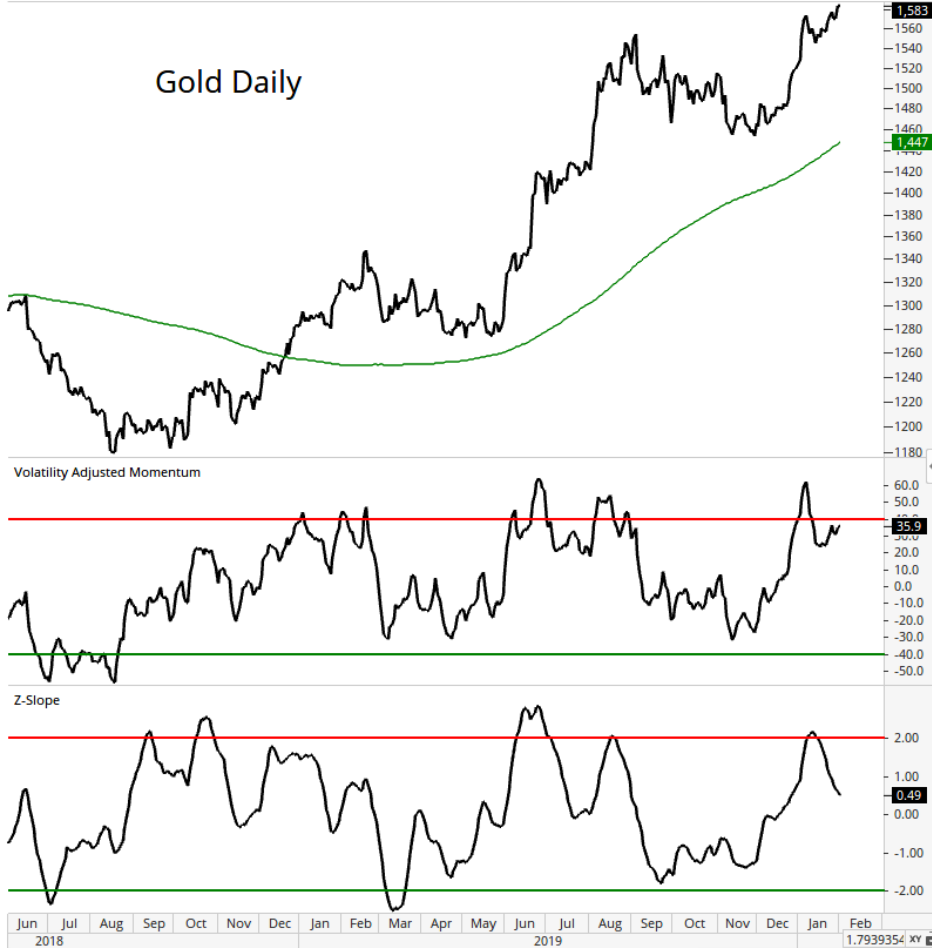
U.S. Dollar Index - DXSpot (AFUT) - 1 Day Line Chart - USD - No Layout

U.S. Dollar

97.213

US Dollar DSI (DSI) - 1 Day - USD

66.00

| | Sep | Oct | Nov | Dec | Jan | Feb | 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 |
| 2016 | | | | | | 2017 | | | | | | | | | | | 2018 | | | | | | | | | | | | 2019 | | |

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

VIX

VIX DSI (DSI) - 1 Day - USD



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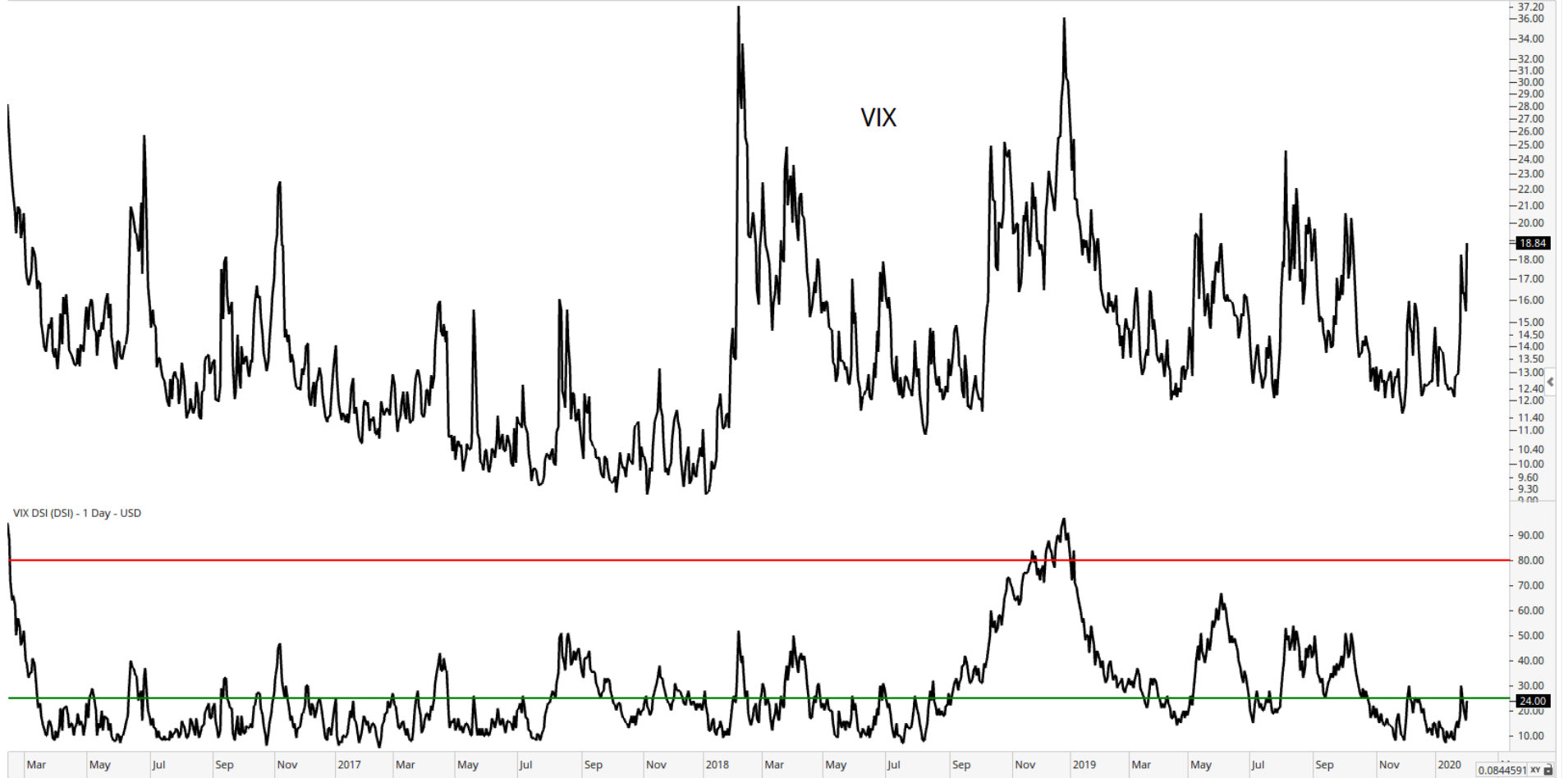
NIKKEI 225 INDEX - NYCash (CME) - 1 Day Line Chart - USD - No Layout

Nikkei 225 Index

23,205

Nikkei DSI (DSI) - 1 Day - USD

52.00

Jul    Sep    Nov    2018    Mar    May    Jul    Sep    Nov    2019    Mar    May    Jul    Sep    Nov    2020

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

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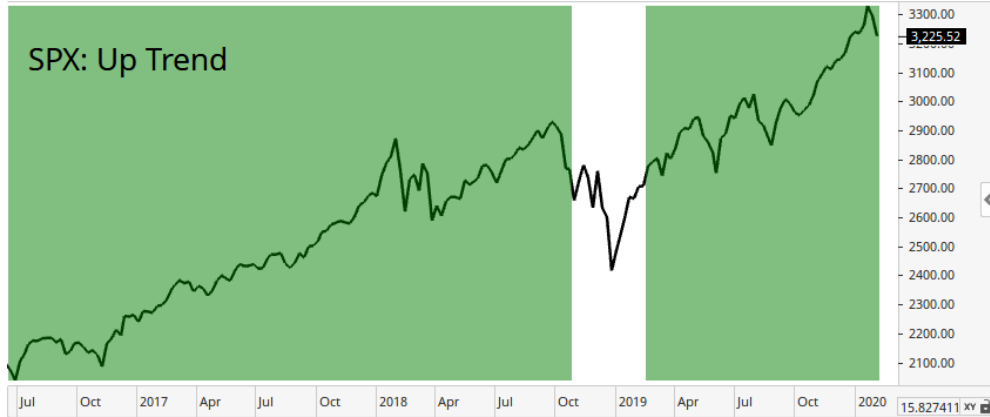
SPDR Financial Select Sector Fund ETF - XLF (US) - 1 Week Line Chart - USD - No Layout
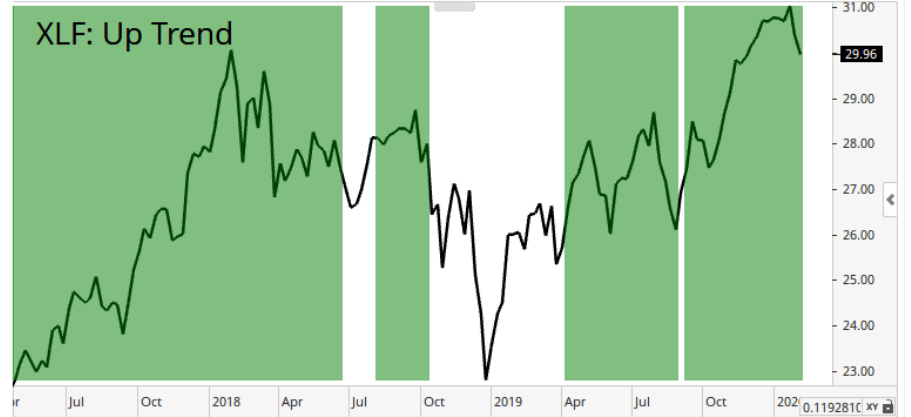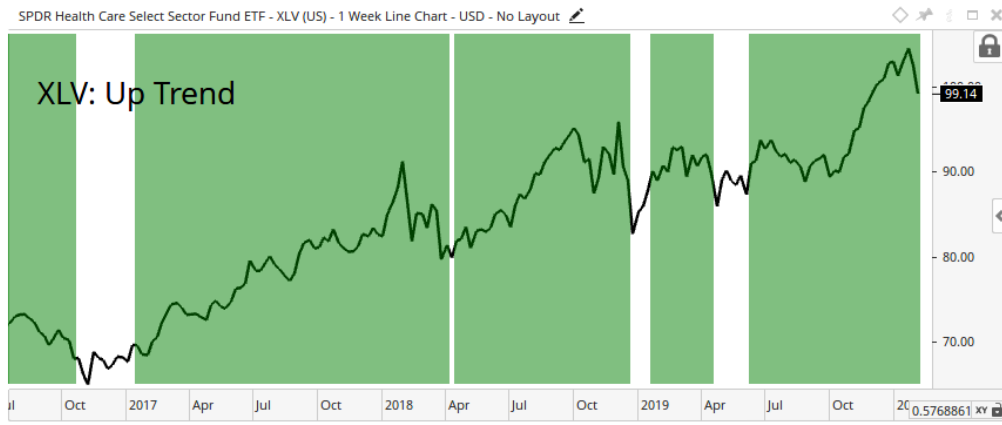
XLF: Up Trend

SPDR Consumer Discretionary Select Sector Fund ETF - XLY (US) - 1 Week Line Chart - USD - No Layout
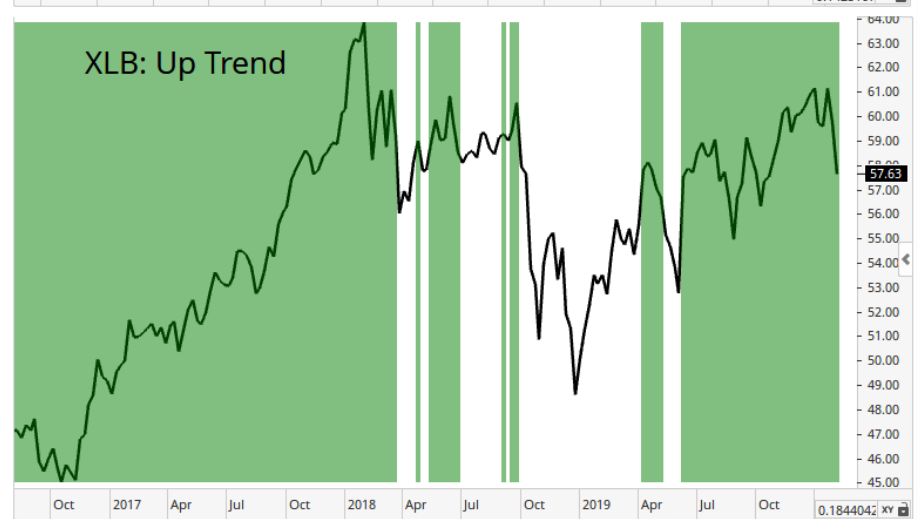
XLY: Up Trend

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

XLK: Up Trend

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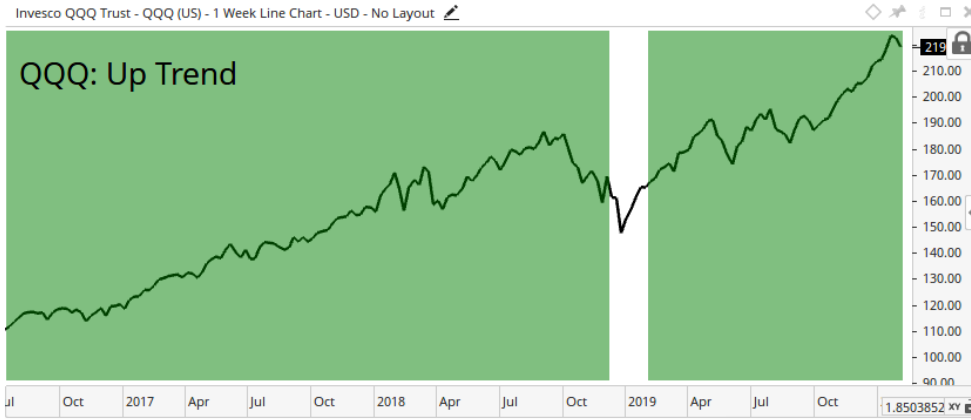SPDR Health Care Select Sector Fund ETF - XLV (US) - 1 Week Line Chart - USD - No Layout

**XLV: Up Trend**

99.14

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

**XLU: Up Trend**

68.98

SPDR Consumer Staples Select Sector Fund ETF - XLP (US) - 1 Week Line Chart - USD - No Layout

**XLP: Up Trend**

63.18

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

**XLI: Up Trend**

81.11

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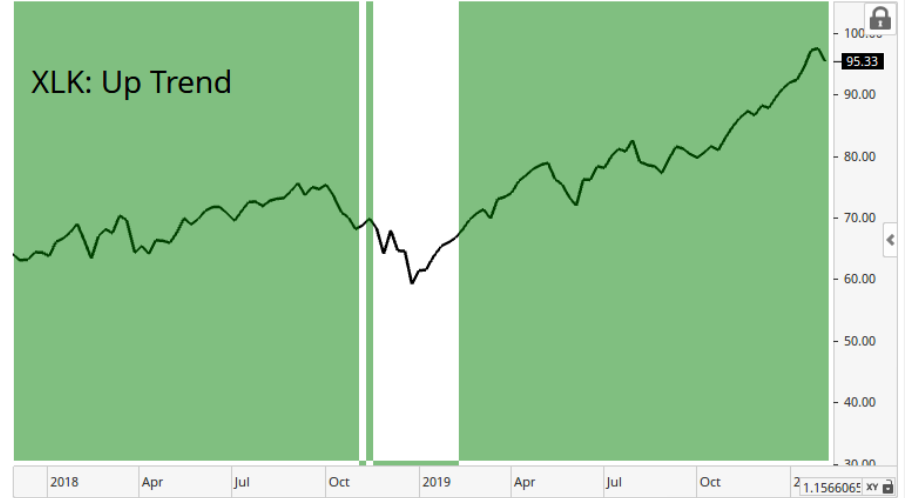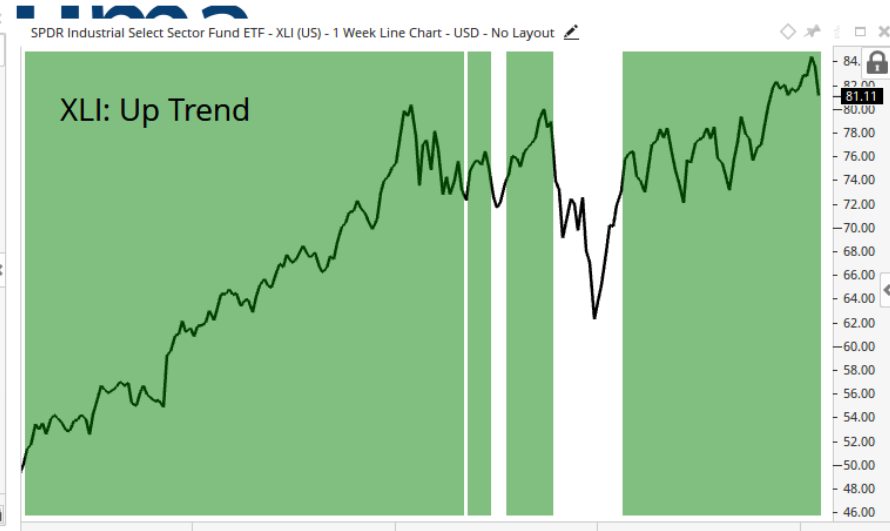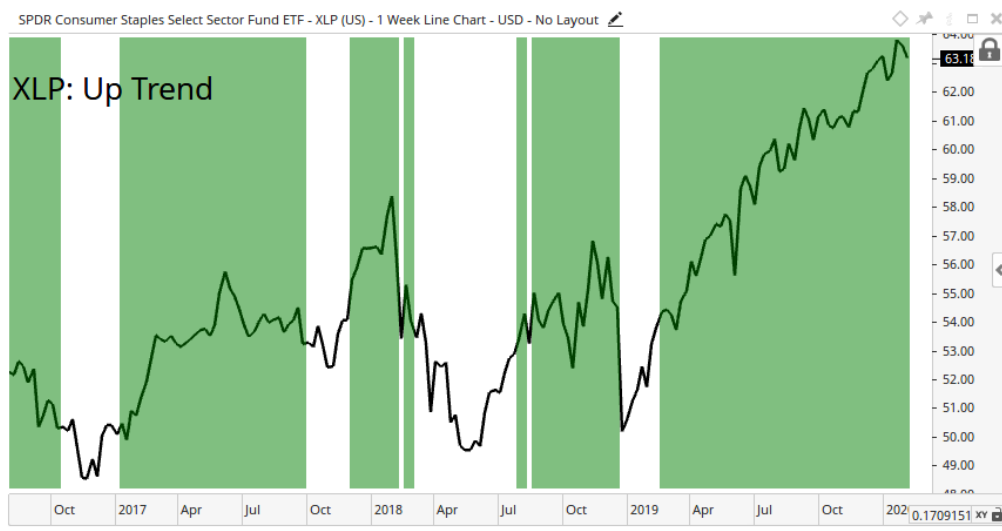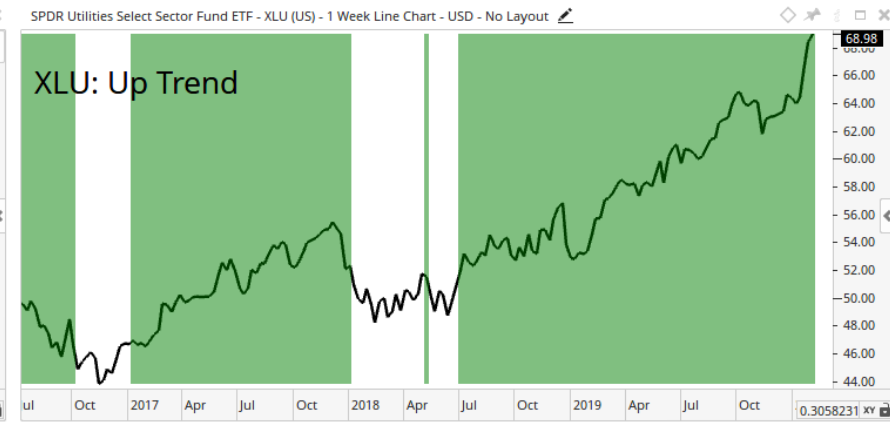
XLV, XLU, XLP, and XLI are all in up trends.

QQQ: Up Trend

XLRE: Up Trend

XLE: Up Trend

XLB: Up Trend

2nd Feb 2020
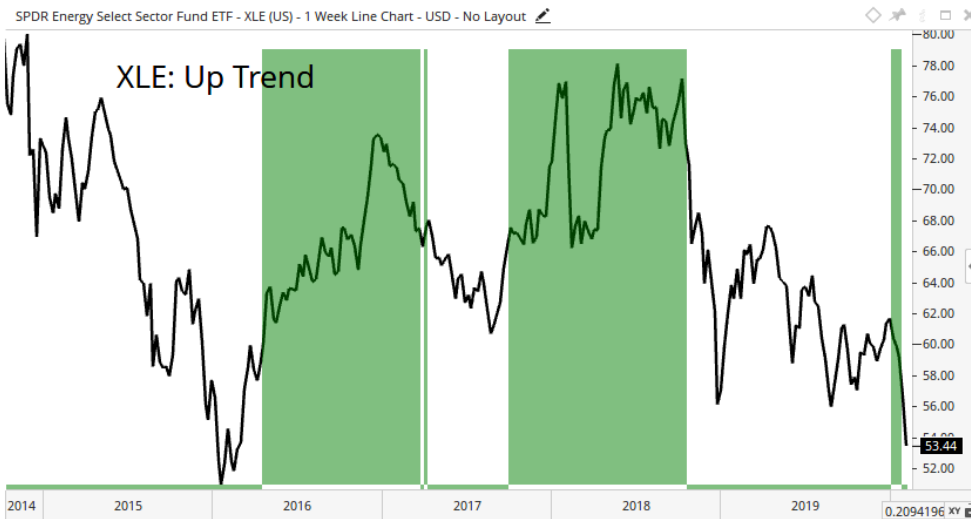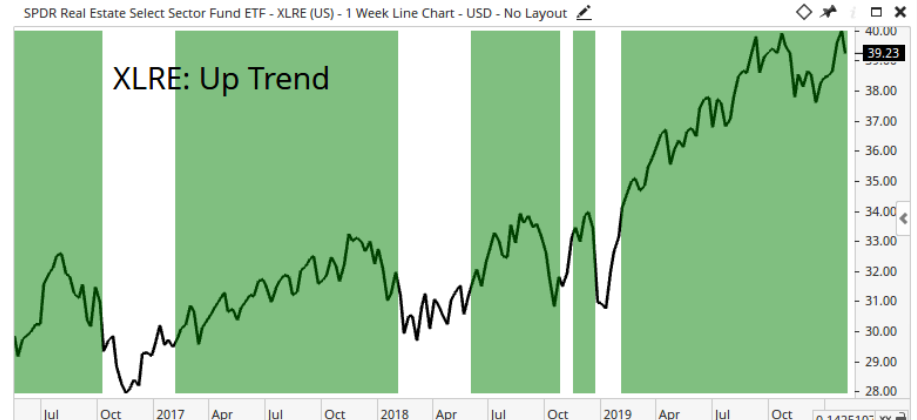
QQQ, XLRE, XLB , and XLE are in up trends. XLE has a new positive trend reading, hopefully we see it hold on.

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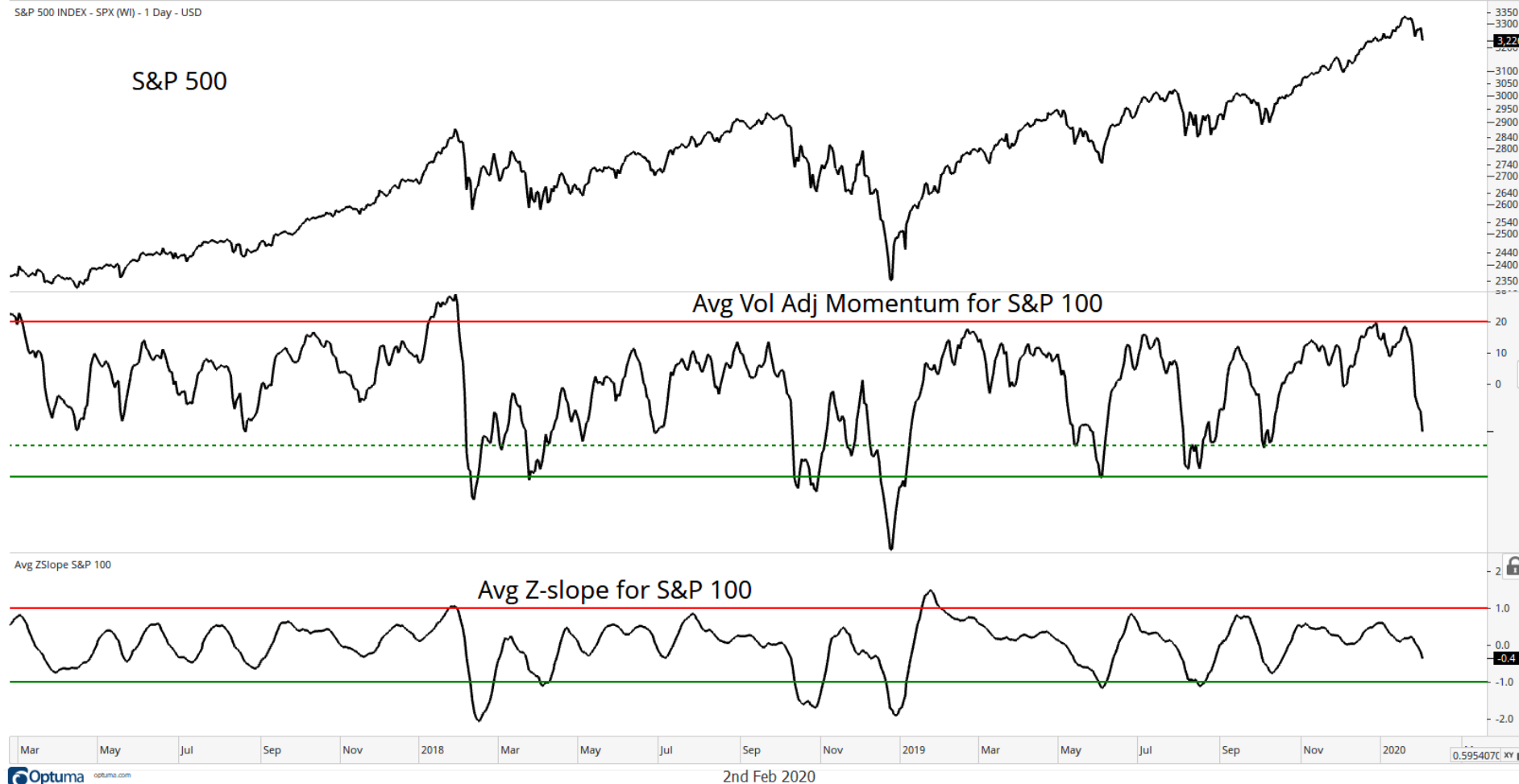
**Volatility-Adjusted Momentum (VaM:** This is a spin on the traditional measures of momentum, taking into account the volatility of the underlying asset into the calculation. By adjusting for volatility we can get a better look at potential mean-reversion signals when risk/reward becomes unbalanced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

SPX Daily

SPX Weekly

Volatility Adjusted Momentum

Z-Slope

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# IWM Daily

## IWM Weekly
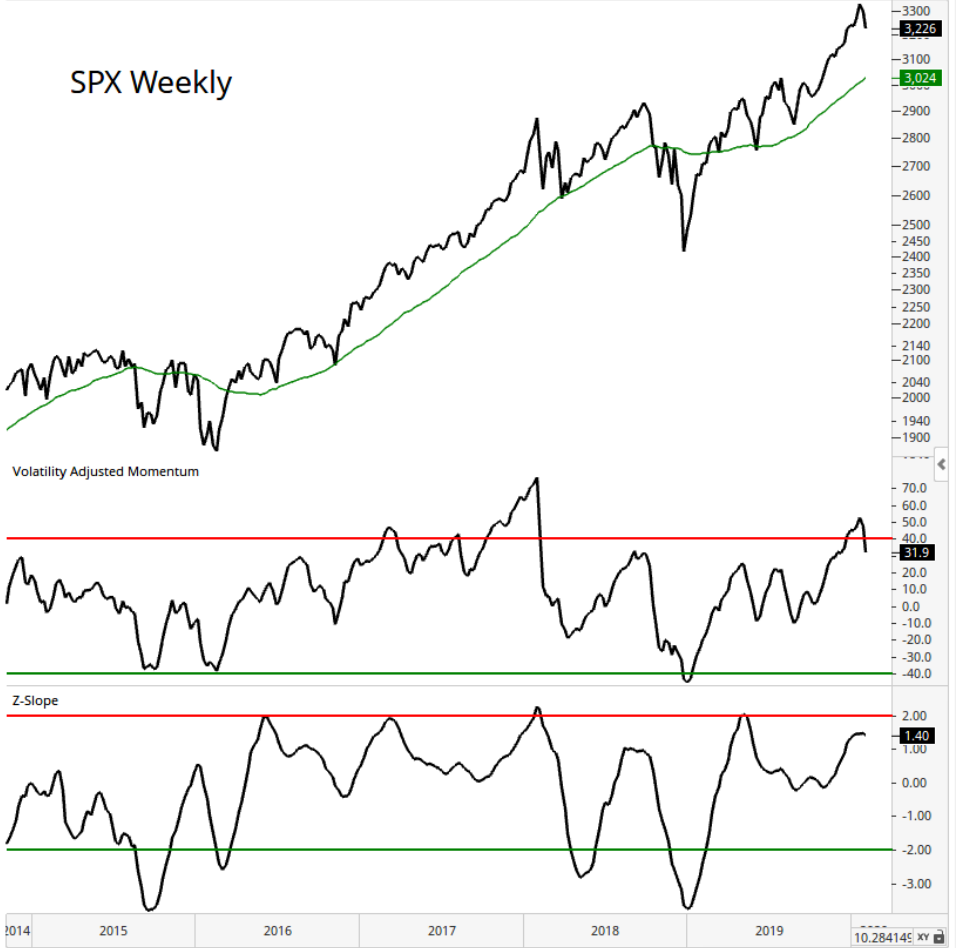
iShares Russell 2000 ETF - IWM (US) - 1 Day Line Chart - USD - VMomo & ZSlope Layout
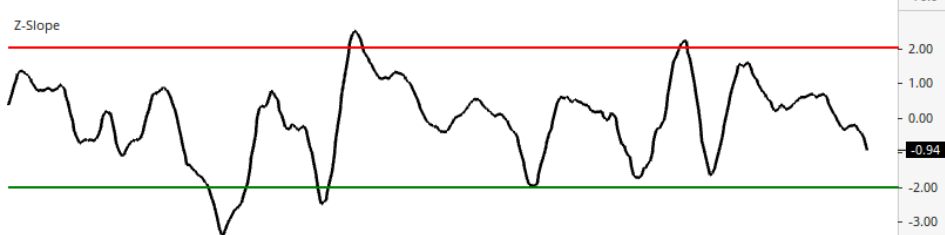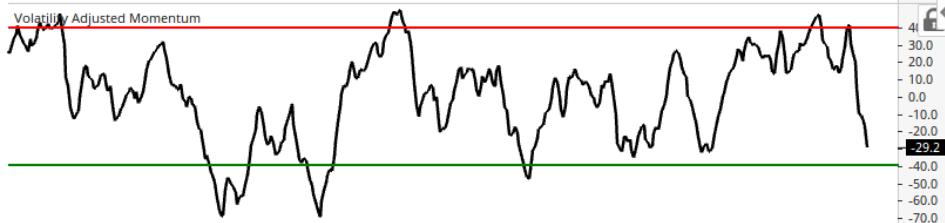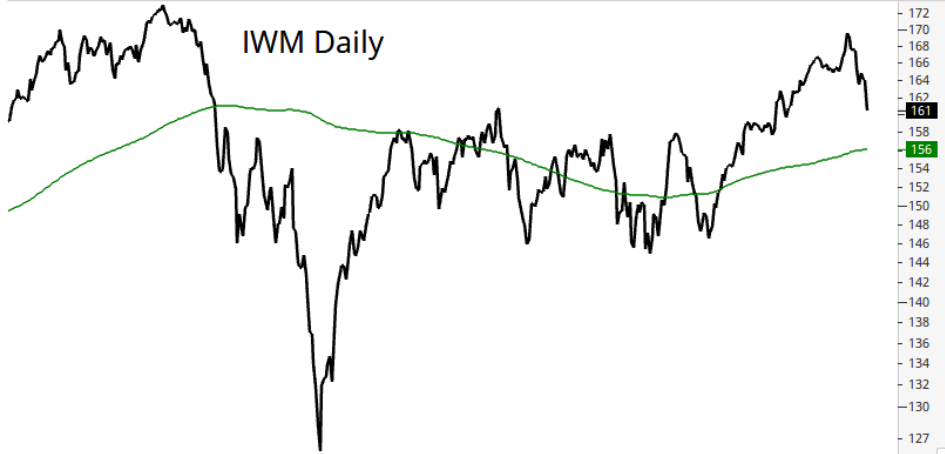
iShares Russell 2000 ETF - IWM (US) - 1 Week Line Chart - USD - No Layout

Volatility Adjusted Momentum

Z-Slope

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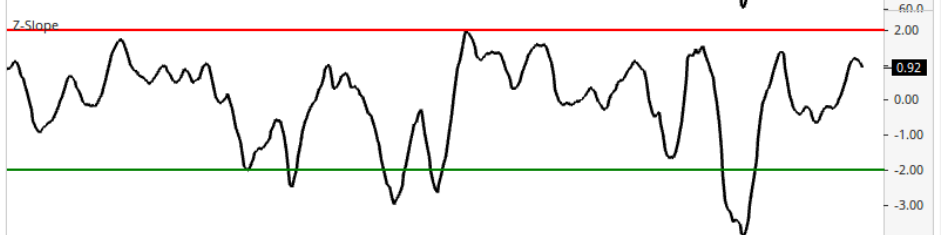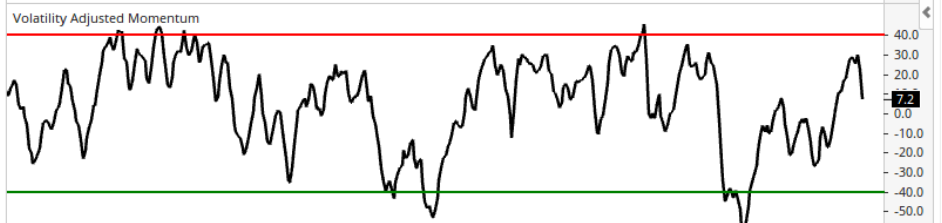
Invesco QQQ Trust - QQQ (US) - 1 Day Line Chart - USD - VMomo & ZSlope Layout

QQQ Daily

223
219
216
213
210
206
203
200
195
190
186
183
180
176
173
170
166
163
160
156
153
150
146
144

Volatility Adjusted Momentum

60.0
50.0
40.0
30.0
20.0
10.0
0.0
-10.0
-20.0
-30.0
-40.0
-50.0

9.8

Z-Slope

2.00
1.00
0.00
-1.00
-2.00
-3.00

-0.01

Jul    Sep    Nov    2019    Mar    May    Jul    Sep    Nov    2020

0.3633674  XY

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

QQQ Weekly

219.07
210.00

195.61

210.00
200.00
190.00
180.00
170.00
160.00
150.00
145.00
140.00
135.00
130.00
124.00
120.00
114.00
110.00
104.00
100.00
96.00
93.00
90.00
86.00
83.00
80.00

Volatility Adjusted Momentum

60.0
50.0
40.0
30.0
20.0
10.0
0.0
-10.0
-20.0
-30.0
-40.0

46.2

Z-Slope

1.64

1.00
0.00
-1.00
-2.00
-3.00
-4.00

2014    2016    2018

0.8224923  XY

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SPDR Materials Select Sector Fund ETF - XLB (US) - 1 Day Line Chart - USD - VMomo & ZSlope Layout
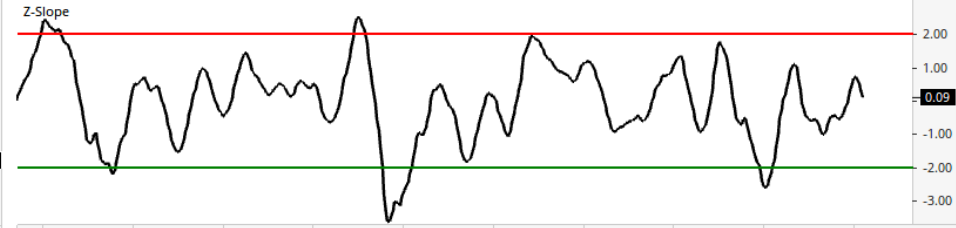
XLB Daily

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

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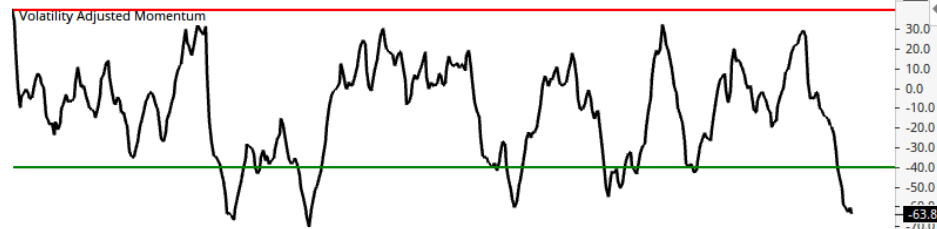SPDR Energy Select Sector Fund ETF - XLE (US) - 1 Day Line Chart - USD - VMomo & ZSlope Layout

XLE Daily

Volatility Adjusted Momentum

Z-Slope

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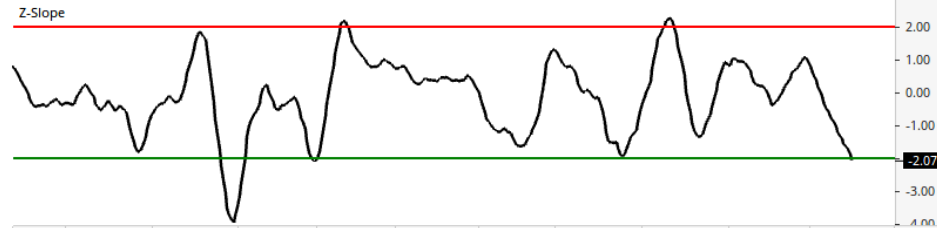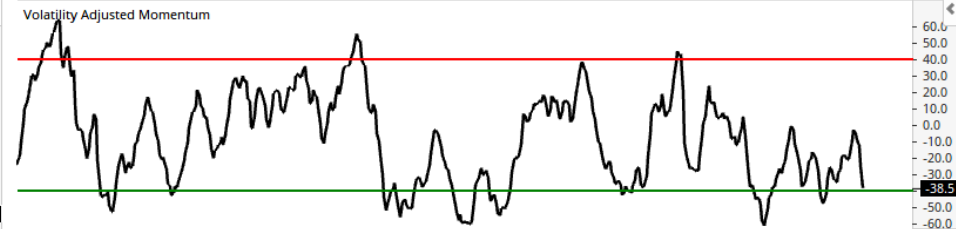
XLE Weekly

Volatility Adjusted Momentum

Z-Slope

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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

XLC Daily

XLC Weekly

Volatility Adjusted Momentum

Volatility Adjusted Momentum

Z-Slope

Z-Slope

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XLF Daily

XLF Weekly

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

XLK Daily

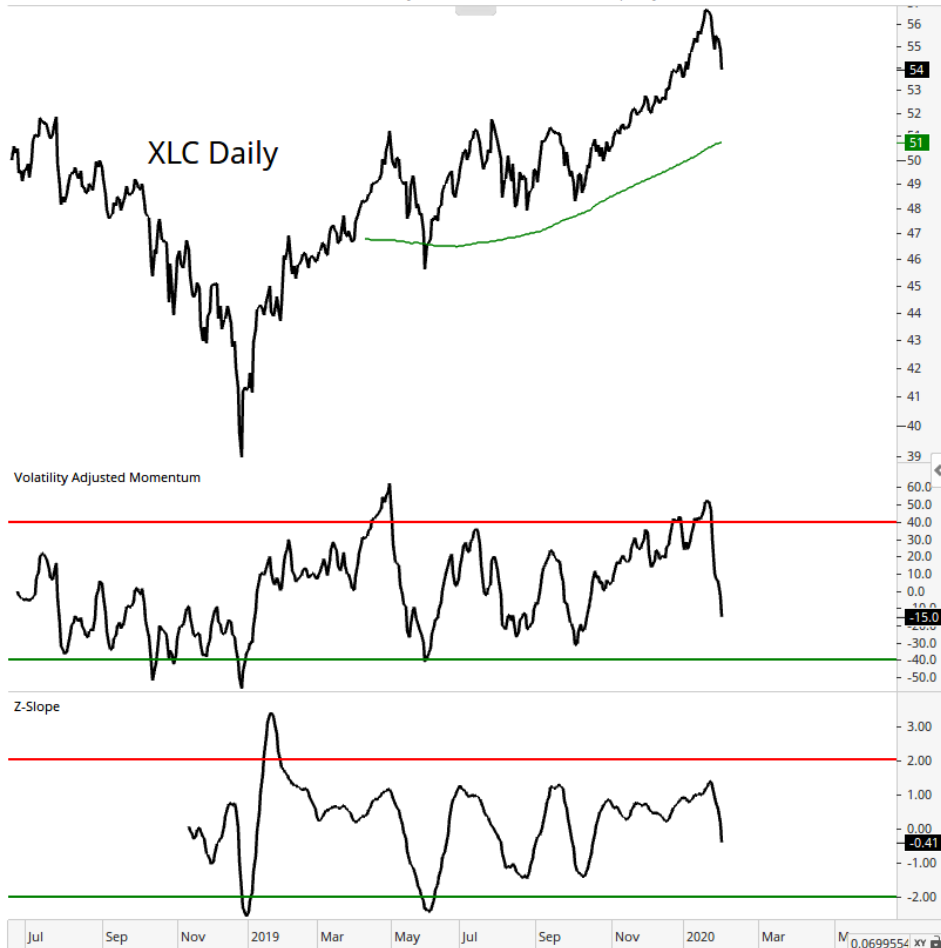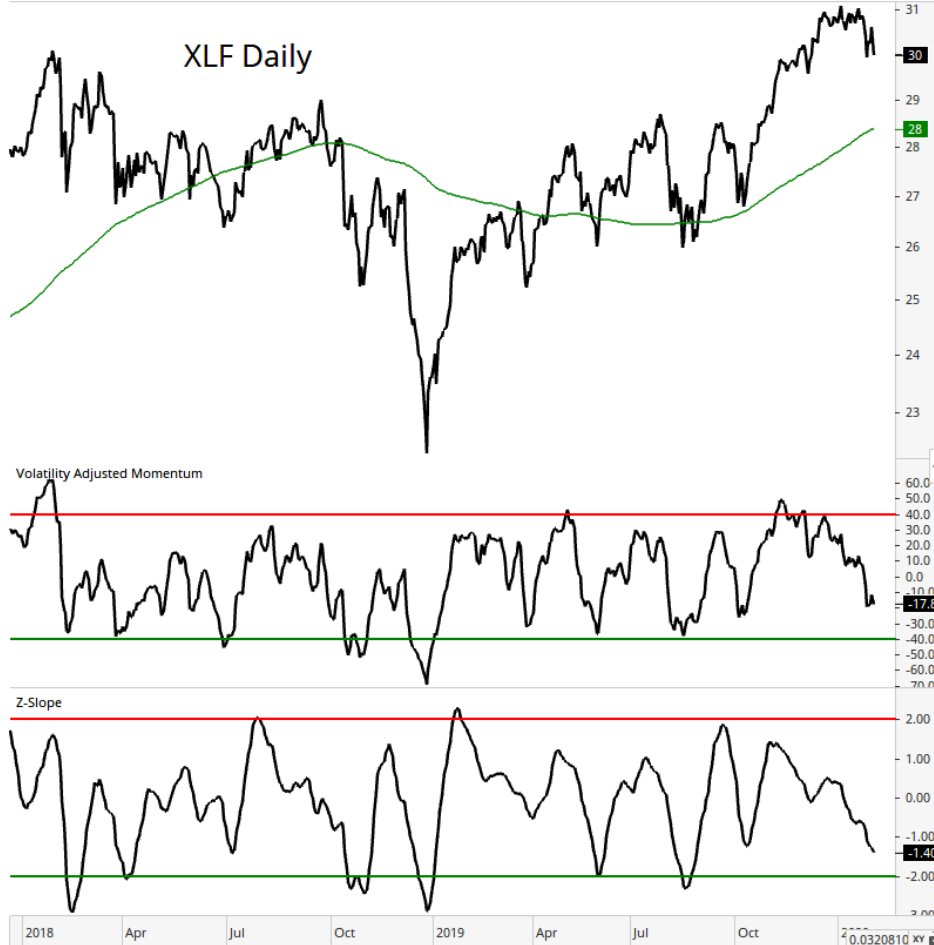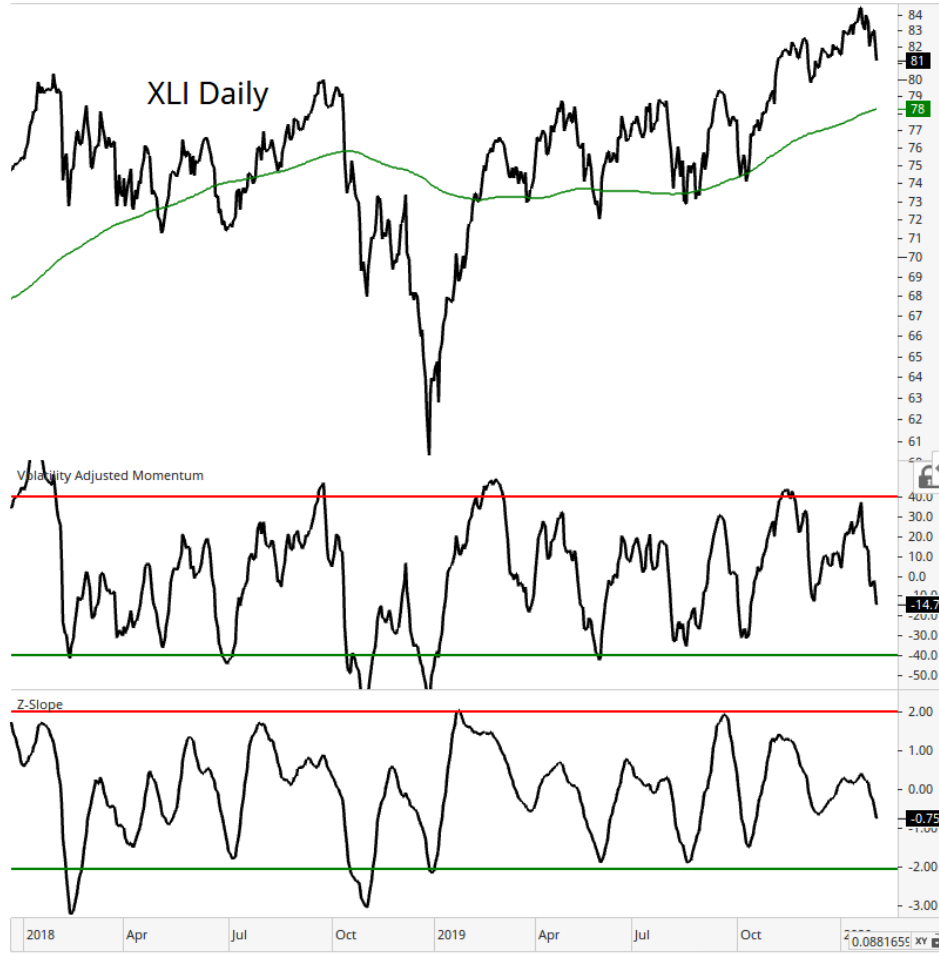SPDR Technology Select Sector Fund ETF - XLK (US) - 1 Week Line Chart - USD - No Layout

XLK Weekly

Volatility Adjusted Momentum

Volatility Adjusted Momentum

Z-Slope

Z-Slope

2nd Feb 2020

SPDR Consumer Staples Select Sector Fund ETF - XLP (US) - 1 Day Line Chart - USD - VMomo & ZSlope Layout

XLP Daily

Volatility Adjusted Momentum

Z-Slope

SPDR Consumer Staples Select Sector Fund ETF - XLP (US) - 1 Week Line Chart - USD - No Layout

XLP Weekly

Volatility Adjusted Momentum

Z-Slope

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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

XLRE Daily

XLRE Weekly

Volatility Adjusted Momentum

Volatility Adjusted Momentum

Z-Slope

Z-Slope

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

**XLU Daily**

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

**XLU Weekly**

Volatility Adjusted Momentum

Z-Slope

Volatility Adjusted Momentum

Z-Slope

2nd Feb 2020

THRASHER ANALYTICS

SPDR Consumer Discretionary Select Sector Fund ETF - XLY (US) - 1 Day Line Chart - USD - VMomo & ZSlope Layout

XLY Daily

Volatility Adjusted Momentum

Z-Slope

SPDR Consumer Discretionary Select Sector Fund ETF - XLY (US) - 1 Week Line Chart - USD - No Layout

XLY Weekly

Volatility Adjusted Momentum

Z-Slope

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iShares MSCI EAFE Index Fund ETF - EFA (US) - 1 Day Line Chart - USD - VMomo & ZSlope Layout

**EFA Daily**

iShares MSCI EAFE Index Fund ETF - EFA (US) - 1 Week Line Chart - USD - No Layout

**EFA Weekly**

Volatility Adjusted Momentum

Z-Slope

Volatility Adjusted Momentum

Z-Slope

2nd Feb 2020

EEM

THRASHER ANALYTICS

EEM Daily

EEM Weekly

2nd Feb 2020
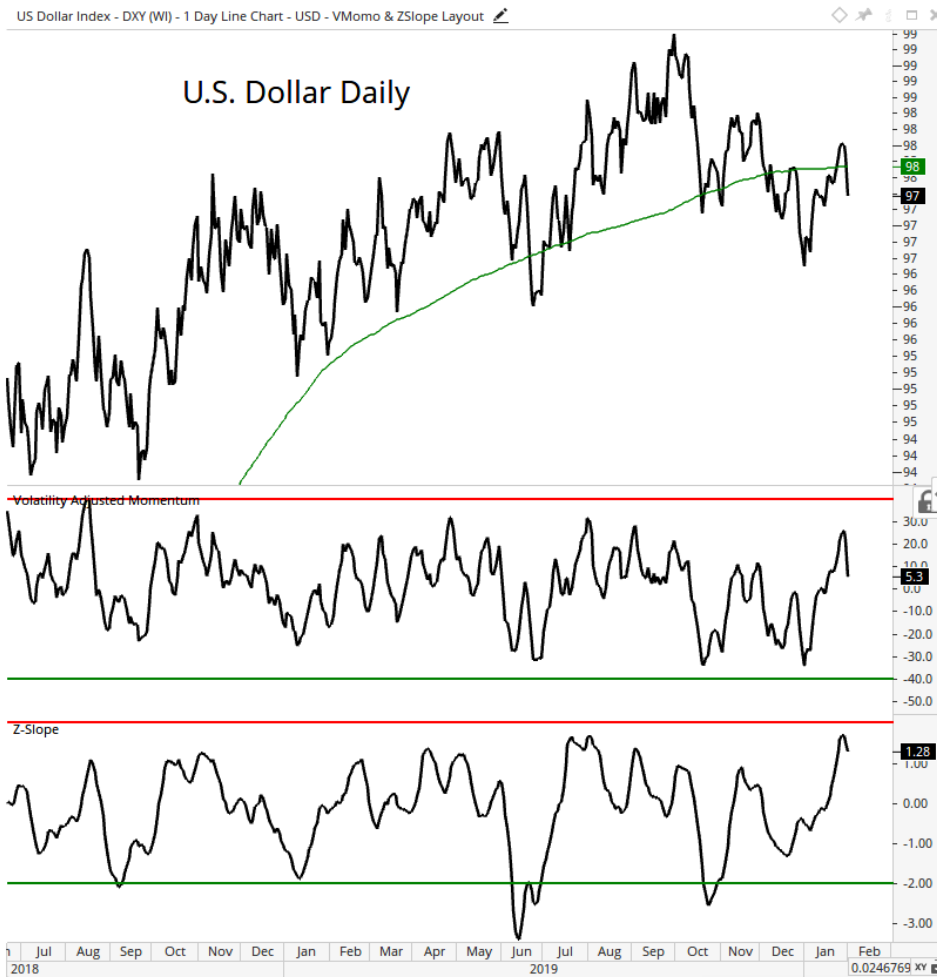
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U.S. Dollar Daily

U.S. Dollar Weekly

2nd Feb 2020

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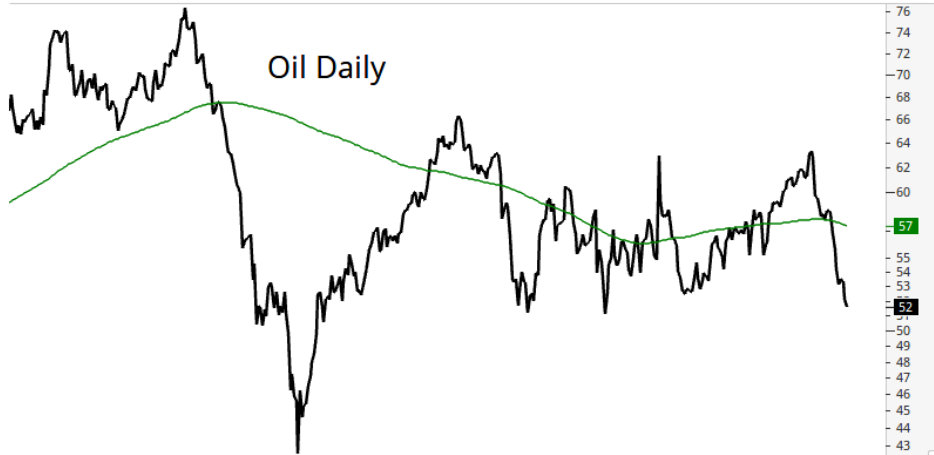
**Gold Daily**

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

**Gold Weekly**

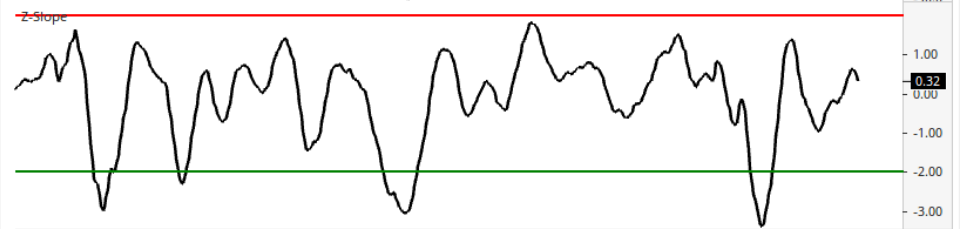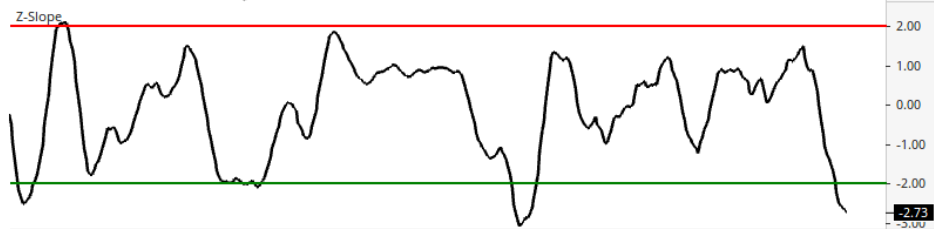Volatility Adjusted Momentum

Z-Slope

2nd Feb 2020

THRASHER ANALYTICS

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

Oil Daily

57

52

Volatility Adjusted Momentum

-66.0

Z-Slope

-2.73

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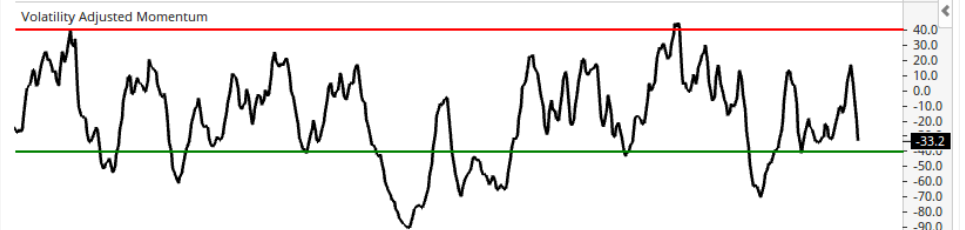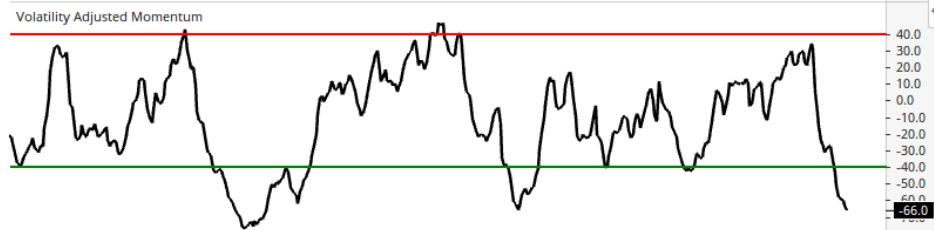
Oil Weekly

57.00

51.56

Volatility Adjusted Momentum

-33.2

Z-Slope

0.32

Jun Jul Aug Sep Oct Nov Dec Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec Jan Feb

2018 | 2019 | 0.1504791 XY

2010 2011 2012 2013 2014 2015 2016 2017 2018 2019 2020

2010's | 0.3245761 XY

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## THRASHER ANALYTICS

iShares 20+ Year Treasury Bond ETF - TLT (US) - 1 Day Line Chart - USD - VMomo & ZSlope Layout

TLT Daily

146

136

Volatility Adjusted Momentum

38.5

Z-Slope

2.04

Jan Apr Jul Oct Jan Apr Jul Oct Jan Apr Jul Oct Jan Apr Jul Oct Jan Apr
5     2016           2017           2018           2019
0.064708

iShares 20+ Year Treasury Bond ETF - TLT (US) - 1 Week Line Chart - USD - No Layout

TLT Weekly

145.90

137.08

Volatility Adjusted Momentum

7.5

Z-Slope

-0.38

2012  2013  2014  2015  2016  2017  2018  2019  2020
2010's
0.211853

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

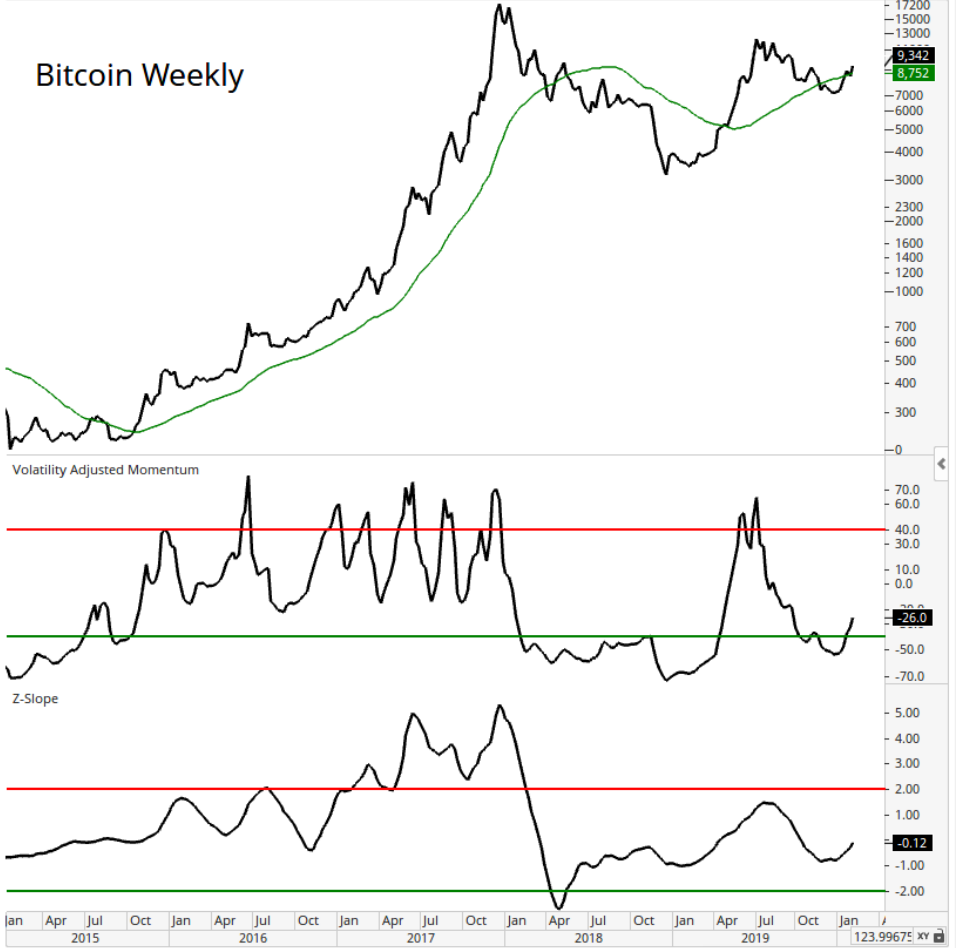Bitcoin / US Dollar - XBTUSD (FX) - 1 Week Line Chart - USD - No Layout

Bitcoin Daily

Bitcoin Weekly

Volatility Adjusted Momentum

Volatility Adjusted Momentum

Z-Slope

Z-Slope

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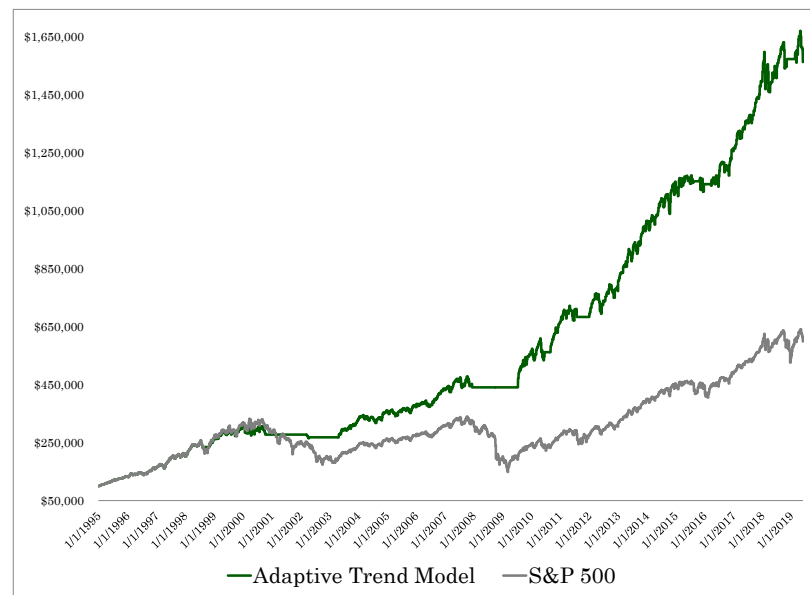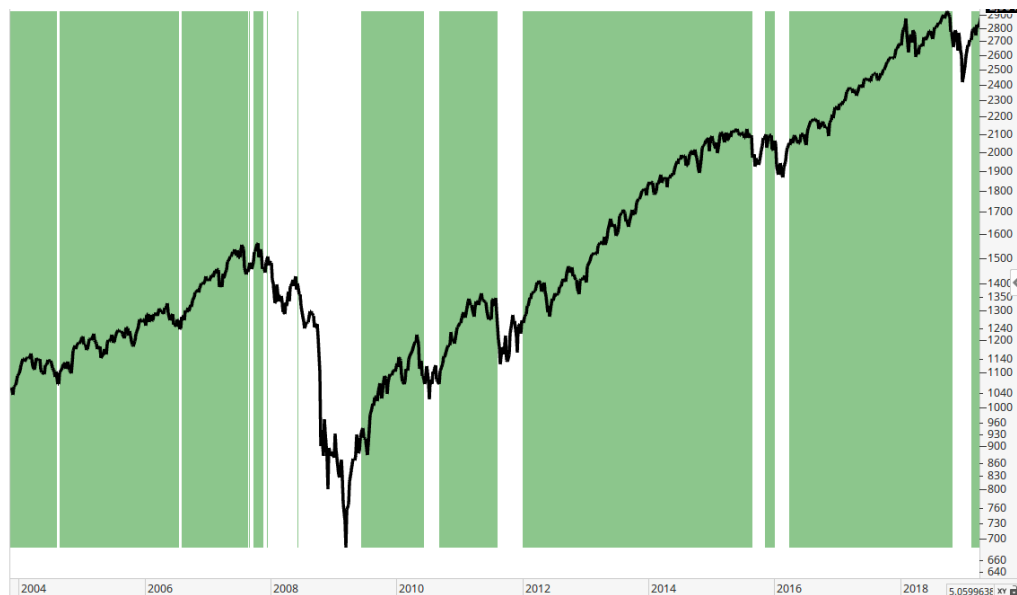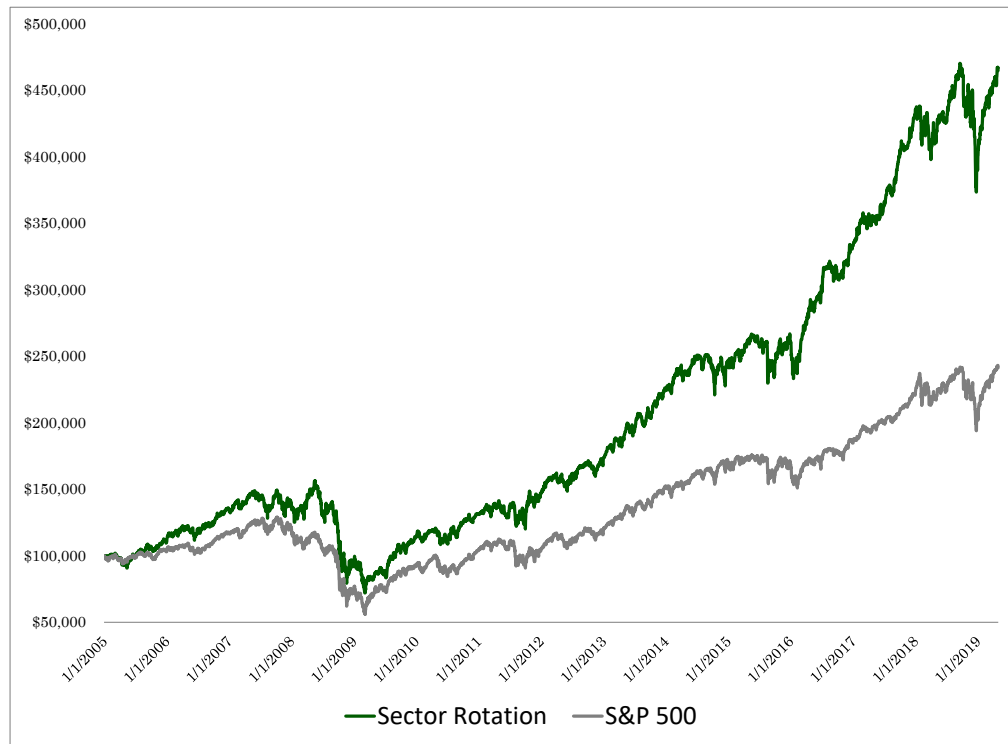
|  | Annualized Return | Annualized Volatility | Beta | Sharpe | Maximum Drawdown |
|---|---|---|---|---|---|
| **Adaptive** | 12.5% | 10.3% | 0.47 | 0.97 | 14.1% |
| **S&P 500** | 8.9% | 15.3% | 1 | 0.42 | 56.6% |

*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.
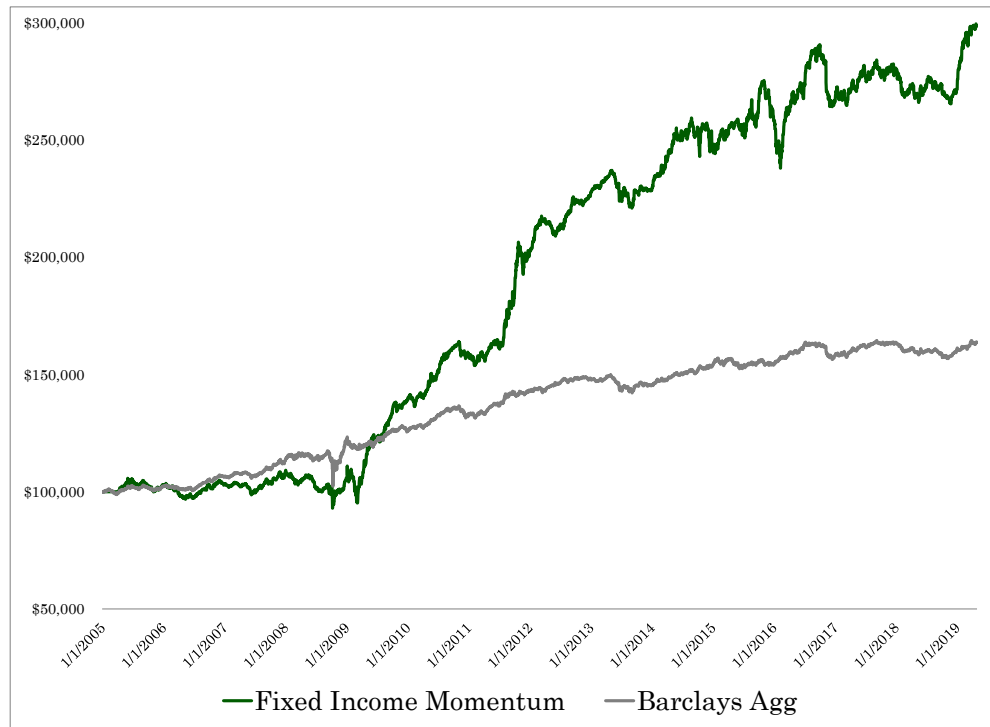
THRASHER ANALYTICS



| | 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% |

*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.*

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% |

*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.*

Т 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.

## Blends of The Sector, Trend & Fixed Income Models
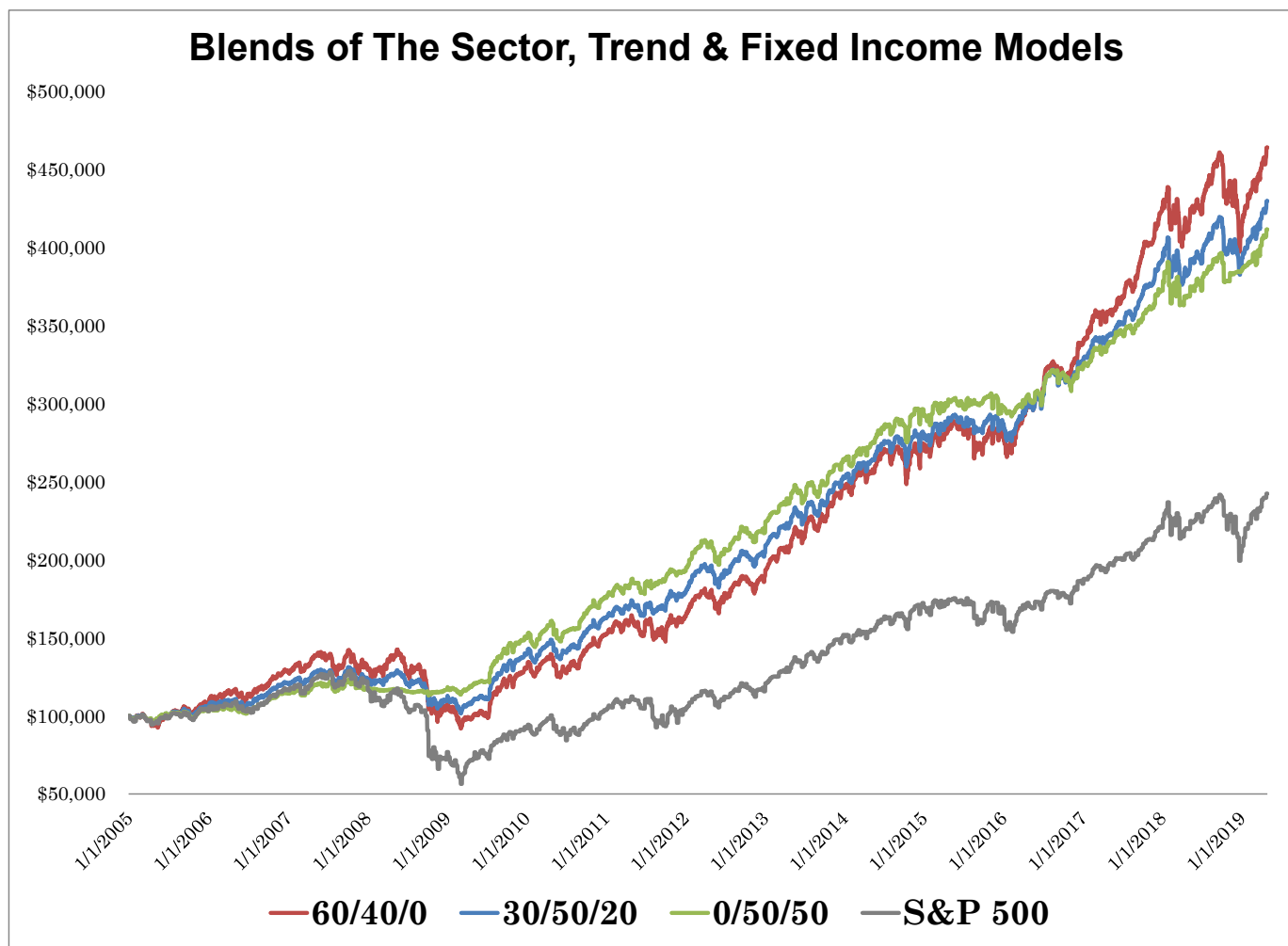


The above chart shows examples of blending the sector, trend, and fixed income models . Ranging from an all equity approach of 60% in sector rotation, 40% trend and 0% in fixed income; 30% in sector rotation, 50% in trend, and 20% in fixed income; 0% in sector rotation, 50% in trend, and 50% in fixed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

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

*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.*

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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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