THRASHER ANALYTICS

WEEKLY RESEARCH & ANALYSIS

ThrasherAnalytics.com

Thrasher Analytics Market Dashboard

THRASHER ANALYTICS

Sector Rotation: April	
Technology	XLK
Health Care	XLV
Consumer Staples	XLP

Fixed Income Rotation: Q2	
Emerging Mkt Sovereign	PCY
Convertible Bond	CWB

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	61%	52%
Nasdaq 100	70%	62%
Nikkei	70%	61%
VIX	33%	40%
10yr Treasury	55%	59%
5yr Treasury	63%	63%
CRB Index	56%	50%
Gold	75%	79%
U.S. Dollar	64%	66%

**Green<25%   Red>80%*

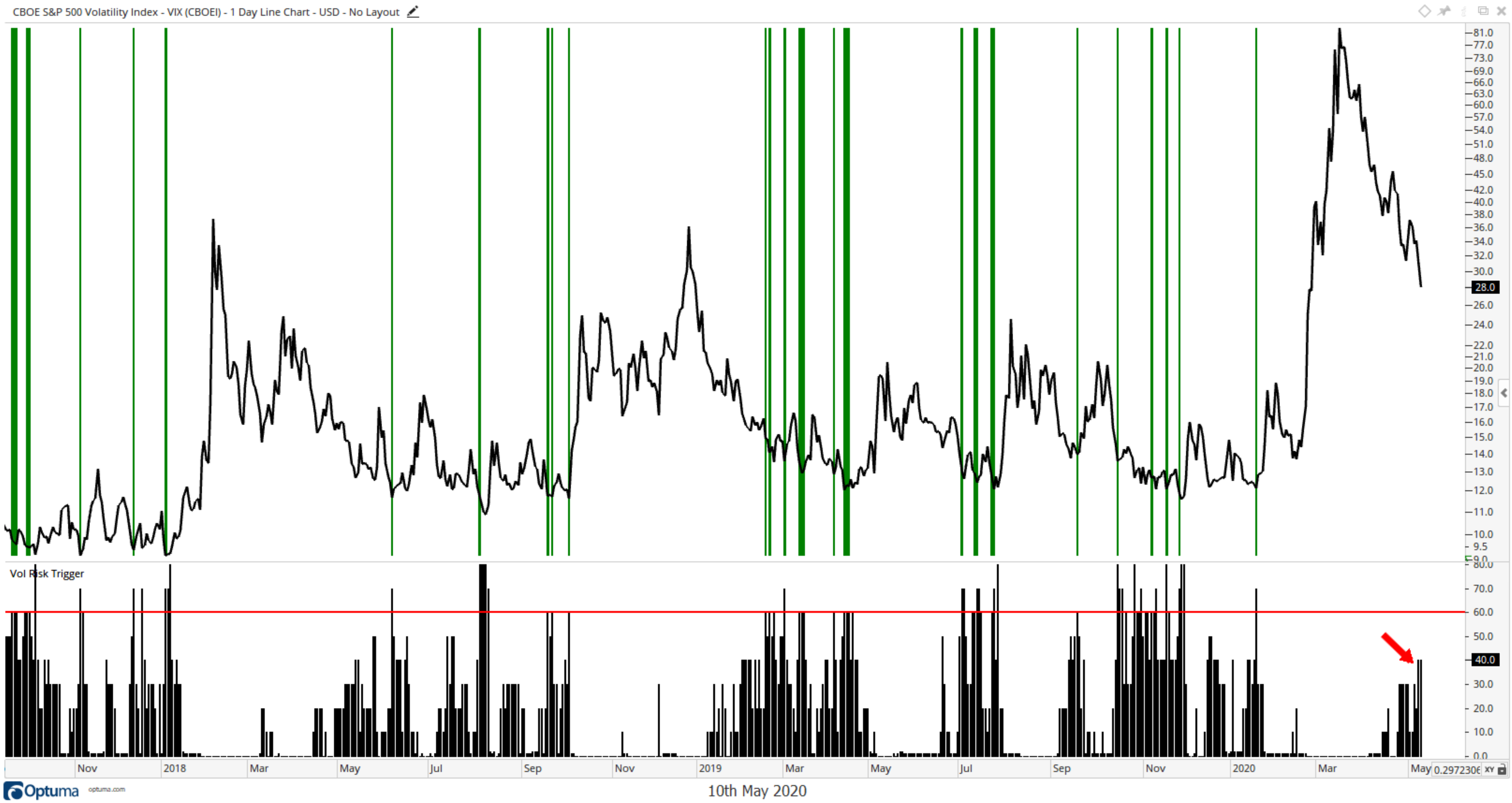
Notable Breadth Data:	
SPX >50MA	74.26%
SPX >200MA	26.73%
Nasdaq >50MA	93.20%
Nasdaq >200MA	53.40%

Sector Dashboard

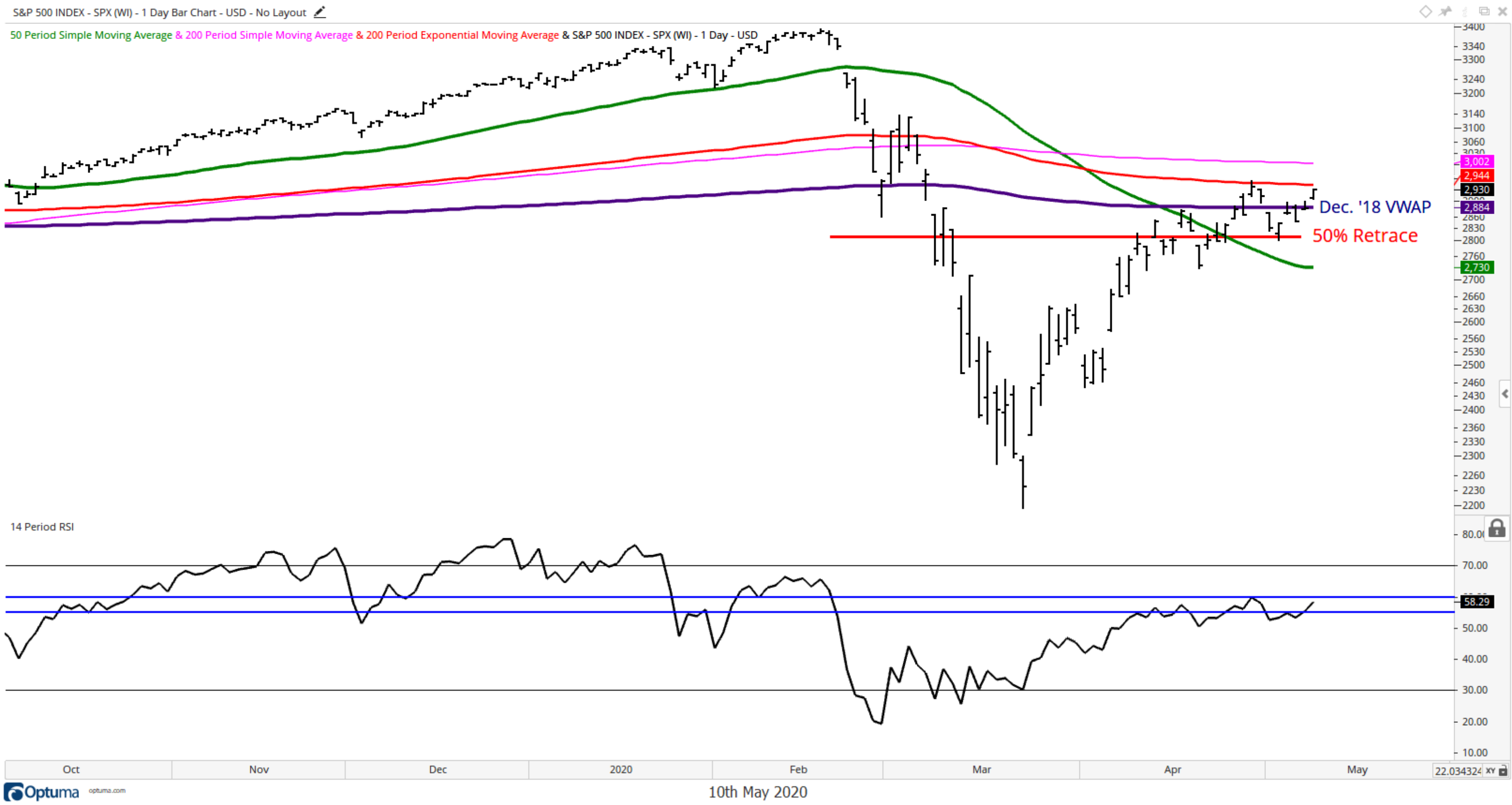
Thrasher Analytics

Day - Watch List - No Layout

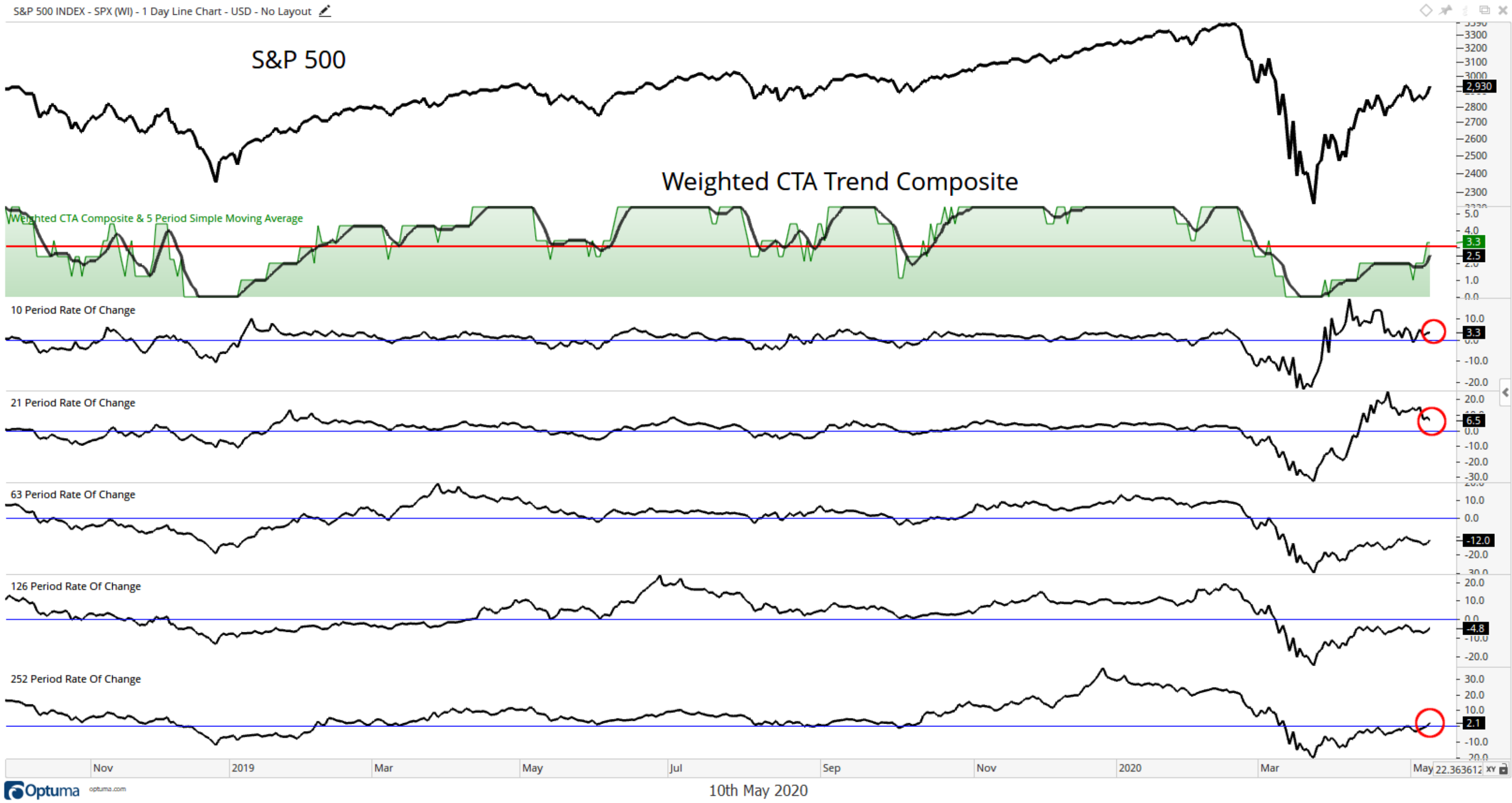
Sector	> 50MA	> 200MA	1wk Perf	1mo Perf	3mo Perf	12mo Perf
SPDR Energy Select Sector Fund ETF	True	False	8.17%	13.33%	-28.16%	-39.17%
SPDR Technology Select Sector Fund ETF	True	True	6.61%	11.27%	-4.93%	23.96%
SPDR Communication Services Select Sector ETF	True	True	4.6%	12.18%	-7.16%	5.58%
SPDR Consumer Discretionary Select Sector Fund ETF	True	False	4.47%	11.90%	-8.61%	-0.29%
SPDR Materials Select Sector Fund ETF	True	False	3.33%	6.45%	-12.66%	-4.29%
SPDR Health Care Select Sector Fund ETF	True	True	1.62%	5.41%	-3.52%	11.61%
SPDR Real Estate Select Sector Fund ETF	True	False	1.43%	-1.30%	-16.5%	-6.27%
SPDR Industrial Select Sector Fund ETF	True	False	1.35%	1.33%	-24.55%	-17.05%
SPDR Financial Select Sector Fund ETF	True	False	1.04%	0.45%	-27.91%	-18.53%
SPDR Consumer Staples Select Sector Fund ETF	True	False	0.87%	0.92%	-9.55%	2.43%
SPDR Utilities Select Sector Fund ETF	False	False	0.5%	-3.32%	-18.12%	-1.49%



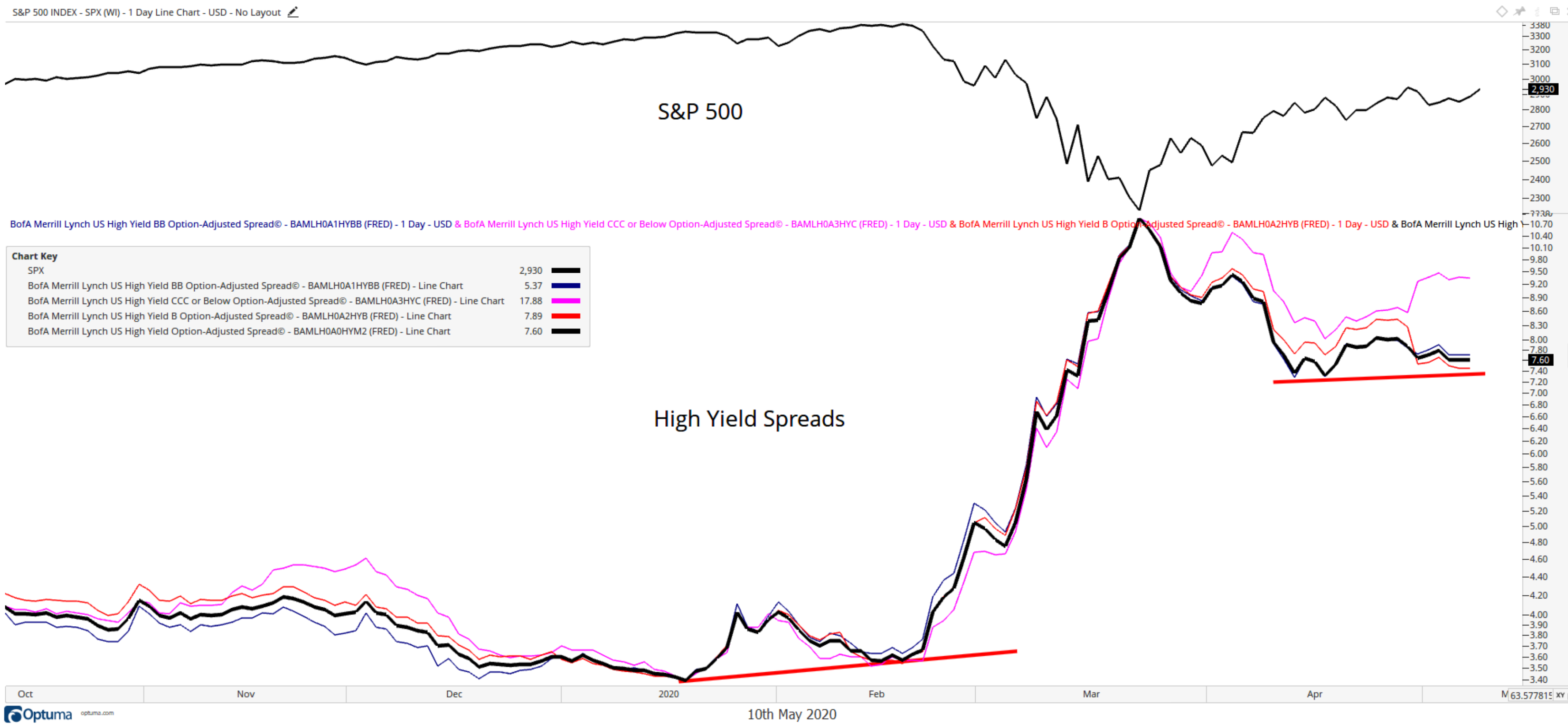
The VRT has continued to rise, but not at a threshold to trigger a signal. Volatility has continued to come down, crossing below 30 last week.



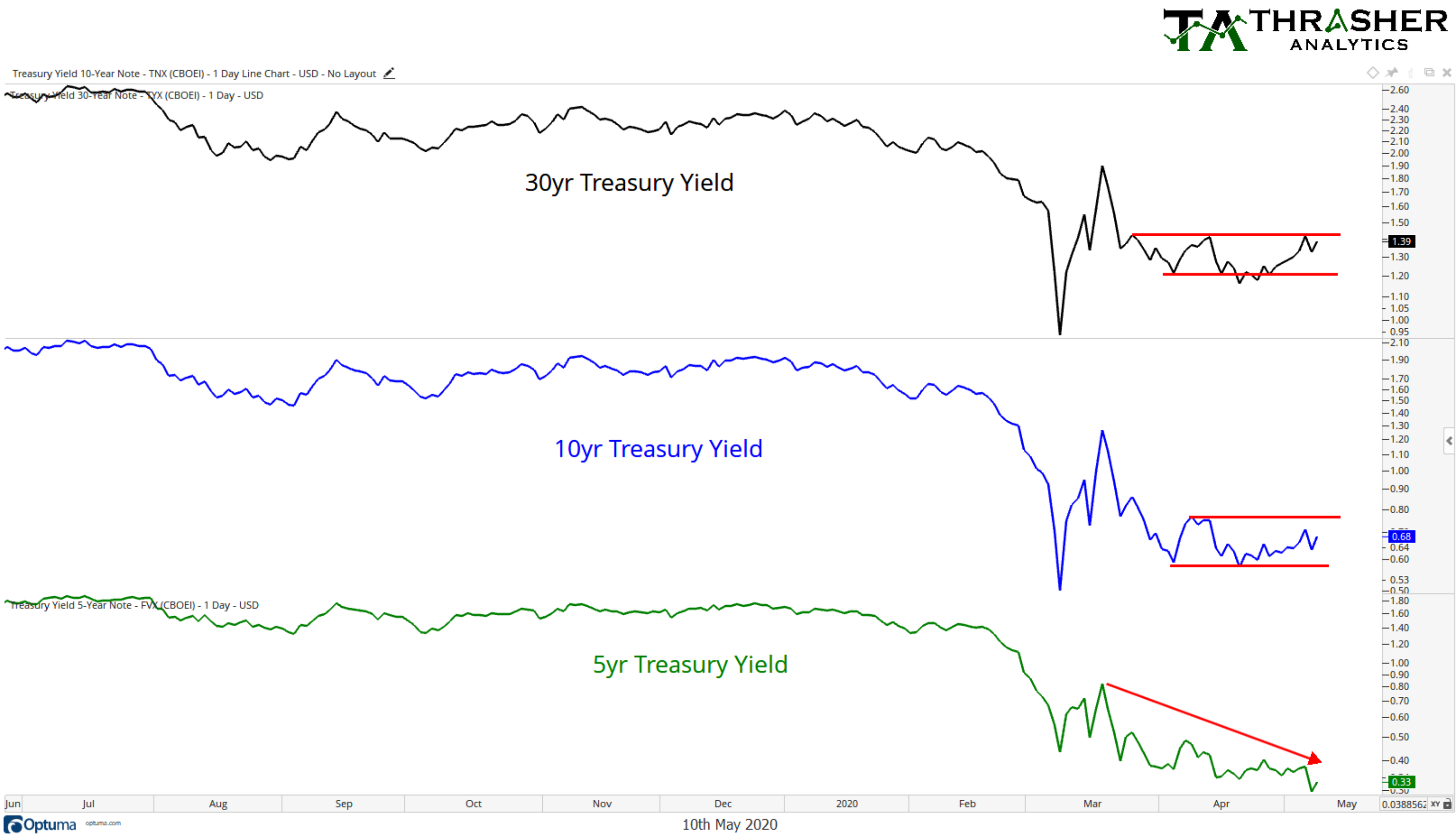
Unlike the Nasdaq 100, the S&P 500 has basically gone no where over the last two weeks. We remain below the prior April high and just under the 200-day Exponential Moving Average (and Simple Moving Average). The 50% retracement level acted as support on the short-term April dip, which was quickly bought to send SPX back to the upper-end of its brief range. The 200-day MA continues to be a key focus point for me, being that's where many bear market rallies have failed in the past. However, breadth as improved a great deal (more on this later) so this level may get taken out soon, which would be bullish. Momentum remains just below its bear market range high (60), so that's a level we'll want to keep an eye on this week if price continues higher. The fact that the market has shrugged off a horrible earnings season, historic labor market data, and continued trade threats from China is truly amazing. The bulls dance on a Fed-created balancing rope with astonishing talent.



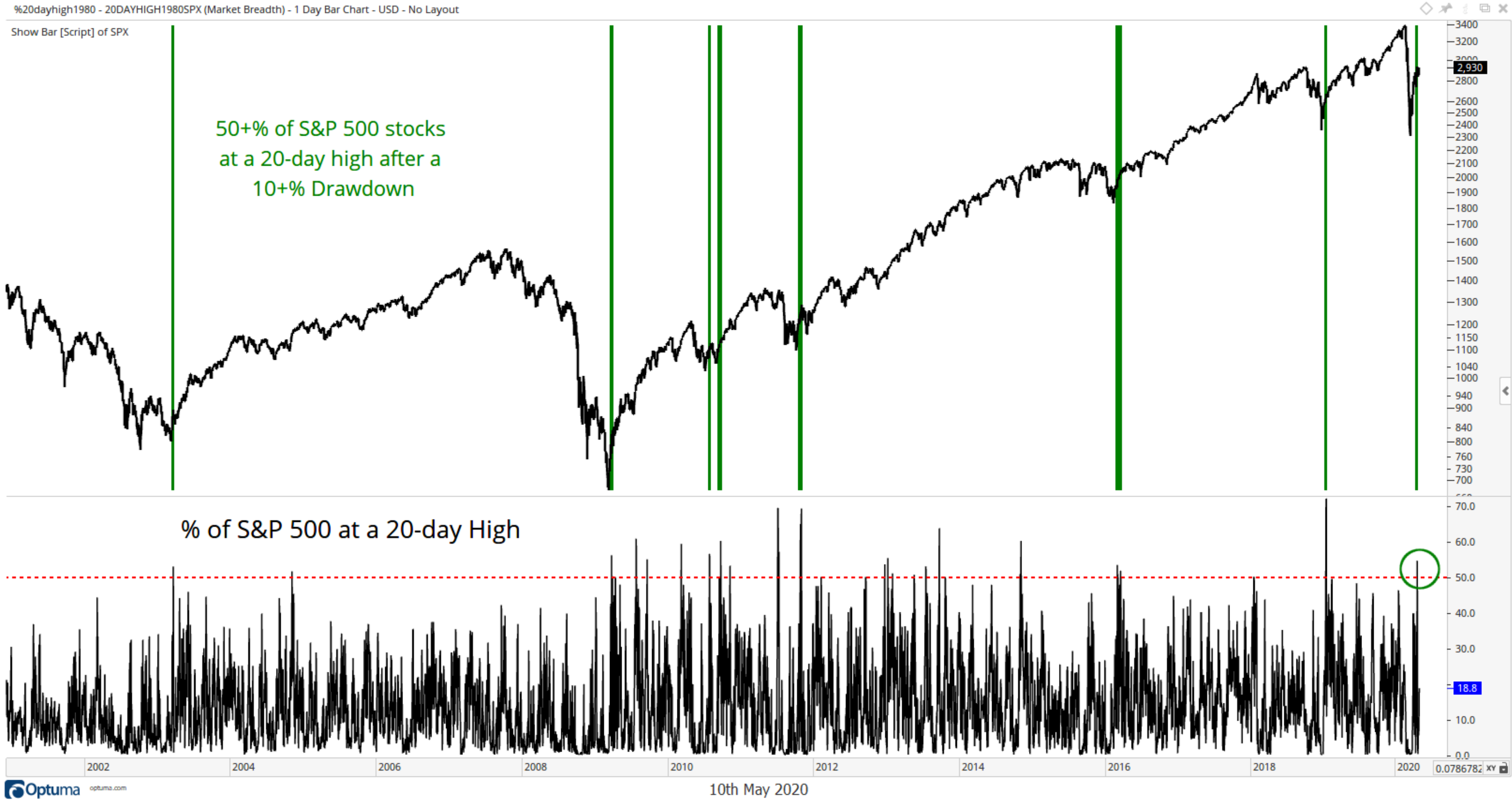
Last week the 1-year (252-day) rate of change moved positive, giving three lookback periods as a tailwind for CTA trend models, joining 2-week and 1-month. The weighted composite is inching higher with likely the next to move positive to be the 6-month period, which should be enough for the weighted composite to move back to positive.



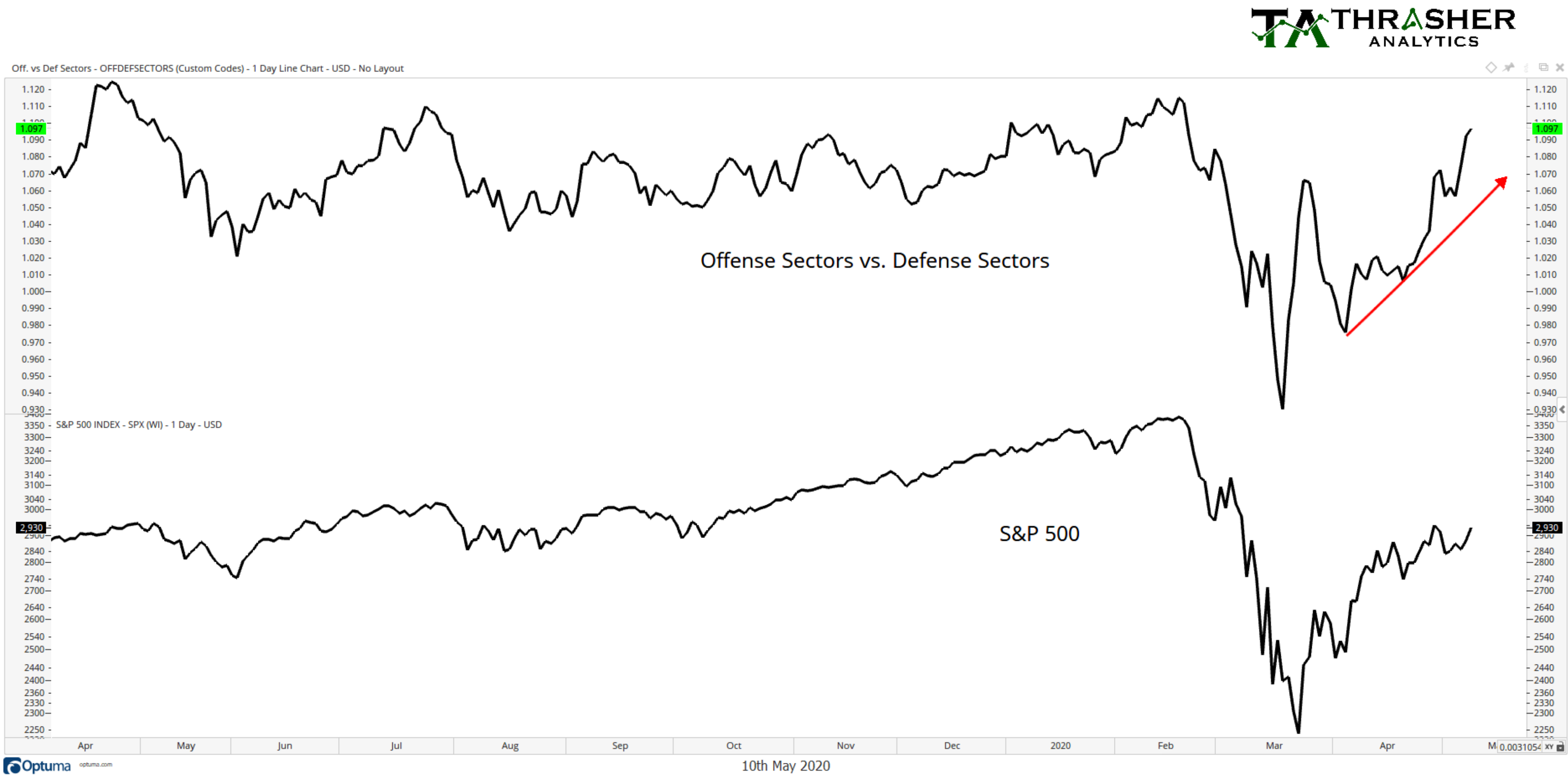
High yield bond spreads have not moved much (like SPX) in the last two weeks, CCC or Lower remains elevated, likely due to energy bonds but the bulk of the high yield spreads still appear a bit concerned with the health of the fixed income market. But can you blame them? We continue to get bankruptcy announcements of brick and mortar retailors as the Coronavirus wrecks havoc on the U.S. economy.



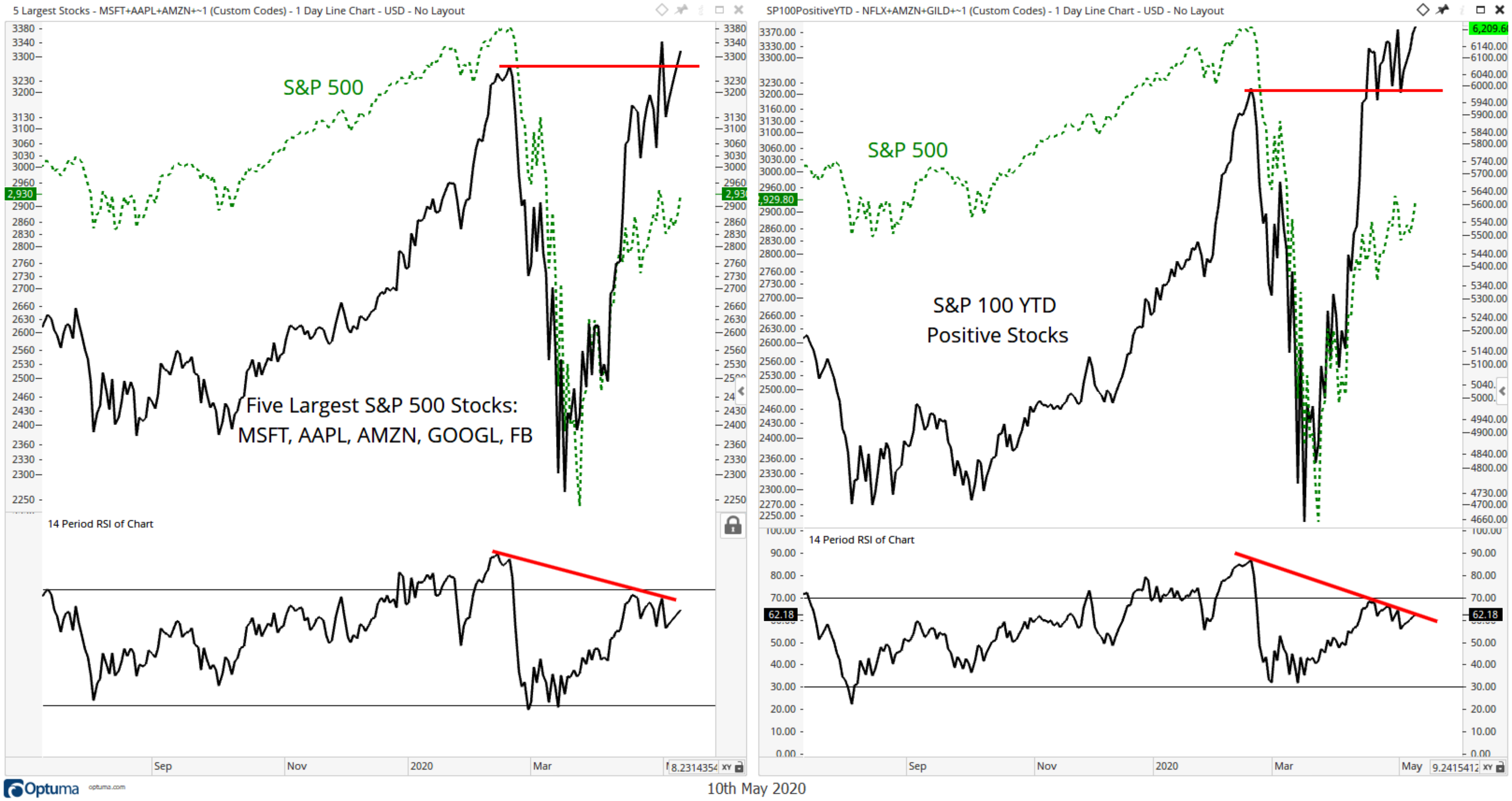
The short-end of the Treasury curve remains under pressure with the 5-year Yield hitting new lows last week. Meanwhile, 10-year and 30-year yields continue to trade in a narrow range since early April. While the Fed's action is keeping pressure on the front of the curve, the massive amount of stimulus is having little to no impact on the middle or long-term portions of the curve as sellers continue to meet the in the middle with the Fed, keeping rates low - something we didn't typically see during past occurrences of QE.



One of the most bullish developments to transpire in the equity market is shown in this chart, the percentage of the S&P 500 that hit a new 20-day high in a single day, a topic discussed by Ned Davis Research. When this breadth indicator breaks 50% after the S&P 500 has experienced a 10+% drawdown, continued strength has historically followed. Going back to the tech wreck we saw this take place after major lows in all the major down trends, from the protracted: 2002 and 2009, to the quick: 2019, 2011, 2018. And we can now add 2020 to the list. While the 5 Mega Caps carry the lion share of the equity move, the fact that we're seeing this large of a breadth thrust is a big positive.

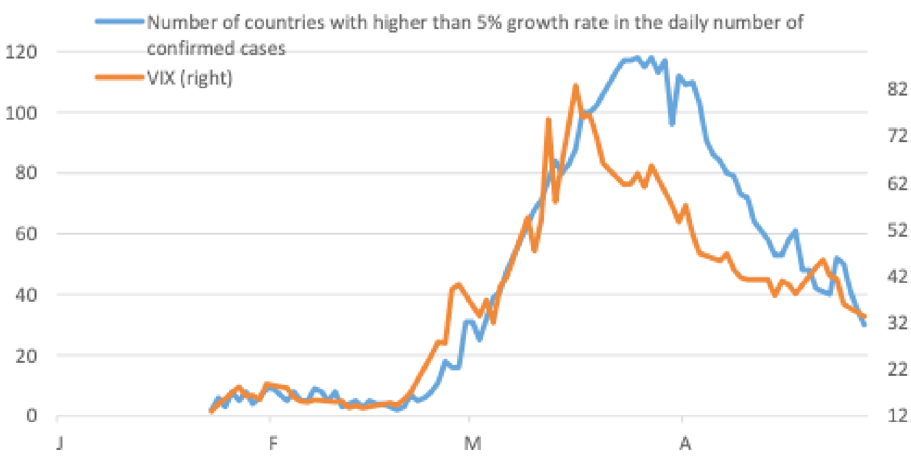


From a sector leadership, offense sectors continue to stay on the field, leading the market higher, largely driven by tech and consumer discretionary strength.



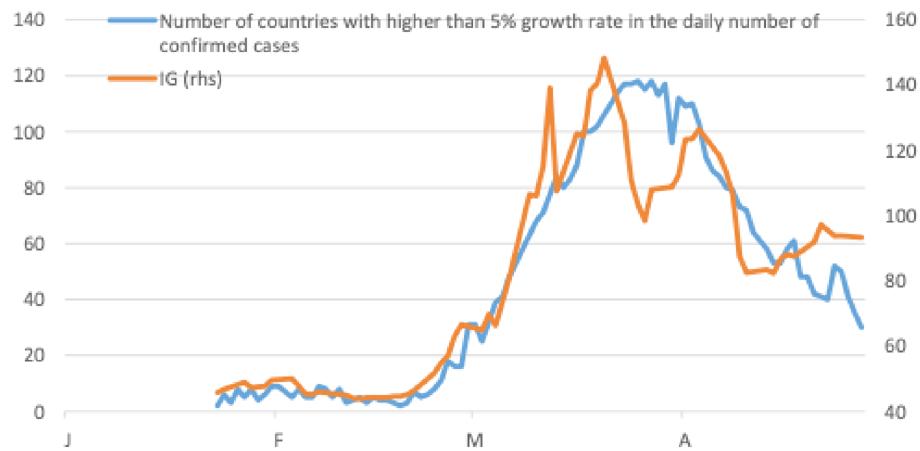
Above is an updated chart from my last note, where I discussed the bearish breakdown of the five largest SPX stocks and the stocks that had were positive YTD. Since then, the trends have turned on a dime and moved higher setting or nearing new highs. Momentum continues to diverge, but could see its own improvement this week if the mega caps continue to advance. I previously asked the question, “have they begun to shoot at the generals?” and at this point it seems the answer is no, not any longer.

Figure 2: Commensurate reaction



Source : Deutsche Bank, Bloomberg Finance LP

Figure 3: Over-reaction

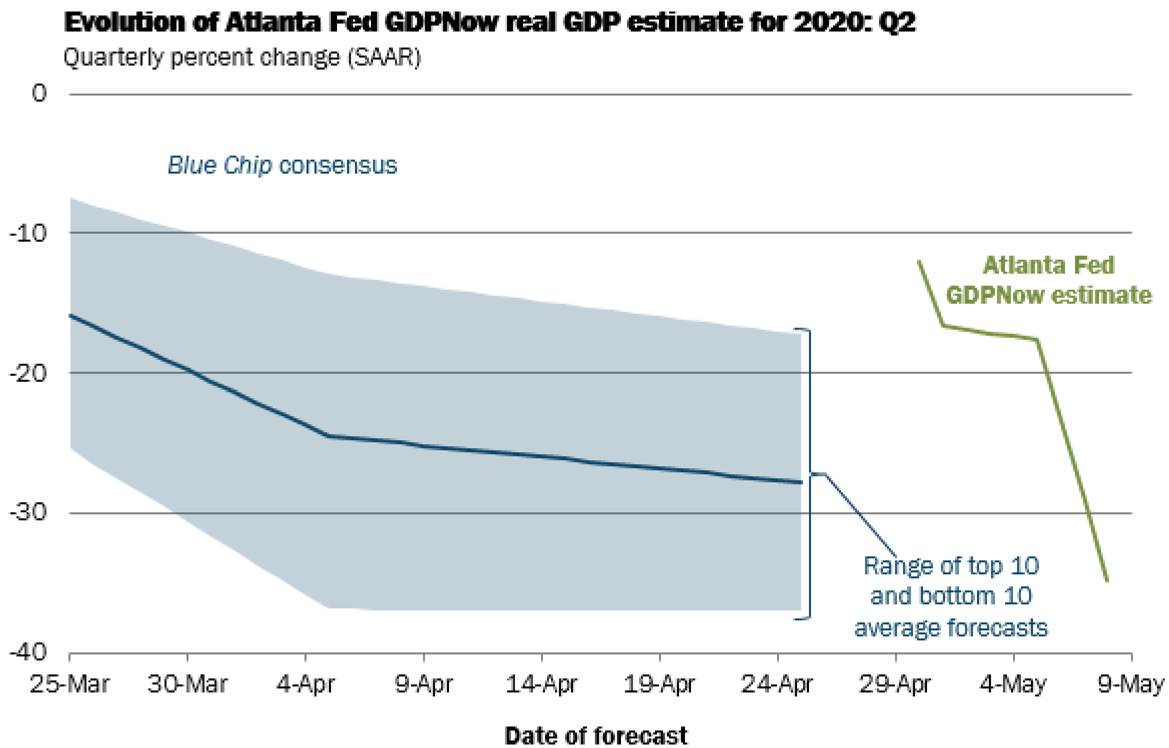


Source : Deutsche Bank, Bloomberg Finance LP

The above chart comes from Deutsche Bank and shows the recent strong relationship of the VIX and investment grade bonds with the number of countries that have more than 5% growth rate in coronavirus cases. The financial market has continued to squarely focus on the infection rate of the virus and has either purposely ignored or yet to catch on to the economic damage being left in the virus's wake. IG bonds have recently begun to level off, likely in anticipation of the Fed's buying of IG ETFs. With regards to the Covid-19, South Korea recently warned of a 2nd wave of the coronavirus over the weekend as infections hit a 1-month high. Seoul, S. Korea (the capital) has since shutdown the city's bars and nightclubs. As many doctors call the U.S. rush to re-open premature, there seems to be a high expectation of our own 2nd wave as well in the next few months. One restauranteur in my hometown if Indianapolis recently said in an interview that if another lockdown occurs then he expects half the city's restaurants to permanently close and that restaurants weren't able to take advantage of PPP loans since employee costs are far from being their highest expense (75% of the loan must go to labor). So while the loans helped many other small business, the hospitality industry continues to struggle with many not re-opening their doors, moving their employees from furloughed to actual unemployed.

GDPNow is not an official forecast of the Atlanta Fed. Rather, it is best viewed as a running estimate of real GDP growth based on available data for the current measured quarter. There are no subjective adjustments made to GDPNow—the estimate is based solely on the mathematical results of the model.

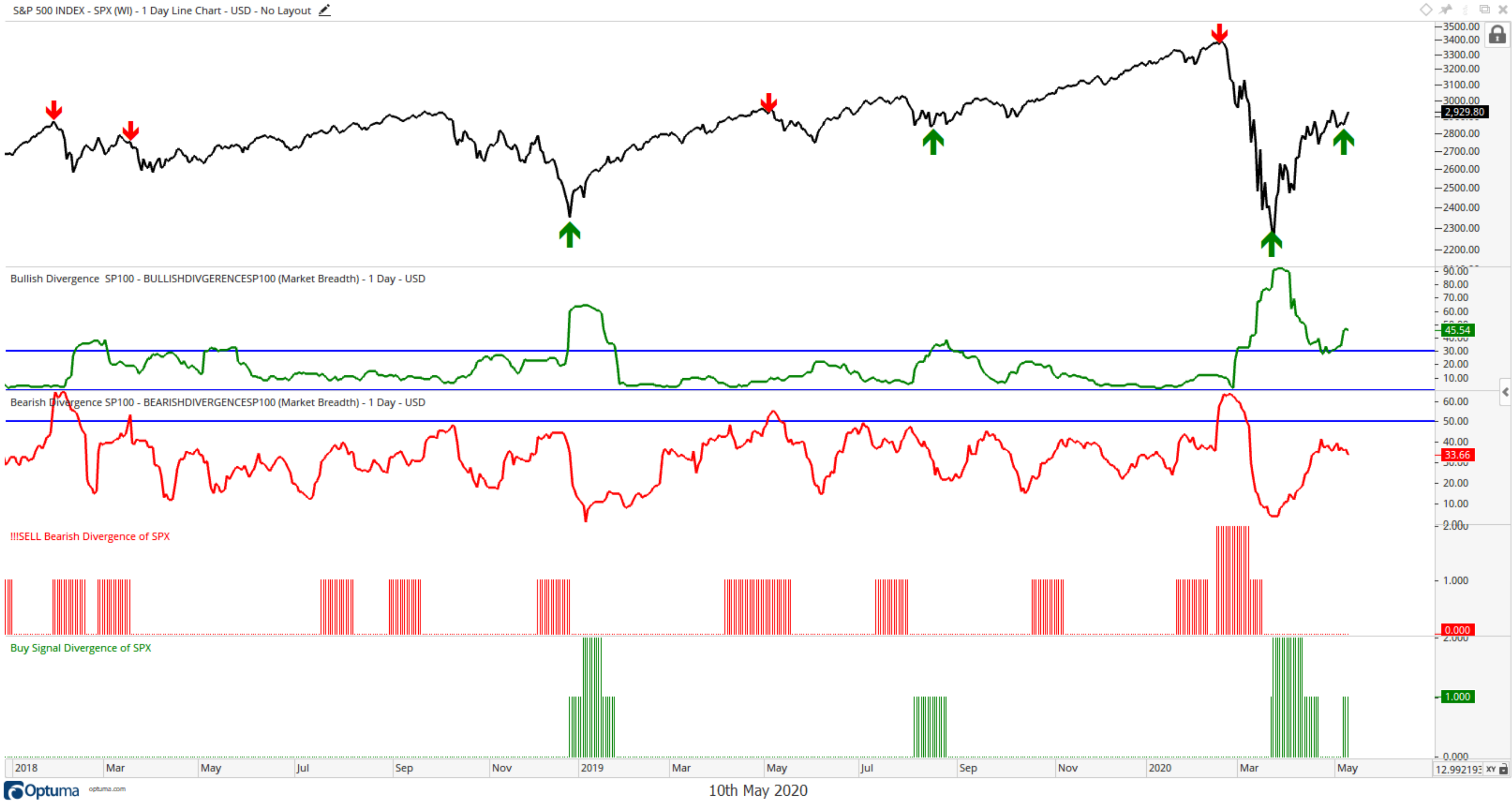
In particular, **it does not capture the impact of COVID-19** beyond its impact on GDP source data and relevant economic reports that have already been released. It does not anticipate the impact of COVID-19 on forthcoming economic reports beyond the standard internal dynamics of the model.



Sources: *Blue Chip Economic Indicators* and *Blue Chip Financial Forecasts*
Note: The top (bottom) 10 average forecast is an average of the highest (lowest) 10 forecasts in the *Blue Chip* survey.

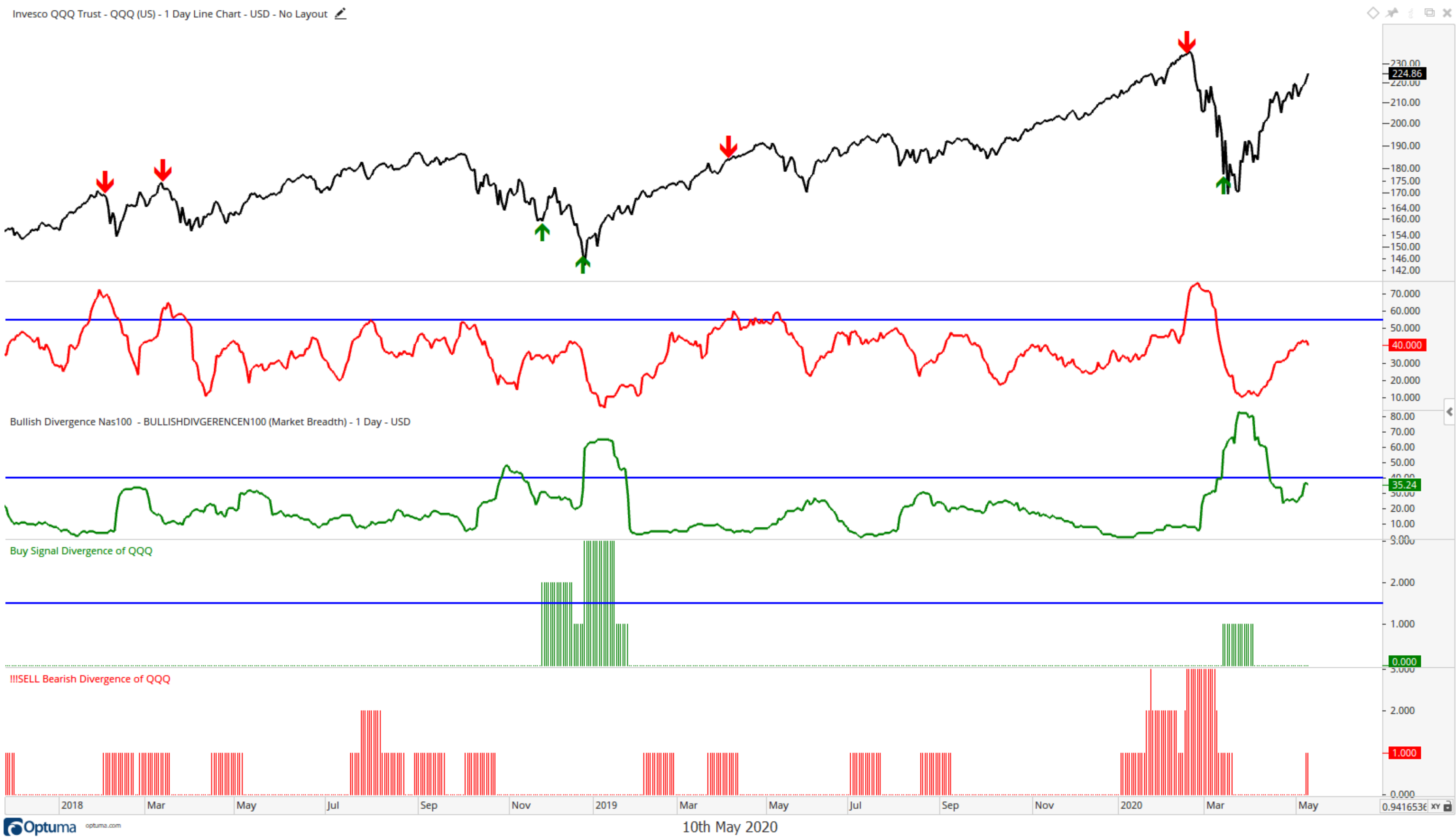
Here is the Atlanta Fed GDPNow chart, which uses current data and 'now-casting' to estimate the next quarters GDP growth. As of May 8th, the estimate sits at –34.9%, down from –176% on May 5th as the April employment report was released. This would clearly be the wort GDP contraction in modern history. At the depths of 2009 GDP contracted by less than 10%.

Momentum Divergences—SPX



While we often look at momentum divergences on indices on their own, I’ve developed a breadth tool that looks at the percentage of stocks within indices and sectors that are showing bearish or bullish divergences. This can be useful data, when more than half to the underlying index (or sector) has a bearish or bullish divergence we often see a trend change develop. Above is an example showing the % for S&P 100 stocks as well as the indicator applied to the S&P 500 itself. The arrows on the chart indicate when there’s a large number of individual stock divergences and a divergence in the index itself. As you can see, these have done a great job at marking turning points in price. When many of the stocks and the index have a bearish or bullish momentum divergence, then it becomes a major headwind or tailwind for price action.

I’ll be providing these charts for the S&P 500, Nasdaq 100, and each sector. The sector charts will becoming in the next report. I’ve been working n this project for a great deal of time and am very exited to begin showing them to you now.



Above is the same chart of divergences, but for the Nasdaq 100.

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.

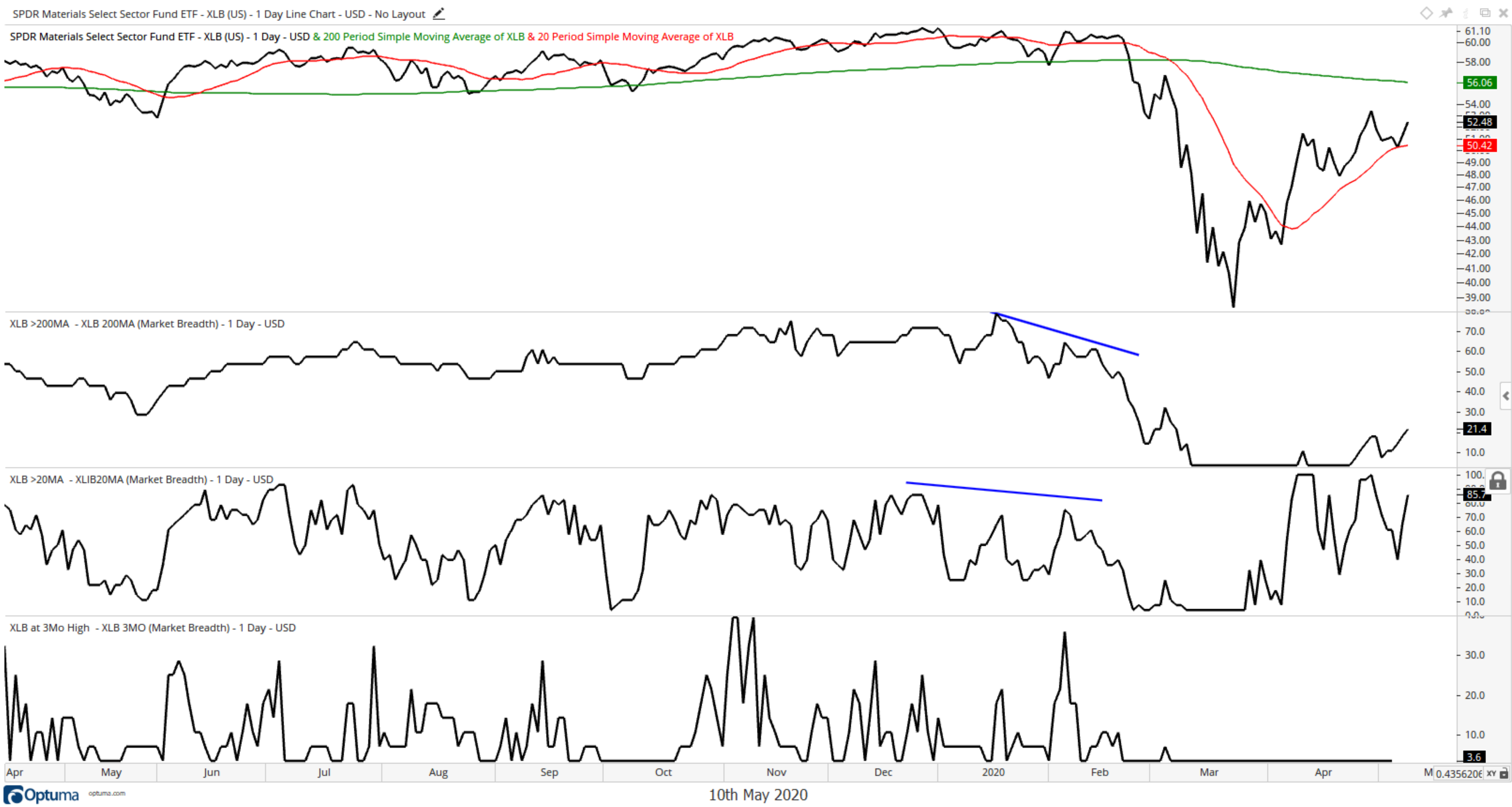
The second watchlist is the individual stocks of the sector sorted by respective Momentum Composite reading, shown as a z-score. Scores less than 2 are significant.

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.

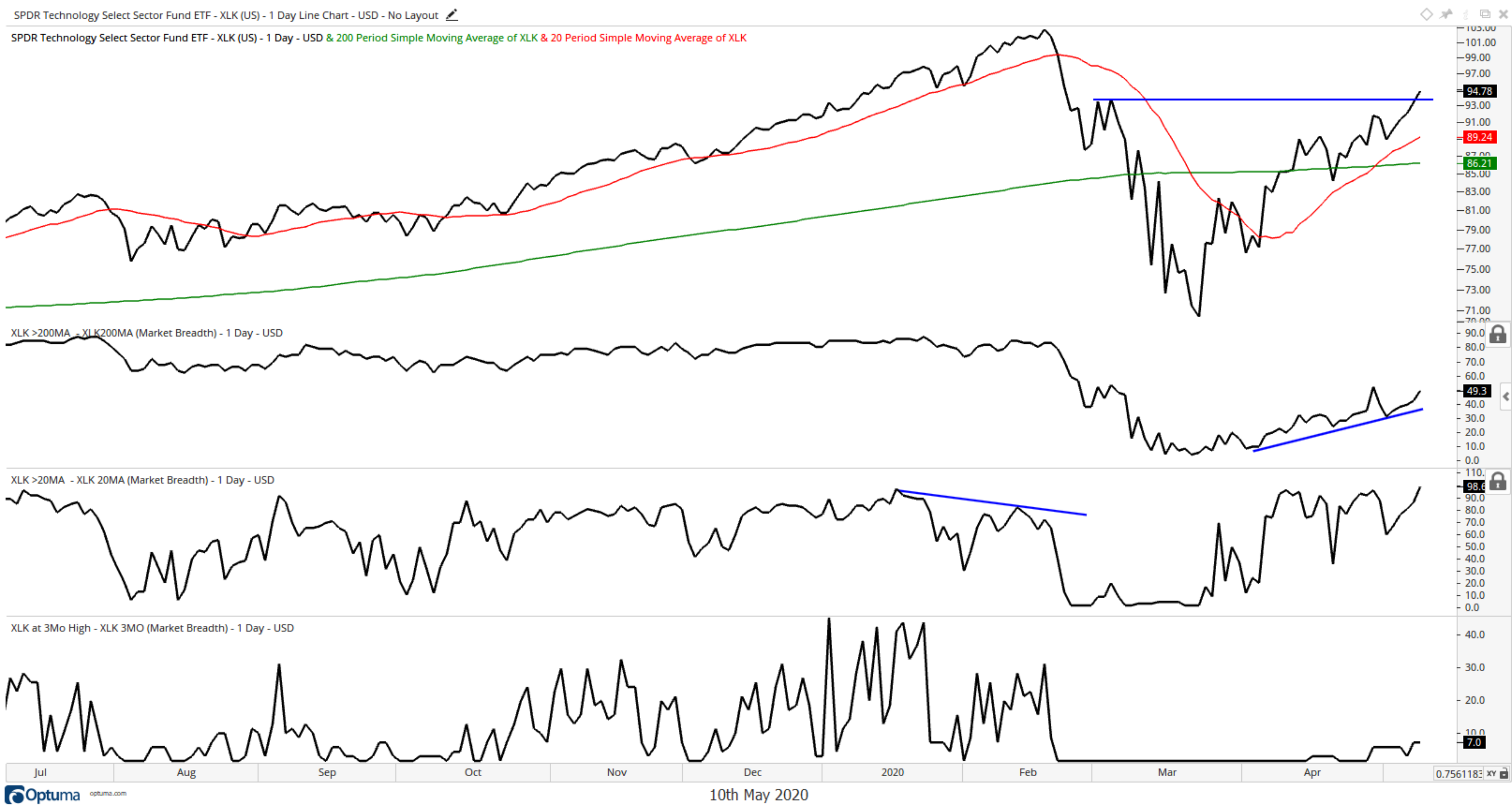
10th May 2020

XLF continues to do battle with its 50-day moving average on the daily chart, with both momentum indicators moving higher. Weekly momentum is still extremely low, giving plenty of upside potential as price still sits below its 2018 low.



Breadth remains supportive with over 85% of XLF stocks above their short-term moving average.

XLK recently broke above the counter-trend high from March, a bullish price move. Momentum is supportive of the bullish price action on both the daily and weekly timeframes.

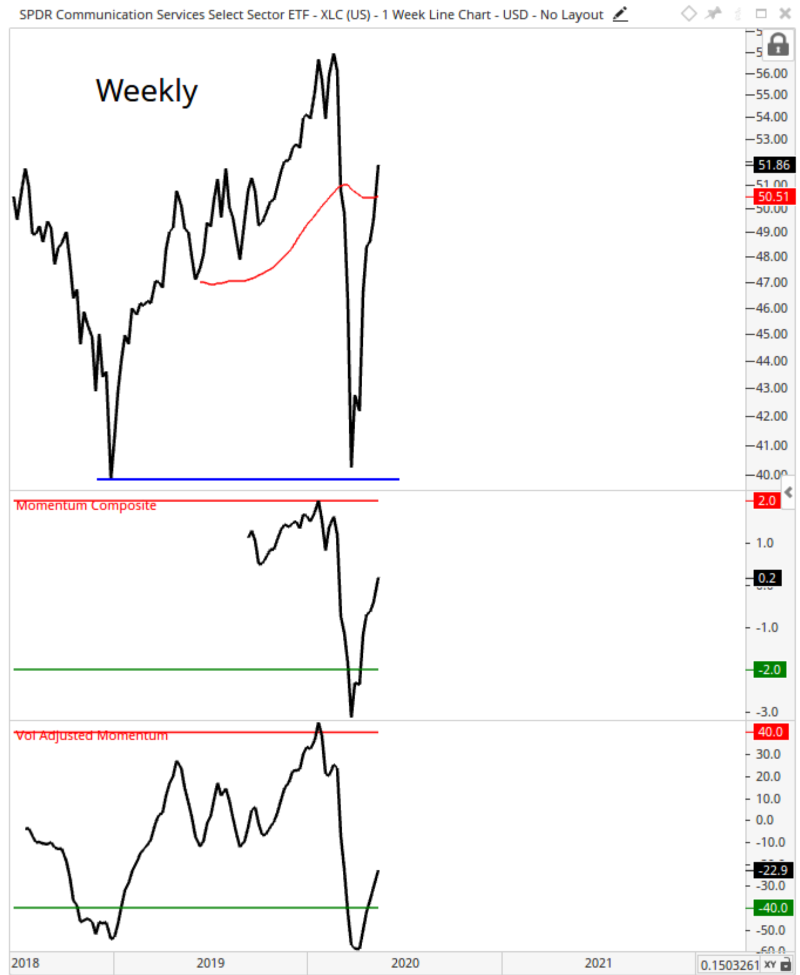


A continued trend of more stocks rising above their respective 200-day MA with 98% already above their 20-day MA. Breadth appears bullish for tech.

Health Care Sector

XLV has consolidated in recent weeks, similar to SPX. Momentum Composite has also flattened out but VaM has begun to move lower. Price has held above its two key Moving Averages.

The % of stocks above their 20-day MA has begun to fade a little but still is north of 85%, so we can forgive that since the trend in %200MA continues to rise. XLV is holding above its own 20-day MA, an area of support we'll want to watch.



10th May 2020

Watch List

Ticker	Momentum
Communications Momentum Score	
NFLX	28.2806
ATVI	18.8263
EA	8.0805
CHTR	-2.8024
TTWO	-2.8356
TMUS	-6.7317
FB	-15.6346
VZ	-19.5376
GOOG	-20.4213
GOOGL	-20.7944
TWTR	-43.2820
CMCSA	-48.3301
T	-50.3895
DIS	-52.9455

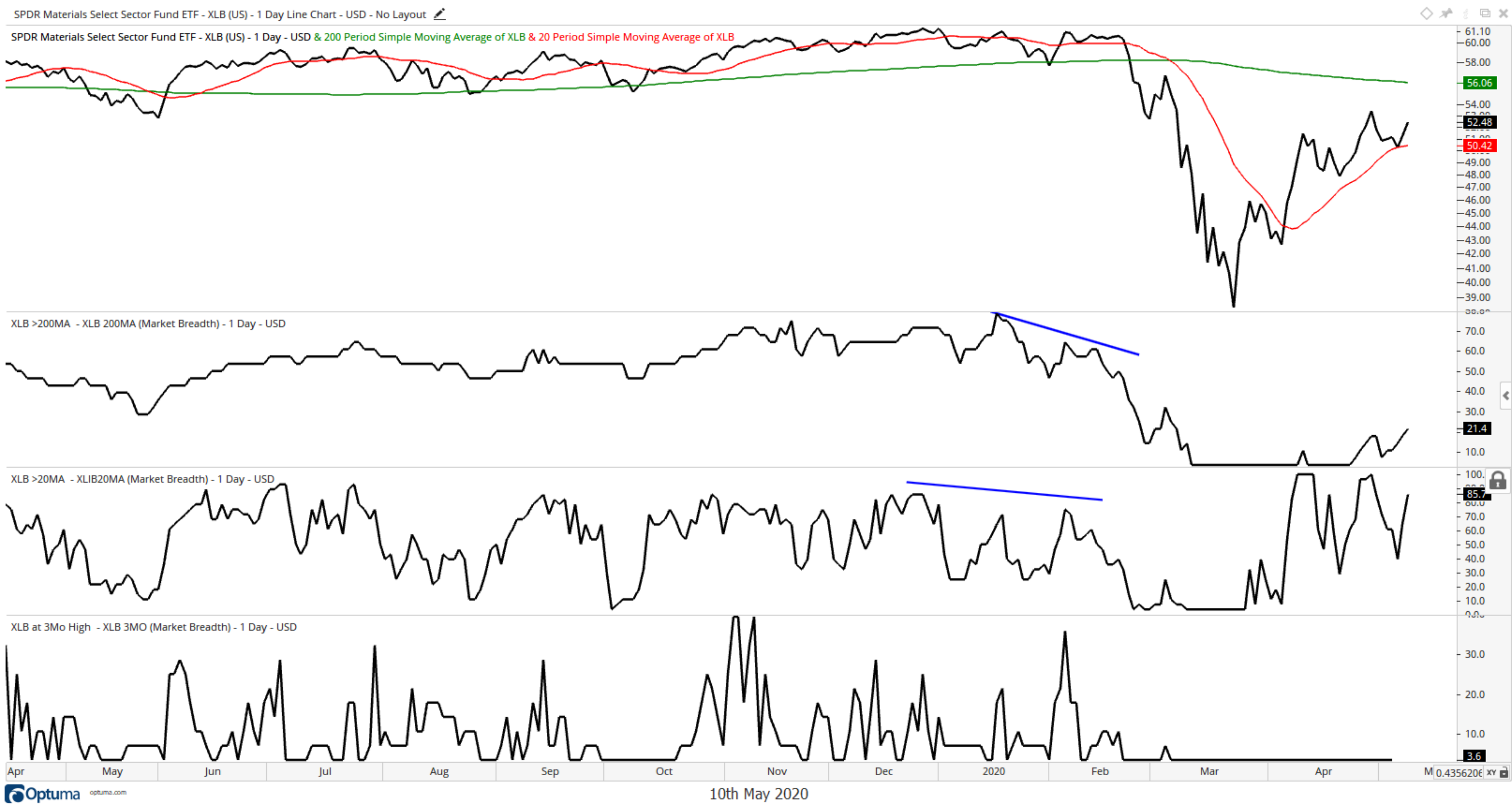
Watch List

Ticker	Mean Reversion
Communications Mean Reversion	
OMC	-1.9199
LYV	-1.8418
DISCK	-1.801
CMCSA	-1.7852
DISCA	-1.7504
VIAC	-1.4628
T	-1.4324
DISH	-1.2873
DIS	-1.2196
CTL	-1.1829
IPG	-1.1785
FOXA	-1.1362
FOX	-1.0925
NWSA	-0.8386
NWS	-0.7627
TWTR	-0.7286

XLC broke above its 200-day MA with momentum trending higher.

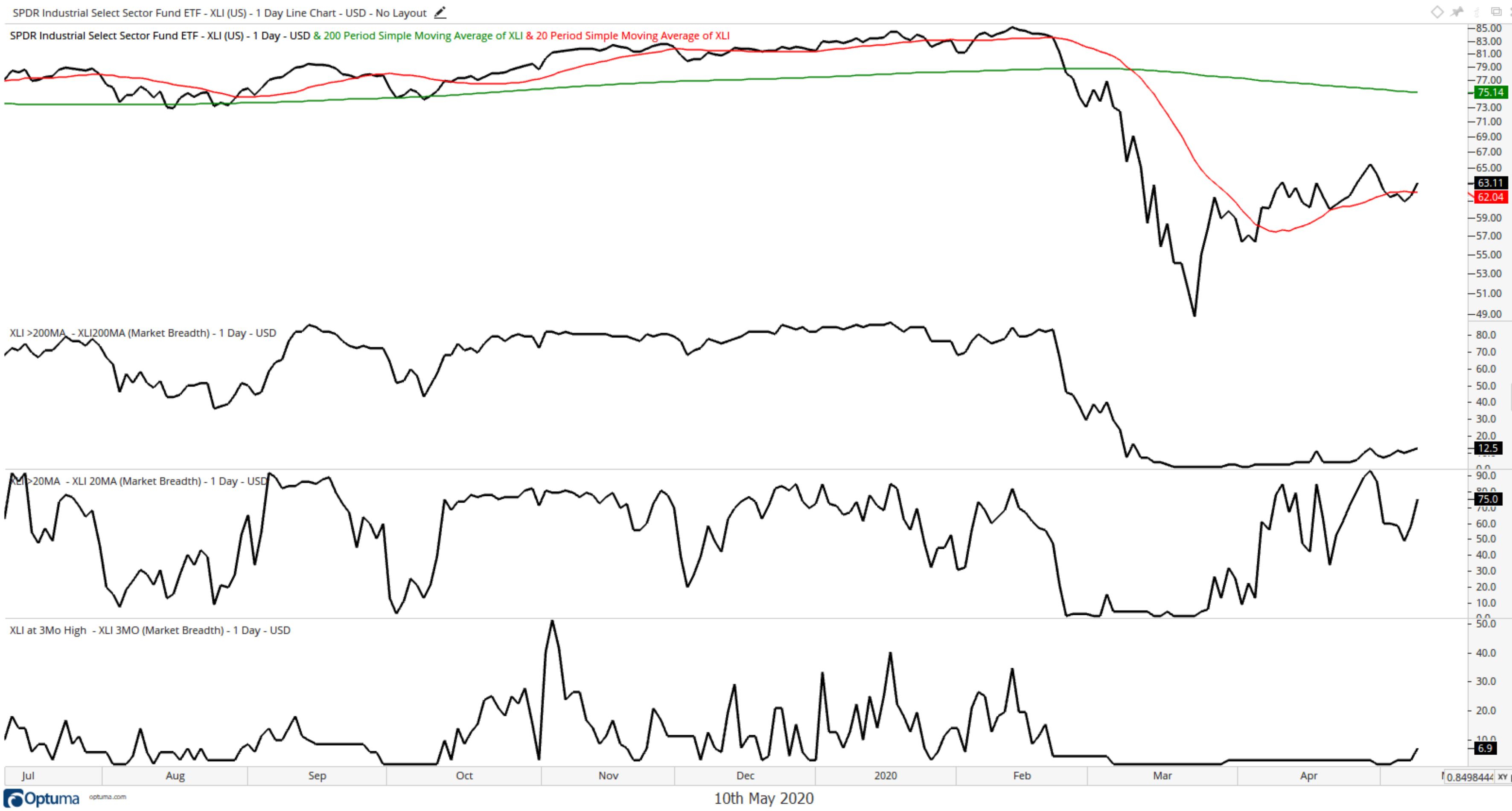
A slight drop in % of stocks above 20-day MA with XLC making a higher-high and no recent additions to the % above 200-day MA.

XLB has cleared its 50-day MA but still sits below its 200-MA. Weekly momentum is working on recovering as price recaptures the Dec. ‘18 low.



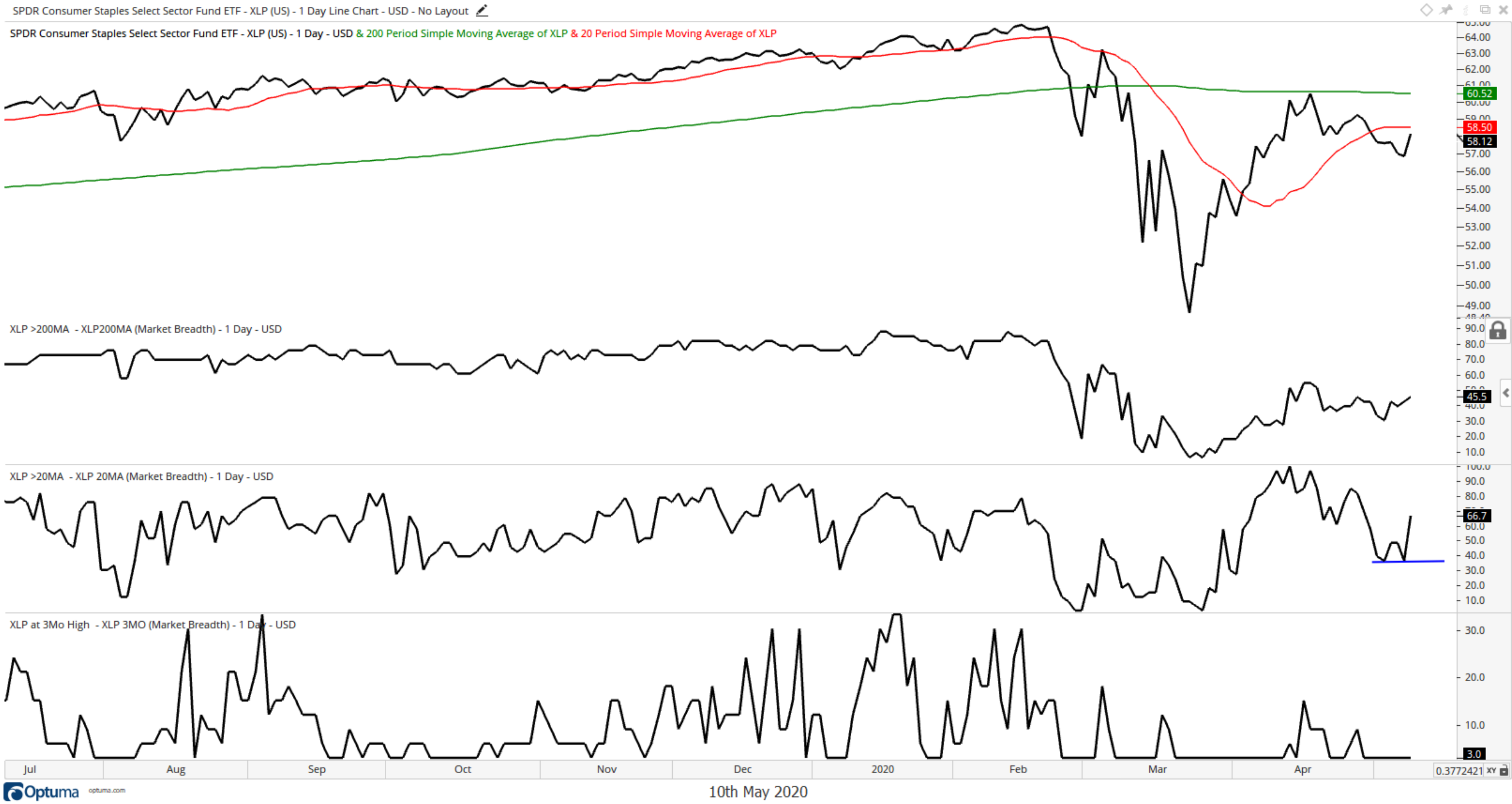
Just 21% of stocks are back above the 200-day MA, something XLB itself has yet to accomplish. But with over 85% above their 20-day MA, breadth appears to be on the right path.

XLI attempted to clear its 50-day MA last week, watching if it can hold this week. Momentum is constructive on the daily and still has room to improve on weekly with price also trying to regain the 2018 low.

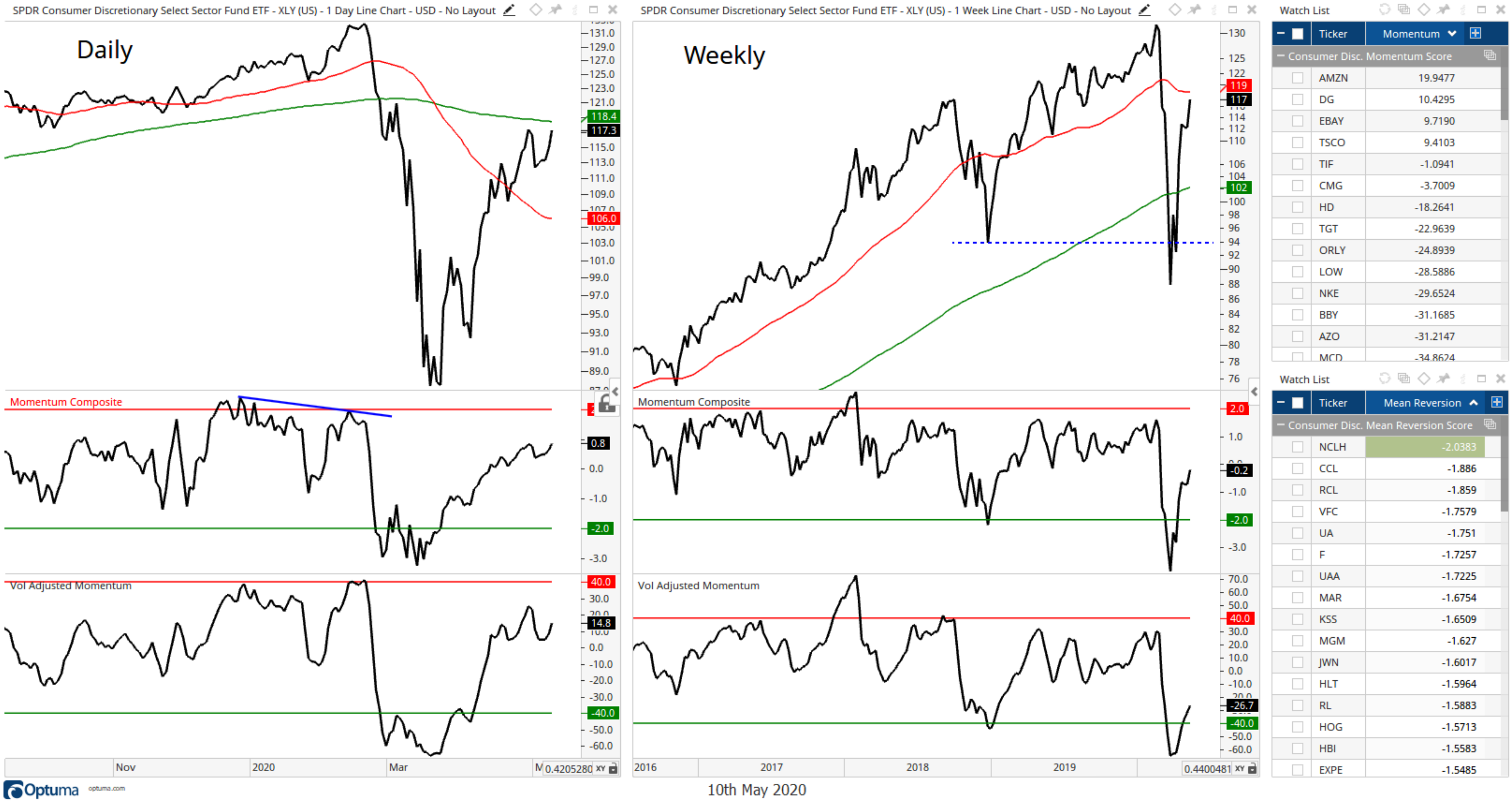


75% of stocks are above their 20-day MA but just 12% have regained their 200-day MA as industrials haven't been as strong as other sectors since the broad market bottom in March.

XLP is working on re-taking its pivot low from February after holding its 50-day MA as support on the latest short-term move lwoer. The 200-day MA has been resistance with momentum flattening out.

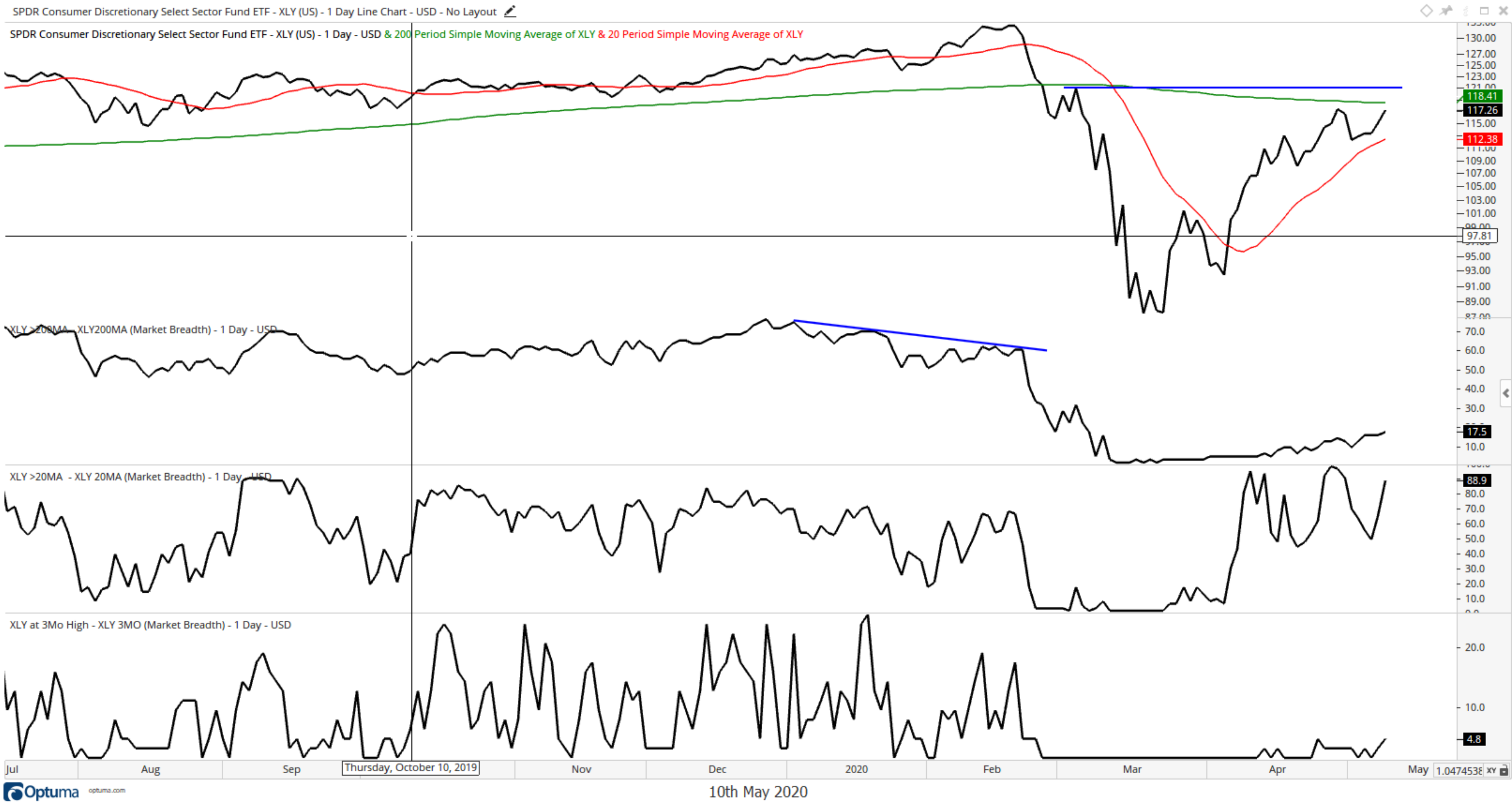


%20MA has held above 40% on the recent dip in price with good improvement in %200MA even though XLP has yet to capture its own 200-day MA.



10th May 2020

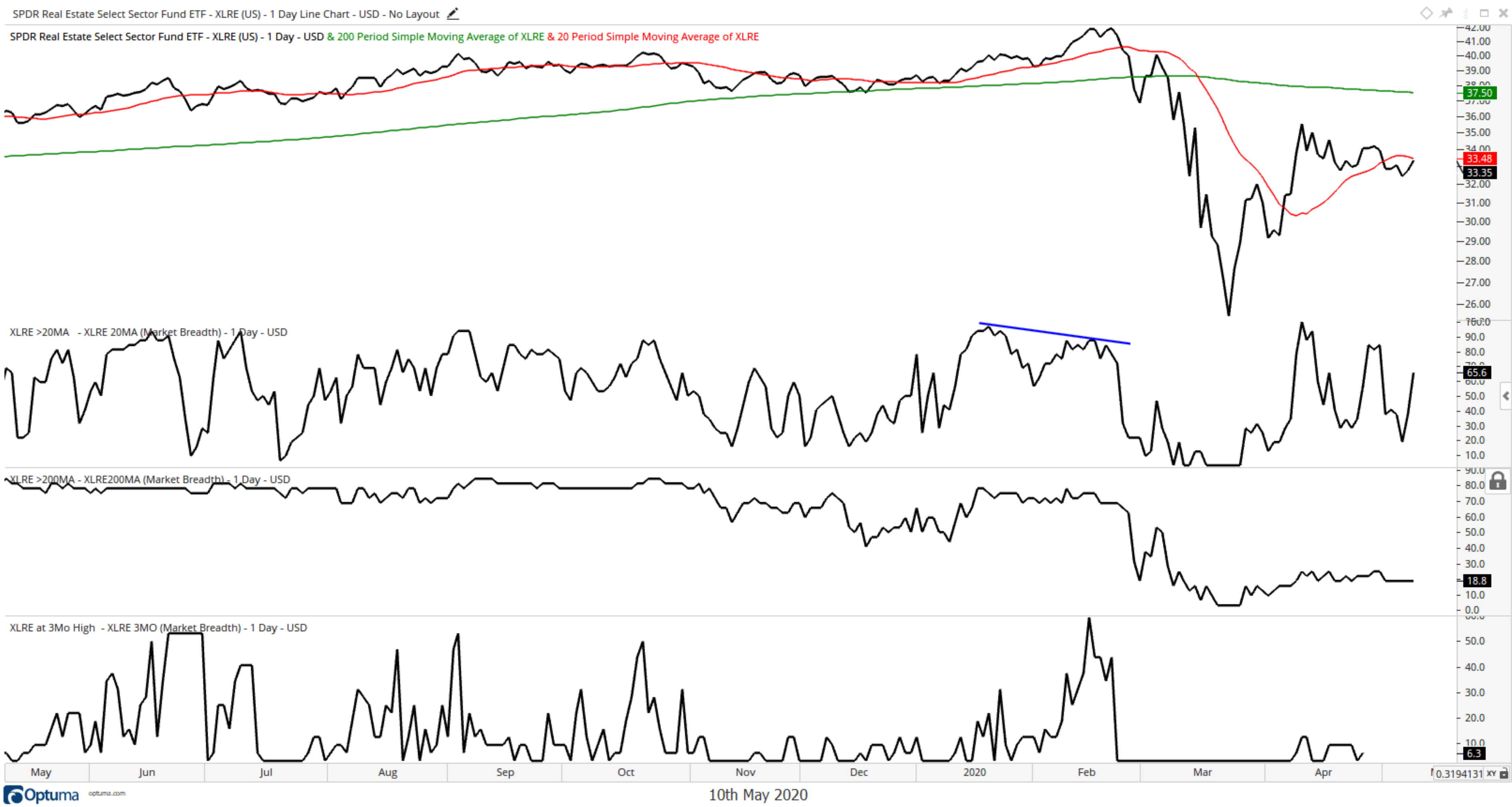
XLY is moving closer to its 200-day MA with momentum moving higher.



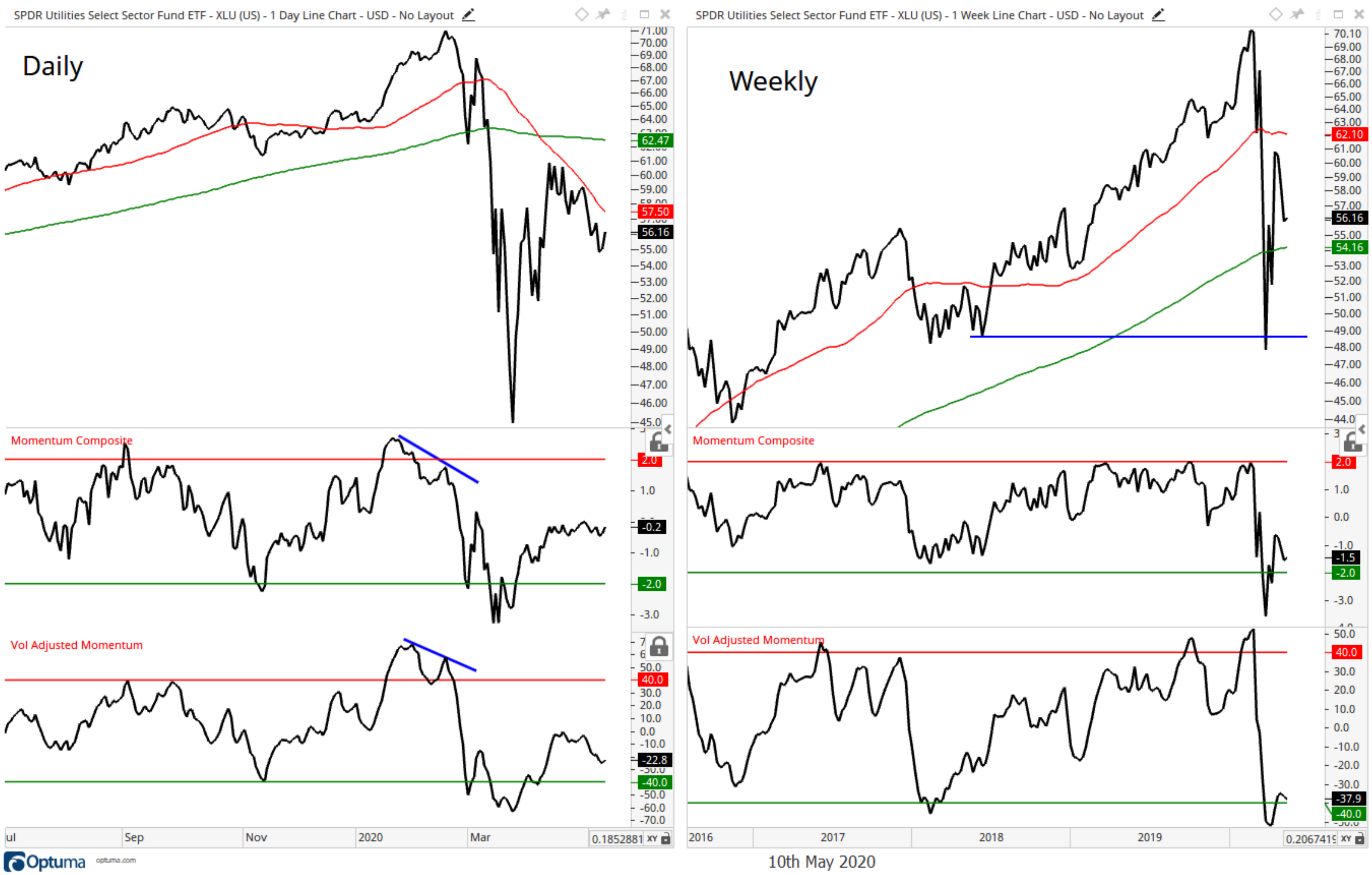
Breadth continues to improve with XLY, nearly 90% of stocks are above their 20-day MA and the trend is moving in the right direction for %200MA.

10th May 2020

The 50-day MA has been resistance for XLRE. Weekly VaM has yet to move back above –40, something bulls will want to see soon.



Breadth is unimpressive for real estate, as price consolidates, fewer stocks have held above their 20-day MA.



Watch List

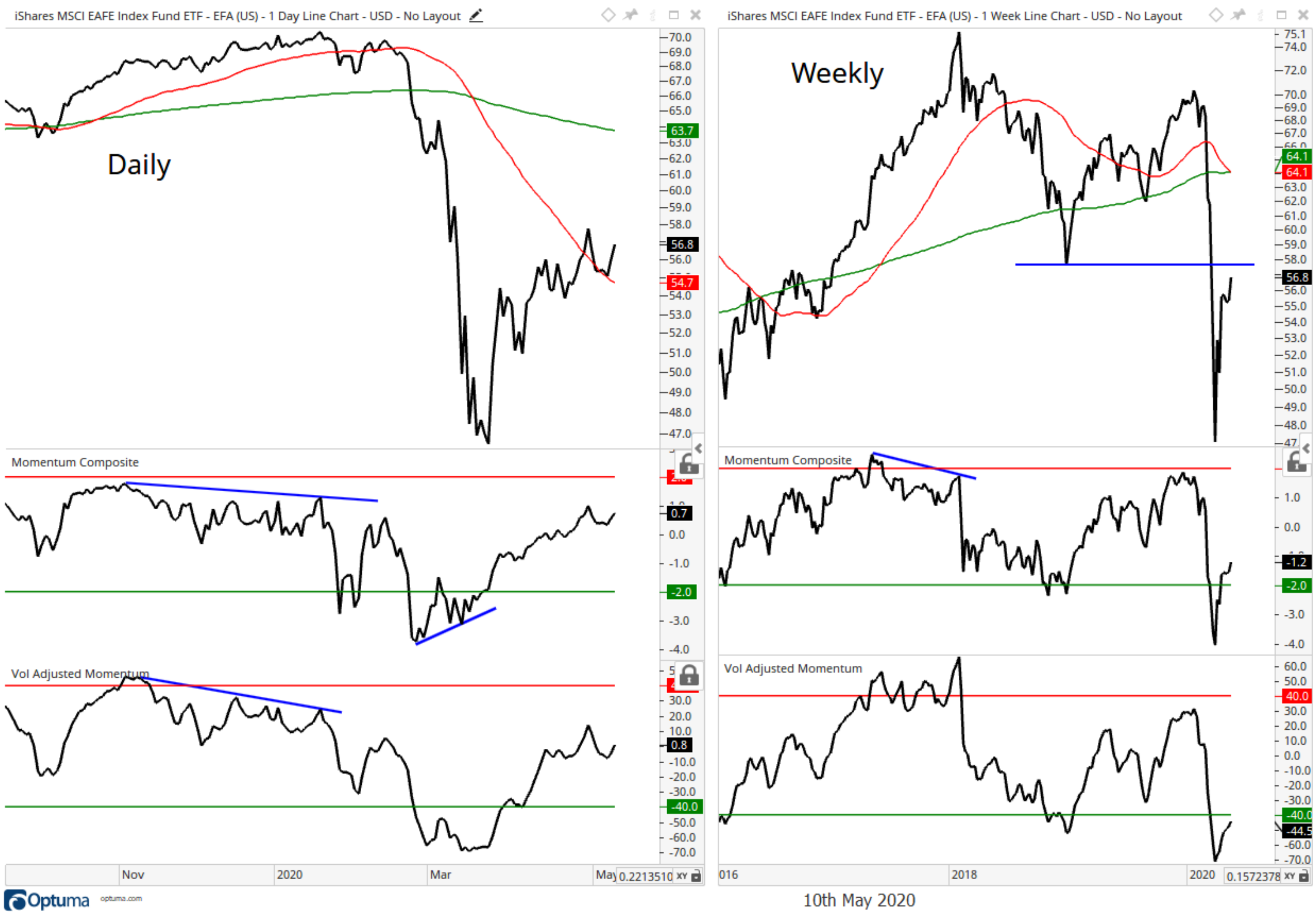
Ticker	Momentum
Utilities Momentum Score	
XEL	-25.2050
AWK	-27.1822
D	-27.5781
WEC	-29.5399
NEE	-31.0261
ES	-31.1606
AEE	-33.8783
ATO	-34.7649
CMS	-34.9680
DUK	-35.9634
LNT	-36.9965
NRG	-37.1747
SO	-37.9928
PEG	-38.8741

Watch List

Ticker	Mean Reversion
Utilities Mean Reversion Score	
ED	-2.5987
NI	-2.1928
PNW	-1.9836
DTE	-1.7321
AES	-1.6968
PEG	-1.5996
AEP	-1.5827
ATO	-1.5534
EXC	-1.5313
DUK	-1.4472
AEE	-1.3738
PPL	-1.3419
CMS	-1.3338
EIX	-1.3139
CNP	-1.2922
FE	-1.2916

50-day MA has been resistance for XLU and breadth has weakened along with the price action.

Breadth looks poor for XLU, less than 25% of the stocks are above their 20-day MA and less than 5% above the 200-day MA.



1 Week - Watch List - No Layout

Name	Momentum
Country Momentum Score	
OMX Copenhagen	-6.1030
NASDAQ Composite Index	-14.5822
OMX Vilnius Stock Index	-14.6383
Shanghai Composite Index	-19.1285
Taiwan Stock Exchange Weighted In	-24.7786
NZSX 50 Index	-27.3258
Swiss Market Index	-30.1446
S&P 500 INDEX	-30.2156
FTSE JSE Africa All Share	-32.3182
OMX Stockholm Benchmark Index	-32.8373
Kospi 200 Index	-33.1092
OMX Stockholm All-Share Cap GI Inc	-34.9272
Nikkei Stock Average 225	-36.7153
Tel Aviv Stock Exchange 125 Index	-37.0726

1 Week - Watch List - No Layout

Name	Mean Reversion
Country Mean Reversion Score	
Madrid General Index	-2.0695
Jakarta Stock Exchange Com	-2.0176
Straits Times Industrial Inde	-1.8063
BSE 30 - India	-1.7806
Polish Index	-1.7371
Australia All Ordinaries Inde	-1.689
FTSE MIB Index	-1.6792
CAC 40 Index	-1.6282
Vienna Stock Exchange Inde	-1.6174
FTSE All Share Index	-1.5983
FTSE 100 Index	-1.5943
Ibovespa - Brazil Index	-1.5567
Budapest Indices BUX Index	-1.5357
BEL 20 Index - Belgium	-1.518
Thailand SET Index	-1.4488
Hang Seng Index	-1.4053

EFA has hung on to its 50-day MA with momentum remaining supportive. Price still sits below the 2018 low on the weekly chart.

1 Day - Watch List - No Layout

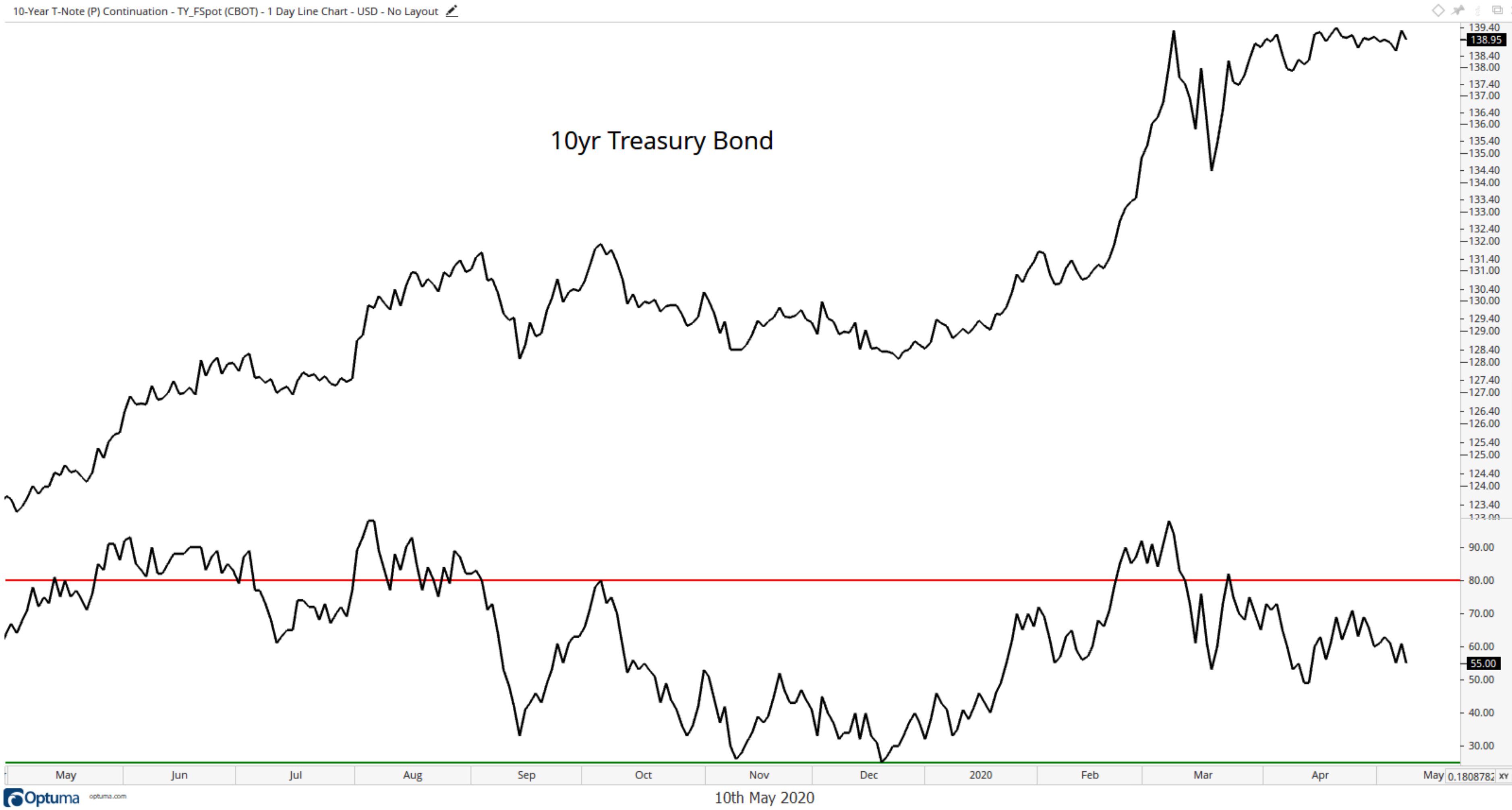
Market	% Bullish	5MA	History
Natural Gas DSI	21	30.00	
Cocoa DSI	22	19.4	
Corn DSI	23	20	
Swiss Franc DSI	25	21.8	
Mexican Peso DSI	25	19.6	
Sugar DSI	30.00	30.40	
VIX DSI	33.00	40.40	
Palladium DSI	35.00	28.80	
Euro DSI	35.00	34.20	
Cotton DSI	45.00	37.60	
Heating Oil DSI	46.00	39.80	
Gasoline DSI	46.00	38.00	
Coffee DSI	47.00	39.60	
Crude Oil DSI	48.00	47.00	
Lumber DSI	49.00	42.80	
Lean Hog DSI	51.00	53.40	
10Y DSI	55.00	59.00	

1 Day - Watch List - No Layout

Code	% Bullish	5MA	History
CRB Index DSI	56.00	49.60	
British Pound DSI	58.00	55.60	
Wheat DSI	61.00	58.00	
SPX DSI	61.00	52.40	
Cattle DSI	63.00	51.20	
5YR DSI	63.00	62.80	
US Dollar DSI	64.00	66.00	
Platinum DSI	66.00	64.40	
New Zealand Dollar DSI	66.00	60.40	
Copper DSI	67.00	57.60	
Australian Dollar DSI	69.00	65.40	
Nikkei DSI	70.00	61.20	
Nasdaq DSI	70.00	62.00	
Silver DSI	71.00	64.80	
Orange Juice DSI	71.00	66.00	
Gold DSI	75.00	78.60	
EuroDollar DSI	78.00	77.40	

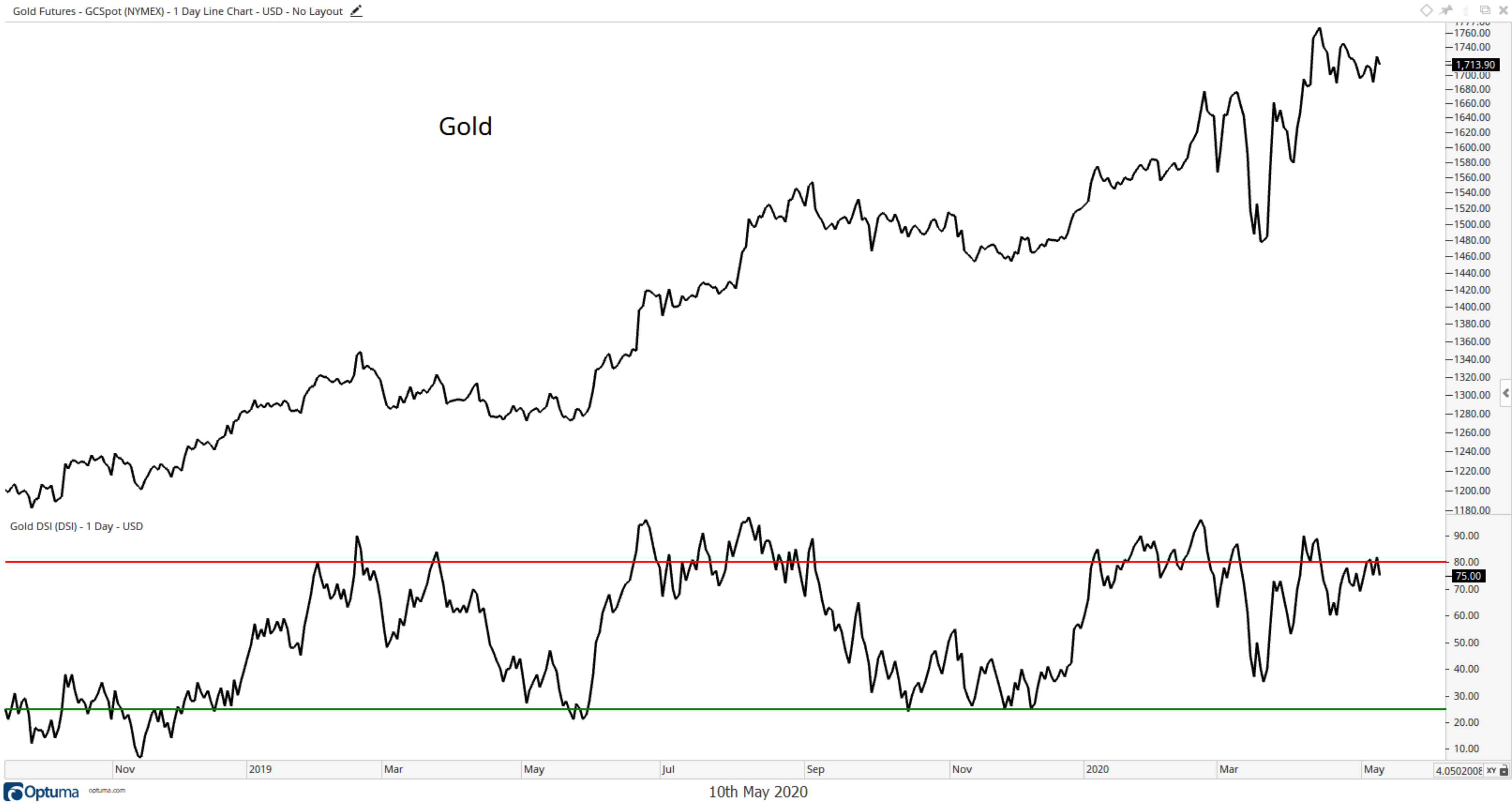
Above is the DSI score for each of the futures markets.

Daily Sentiment Index 10-year Treasury

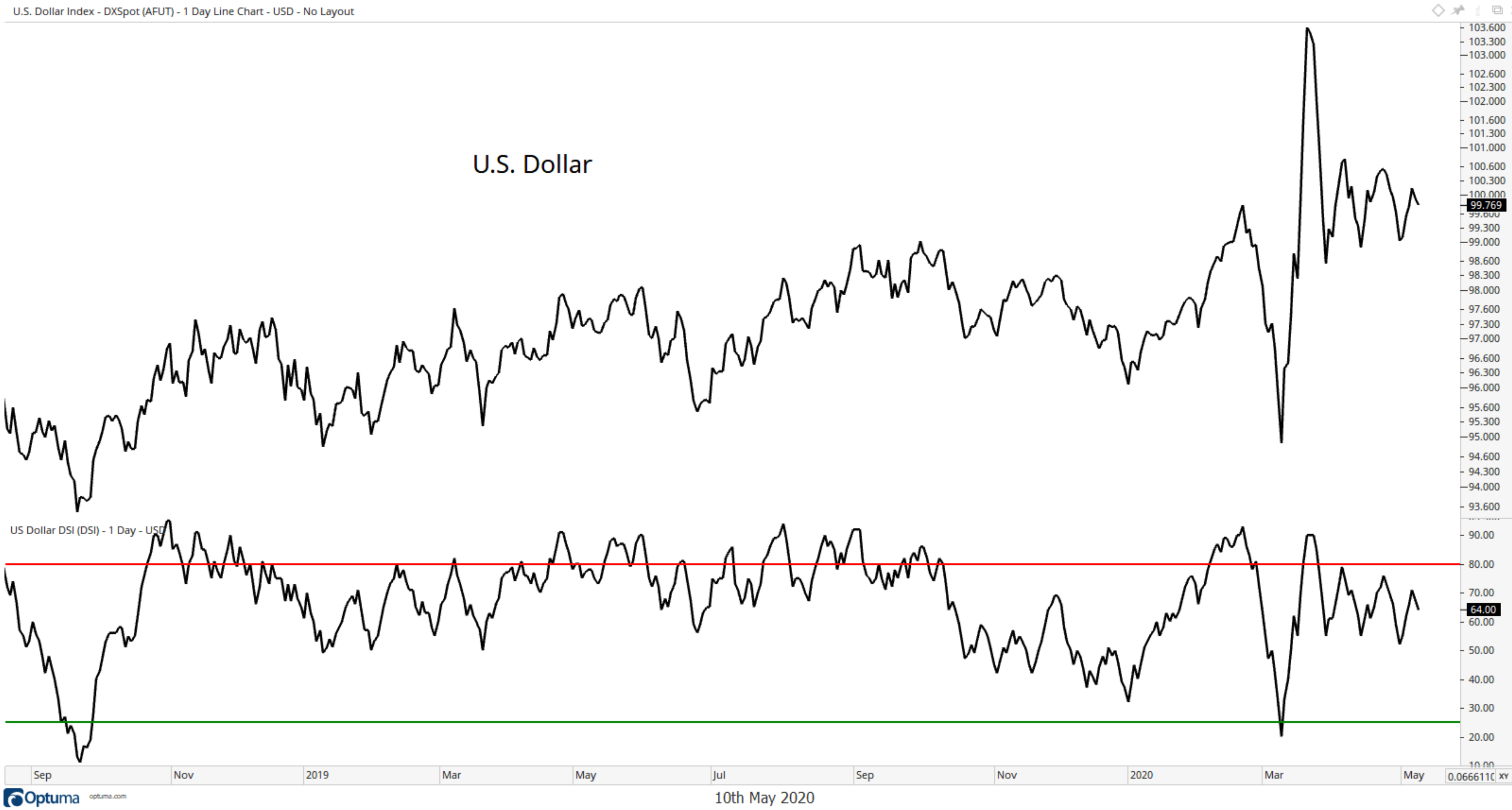


Daily Sentiment Index S&P 500

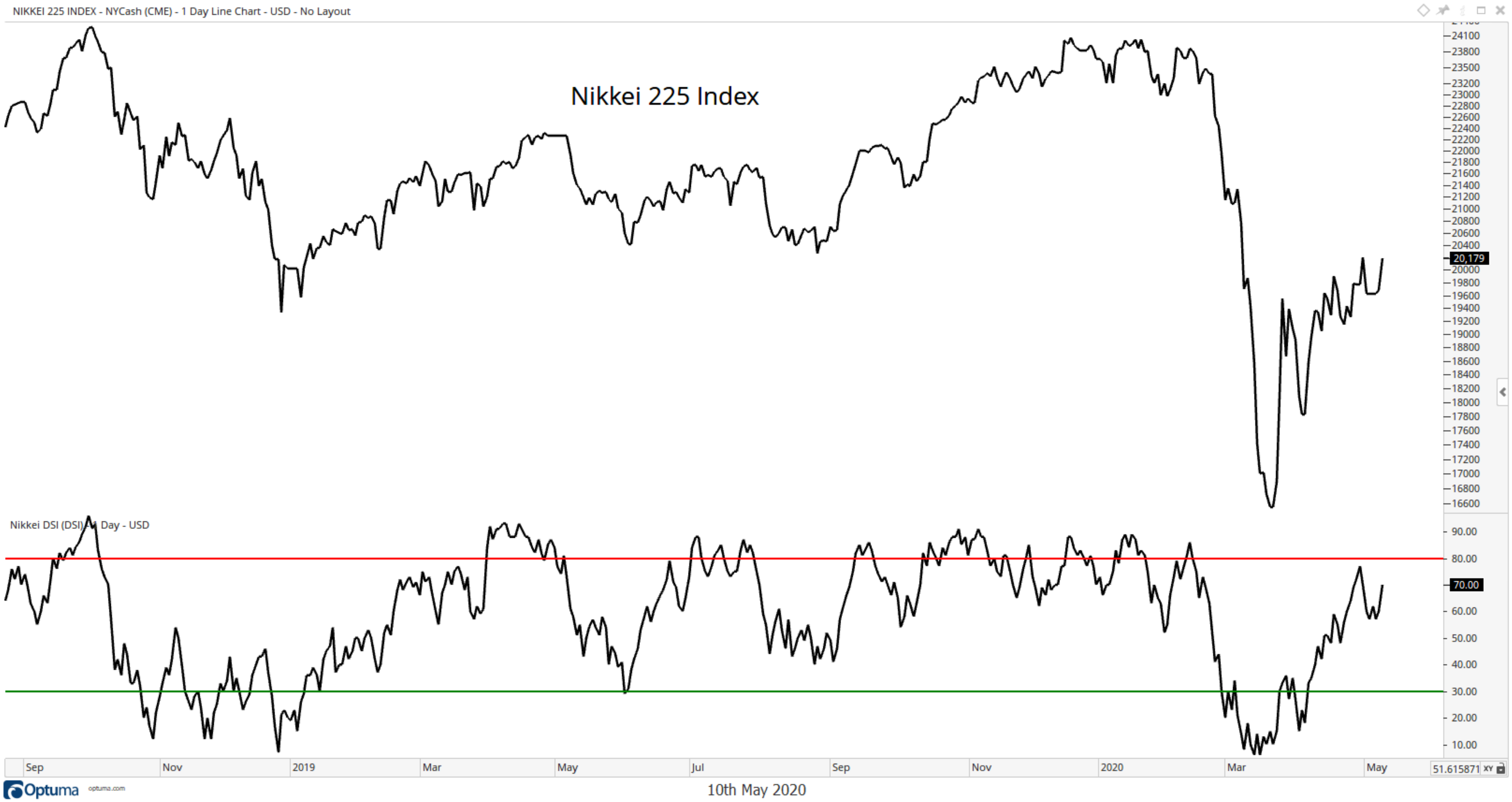
Daily Sentiment Index Nasdaq 100



10th May 2020


U.S. Dollar Index - DXSpot (AFUT) - 1 Day Line Chart - USD - No Layout
U.S. Dollar
US Dollar DSI (DSI) - 1 Day - USD
99.769
64.00
Sep
Nov
2019
Mar
May
Jul
Sep
Nov
2020
Mar
May
Optuma
10th May 2020

10th May 2020


NIKKEI 225 INDEX - NYCash (CME) - 1 Day Line Chart - USD - No Layout
Nikkei 225 Index
Nikkei DSI (DSI) - 1 Day - USD
Sep
Nov
2019
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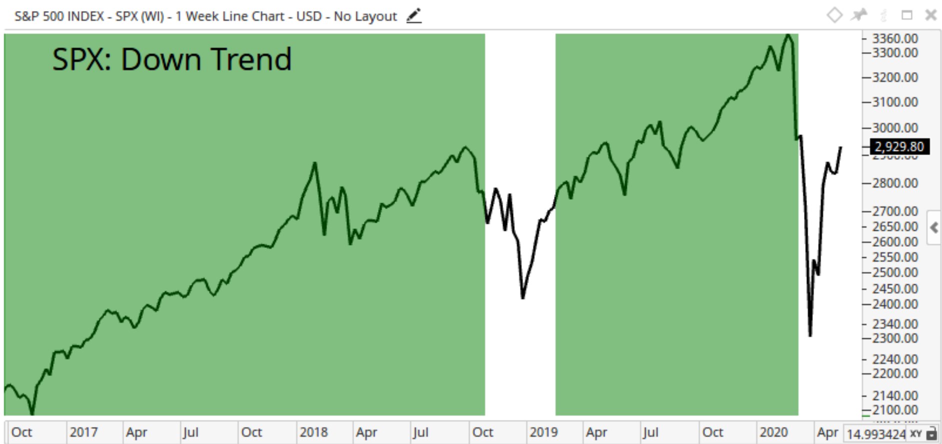
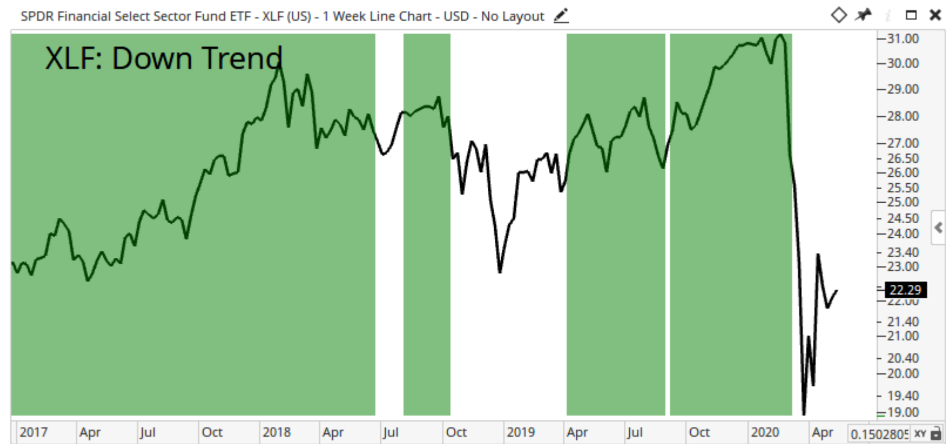
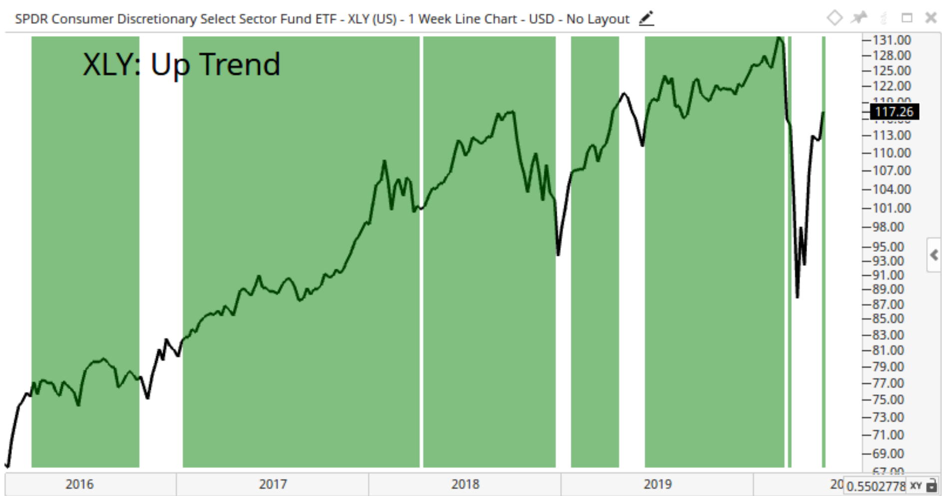
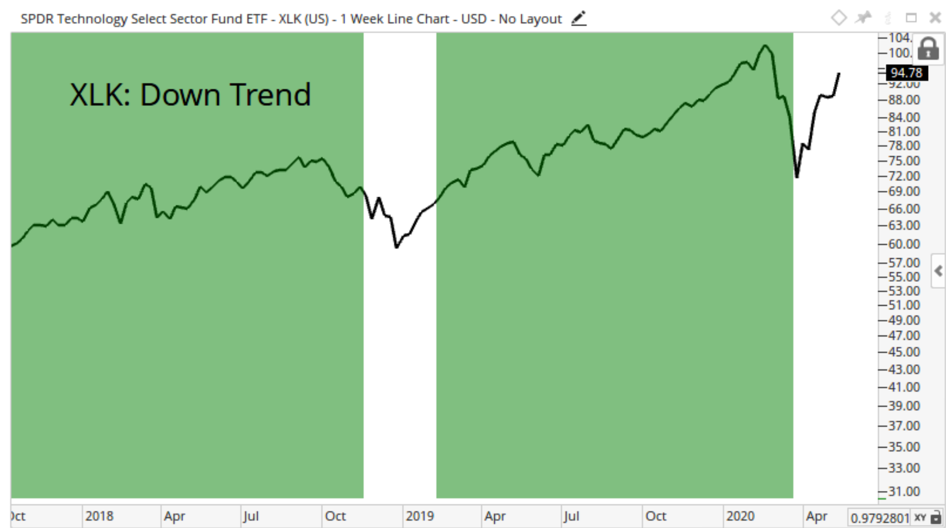
May
Jul
Sep
Nov
2020
Mar
May
10th May 2020









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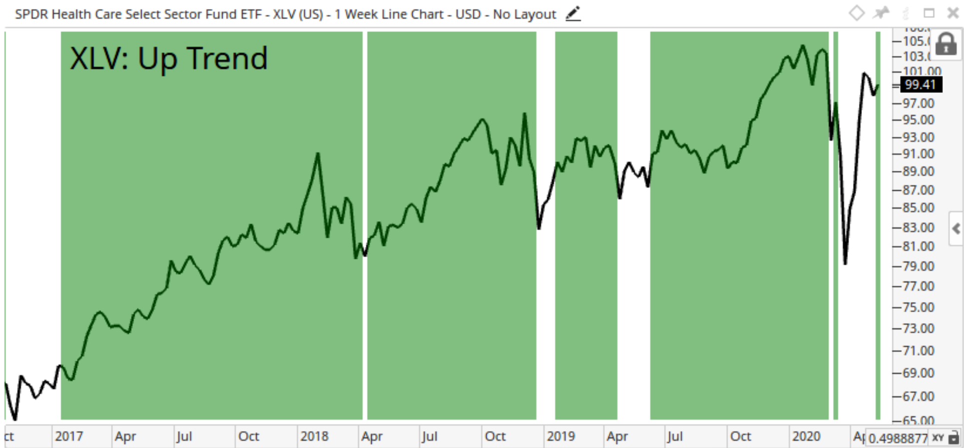

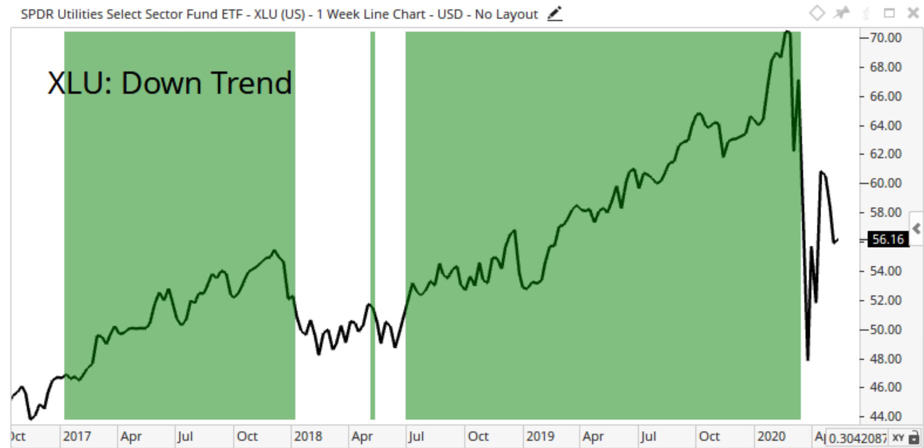

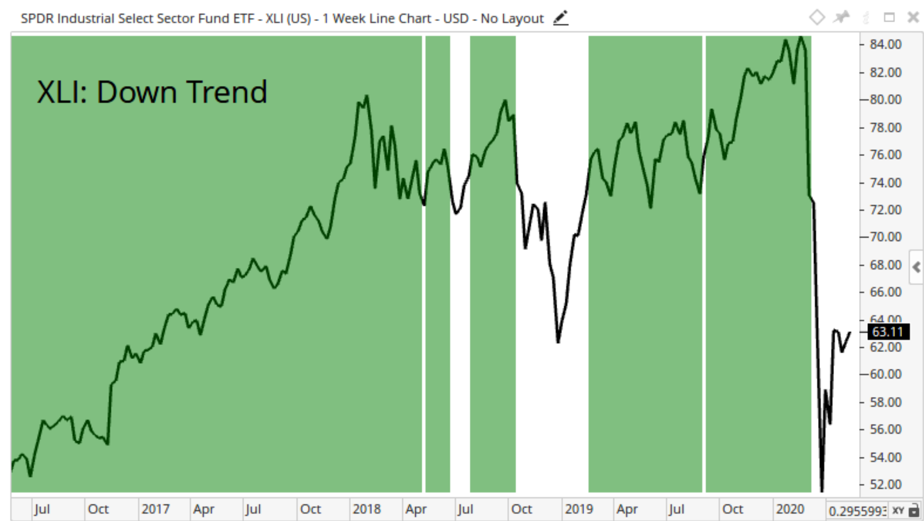

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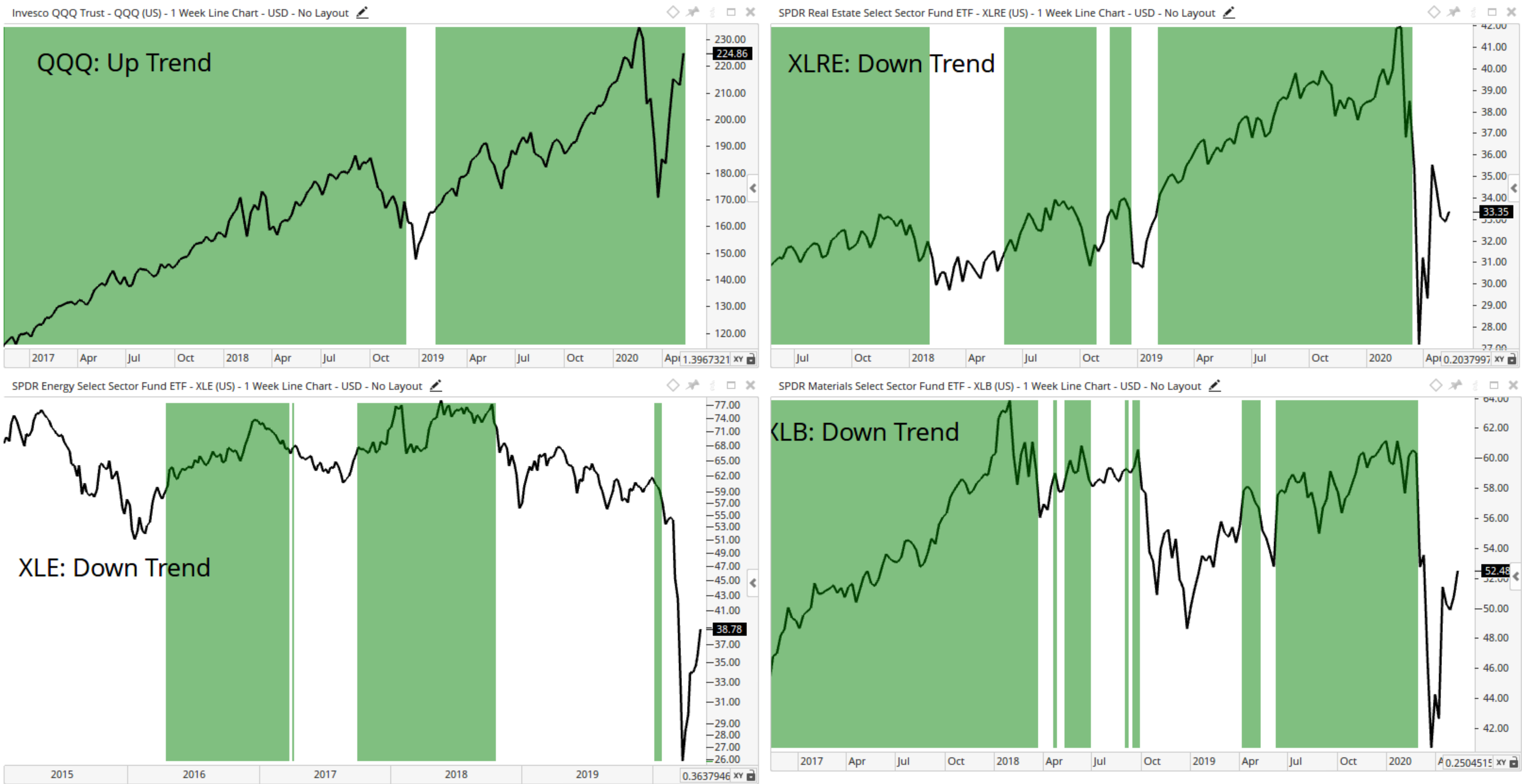
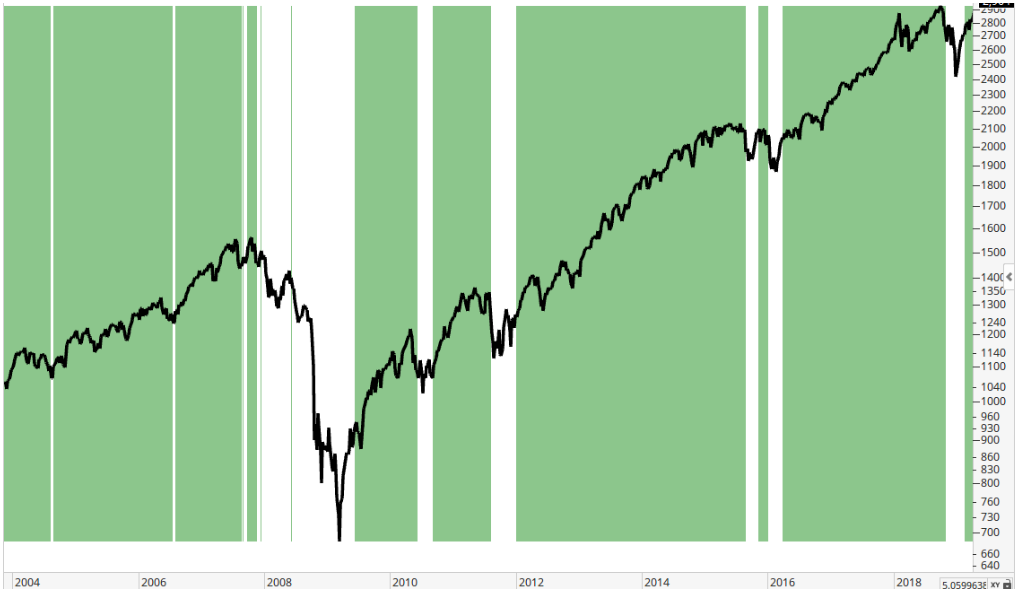
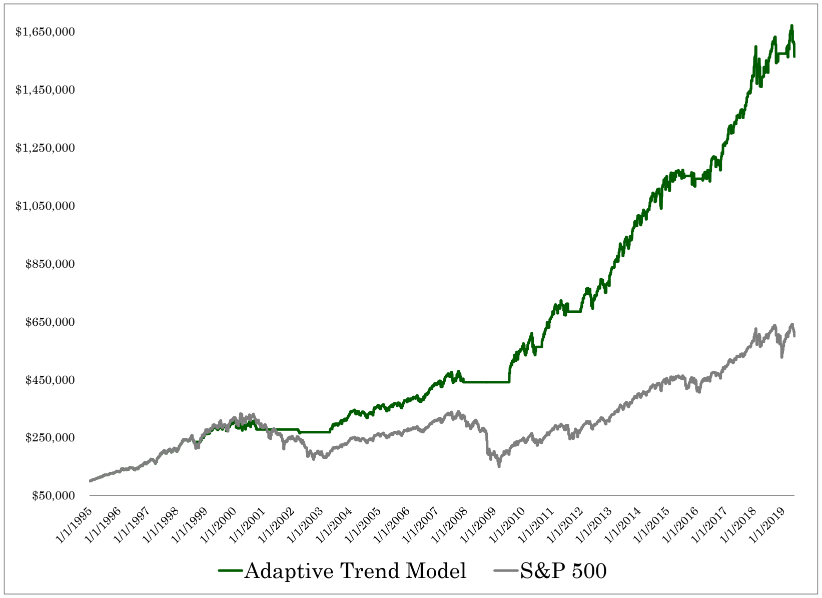


10th May 2020

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.



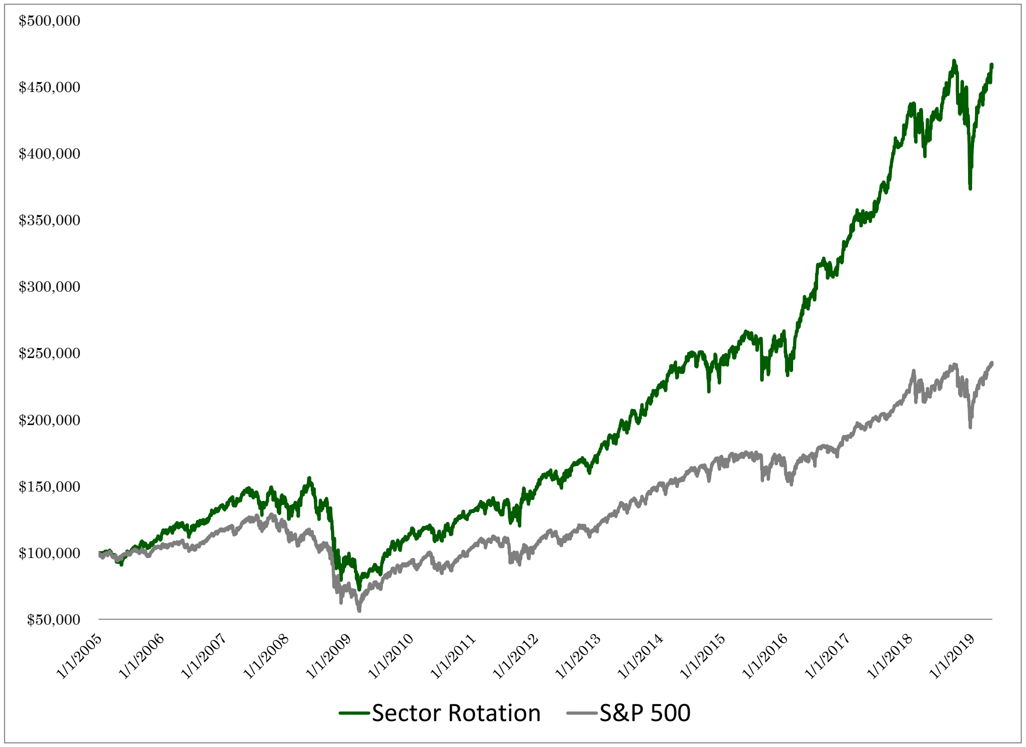


	Annualized Return	Annualized Volatility	Beta	Sharpe	Maximum Drawdown
Adaptive	12.5%	10.3%	0.47	0.97	14.1%
S&P 500	8.9%	15.3%	1	0.42	56.6%

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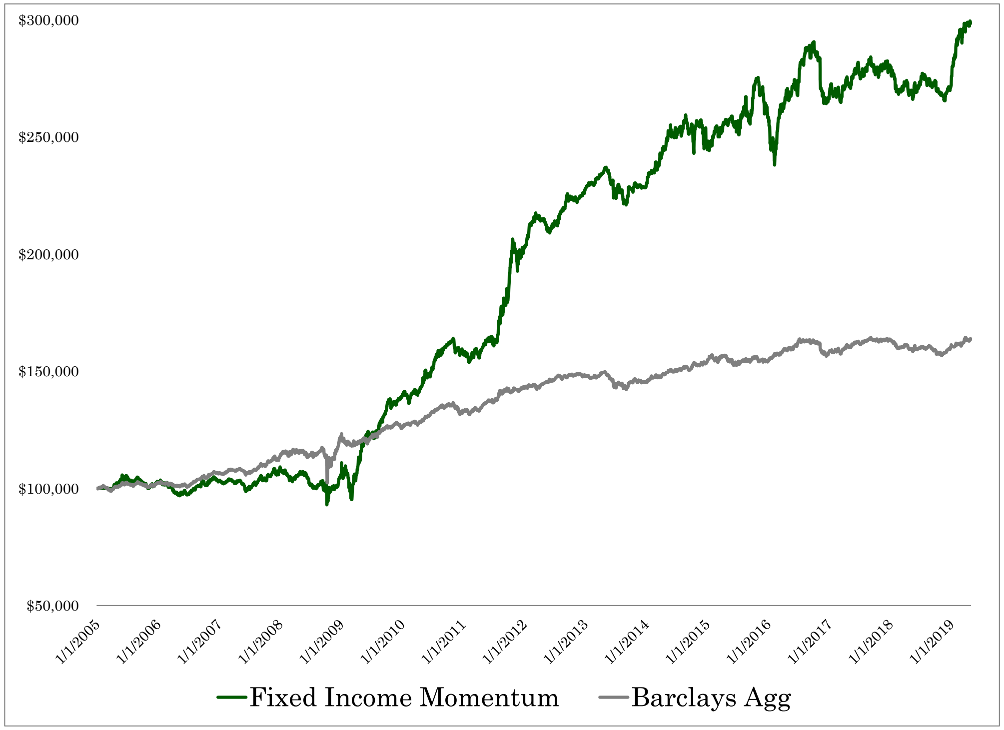
If equities are the speedboats in the sea of financial markets then fixed income securities are the tanker ships. While stocks can move violently in both directions, Thrasher Analytics research has shown that fixed income markets historically show consistent trends. Because of the tanker-like movements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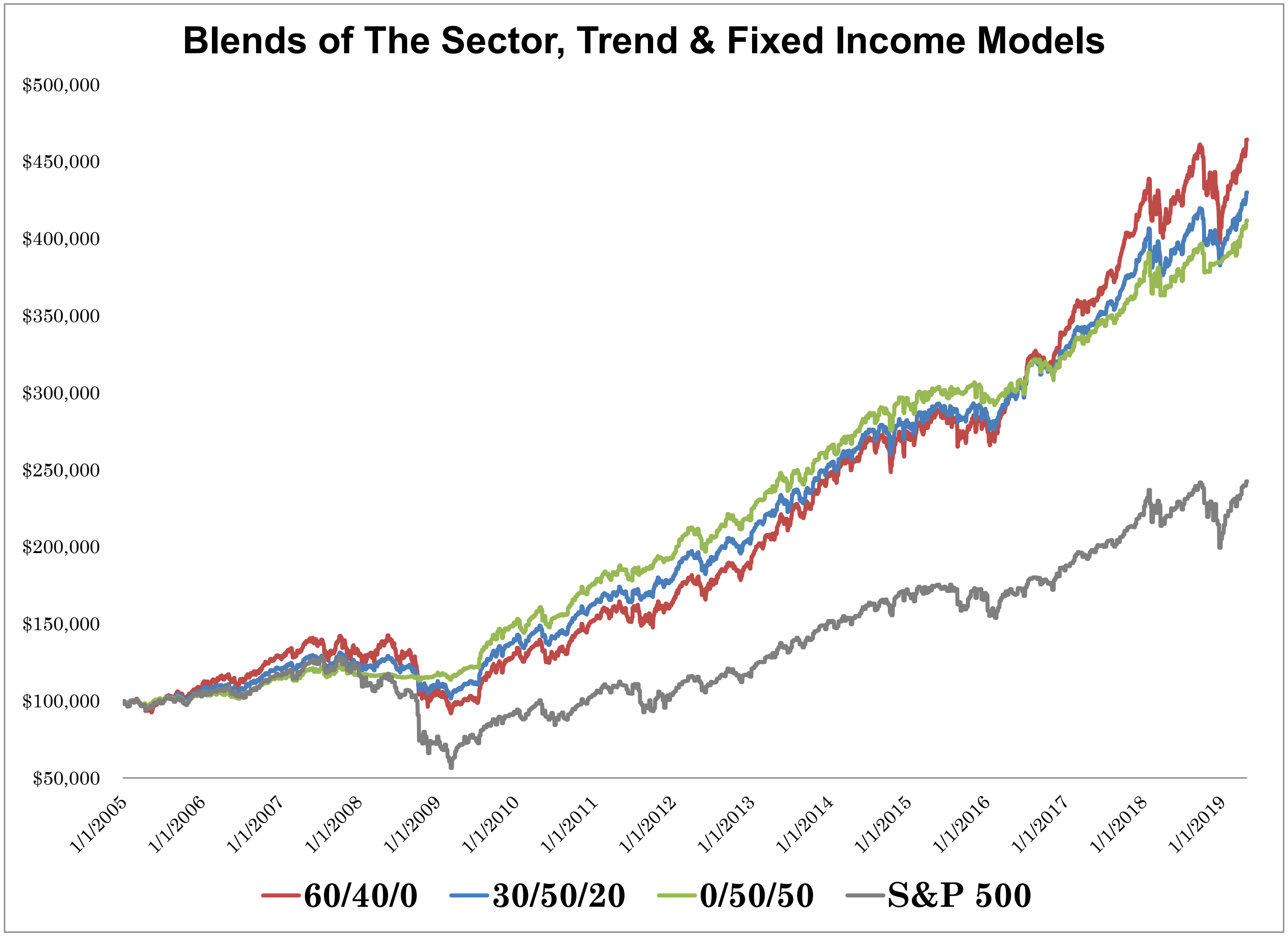
The concept of diversification is not new to financial markets. While many market participants focus on the diversification of the underlying holdings. This procedure is can be vastly skewed during periods of high market turmoil, in which correlations across asset classes tend to historically rise. Thrasher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

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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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