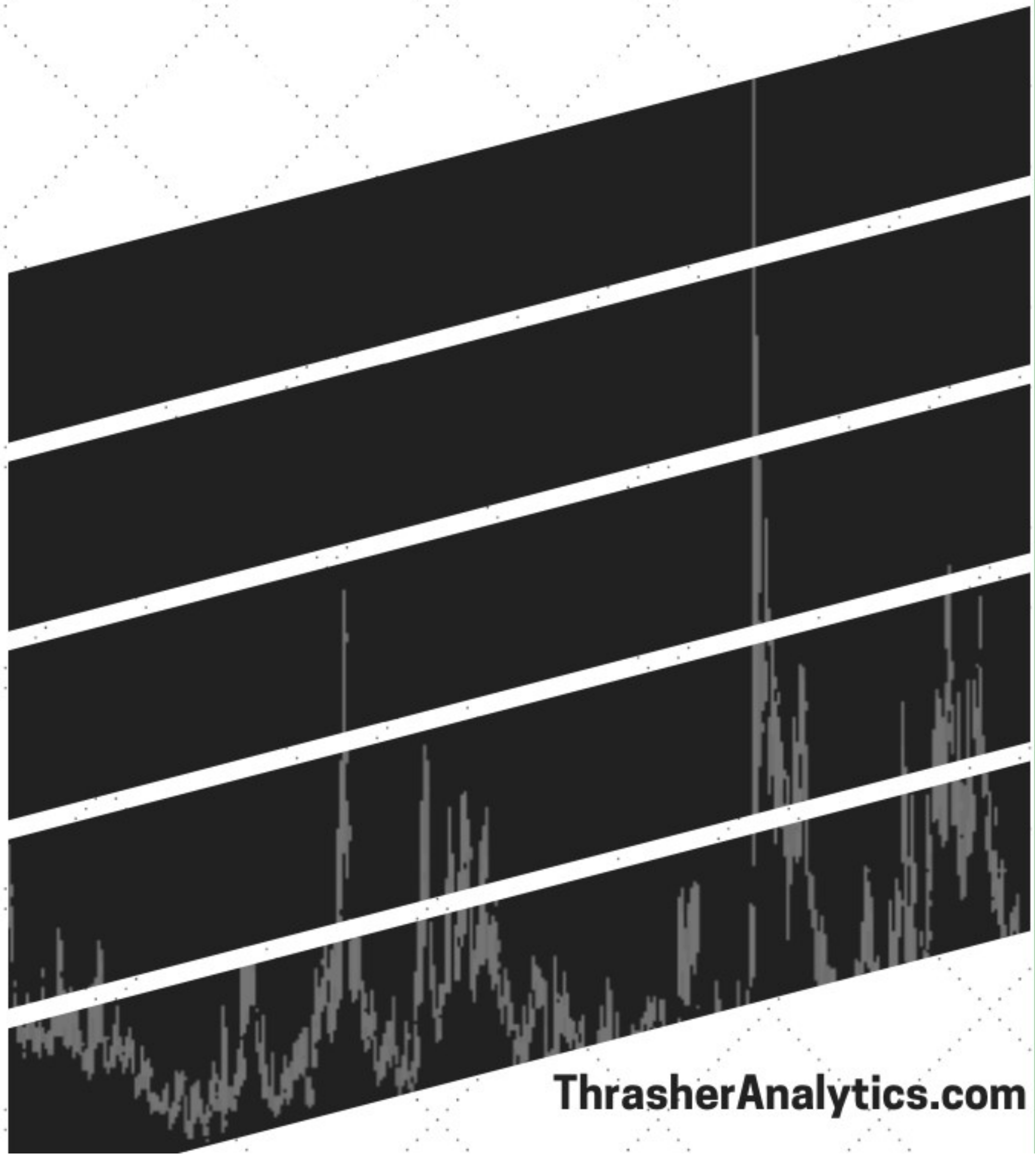
THRASHER ANALYTICS



ThrasherAnalytics.com

WEEKLY RESEARCH & ANALYSIS

Thrasher Analytics Market Dashboard

THRASHER ANALYTICS

Sector Rotation: August	
Technology	XLK
Consumer Disc.	XLY
Communication	XLC

Notable Breadth Data:	
SPX >50MA	72.67%
SPX >200MA	55.05%
Nasdaq >50MA	67.96%
Nasdaq >200MA	77.67%

Fixed Income Rotation: Q3	
Muni Bond	MUB
High Yield Corp.	HYG

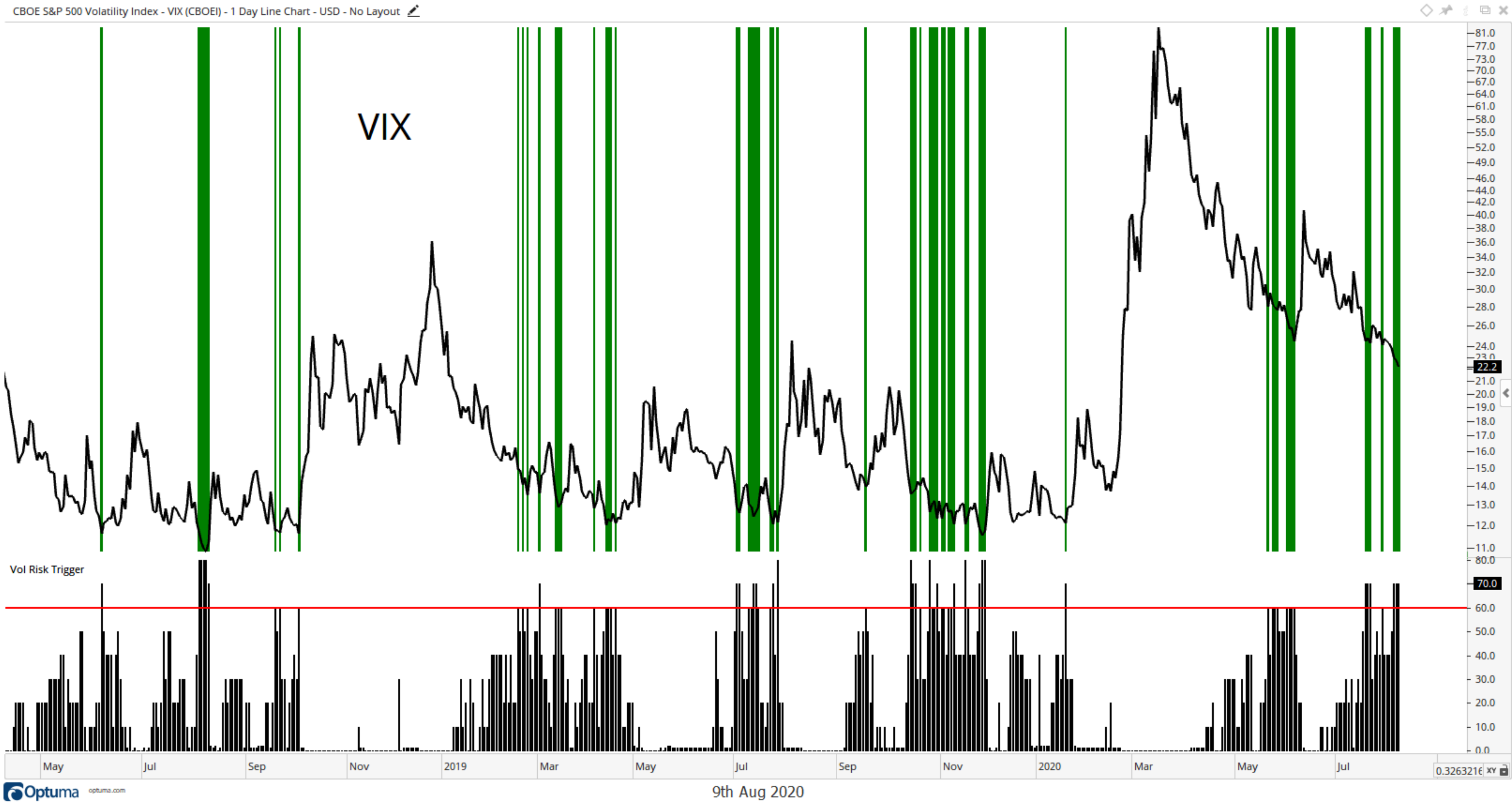
Index & Sector Adaptive Trend	Up Trend	Down Trend
SPX	X	
QQQ	X	
XLF		X
XLY	X	
XLK	X	
XLV	X	
XLU		X
XLP	X	
XLI	X	
XLRE		X
XLE		X
XLB	X	

Daily Sentiment Index	% Bullish	5-day MA
S&P 500	85%	83%
Nasdaq 100	81%	86%
Nikkei	76%	75%
VIX	10%	12%
10yr Treasury	72%	78%
5yr Treasury	71%	72%
CRB Index	80%	83%
Gold	84%	90%
U.S. Dollar	17%	15%

**Green<25%   Red>80%*

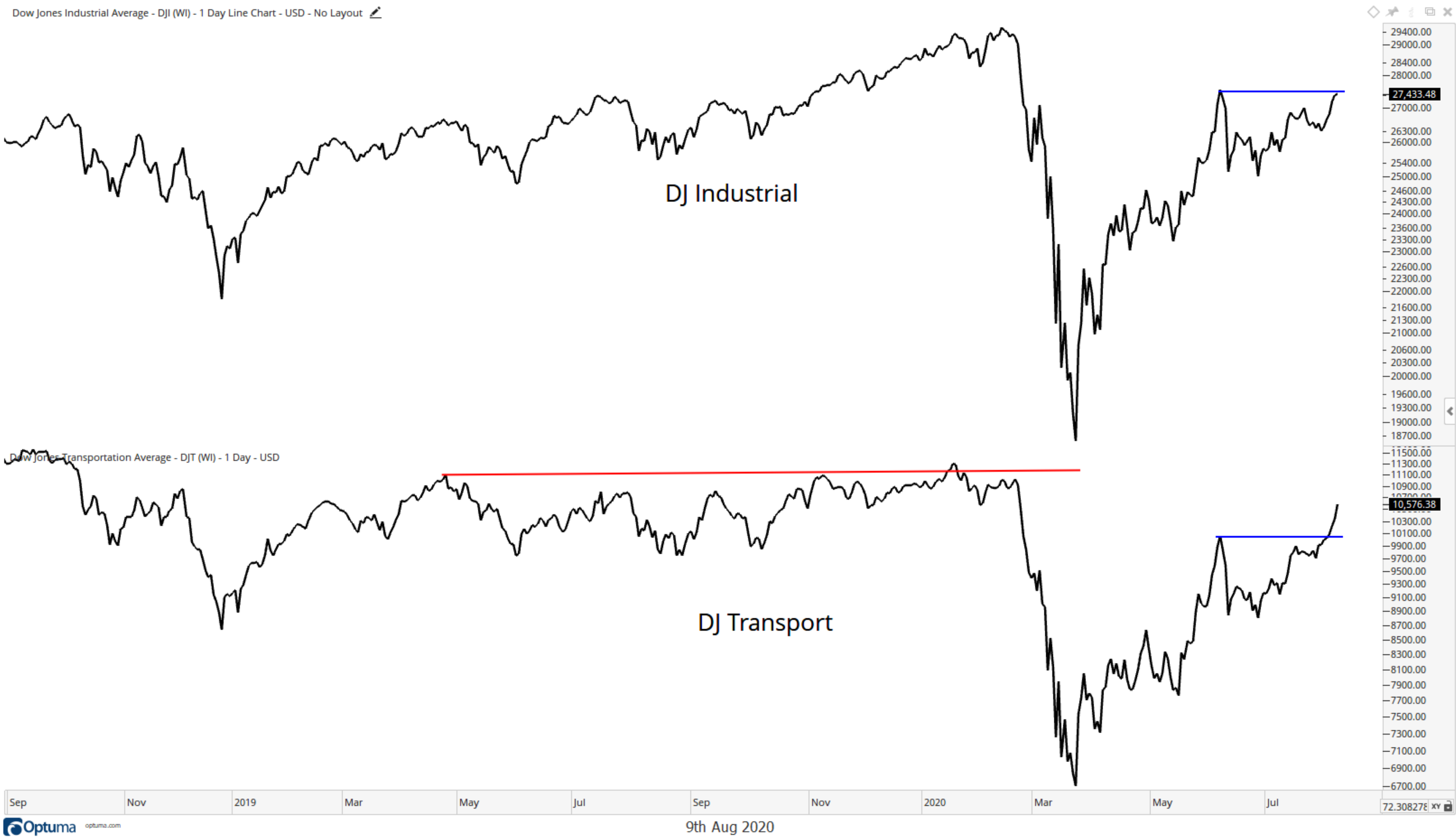
source: trade-futures.com

Sector	> 50MA	> 200MA	1wk Perf	1mo Perf	3mo Perf	12mo Perf
SPDR Industrial Select Sector Fund ETF	True	True	4.74%	9.47%	22%	0.45%
SPDR Financial Select Sector Fund ETF	True	False	3.37%	8.33%	13.84%	-7.14%
SPDR Energy Select Sector Fund ETF	False	False	3.19%	2.54%	0.24%	-36%
SPDR Communication Services Select Sector ETF	True	True	3.1%	6.73%	17.67%	21.83%
SPDR Technology Select Sector Fund ETF	True	True	3%	7.31%	21.76%	46.78%
SPDR Consumer Discretionary Select Sector Fund ETF	True	True	2.47%	7.57%	22.05%	19.83%
SPDR Materials Select Sector Fund ETF	True	True	2.24%	5.72%	20.41%	8.07%
SPDR Consumer Staples Select Sector Fund ETF	True	True	1.29%	6.17%	11.72%	7.85%
SPDR Utilities Select Sector Fund ETF	True	False	1.08%	7.95%	11.7%	2.18%
SPDR Health Care Select Sector Fund ETF	True	True	0.83%	4.59%	7.59%	18.12%
SPDR Real Estate Select Sector Fund ETF	True	False	0.66%	3.99%	11.45%	-3.64%

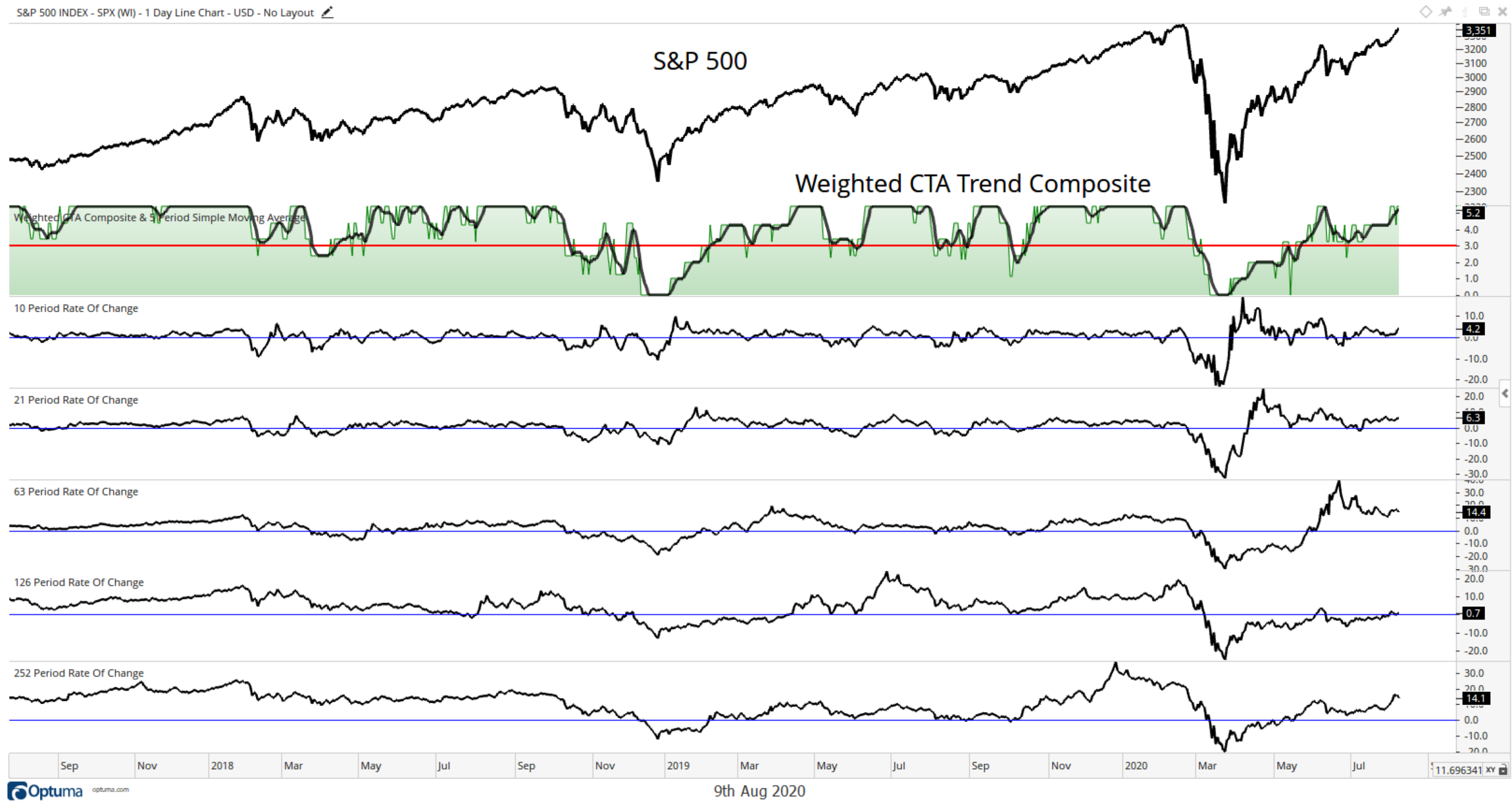


The VRT continues to give signals of heightened risk of a spike in the Volatility Index. Thus far, the market has ignored these concerns, with the VIX moving to its lowest level since March last week. Is this latest move down the setup for a seasonal bounce in volatility that August has grown known for? We'll see.

The S&P 500 has moved higher, closing its gap created in February with the 14-day RSI also moving just below the 70 level. The equity index finds itself just below the 2020 high, a level that will become a target of many traders as gravity surely attempts to pull price up to. Momentum has remained in a bullish range since April, clearing the bearish divergence created a few weeks ago. I've recently grown cautious on stocks and that's clearly been wrong so far, I'm the first to admit that. However, I do believe the risk/reward is not overly attractive here—that doesn't mean price can't inch higher like it has. The mega caps have dragged the broad indices higher as earnings season comes to a close. Goldman's latest note on the topic I think is fitting, highlighting that Q2 earnings at –34% were still better than the consensus expectations of –44%. Only in 2020 would a drop in YoY earnings of 34% come in as a "beat." oy vey.

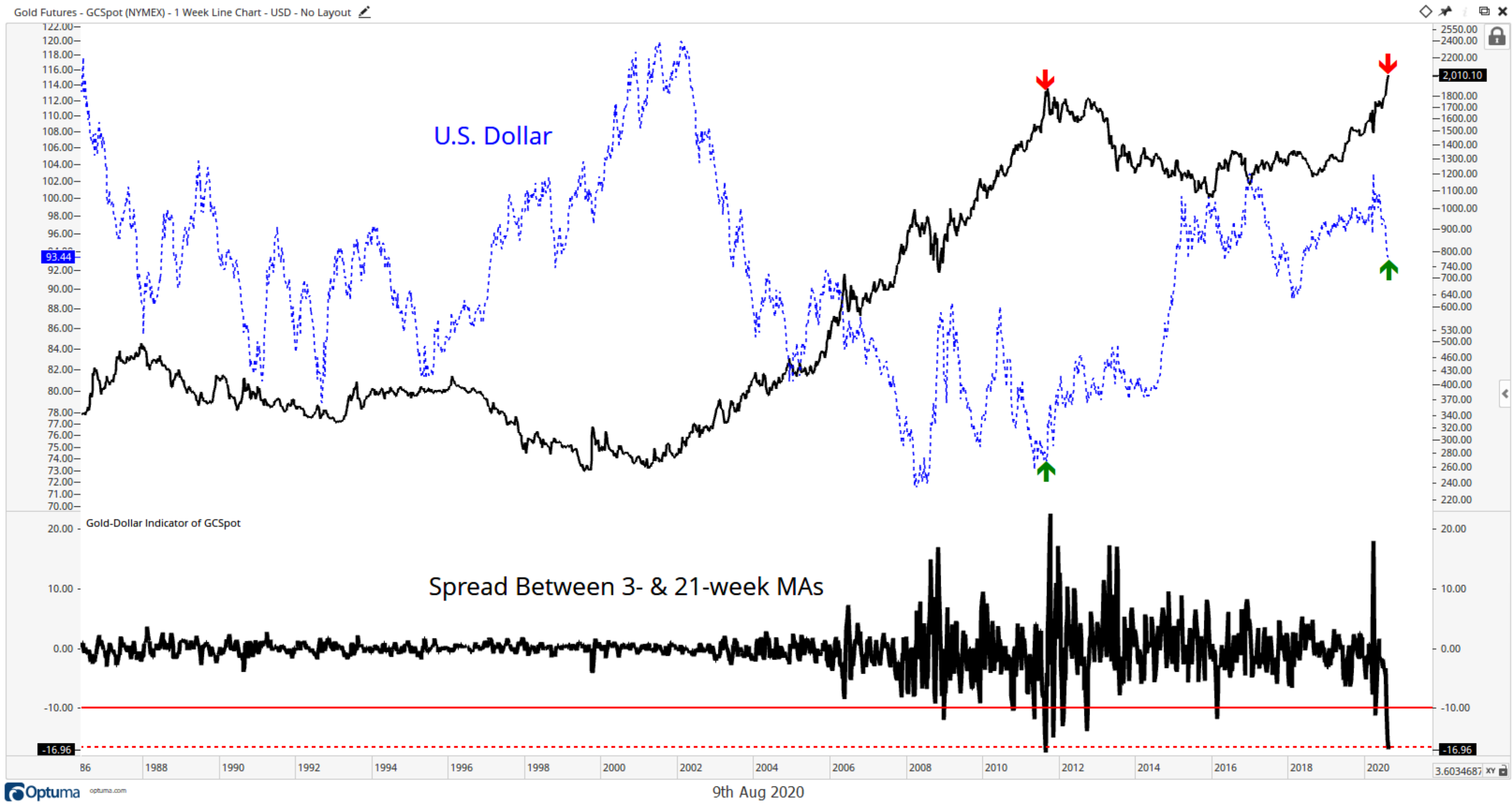


The Dow Jones Transport Index broke above the June high last week. The Industrial Index still sits just below its own June peak, many are looking for the Industrials to rise and 'confirm' the Transports move which would not be unexpected.



All five lookback periods for the Weighted CTA Trend Composite are now positive. The composite moved positive itself back in early May, and remains so now with the 6-month rate-of-change joining the group in the green. This suggests we'll now see a stronger push from trend followers to join the party of taking on risk exposure in equities, adding to the exposure the initial four lookback periods would have provided. If we stay positive, this creates a tailwind for equities to continue their climb.

Gold has now been positive for nine consecutive weeks, a feat it hasn't done since 2008. Going back to the 1970s, gold has only been able to hold a gain for nine straight weeks just four prior times. The shiny metal did struggle to retain the gains in two of the four, topping out several weeks later in 1980 and 2008. While this is obviously a very small sample size it shows the massive climb in gold prices after breaking above the $1,800 level a few weeks ago.

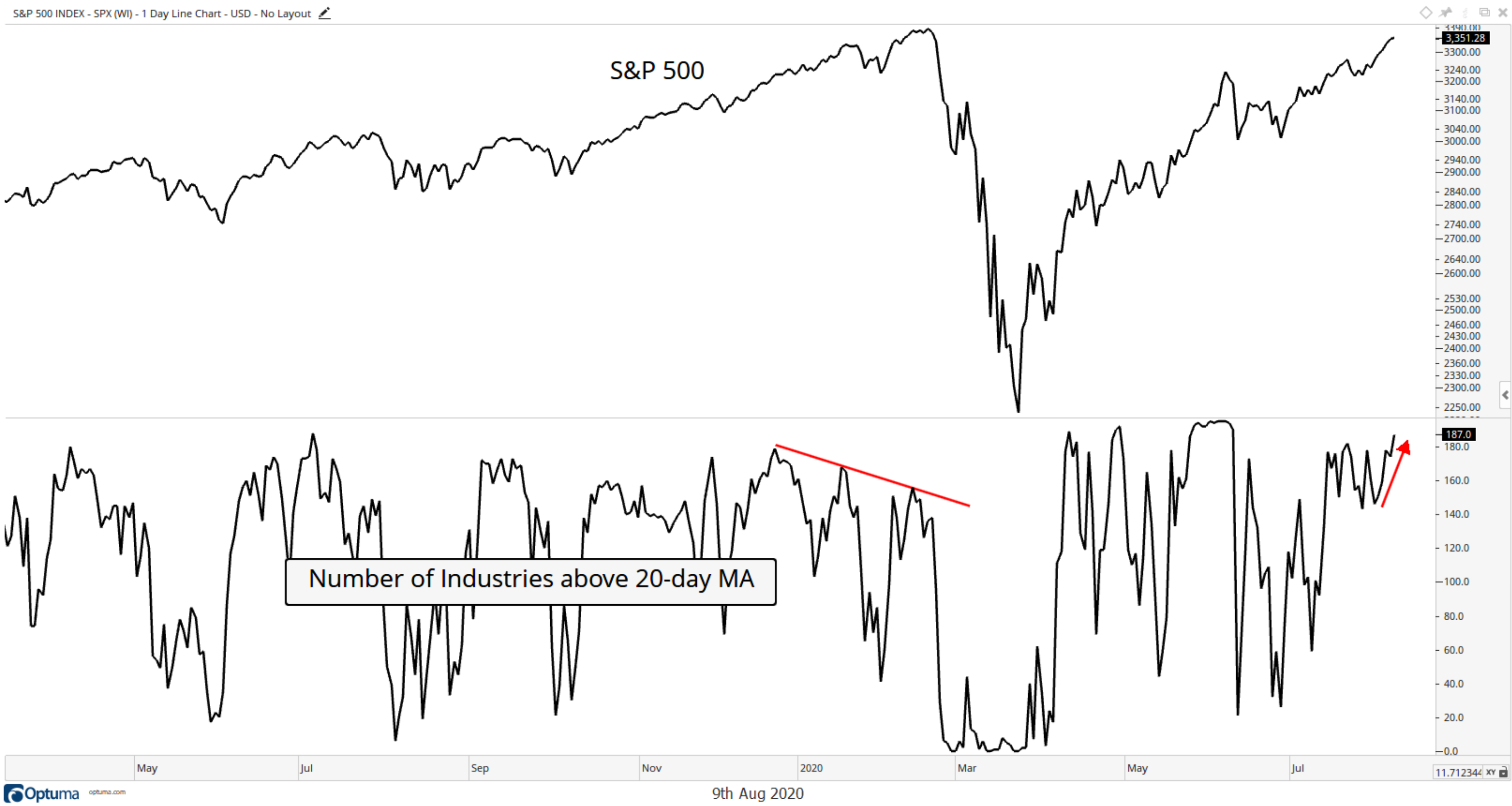


While on the topic of gold, as it shoots higher and the U.S. dollar plummets, the relationship between the two hits historic levels. I believe it was Larry Williams (I could be wrong, don't quote me on that!) that created the Gold-Dollar Indicator that looks at the spread between the 3-week and 21-week moving average of the ratio between the two assets. It has only been at such a depressed level one prior time since the 1970s, at the gold peak and dollar bottom in 2011. This was a significant time for both gold and the dollar. Gold was coming off an extremely strong run after bottoming in 2009, it then slid for several years before bottoming in 2016. This isn't to suggest gold will repeat that move. With real interest rates still negative, there's a massive tailwind for gold prices to remain elevated. However, its relationship to the dollar has become very stretched, so some kind of consolidation or pullback is not out of the question to ease some of this 'tension' so to speak.

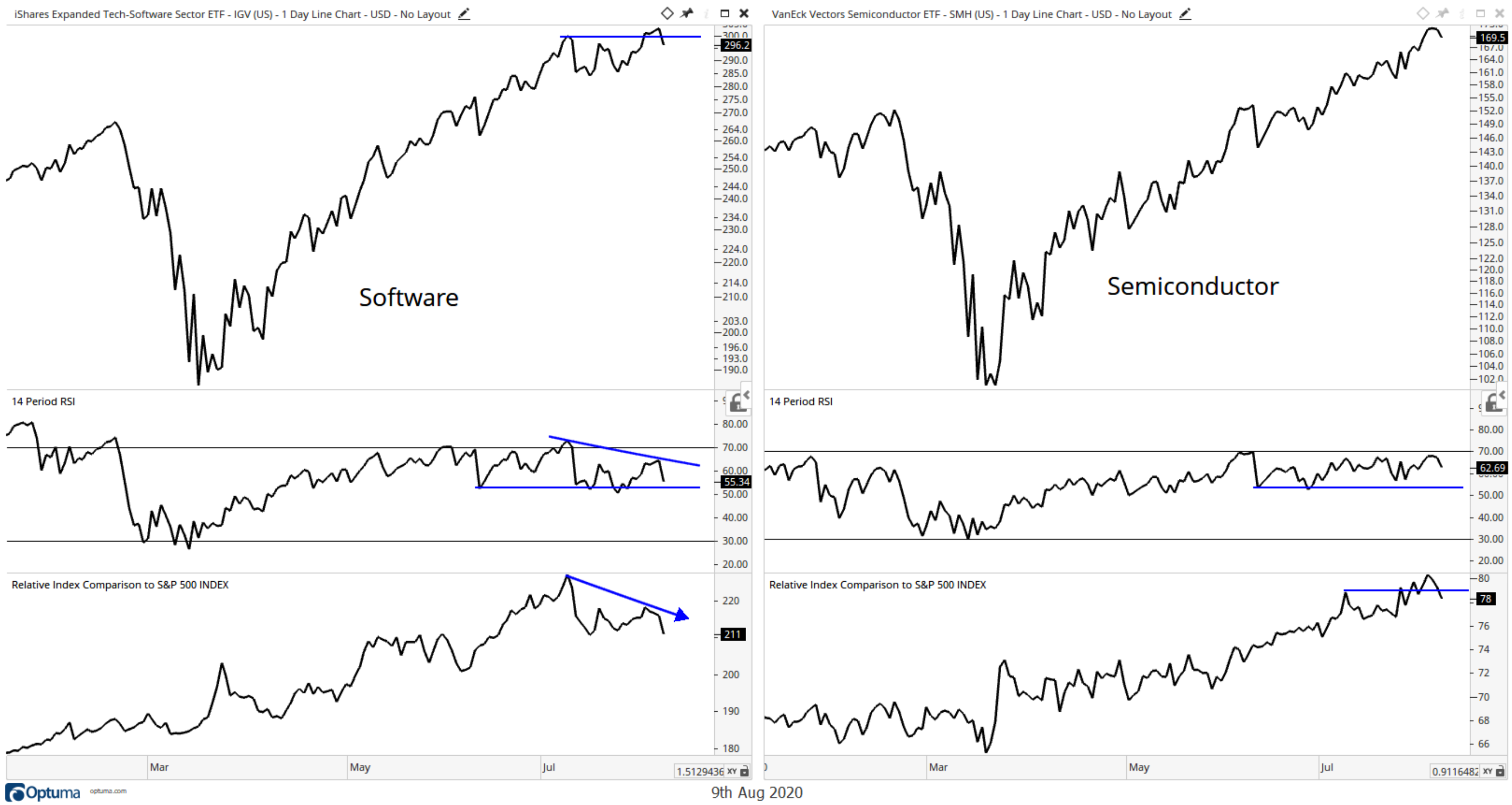
Speaking of commodities, the CCRB Agriculture has had a strong climb since its 2020 low, This index holds 19 commodities such as aluminum, cocoa, coffee, copper, corn, cotton, gold, oil, hogs, cattle, nat gas, gasoline, silver, sugar, and wheat. The big moves in several of these (ala copper, gold, and silver) have helped drive the Daily Sentiment Index (DSI) for commodities above 80% along with momentum north of 70 on the RSI. When these two both occur, elevated sentiment and momentum, commodities have struggled as shown by the red arrows on the chart above. This is not a comment on a one single commodity but for the basket of them.

This risk/reward in commodities is now unattractive in my view.

One of the drivers of the last chart's move in commodities has been assistance by the advance in Copper, which may have hit resistance last week. Copper prices ran up to the March 2019 highs and were unable to break above. Meanwhile, sentiment began to cool off as well, with the DSI dropping to 61% bullish after rising above 80%.

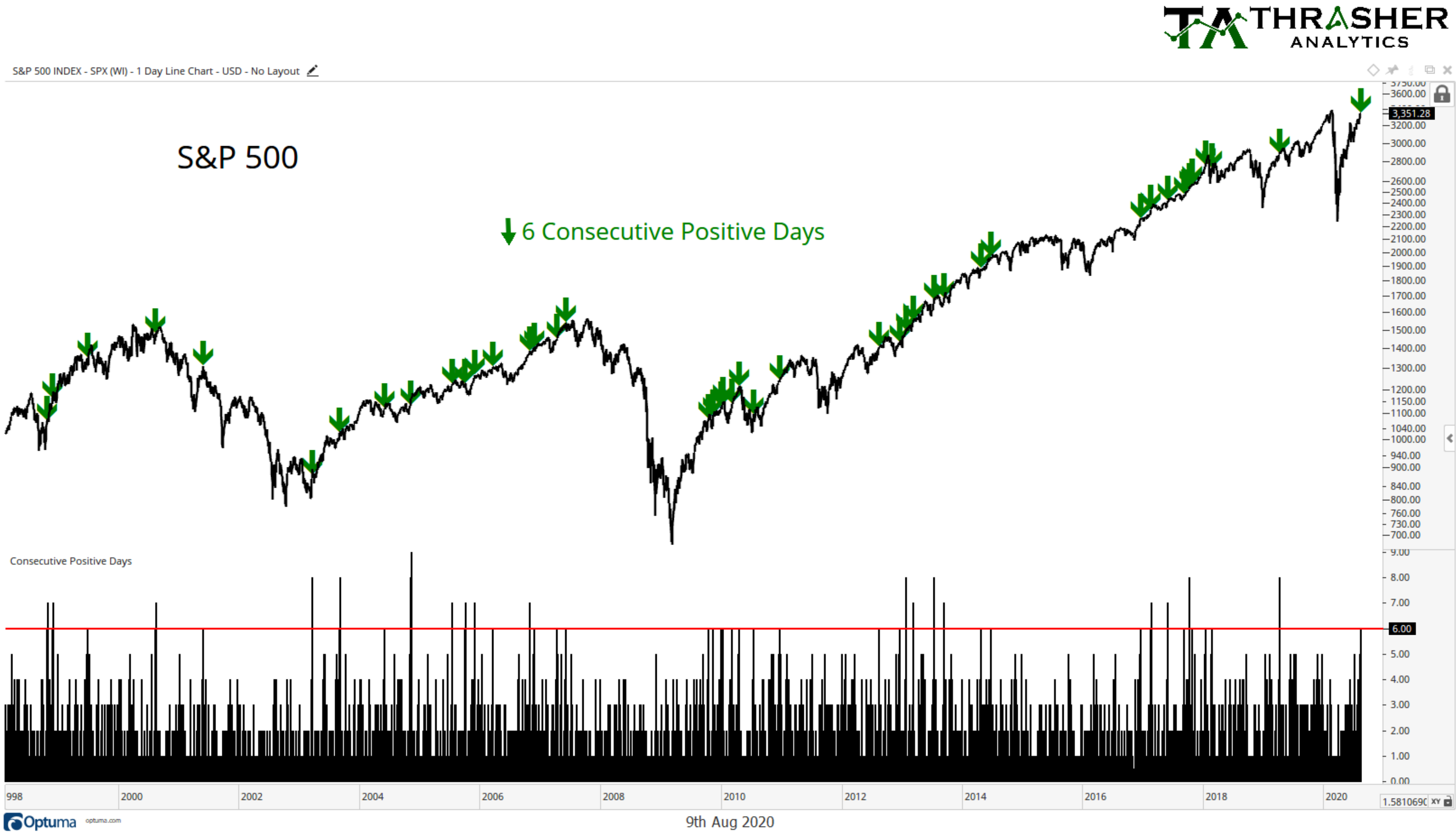


The above chart shows the number of S&P industries with price above its respective 20-day Moving Average. While we often look at more broad sectors, following what the smaller industries are doing can provide advance notice to what's ahead for the major indices. Right now, the industries remain in bullish trends with nearly all of them above the 20-day MA.



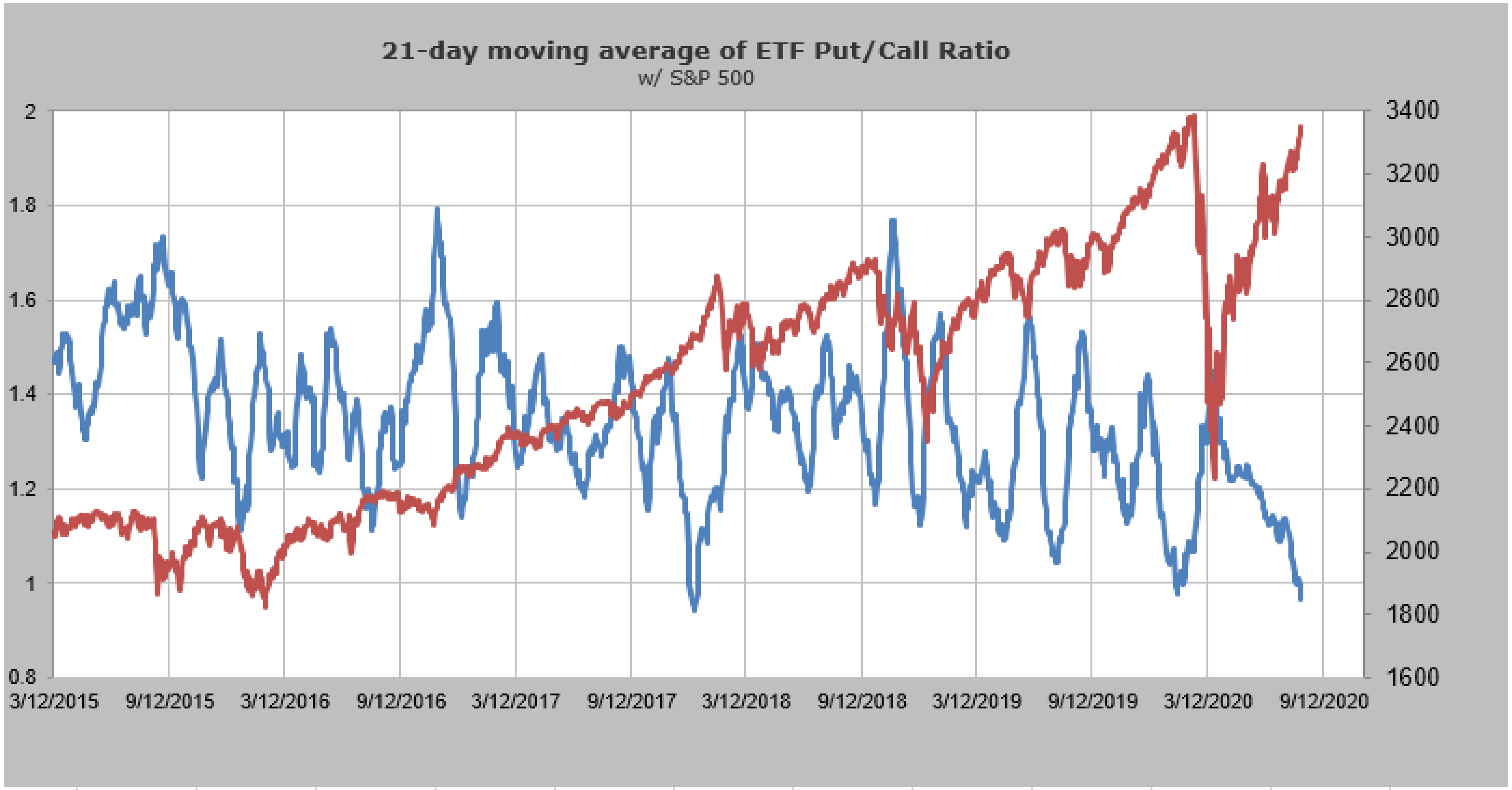
Software and semiconductors have been strong market leaders in recent months. Some of the biggest runs in individual stocks have been software or internet stocks. Because of their leadership status, the recent failed break above the July high in IGV (the largest software ETF by assets) following the bearish momentum divergence is a bit of concern. However, momentum still is above the prior lows, holding a bullish range. Relative strength has broken down for both semi's and software (bottom panel of both charts). I'm watching the prior lows in momentum as signs of possible support and buyer interest. If these don't hold then we may see some rotation (bullish thesis) to other corners of the market or an overall weakening in equities as a whole (bearish thesis).

As large of a share tech has taken in the market, a rotation away from tech without the indices suffering seems a tough needle to thread. We'll see if bulls can accomplish it. AAPL alone is 6.5% of the S&P 500, the largest weighting a stock has ever been for the index.

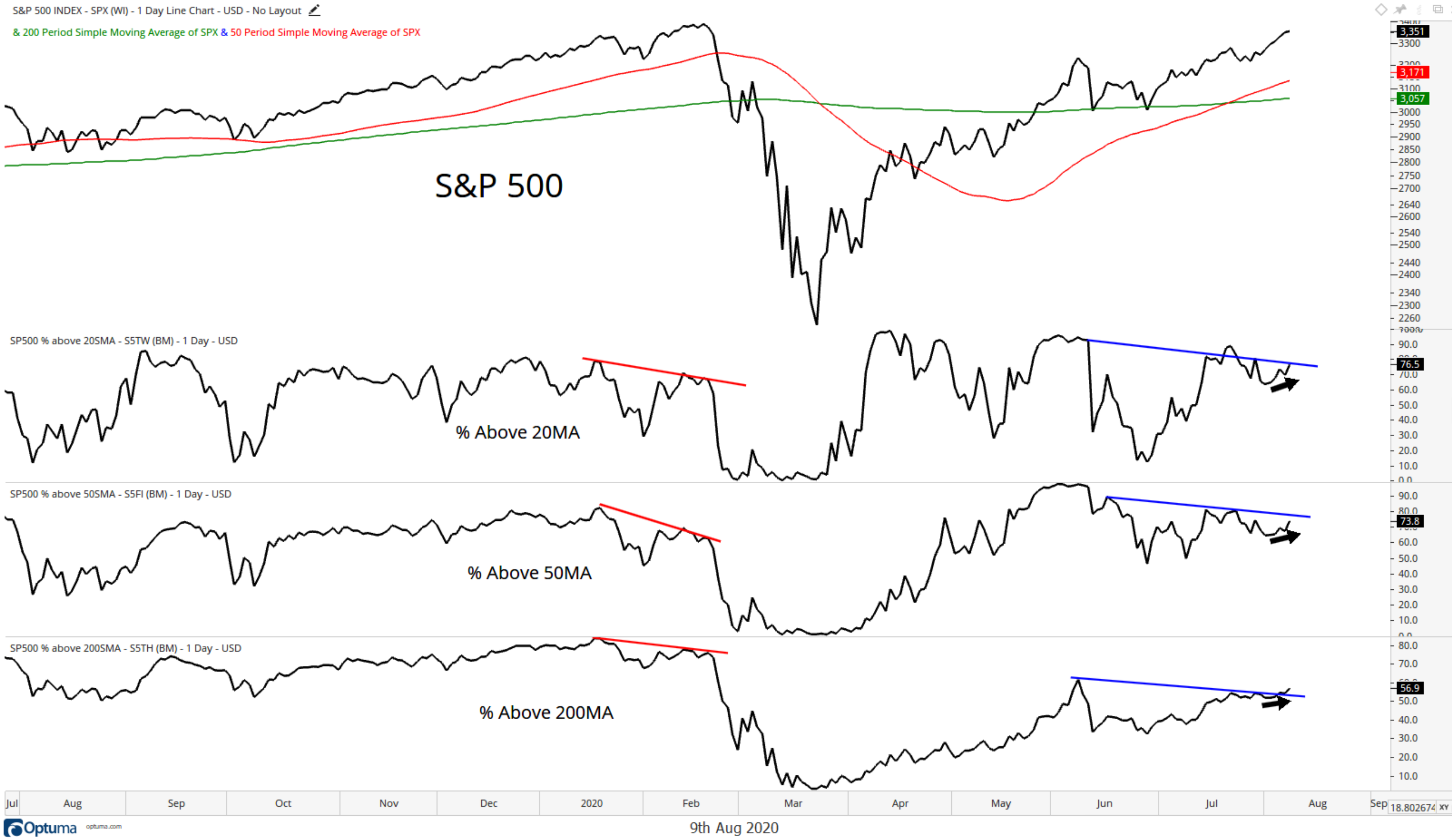


I mentioned earlier the consecutive weeks of gains for gold, a similar pattern has played out for the S&P 500 which has been up for six days in a row. This is more common than the gold pattern, but not something the index has done since 2019. As you can seen, most of the time the trend remained positive for equities, with a few short-term pullbacks soon following. Overall, this isn't a bearish chart for equities long-term but also not a trend that can continue forever.

For those curious, the record (since 1950) for most consecutive days up was set in April 1975 with 14 days.

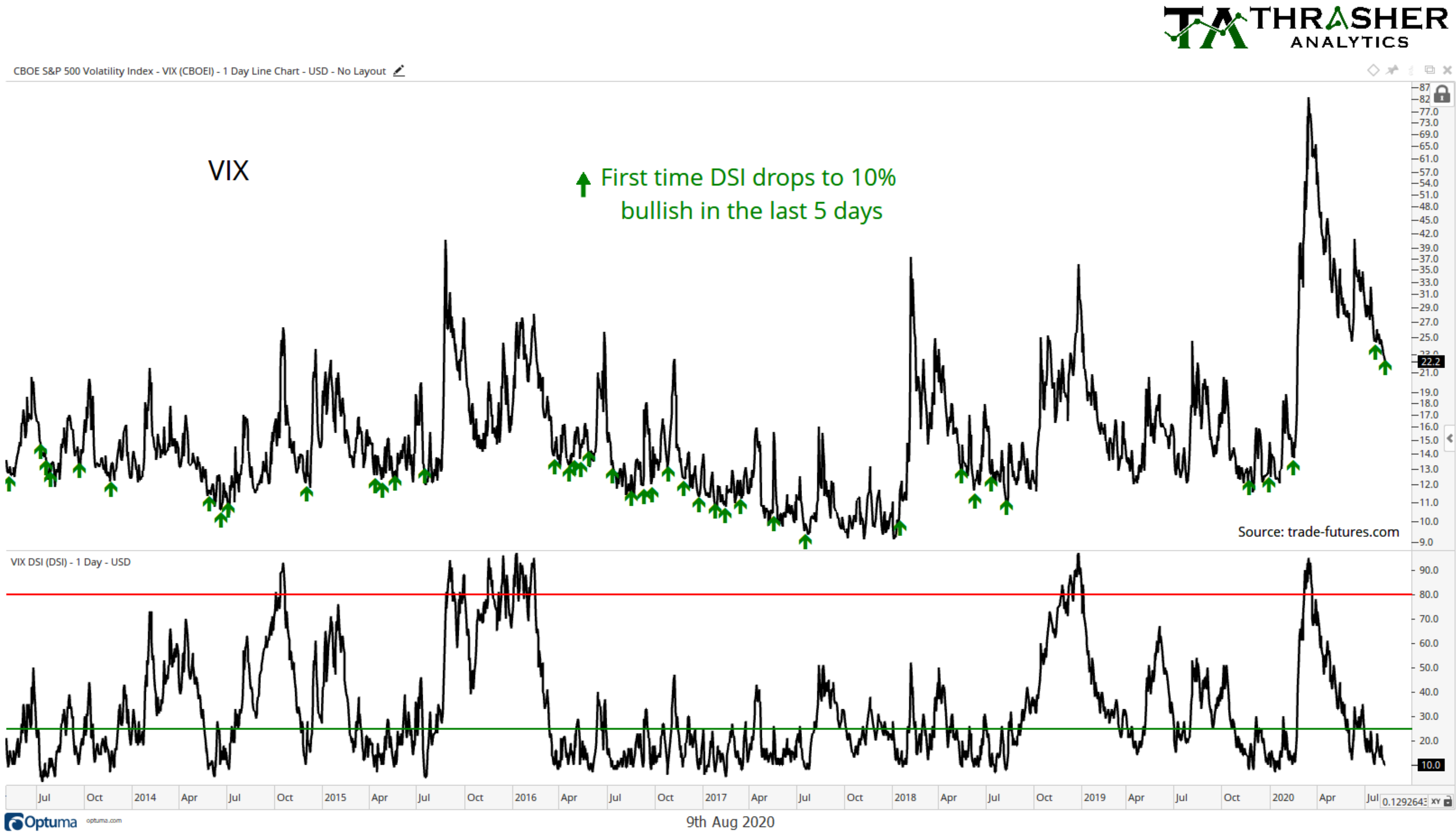


As with the other sentiment gauges, the put/call ratio has fallen off a cliff for equities and the same can ben seen for ETFs. The 1-month (21-day) average of the ETF put/call ratio (chart courtesy of [Helene Meisler]) has fallen under the level seen back in February, which was extremely low on its own merit. We're now back near levels seen during the heyday of January 2018 and the price action 'feels' like early 2018 too as stocks only go up as Dave Portnoy would often like to remind you. Unfortunately that's just not true, they don't always go up but based on how the options market is treating this trading environment, no one seems to want to own a put on ETFs.

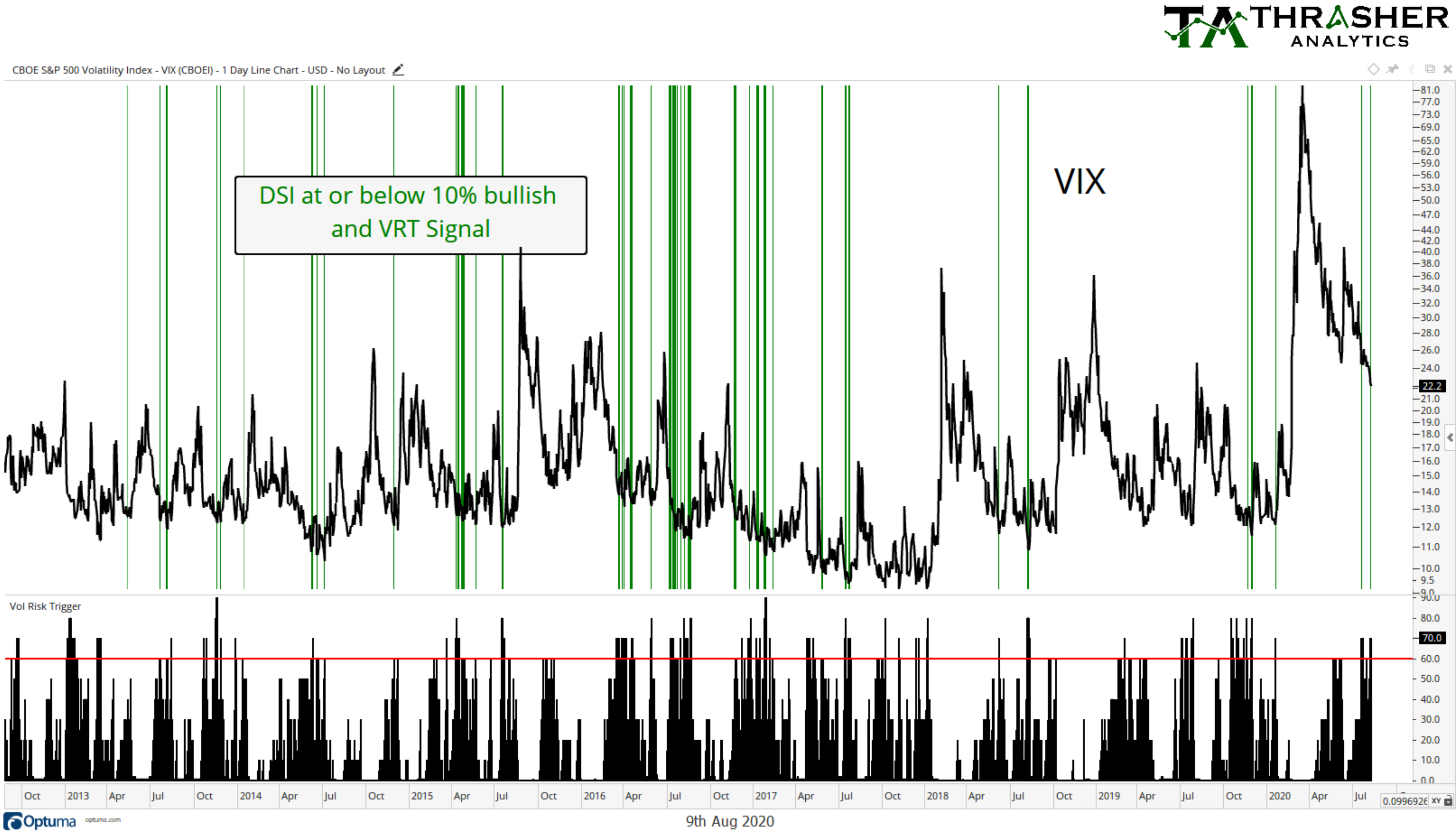


Breadth has been improving for the S&P 500, with a recent rise in % above the 20-day, 50-day, and 200-day MA. There's still some signs of a bearish divergence here with lower highs for the % above 20-day and 50-day. However, the improvement in long-term breadth w/ the % above 200-day is very encouraging. Hopefully these trends continue to strengthen this week if we do see the index hold firm.

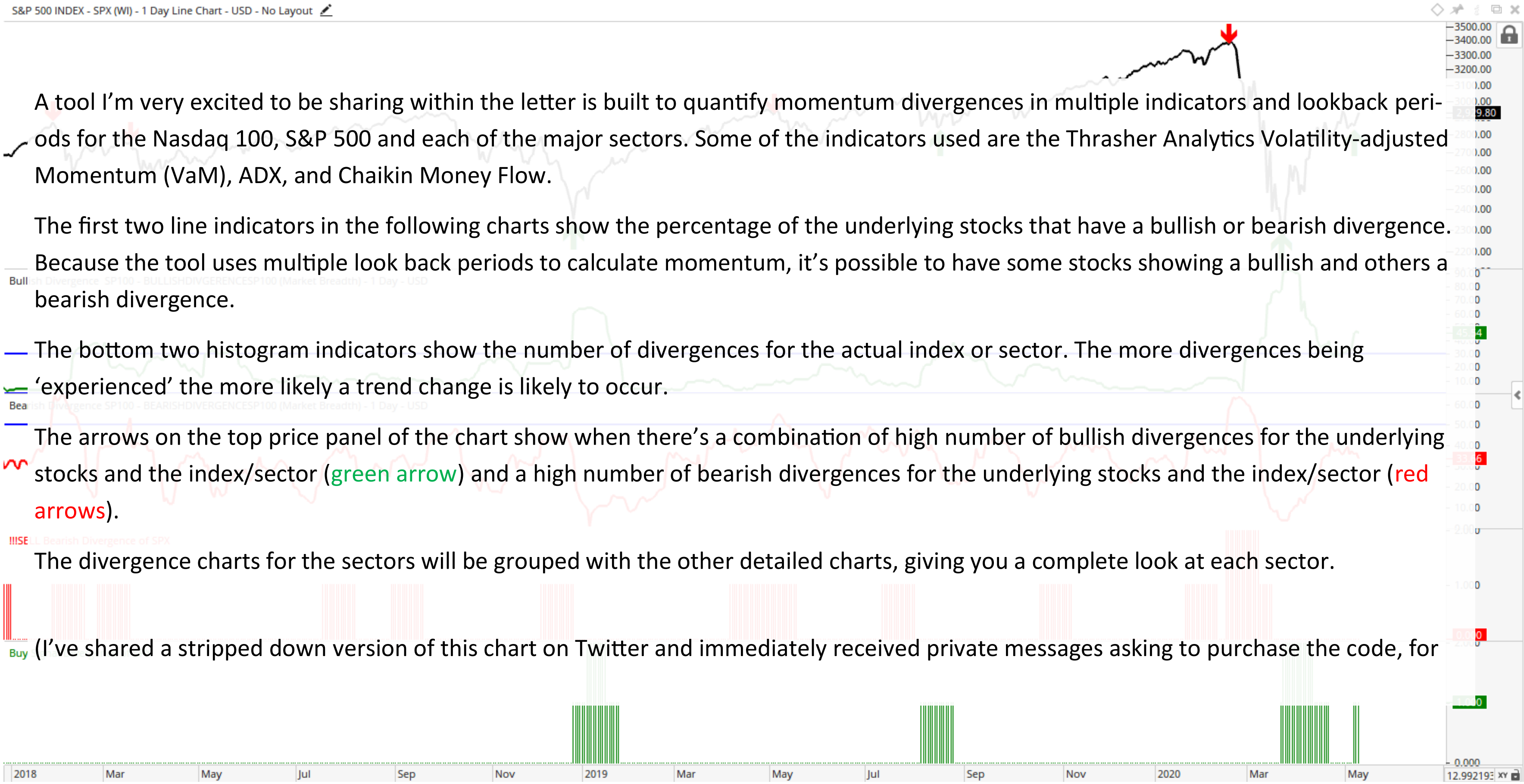
The Volatility index and the VIX of the VIX are in disagreement. While the VIX dropped to fresh multi-month low last week, the VVIX held strong, remaining above its own May low. It's not often for the two to not confirm each other, but when they do the VVIX often comes out the 'smart' one, with the VIX moving to confirm the strength (or weakness) in the VVIX. In this case, that would suggest the VIX to rise back to 25 (ish) which would be fitting based on the signals from the VRT and volatility seasonality in August.



The DSI data for the VIX suggests there are hardly any volatility bulls left as %. It's not usual to see 10% bullish for the VIX, as shown by the green arrows on the chart above. If you're wondering how this looks when we combine it with the VRT, the next page has your answer...



The above chart is the VRT chart but shows a blue bar only when the VRT signals and Daily Sentiment Index is at or below 10% bullish for the VIX. This strengthens the argument for a move higher volatility. Rarely did we see the VRT signal and sentiment be this low without a move higher in VIX not follow. Of course, nothing is guaranteed but I view everything through the prism of risk/reward and this suggests there's much greater risk to vol expanding than continuing to move lower into the teens.



A tool I'm very excited to be sharing within the letter is built to quantify momentum divergences in multiple indicators and lookback periods for the Nasdaq 100, S&P 500 and each of the major sectors. Some of the indicators used are the Thrasher Analytics Volatility-adjusted Momentum (VaM), ADX, and Chaikin Money Flow.

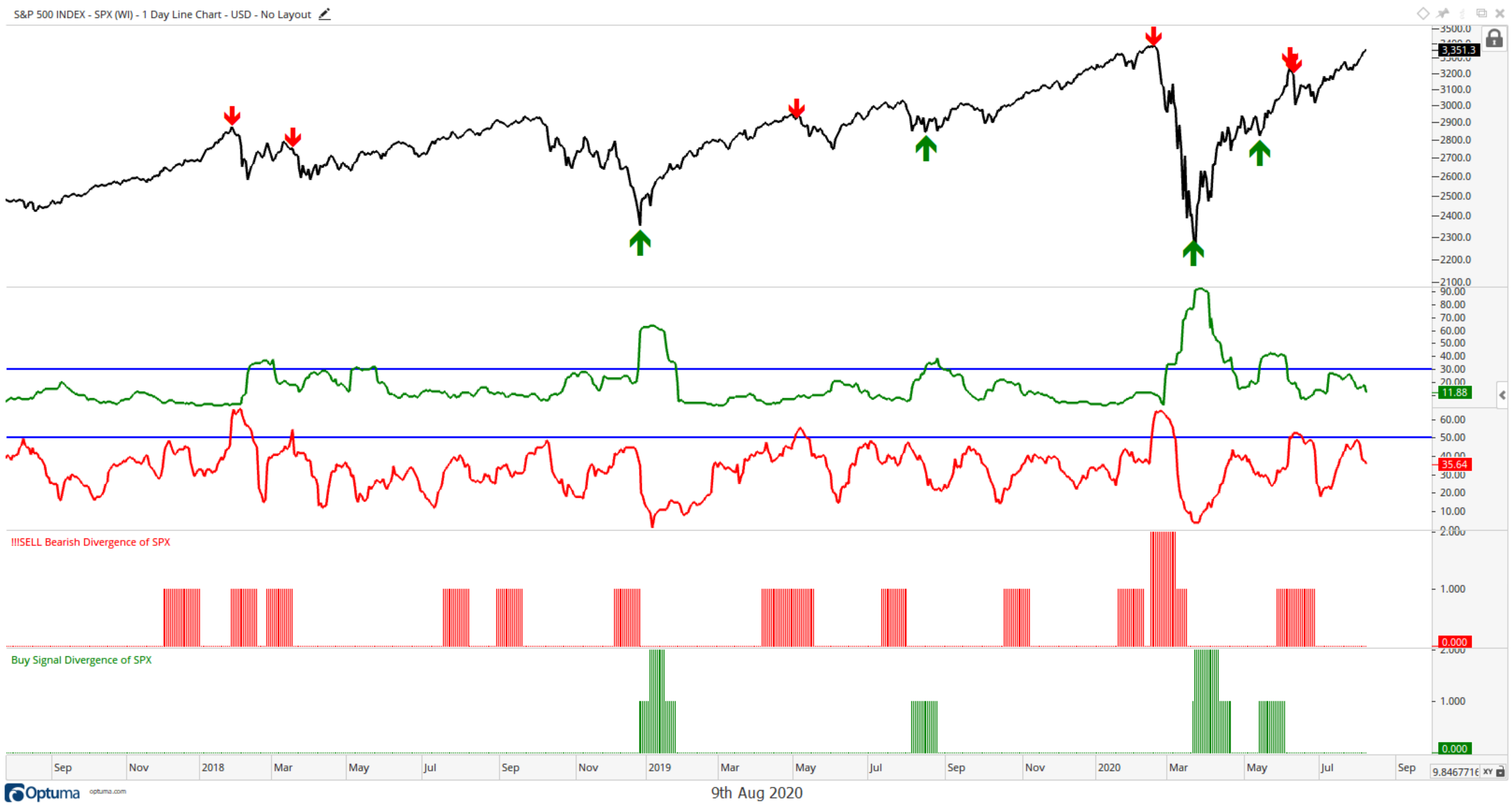
The first two line indicators in the following charts show the percentage of the underlying stocks that have a bullish or bearish divergence. Because the tool uses multiple look back periods to calculate momentum, it's possible to have some stocks showing a bullish and others a bearish divergence.

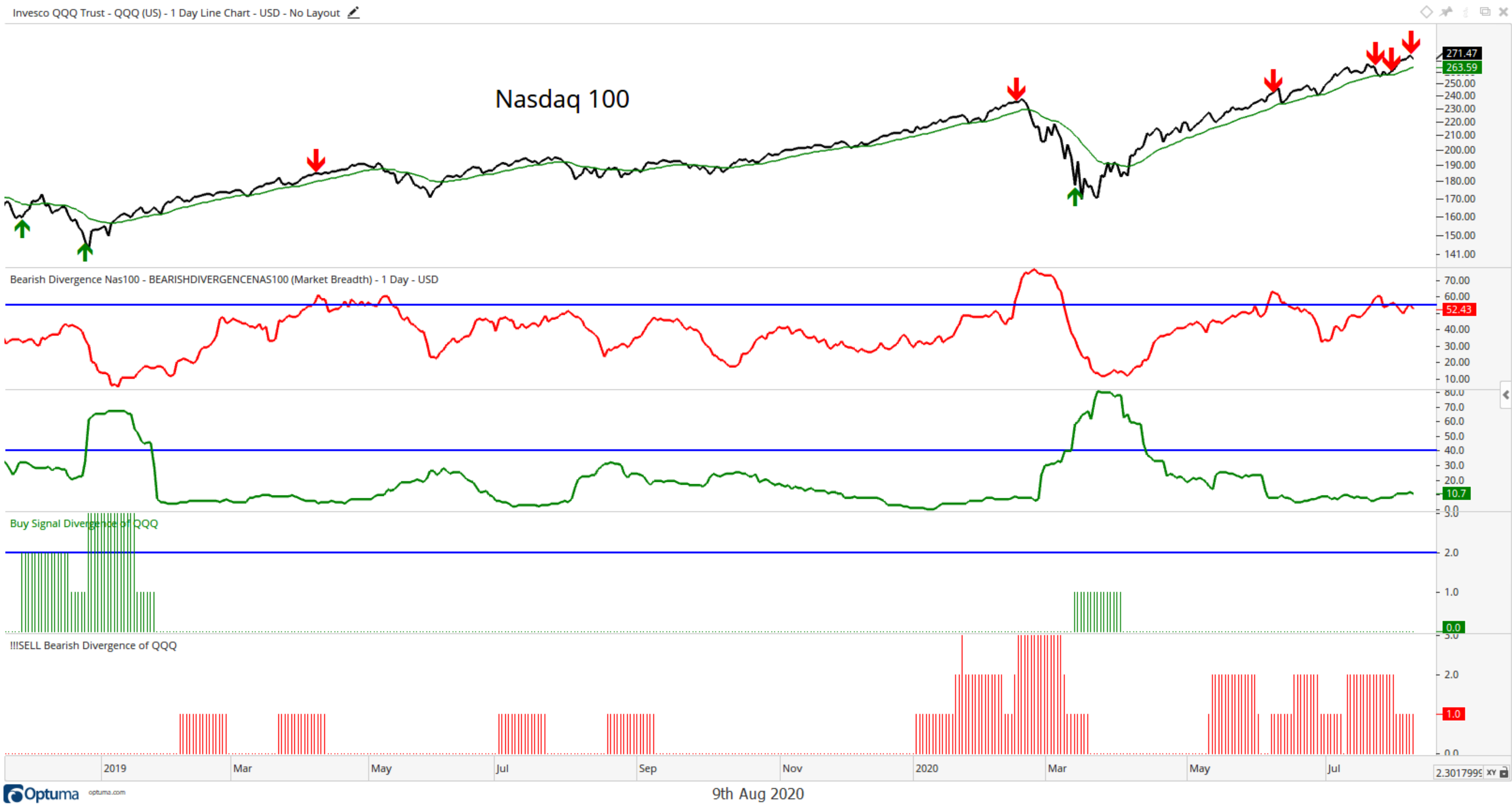
The bottom two histogram indicators show the number of divergences for the actual index or sector. The more divergences being 'experienced' the more likely a trend change is likely to occur.

The arrows on the top price panel of the chart show when there's a combination of high number of bullish divergences for the underlying stocks and the index/sector (green arrow) and a high number of bearish divergences for the underlying stocks and the index/sector (red arrows).

The divergence charts for the sectors will be grouped with the other detailed charts, giving you a complete look at each sector.

(I've shared a stripped down version of this chart on Twitter and immediately received private messages asking to purchase the code, for


S&P 500 INDEX - SPX (WI) - 1 Day Line Chart - USD - No Layout
3,351.3
11.88
35.64
!!!SELL Bearish Divergence of SPX
Buy Signal Divergence of SPX
Sep
Nov
2018
Mar
May
Jul
Sep
Nov
2019
Mar
May
Jul
Sep
Nov
2020
Mar
May
Jul
Sep
Optuma
9th Aug 2020



Invesco QQQ Trust - QQQ (US) - 1 Day Line Chart - USD - No Layout
Nasdaq 100
271.47
263.59
Bearish Divergence Nas100 - BEARISHDIVERGENCENAS100 (Market Breadth) - 1 Day - USD
52.43
10.7
Buy Signal Divergence of QQQ
!!!SELL Bearish Divergence of QQQ
2019
Mar
May
Jul
Sep
Nov
2020
Mar
May
Jul
Optuma
9th Aug 2020

One of the new sections of the report will include a more detailed look at the primary S&P sectors. This section will develop over time but initially will include two pages (three when the divergence data launches in the next report).

The first page will show a daily and weekly chart of the sector with two proprietary indicators. The first is a **Momentum Composite**, which allows momentum indicators to be viewed from a overbought and oversold lens as the indicator evaluates the z-score of multiple momentum indicators with varying lookback periods. When the underlying indicators are at historic extremes, they often are prone to mean-reversion price action, especially when grouped together as I've done with the Momentum Composite

The second tool is a **Volatility-Adjusted Momentum**, which uses a custom gauge of volatility applied to a traditional momentum indicator.

When used together, a great detail can be gleaned from what momentum is showing for the daily and weekly charts of each sector and I'll of course provide brief commentary to accompany them.

On the far right are **two watchlists,** showing stocks that make up each sector broken down by momentum and mean-reversion. The momentum list is the same tool used for the sector rotation model, a custom built indicator (different than the Momentum Composite) that evaluates the trend of a security and provides a score based on the attractiveness and sustainability of that trend. The higher the score the better.

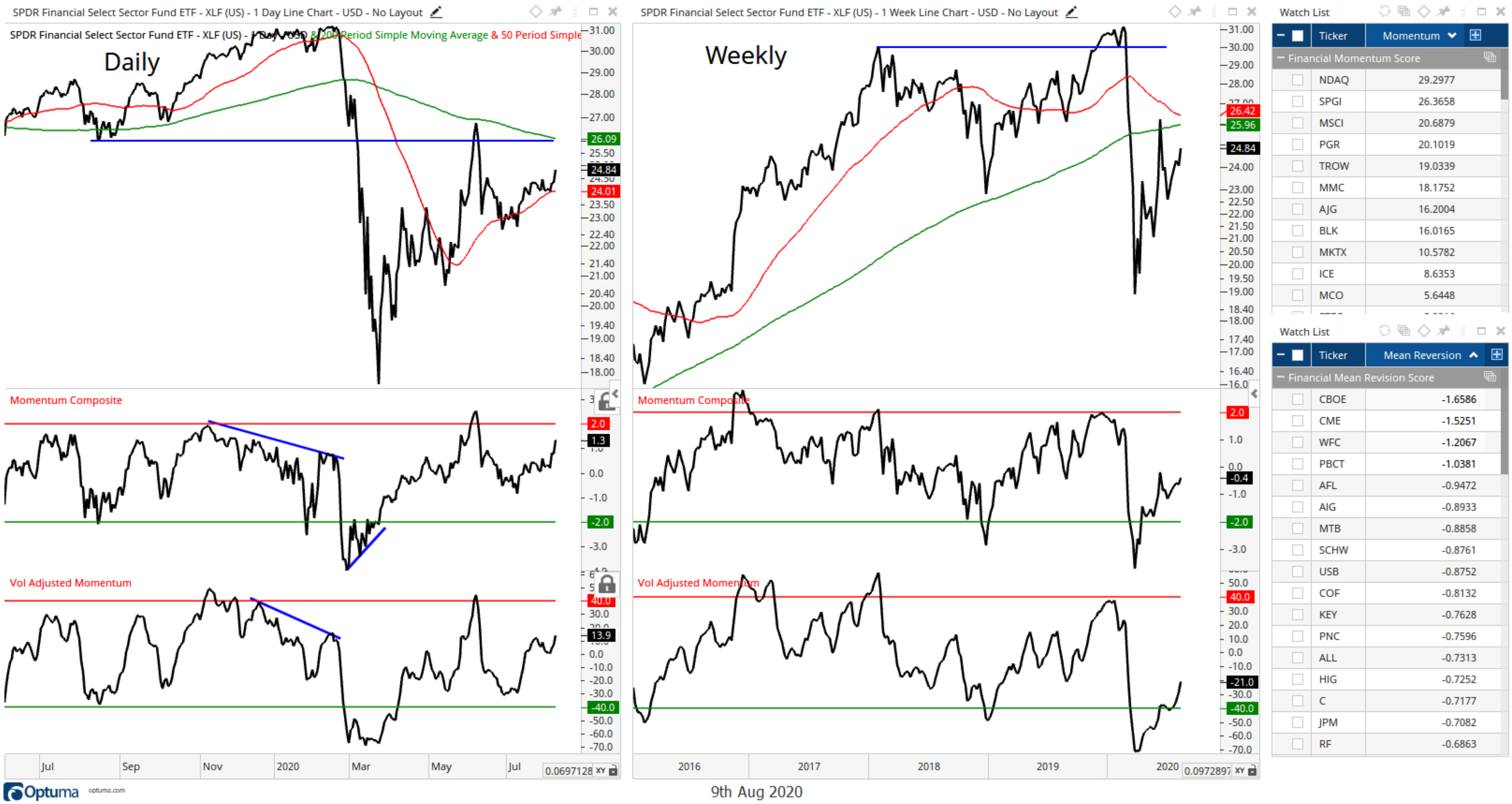
The second watchlist is the individual stocks of the sector sorted by respective Momentum Composite reading, shown as a z-score. Scores less than 2 are significant.

These watchlists can provide an excellent starting point for further research and analysis. Feel free to use these as idea generation. I'll have more details and example back tests in the future. These lists aren't intended to be buy/sell signals on their own.

The second page will show several standard breadth gauges for each sector, providing additional insight into the individual stock participation in the sector's price action.

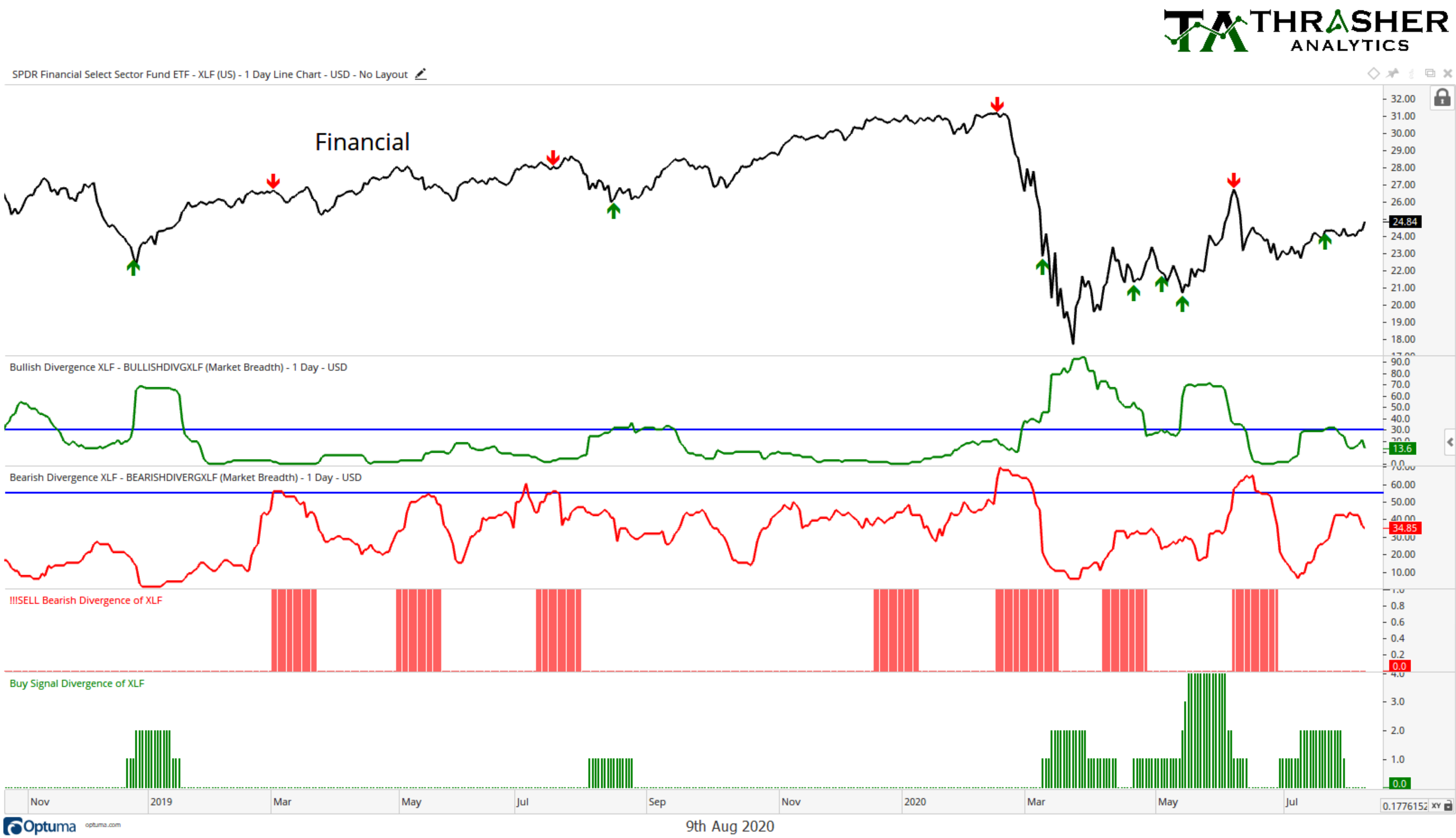
Optuma optuma.com

10th May 2020



XLF has held above the 50-day MA with improving momentum.

Breadth remains supportive.


SPDR Financial Select Sector Fund ETF - XLF (US) - 1 Day Line Chart - USD - No Layout
Financial
Bullish Divergence XLF - BULLISHDIVGXLF (Market Breadth) - 1 Day - USD
Bearish Divergence XLF - BEARISHDIVERGXLF (Market Breadth) - 1 Day - USD
!!!SELL Bearish Divergence of XLF
Buy Signal Divergence of XLF
24.84
13.6
34.85
Nov
2019
Mar
May
Jul
Sep
Nov
2020
Mar
May
Jul
Optuma
9th Aug 2020

Watch List

Ticker	Momentum
Tech Sector Momentum Score	
PYPL	53.2102
AAPL	51.4791
NVDA	50.1209
CDNS	48.9739
AMD	40.1728
NOW	36.6562
SNPS	35.2723
ACN	33.1883
QCOM	30.2679
BR	28.4645
MSFT	27.3477

Watch List

Ticker	Mean Reversion
Tech Sector Mean Reversion Score	
WDC	-1.3271
INTC	-1.3206
ADP	-1.2575
FLIR	-1.2238
STX	-1.1203
XRX	-1.1097
FLT	-0.9473
MSI	-0.8186
NTAP	-0.7778
ADS	-0.6437
PAYX	-0.5552
IBM	-0.3962
CDW	-0.3268
FISV	-0.2036
LDOS	-0.1809
IT	-0.1324
DXC	-0.1162
GPN	0.0281
WLL	0.0306

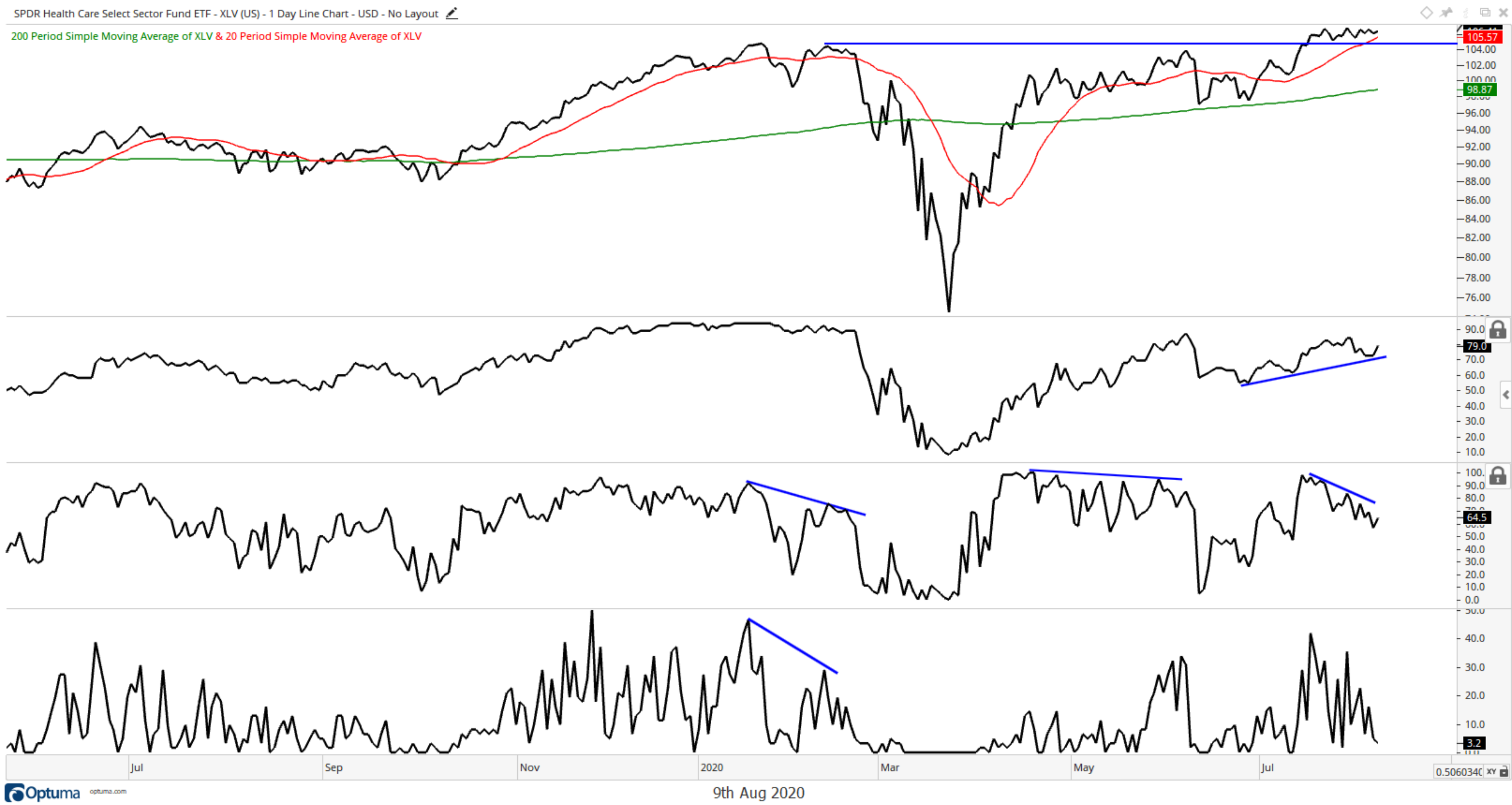
9th Aug 2020

XLK has cleared its bearish momentum divergence with price holding above its breakout point.

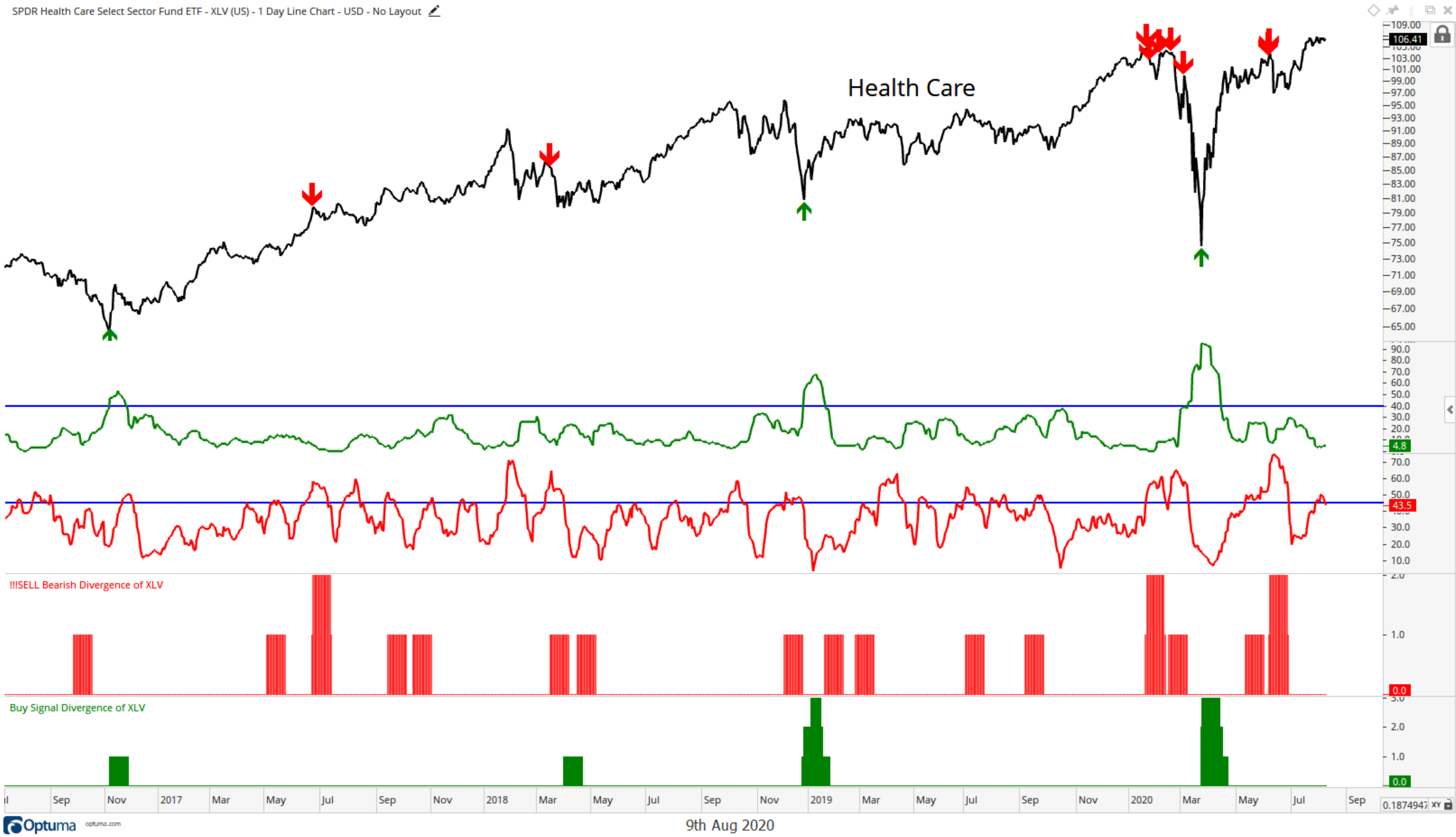
Declining % of tech stocks above the 200-day MA (top panel) with a ceiling on the % making 3-month high just under 30%. Breadth not looking great for tech.

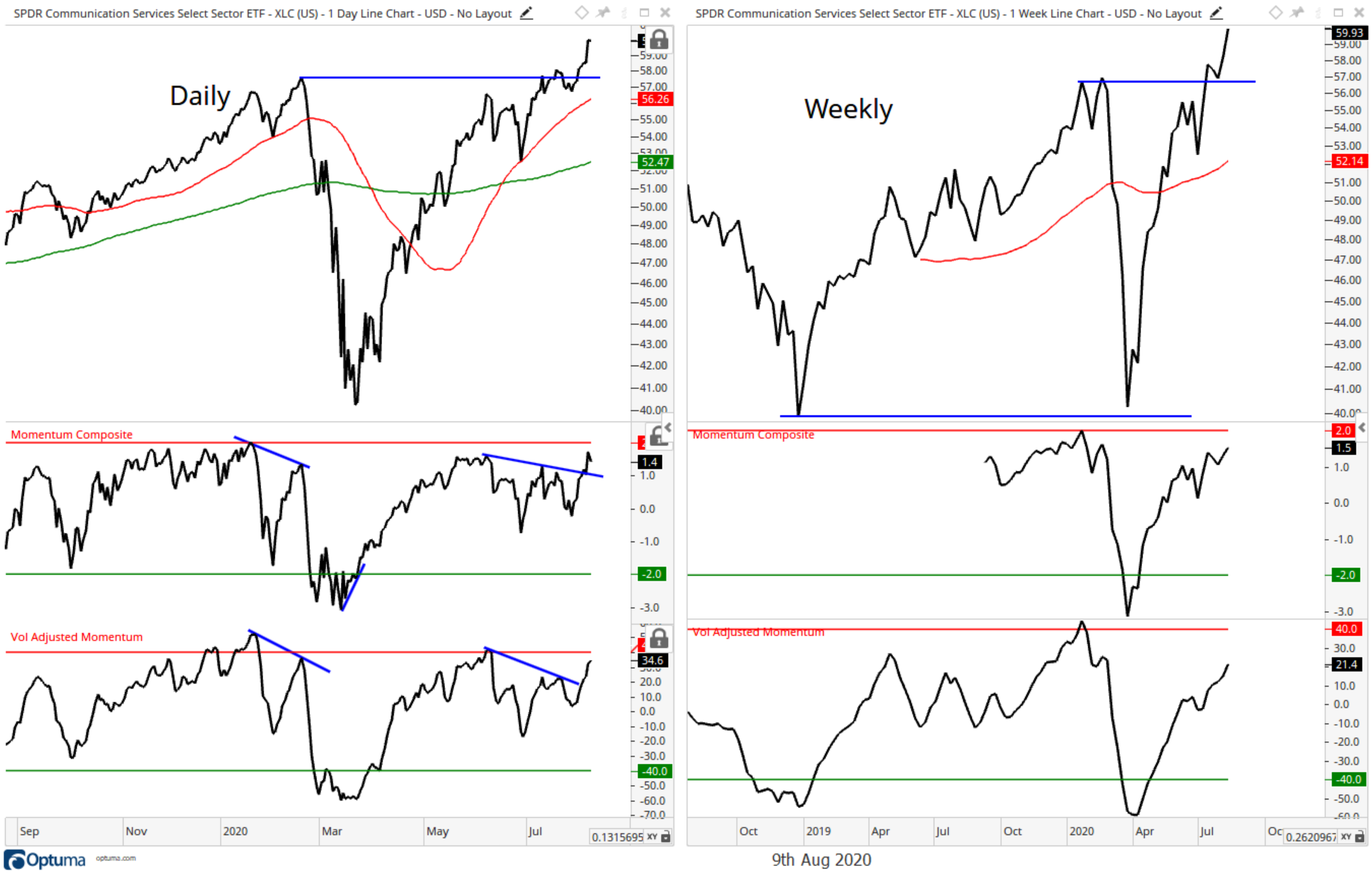

SPDR Technology Select Sector Fund ETF - XLK (US) - 1 Day Line Chart - USD - No Layout
Technology
Buy Signal Divergence of XLK
!!!SELL Bearish Divergence of XLK
113.74
8.5
45.1
Sep
Nov
2019
Mar
May
Jul
Sep
Nov
2020
Mar
May
Jul
9th Aug 2020

XLV holding its breakout but still has weekly bearish divergences.



Breadth remains supportive for the % Above 200-day (top panel) with some weakness short-term in % above 20-day (middle panel).


SPDR Health Care Select Sector Fund ETF - XLV (US) - 1 Day Line Chart - USD - No Layout
Health Care
!!!SELL Bearish Divergence of XLV
Buy Signal Divergence of XLV
Sep
Nov
2017
Mar
May
Jul
Sep
Nov
2018
Mar
May
Jul
Sep
Nov
2019
Mar
May
Jul
Sep
Nov
2020
Mar
May
Jul
Sep
9th Aug 2020



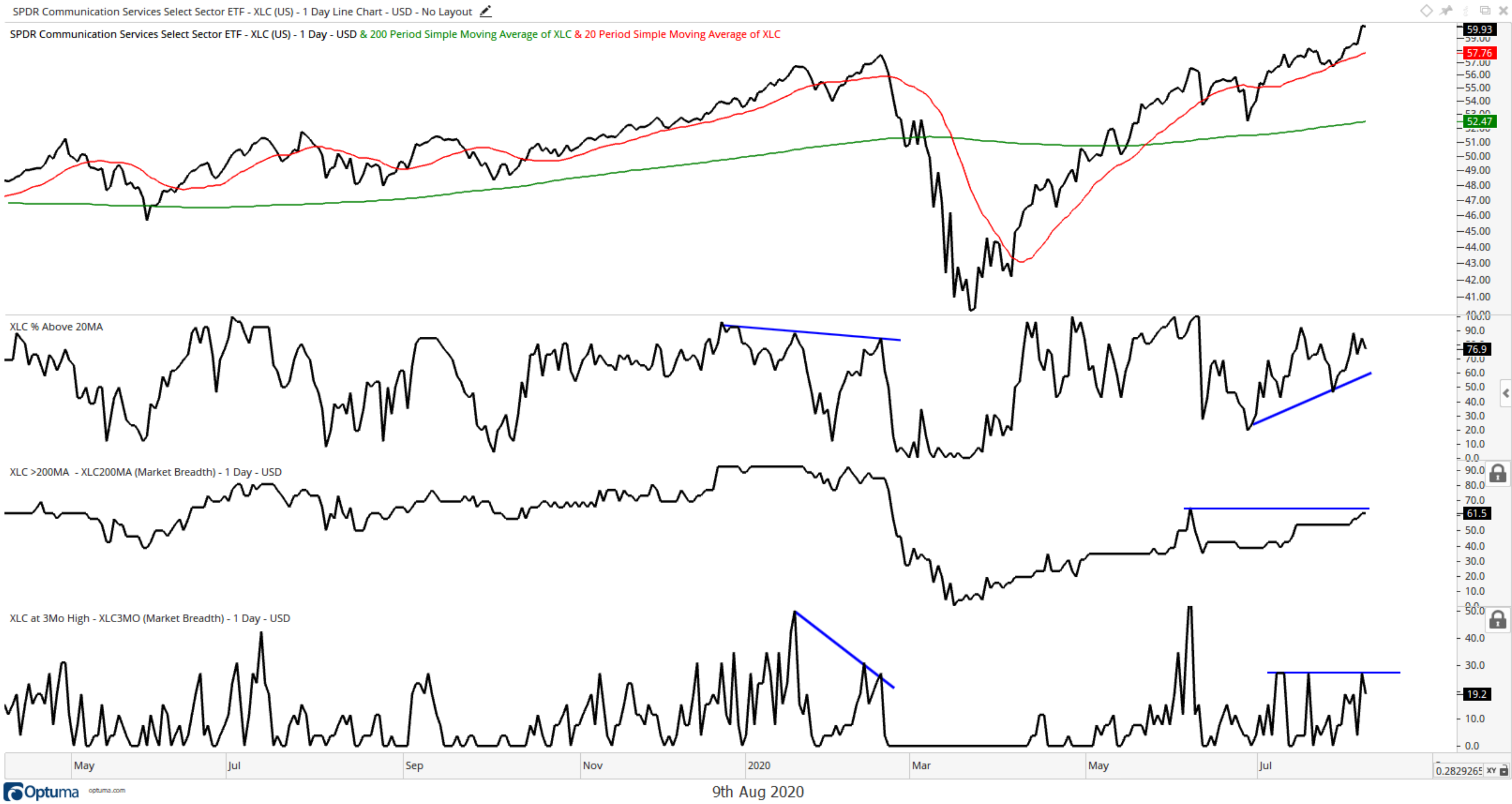
Watch List

Ticker	Momentum
Communications Momentum Score	
TTWO	40.0619
ATVI	33.8758
EA	32.9976
TMUS	32.7472
CHTR	27.3845
FB	17.7279
GOOGL	10.2893
GOOG	8.4043
NWSA	7.7085
NWS	4.3420
CMCSA	3.0458

Watch List

Ticker	Mean Reversion
Communications Mean Reversion	
OMC	-1.1518
FOXA	-1.1281
T	-1.0617
DISCA	-1.03
FOX	-1.0171
DISCK	-0.9728
LYV	-0.8231
CTL	-0.4305
IPG	-0.3426
VIAC	-0.1254
DIS	0.2133
CMCSA	0.2498
DISH	0.2704
VZ	0.4318
TWTR	0.6450
NWS	0.9167
NWSA	1.1022
GOOG	1.1466
GOOGL	1.1889

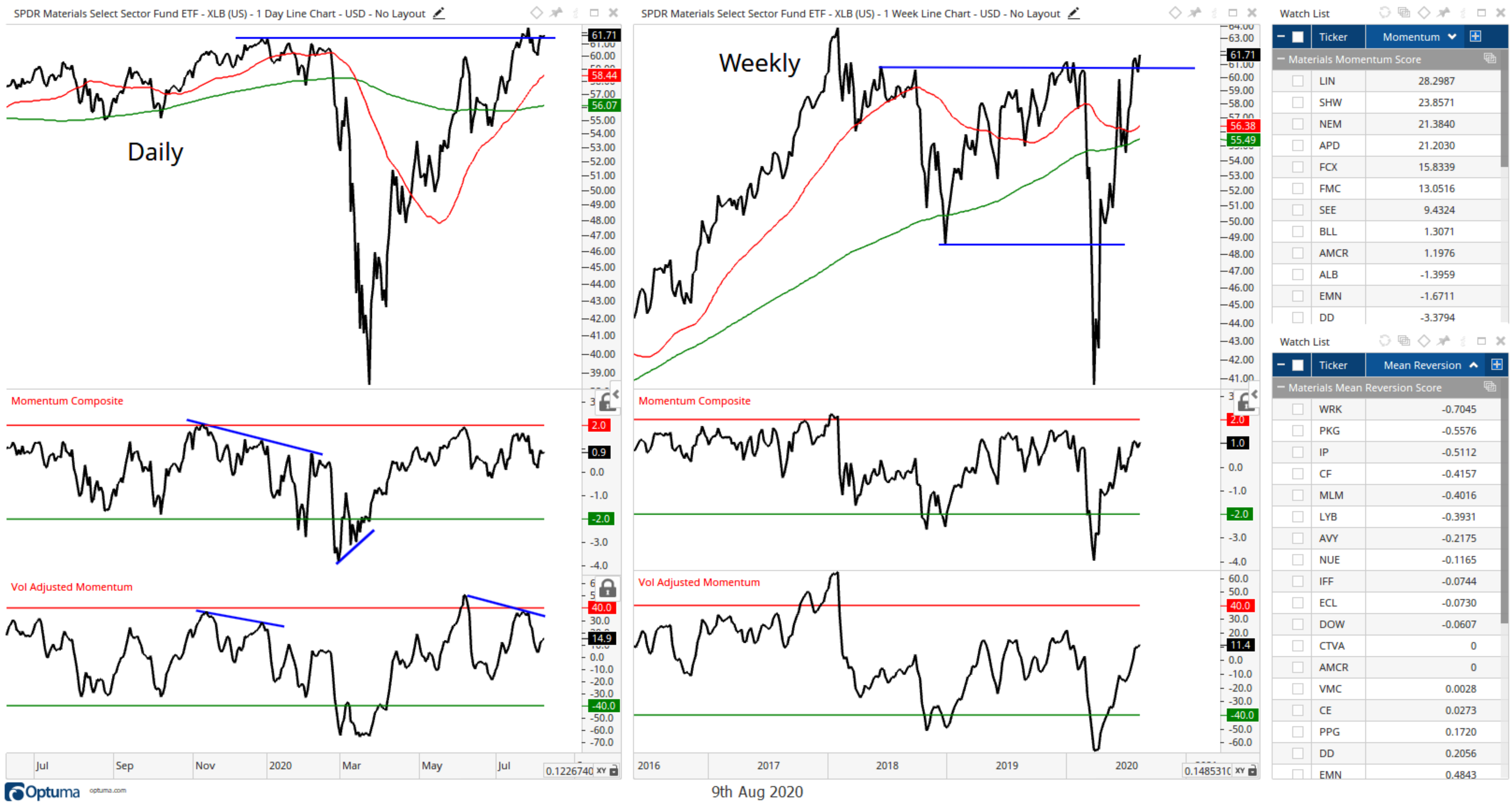
XLC holding on to its breakout, closing out the bearish momentum divergences.



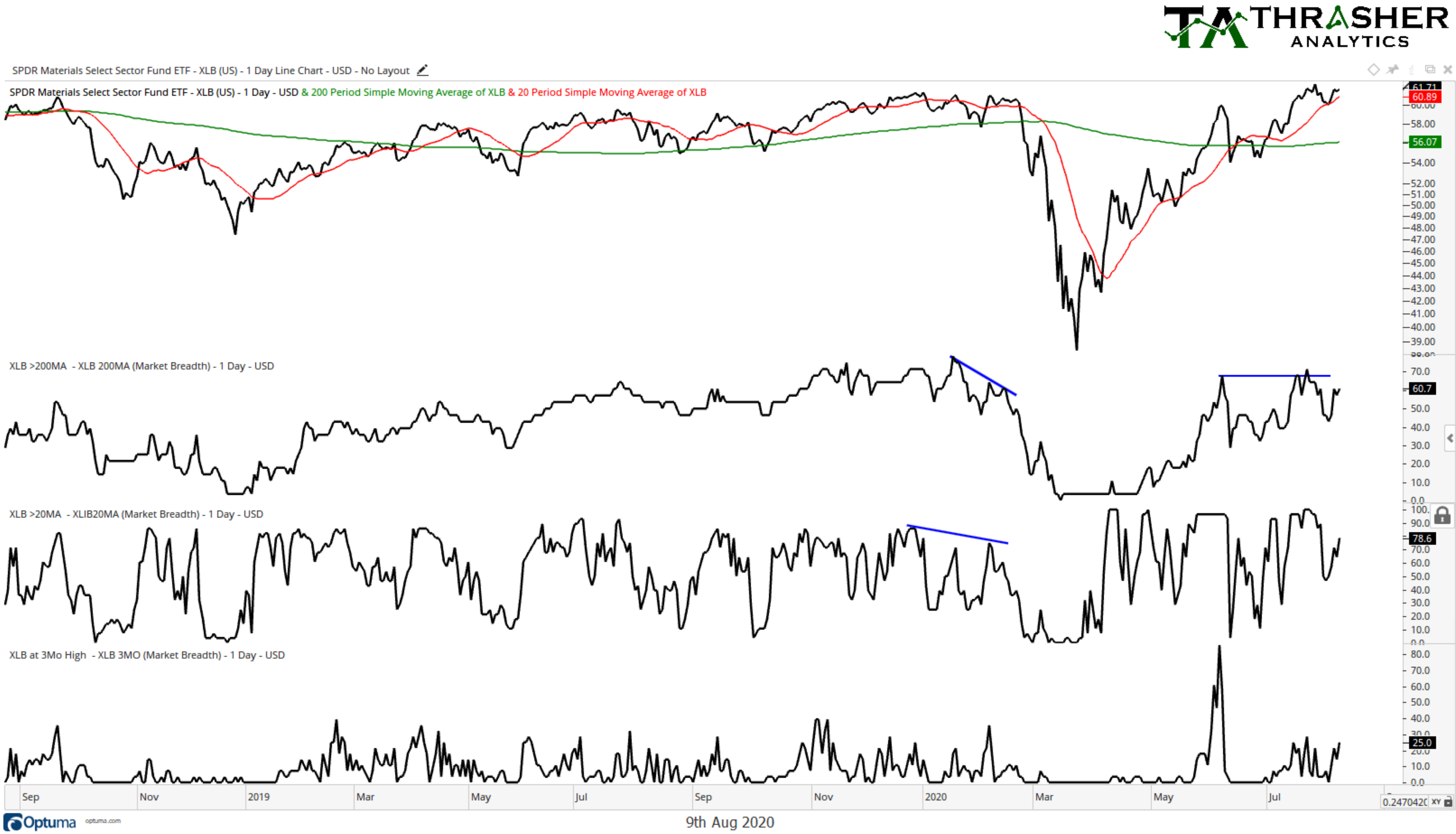
Supportive short-term breadth of %20MA but no improvement in 3 month high or %200MA.


SPDR Communication Services Select Sector ETF - XLC (US) - 1 Day Line Chart - USD - No Layout
Communications
Bullish Divergence XLC - BULLISHDIVGXLC (Market Breadth) - 1 Day - USD
Bearish Divergence XLC - BEARISHDIVGXLC (Market Breadth) - 1 Day - USD
!!!SELL Bearish Divergence of XLC
Buy Signal Divergence of XLC
Jul
Sep
Nov
2019
Mar
May
Jul
Sep
Nov
2020
Mar
May
Jul
Sep
59.93
11.5
46.15
9th Aug 2020

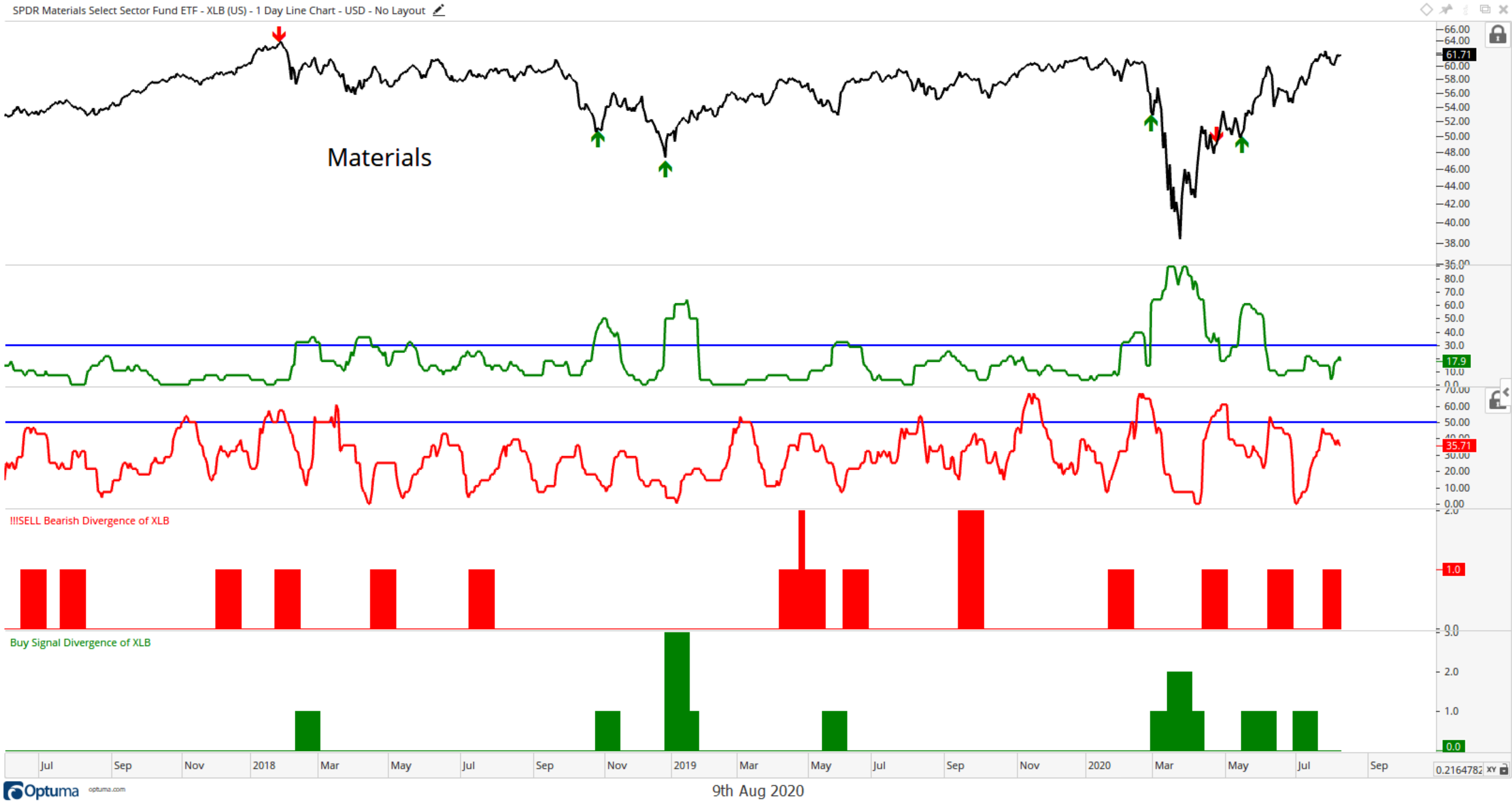
THRASHER ANALYTICS



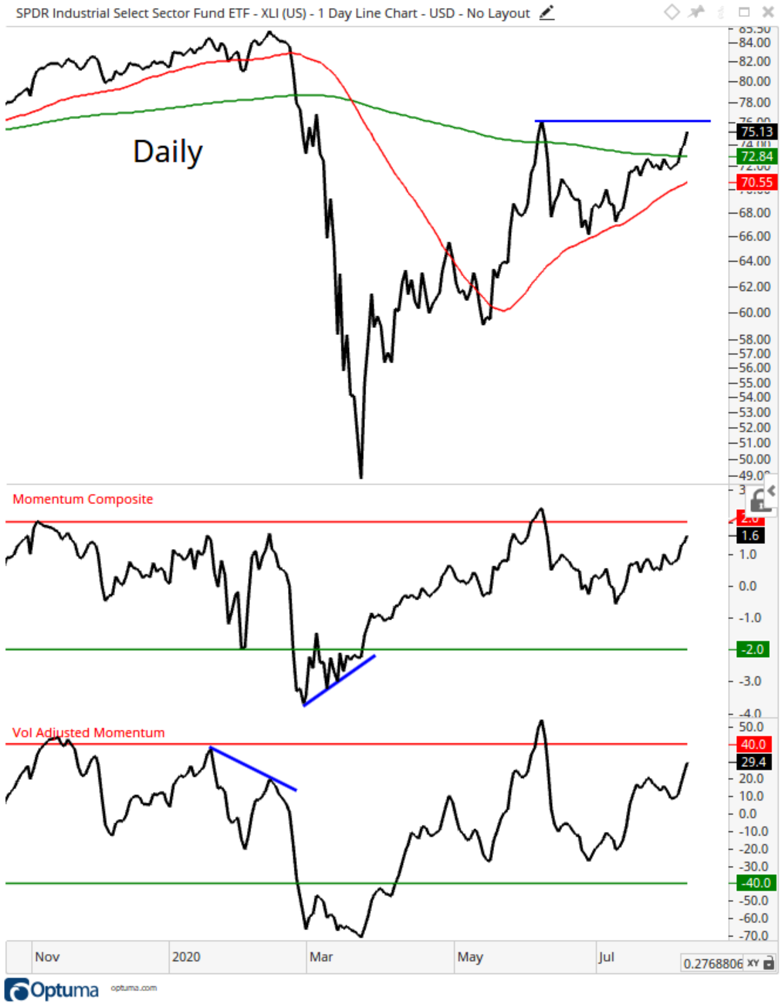
XLB right at its breakout point.

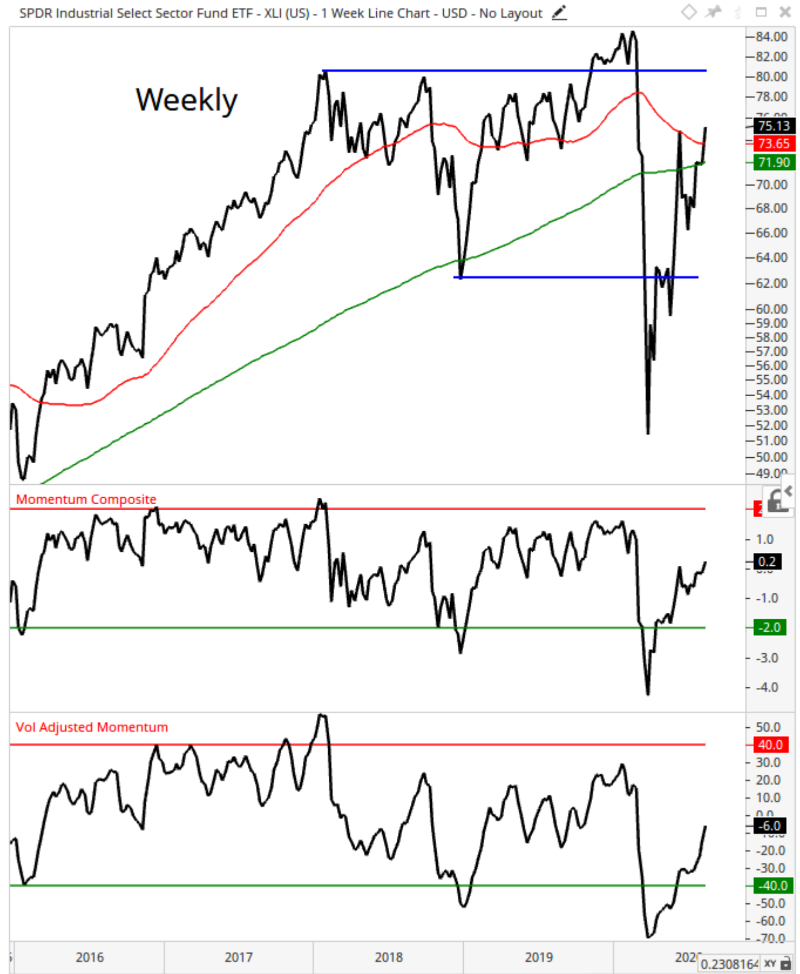


Breadth is positive for XLB.


SPDR Materials Select Sector Fund ETF - XLB (US) - 1 Day Line Chart - USD - No Layout
Materials
61.71
17.9
35.71
!!!SELL Bearish Divergence of XLB
Buy Signal Divergence of XLB
Jul
Sep
Nov
2018
Mar
May
Jul
Sep
Nov
2019
Mar
May
Jul
Sep
Nov
2020
Mar
May
Jul
Sep
Optuma
9th Aug 2020

Industrial Sector





Watch List

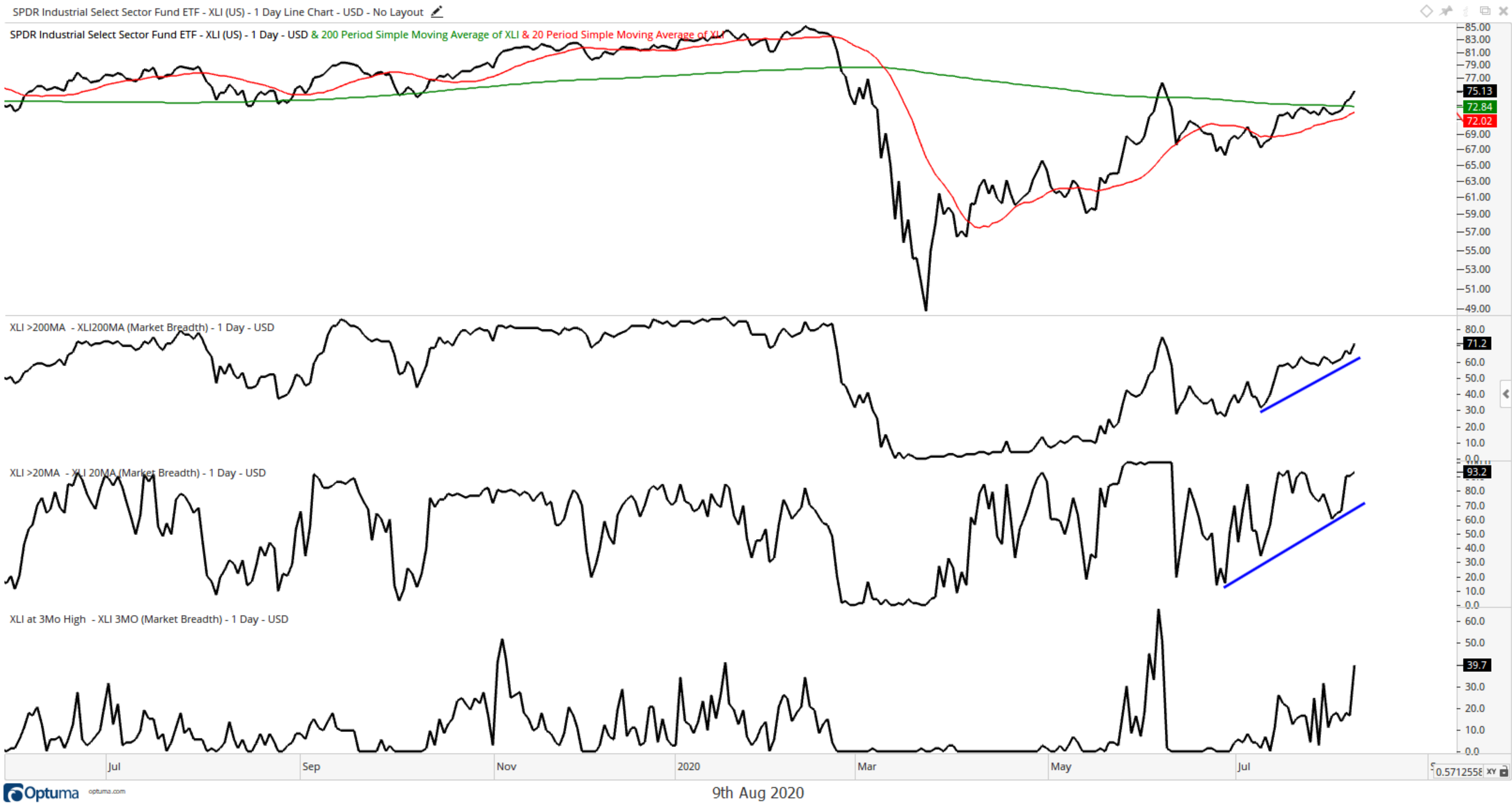
Ticker	Momentum
Industrial Momentum Score	
ROL	47.4538
CARR	45.5103
UPS	42.9232
OTIS	40.8799
MAS	38.5890
FAST	37.9567
ROP	36.5270
CHRW	32.9139
VRSK	29.9992
INFO	29.6057
CMI	27.5139

Watch List

Ticker	Mean Reversion
Industrial Mean Reversion Score	
HII	-1.3245
LHX	-1.1731
GE	-1.1427
RTX	-1.0405
DAL	-1.0228
LUV	-0.9497
UAL	-0.9126
BA	-0.8382
ALK	-0.8039
AAL	-0.7731
HWM	-0.7390
FLS	-0.6653
ALLE	-0.6639
NOC	-0.4317
GD	-0.4217
HON	-0.2569
NLSN	-0.2013
TDG	-0.1665

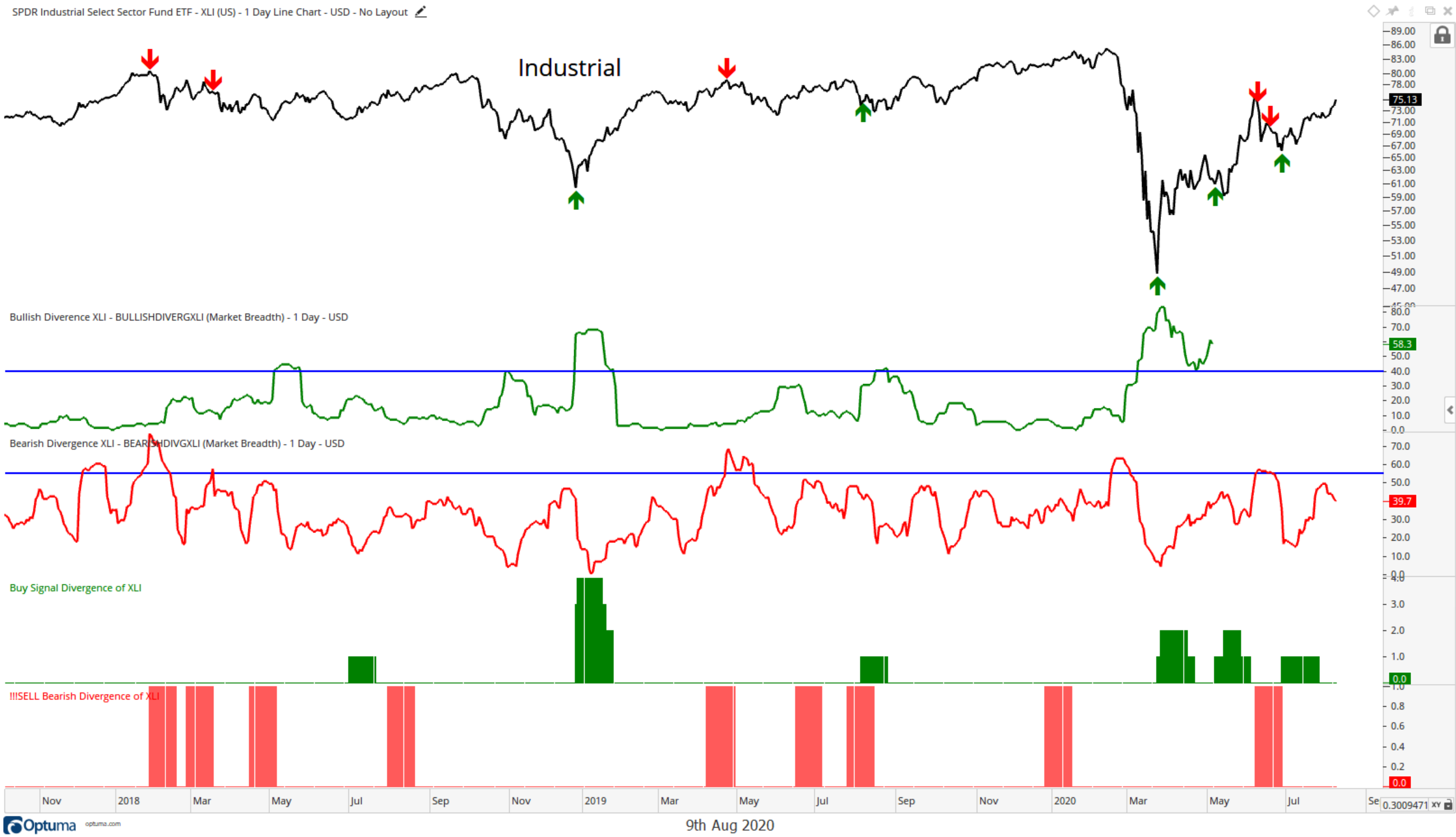
9th Aug 2020

XLI is just under the prior June high and closed above the 200-day MA.



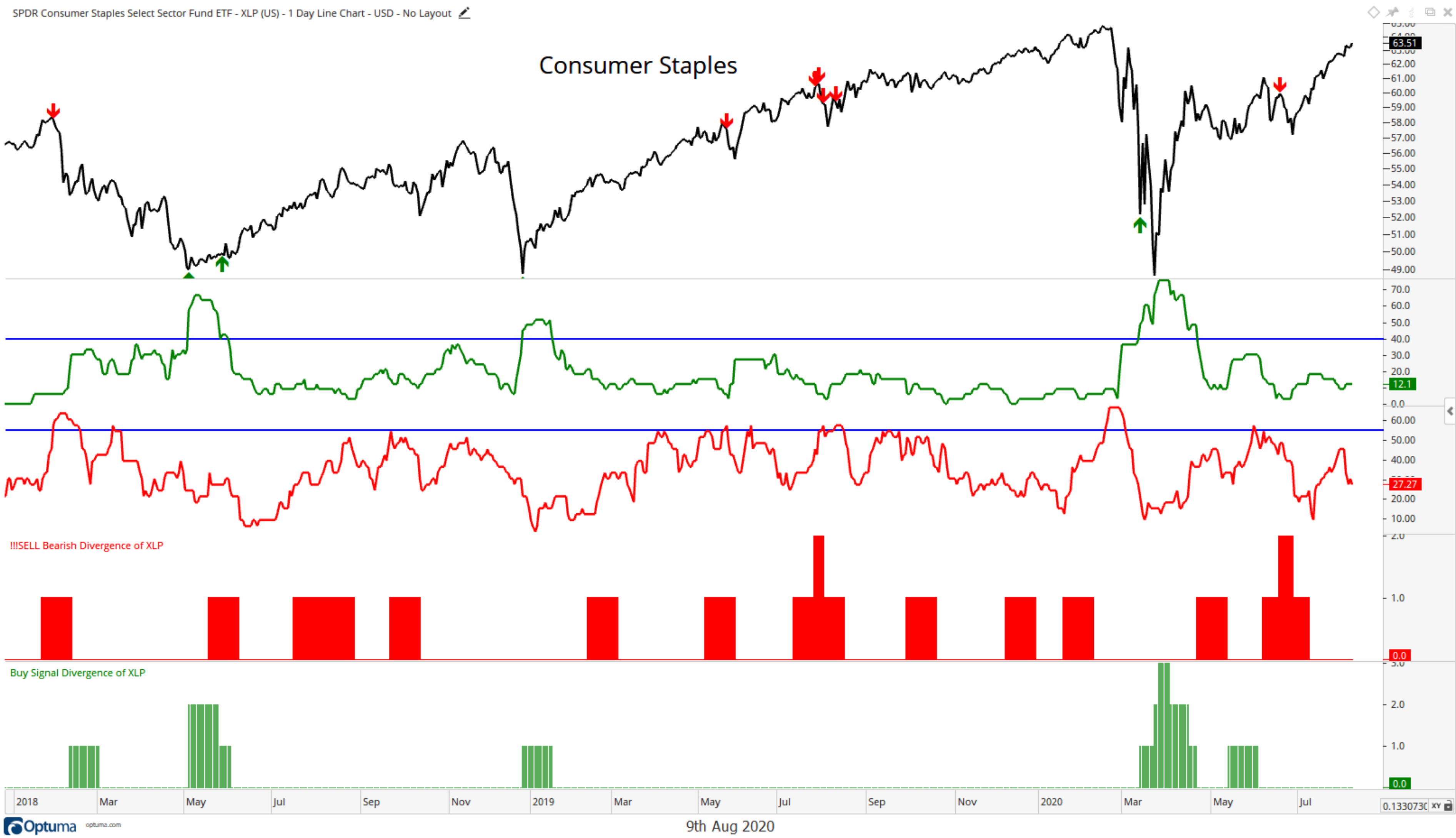
Breadth continues to track price trend.

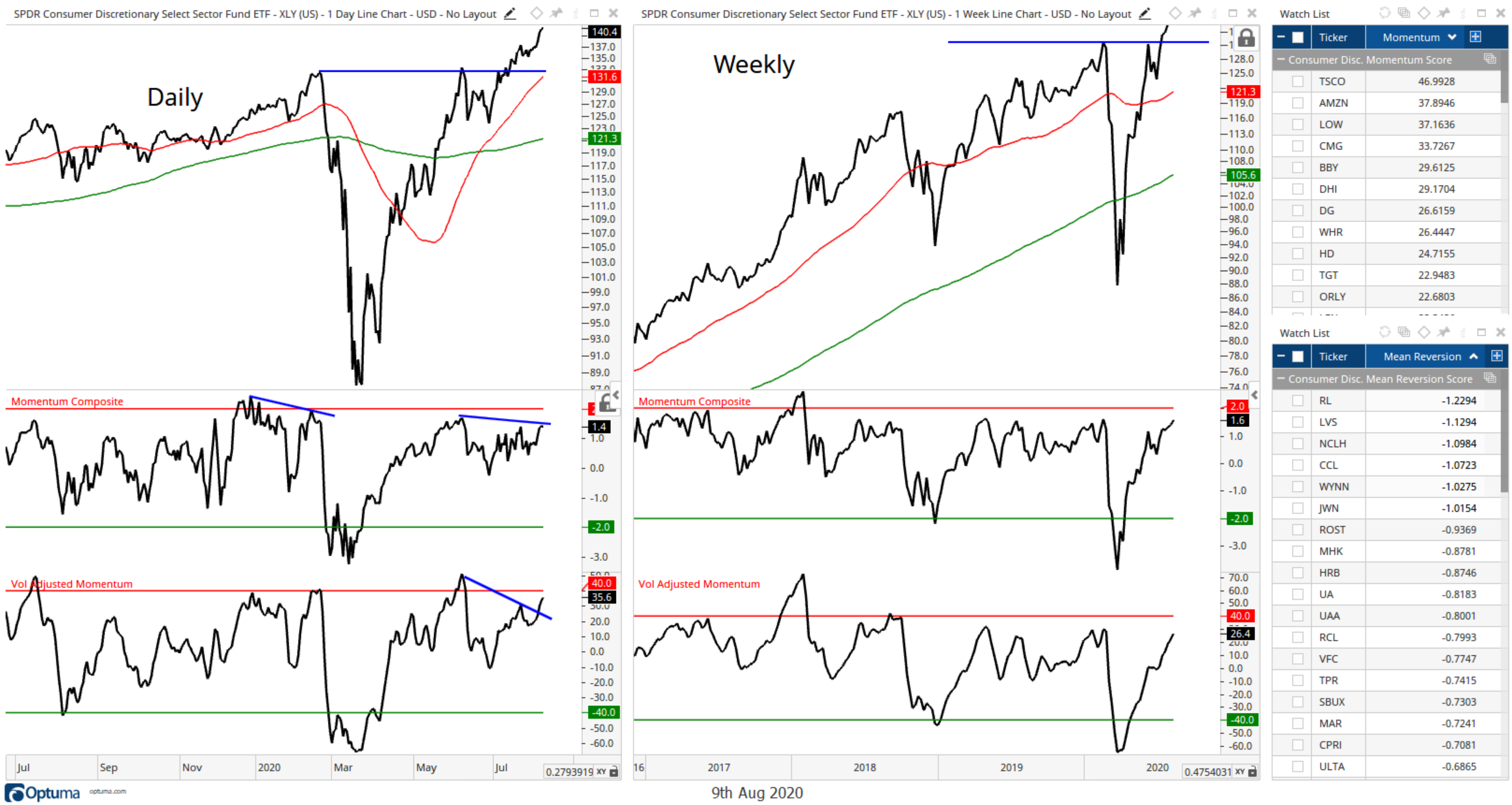
THRASHER ANALYTICS



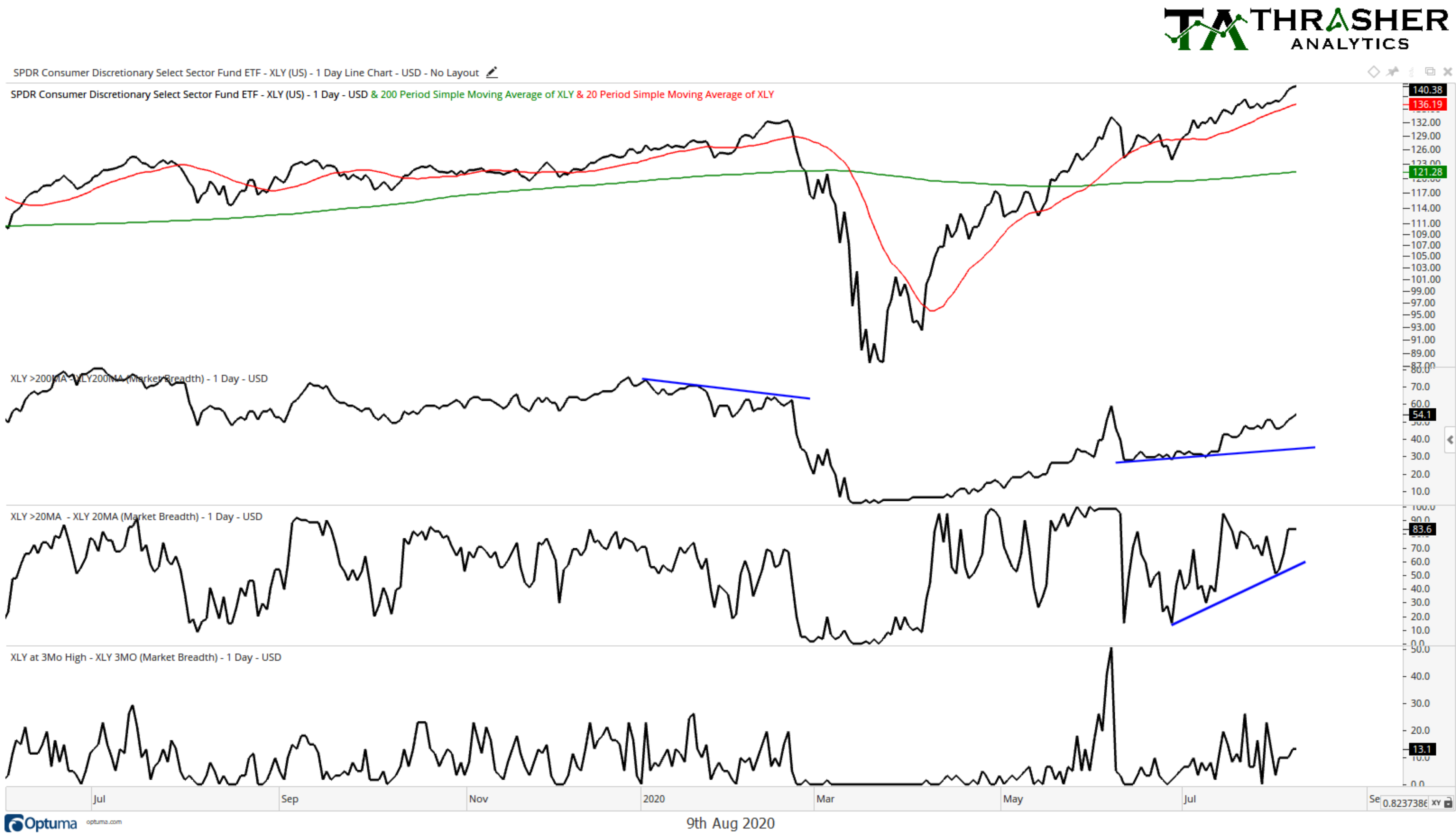
XLP supported by momentum and rising near prior 2020 peak.

Breadth is supportive.


SPDR Consumer Staples Select Sector Fund ETF - XLP (US) - 1 Day Line Chart - USD - No Layout
Consumer Staples
!!!SELL Bearish Divergence of XLP
Buy Signal Divergence of XLP
2018
Mar
May
Jul
Sep
Nov
2019
2020
63.51
12.1
27.27
Optuma
9th Aug 2020

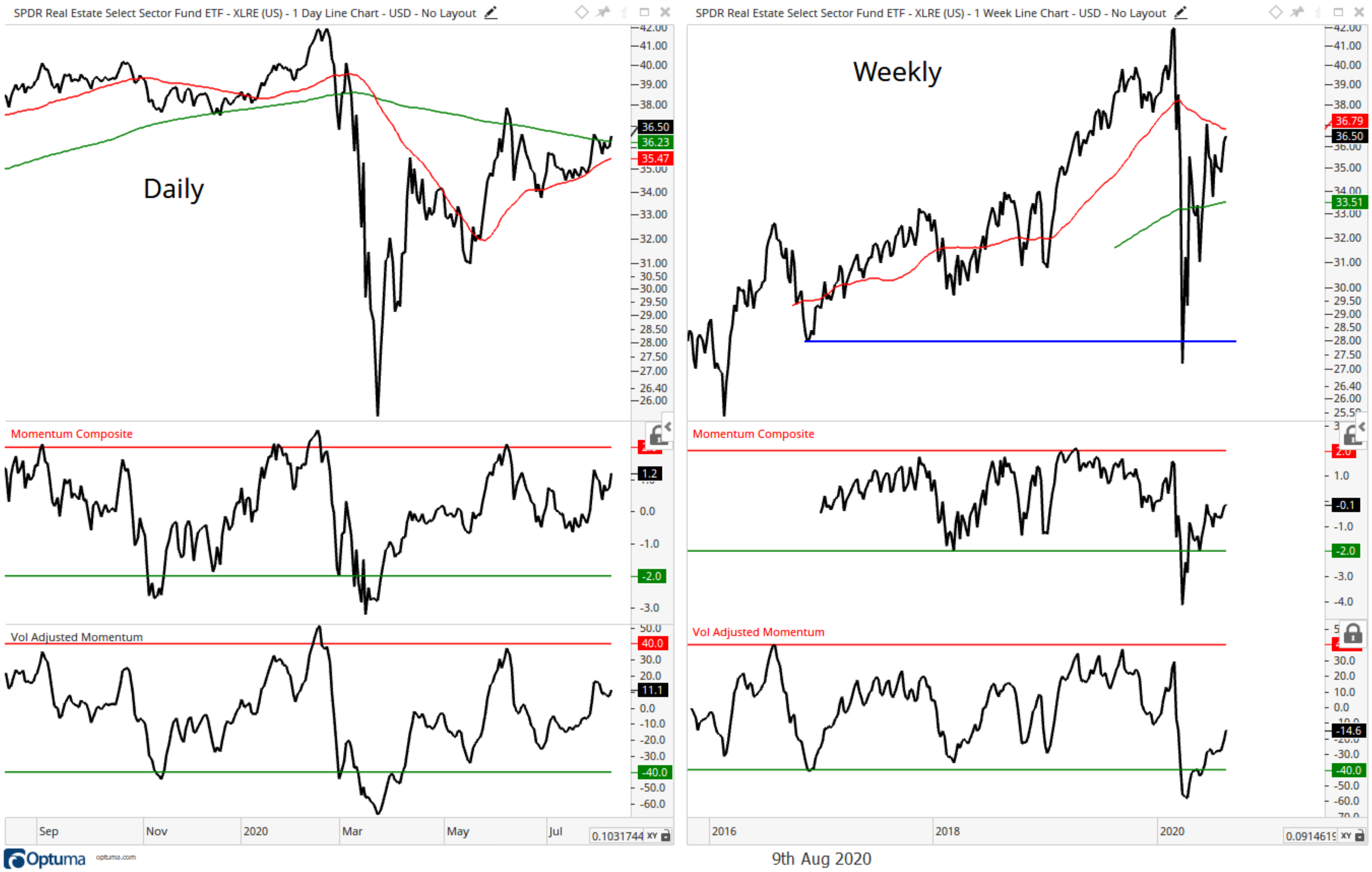


XLY holds above the prior high with bearish divergences on both daily indicators.



Breadth remains supportive

SPDR Consumer Discretionary Select Sector Fund ETF - XLY (US) - 1 Day Line Chart - USD - No Layout
Consumer Disc.
Bullish Divergence XLY - BULLISHDIVERGXLY (Market Breadth) - 1 Day - USD
Bearish Divergence XLY - BEARISHDIVERGXLY (Market Breadth) - 1 Day - USD
!!!SELL Bearish Divergence of XLY
Buy Signal Divergence of XLY
Jul
Sep
Nov
2019
Mar
May
Jul
Sep
Nov
2020
Mar
May
Jul
14.8
47.54
Optuma
9th Aug 2020



Watch List

Ticker	Momentum
Real Estate Momentum Score	
EQIX	32.5253
PLD	17.8800
DLR	14.6246
ARE	13.0645
DRE	12.3666
SBAC	5.4309
WY	4.8744
CCI	1.1423
AMT	0.5491
EXR	-16.3980
IRM	-19.4174
PSA	-29.7671

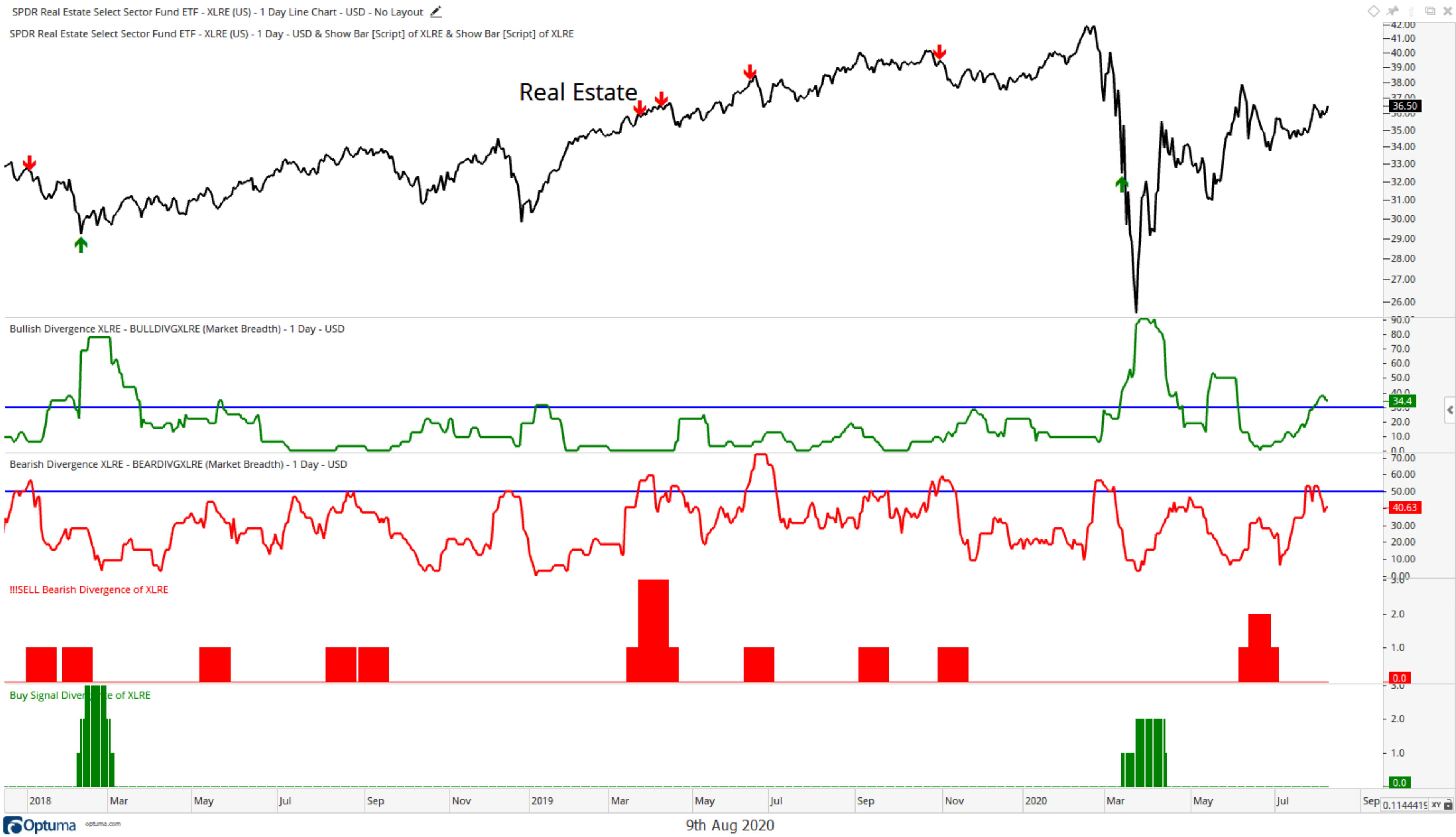
Watch List

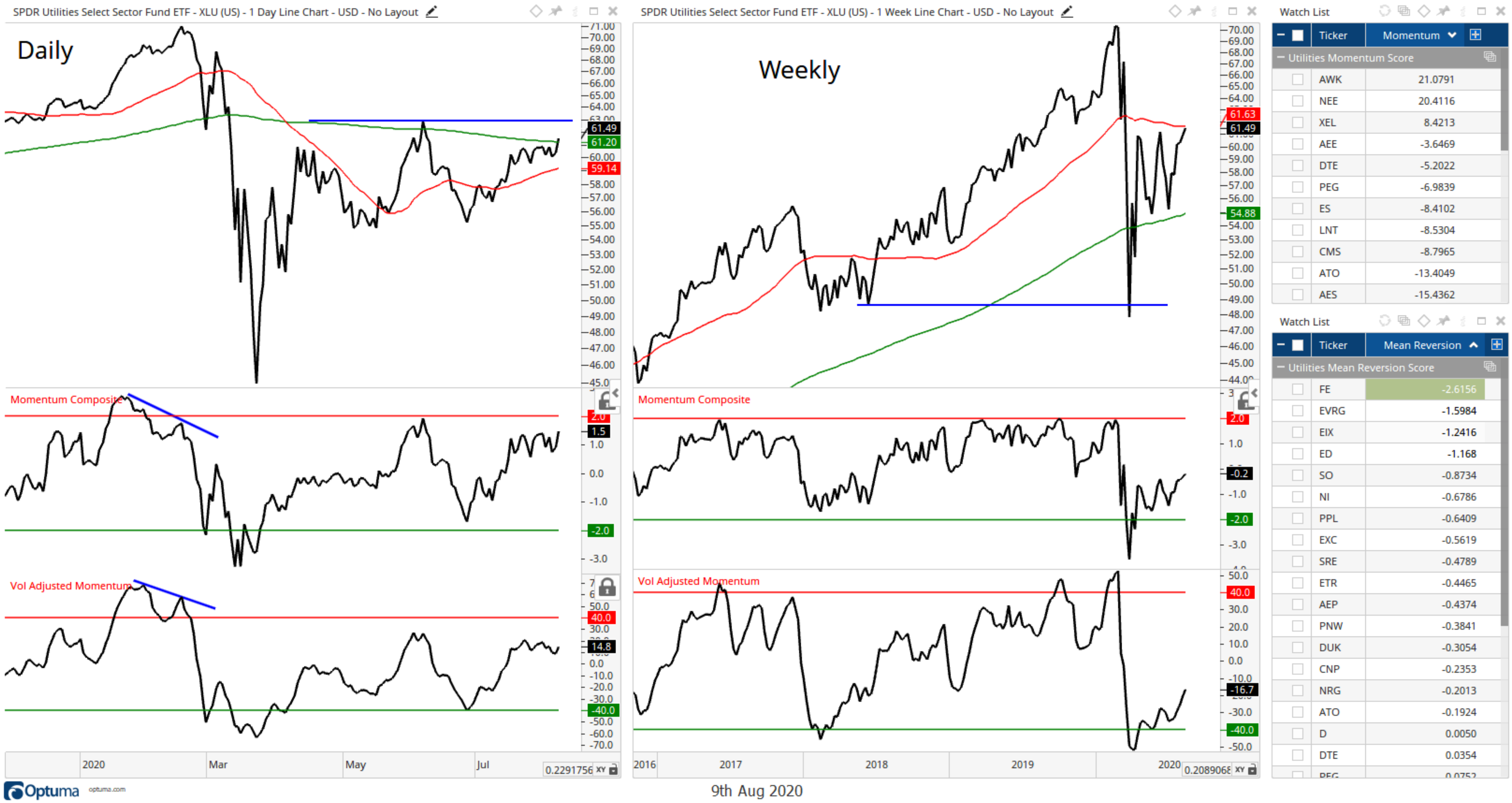
Ticker	Mean Reversion
Real Estate Mean Reversion	
EQR	-1.5416
UDR	-1.3472
ESS	-1.3438
AVB	-1.2506
VNO	-1.184
BXP	-1.1212
AIV	-1.1098
FRT	-1.0718
REG	-1.0439
SLG	-0.9786
KIM	-0.9162
CBRE	-0.8441
SPG	-0.8343
HST	-0.7823
MAC	-0.7097
WELL	-0.6895
MAA	-0.6789
PSA	-0.6318

XLRE trying to break above the declining 200-day MA.

Breadth is supportive.

THRASHER ANALYTICS



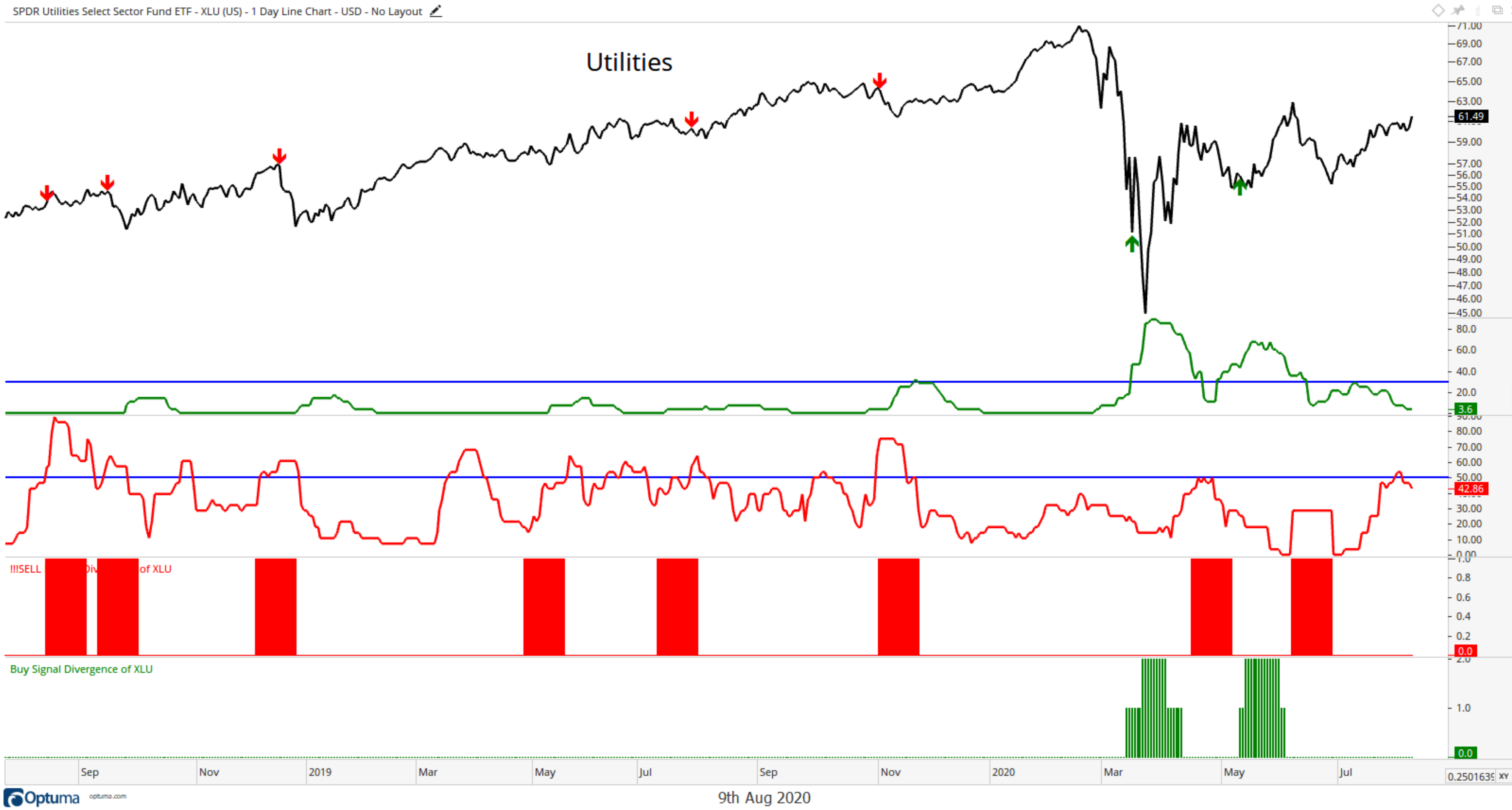


Ticker	Momentum
Utilities Momentum Score	
AWK	21.0791
NEE	20.4116
XEL	8.4213
AEE	-3.6469
DTE	-5.2022
PEG	-6.9839
ES	-8.4102
LNT	-8.5304
CMS	-8.7965
ATO	-13.4049
AES	-15.4362

Ticker	Mean Reversion
Utilities Mean Reversion Score	
FE	-2.6156
EVRG	-1.5984
EIX	-1.2416
ED	-1.168
SO	-0.8734
NI	-0.6786
PPL	-0.6409
EXC	-0.5619
SRE	-0.4789
ETR	-0.4465
AEP	-0.4374
PNW	-0.3841
DUK	-0.3054
CNP	-0.2353
NRG	-0.2013
ATO	-0.1924
D	0.0050
DTE	0.0354

XLU trying to break the 200-day MA and get back to the June high.

Breadth still waiting to expand with price.


SPDR Utilities Select Sector Fund ETF - XLU (US) - 1 Day Line Chart - USD - No Layout
Utilities
!!!SELL
of XLU
Buy Signal Divergence of XLU
Sep
Nov
2019
Mar
May
Jul
Sep
Nov
2020
Mar
May
Jul
9th Aug 2020

Market	% Bullish	5MA	History
VIX DSI	10	11.8	
Corn DSI	14	17	
US Dollar DSI	17	14.8	
Lean Hog DSI	32.00	26.40	
Natural Gas DSI	39.00	36.00	
Wheat DSI	45.00	51.00	
Orange Juice DSI	51.00	56.00	
Coffee DSI	51.00	53.60	
Sugar DSI	58.00	59.60	
Cotton DSI	61.00	68.00	
Copper DSI	61.00	68.40	
Gasoline DSI	62.00	62.60	
Heating Oil DSI	64.00	66.40	
Crude Oil DSI	65.00	68.40	
Mexican Peso DSI	66.00	63.60	
5YR DSI	71.00	71.60	
10Y DSI	72.00	77.60	

Code	% Bullish	5MA	History
EuroDollar DSI	73.00	73.00	
British Pound DSI	73.00	76.00	
New Zealand Dollar DSI	75.00	76.40	
Nikkei DSI	76.00	75.20	
Palladium DSI	77.00	72.60	
Swiss Franc DSI	80	83.6	
Euro DSI	80	84.8	
CRB Index DSI	80	82.6	
Nasdaq DSI	81	85.8	
Australian Dollar DSI	82	83.8	
Platinum DSI	83	85.8	
Cocoa DSI	83	74.40	
Gold DSI	84	90	
SPX DSI	85	82.8	
Silver DSI	86	91.2	
Cattle DSI	87	84.2	
Lumber DSI	91	89.2	

Source: trade-futures.com

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

Daily Sentiment Index 10-year Treasury

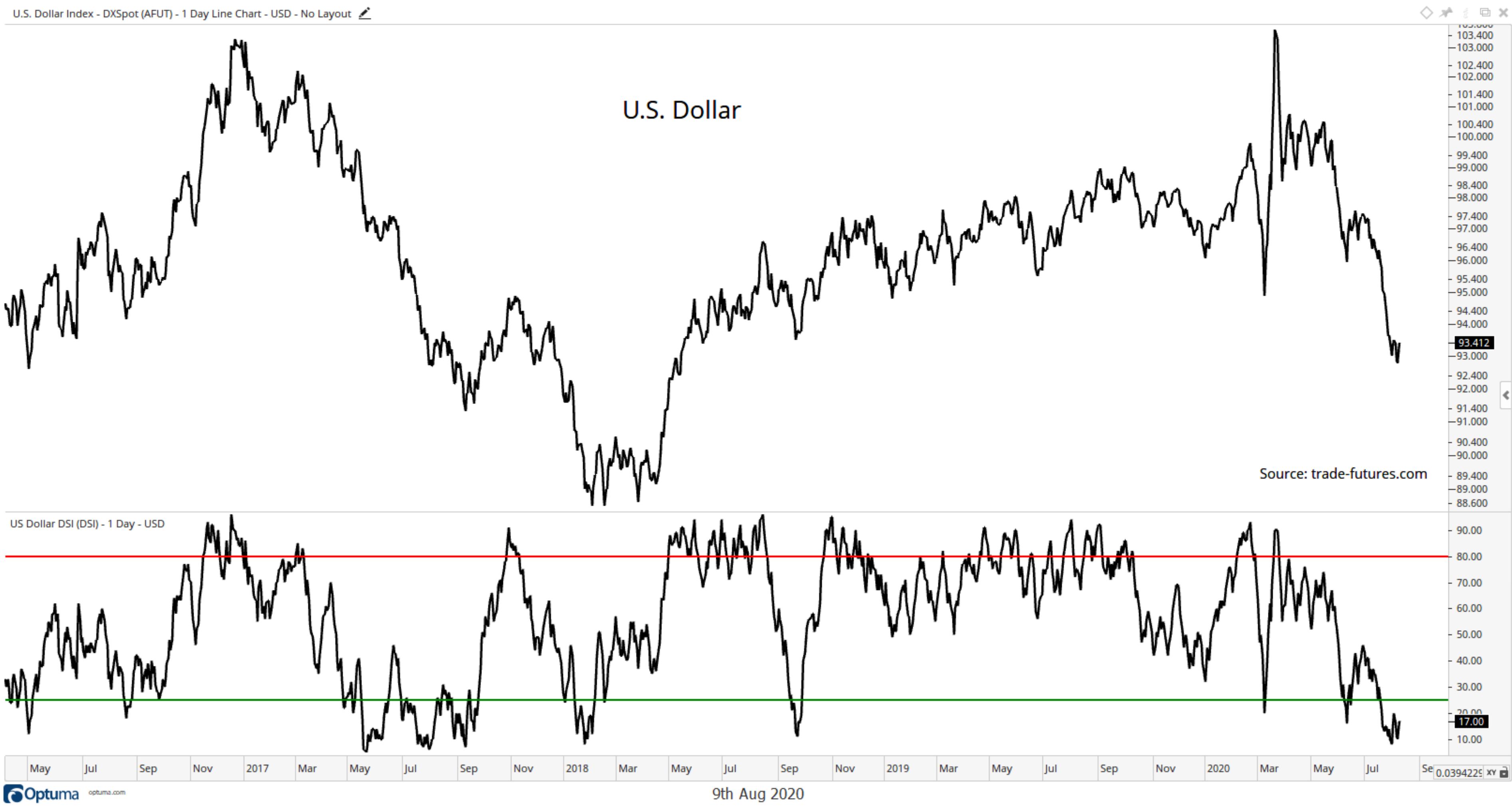
9th Aug 2020


S&P 500 INDEX - SPX (WI) - 1 Day Line Chart - USD - No Layout
S&P 500
3,351.28
3300.00
3240.00
3200.00
3130.00
3100.00
3060.00
3030.00
3000.00
2960.00
2930.00
2900.00
2860.00
2830.00
2800.00
2760.00
2730.00
2700.00
2660.00
2630.00
2600.00
2560.00
2530.00
2500.00
2460.00
2430.00
2400.00
2360.00
2330.00
2300.00
2250.00
Source: trade-futures.com
SPX DSI (DSI) - 1 Day - USD
90.00
85.00
80.00
70.00
60.00
50.00
40.00
30.00
20.00
10.00
Jul
Aug
Sep
Oct
Nov
Dec
2020
Feb
Mar
Apr
May
Jun
Jul
Optuma
9th Aug 2020


NASDAQ 100 Index - NDY (WI) - 1 Day Line Chart - USD - No Layout
Nasdaq 100
11,139.39
Nasdaq DSI (DSI) - 1 Day - USD
81.00
Source: trade-futures.com
Nov
2019
Mar
May
Jul
Sep
Nov
2020
Mar
May
Jul
Optuma
9th Aug 2020


Gold Futures - GCSpot (NYMEX) - 1 Day Line Chart - USD - No Layout
Gold
Source: trade-futures.com
2,010.10
Gold DSI (DSI) - 1 Day - USD
84.00
9th Aug 2020

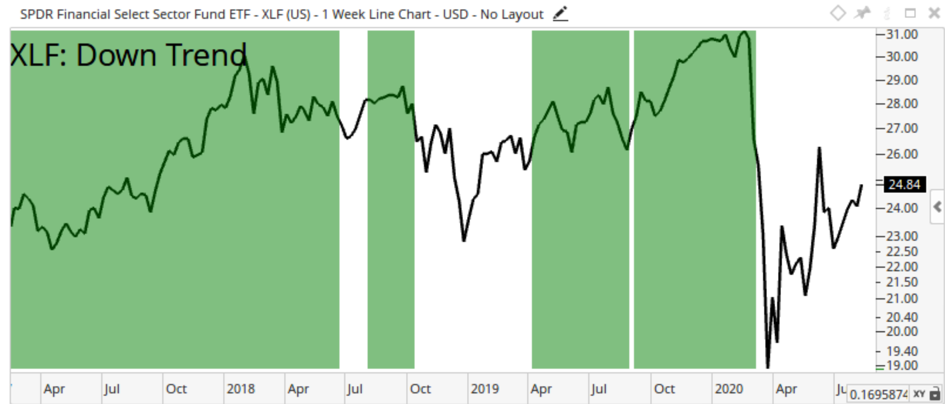
Daily Sentiment Index U.S. Dollar

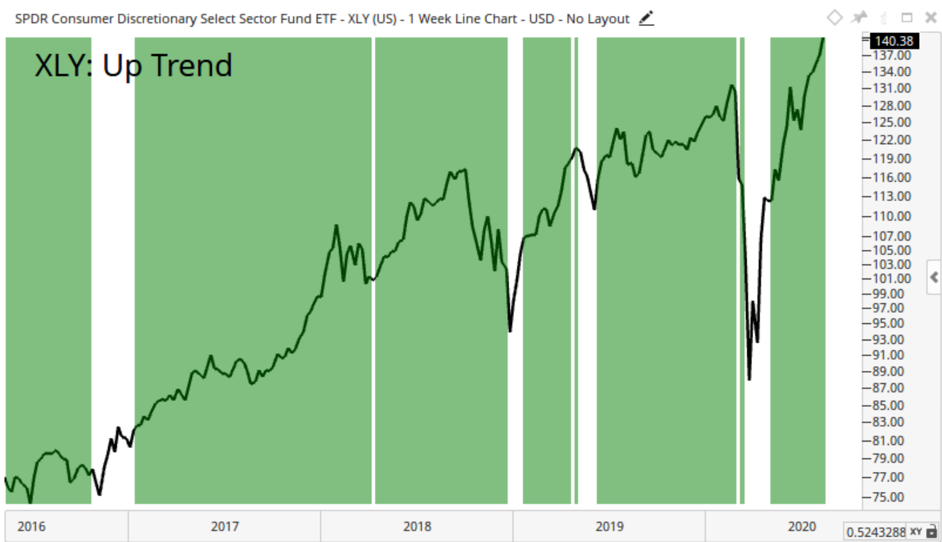


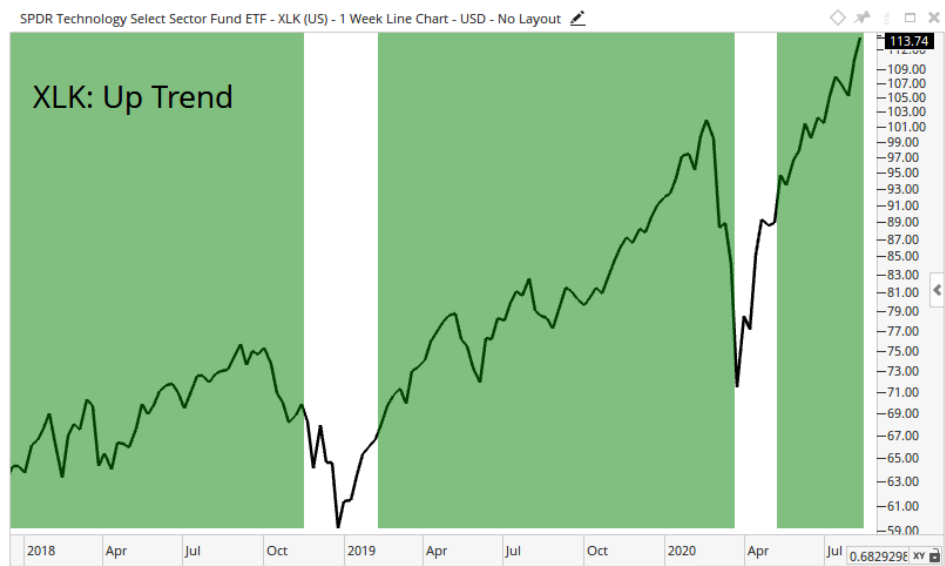

CBOE S&P 500 Volatility Index - VIX (CBOEI) - 1 Day Line Chart - USD - No Layout
VIX
Source: trade-futures.com
VIX DSI (DSI) - 1 Day - USD
2018
Mar
May
Jul
Sep
Nov
2019
Mar
May
Jul
Sep
Nov
2020
Mar
May
Jul
22.21
10.00
Optuma
9th Aug 2020

Daily Sentiment Index Nikkei 225

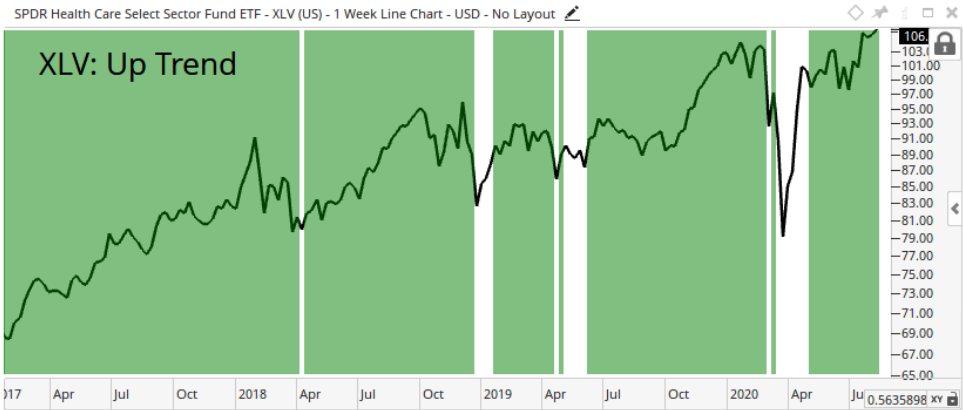

S&P 500 INDEX - SPX (WI) - 1 Week Line Chart - USD - No Layout
SPX: Up Trend

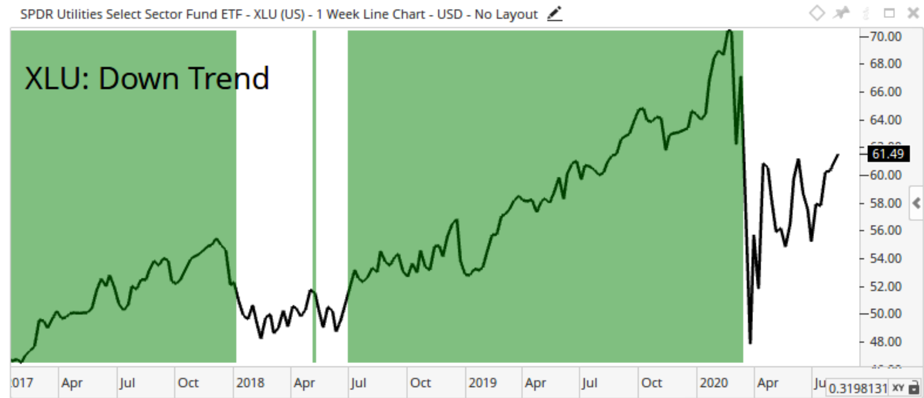

SPDR Financial Select Sector Fund ETF - XLF (US) - 1 Week Line Chart - USD - No Layout
XLF: Down Trend

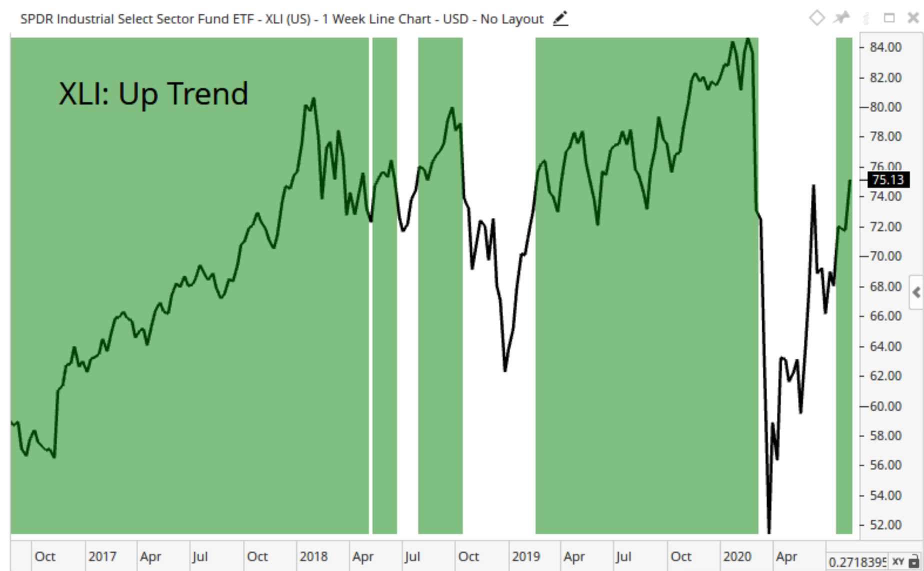

SPDR Consumer Discretionary Select Sector Fund ETF - XLY (US) - 1 Week Line Chart - USD - No Layout
XLY: Up Trend


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

9th Aug 2020







Optuma

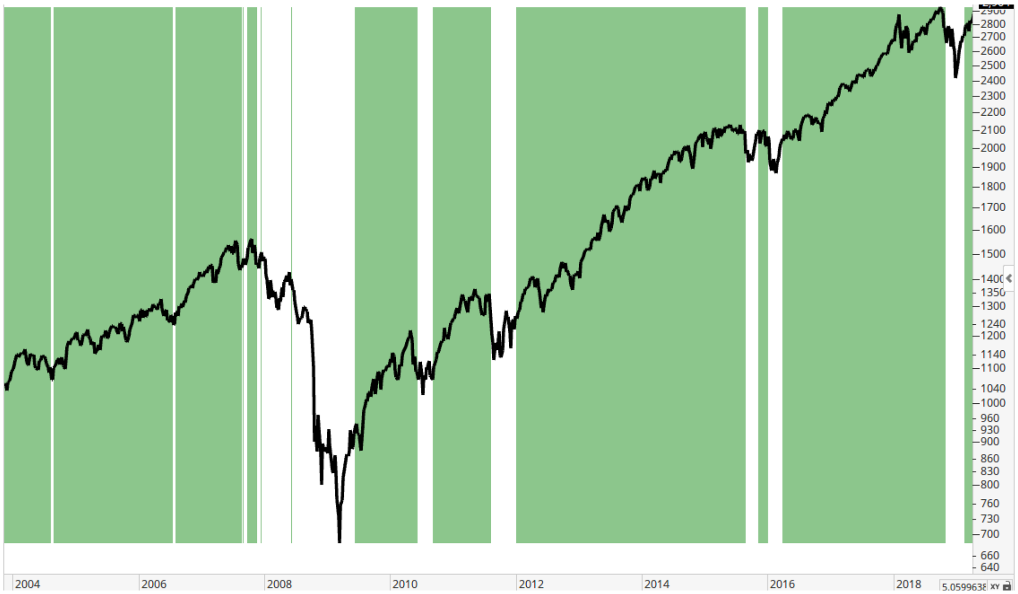
9th Aug 2020

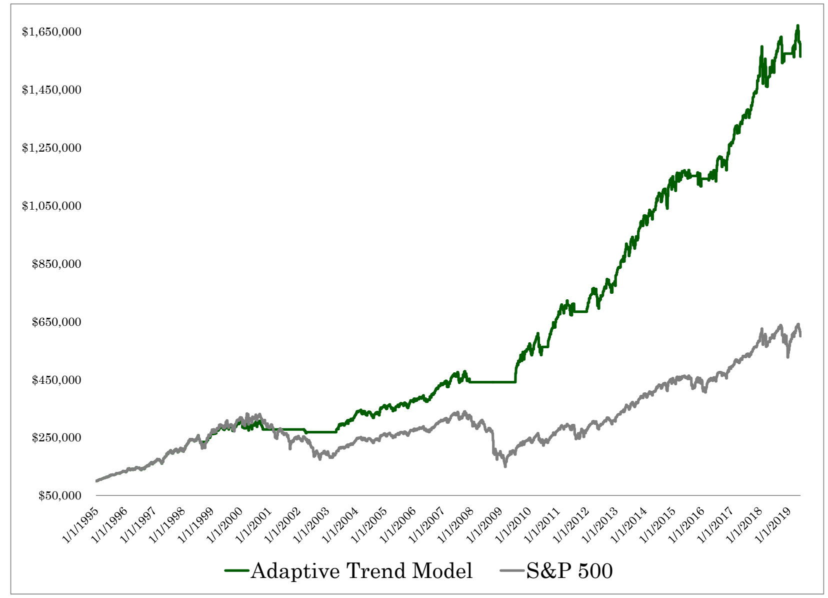

Invesco QQQ Trust - QQQ (US) - 1 Week Line Chart - USD - No Layout
QQQ: Up Trend
SPDR Real Estate Select Sector Fund ETF - XLRE (US) - 1 Week Line Chart - USD - No Layout
XLRE: Down Trend
SPDR Energy Select Sector Fund ETF - XLE (US) - 1 Week Line Chart - USD - No Layout
XLE: Down Trend
SPDR Materials Select Sector Fund ETF - XLB (US) - 1 Week Line Chart - USD - No Layout
XLB: Up Trend
Optuma
9th Aug 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



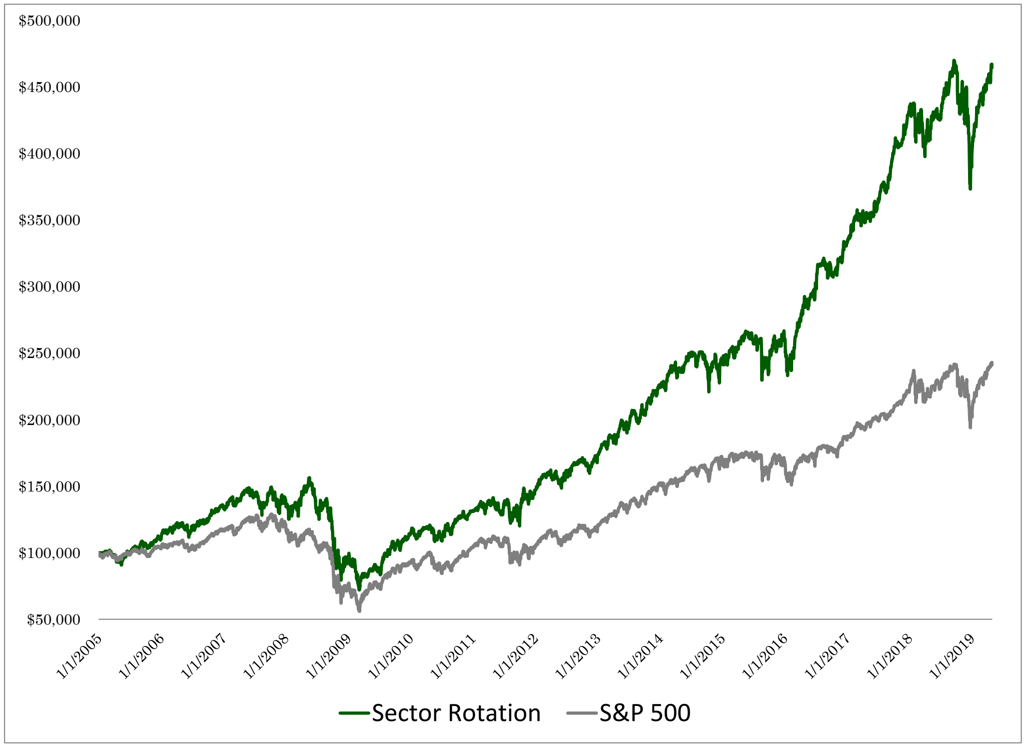


	Annualized Return	Annualized Volatility	Beta	Sharpe	Maximum Drawdown
Adaptive	12.5%	10.3%	0.47	0.97	14.1%
S&P 500	8.9%	15.3%	1	0.42	56.6%

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.

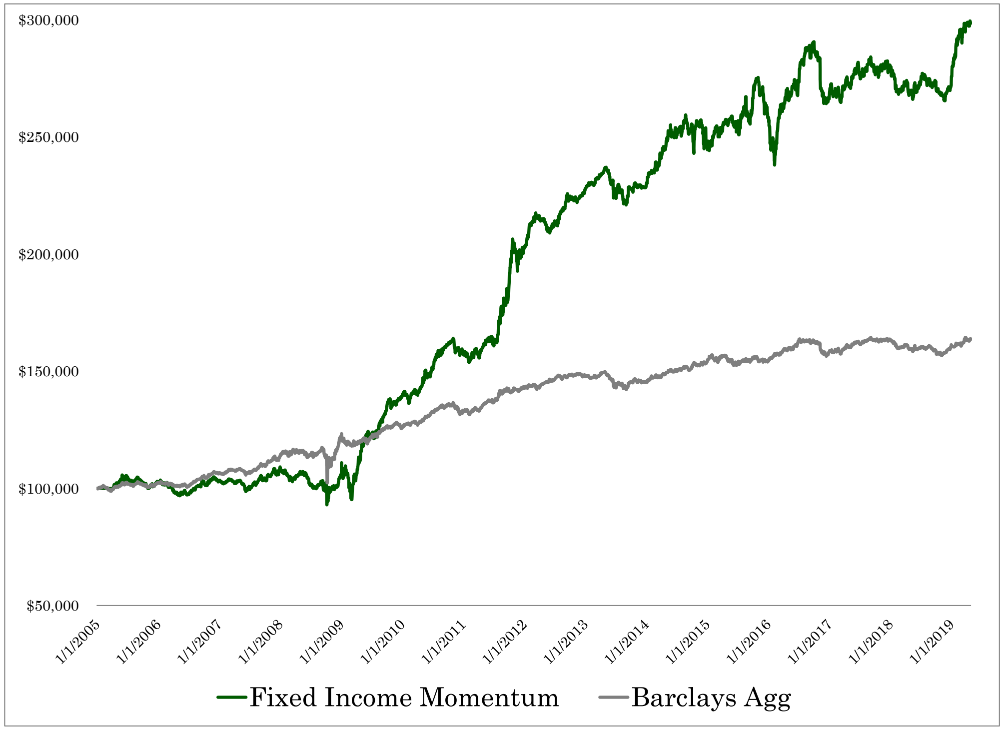


	Annualized Return	Annualized Volatility	Beta	Sharpe	Maximum Drawdown
Sector	12.7%	15.9%	0.96	0.64	53.9%
S&P 500	7.5%	14.8%	1	0.34	56.6%

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%

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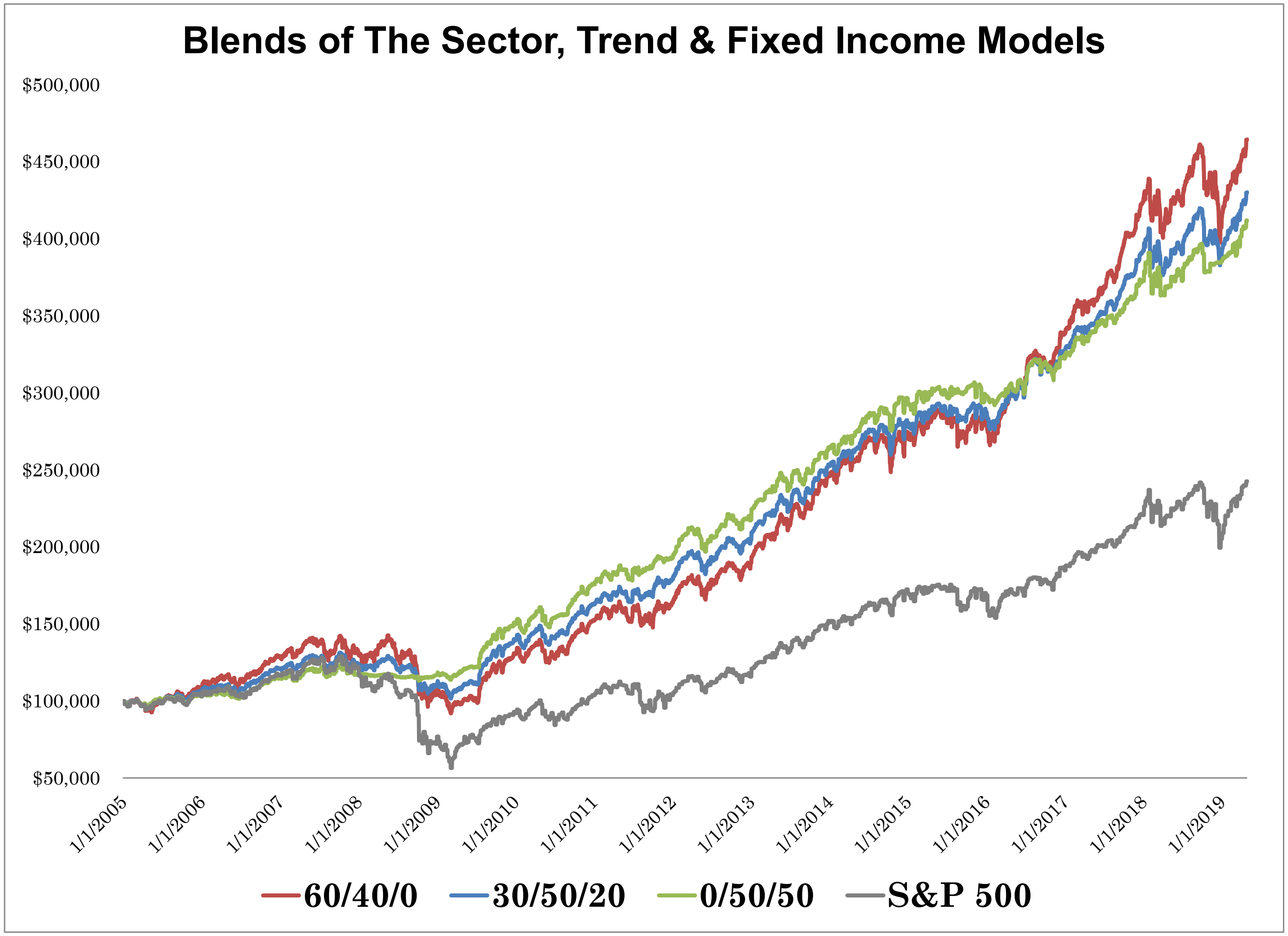
Please see complete disclosure for additional information.

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	XLK	MUB
	XLY	HYG
	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.

Please see complete disclosure for additional information.

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.

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