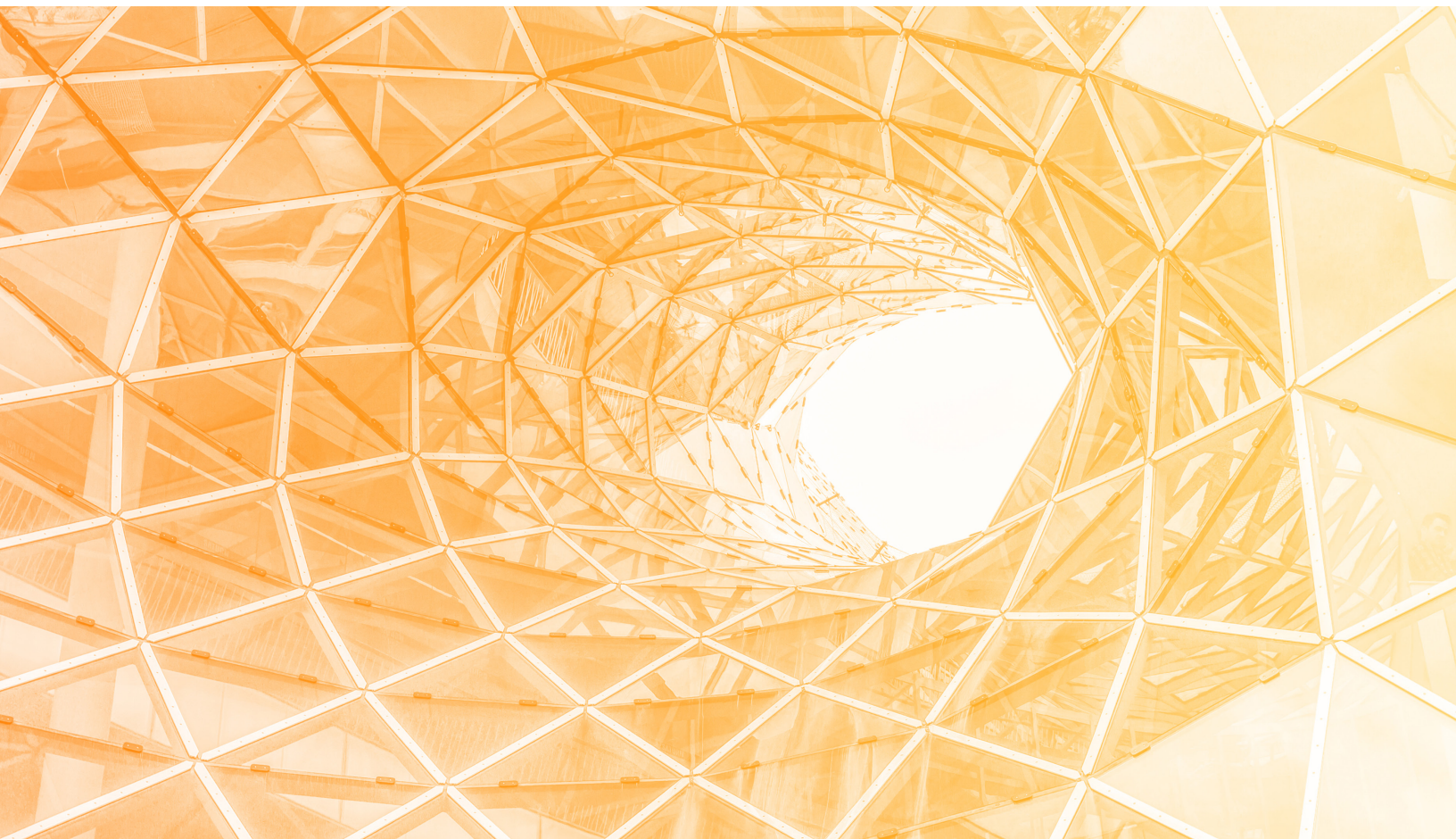


Market Digest – March 2020



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Positioning in a bear market

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MARCH 16, 2020

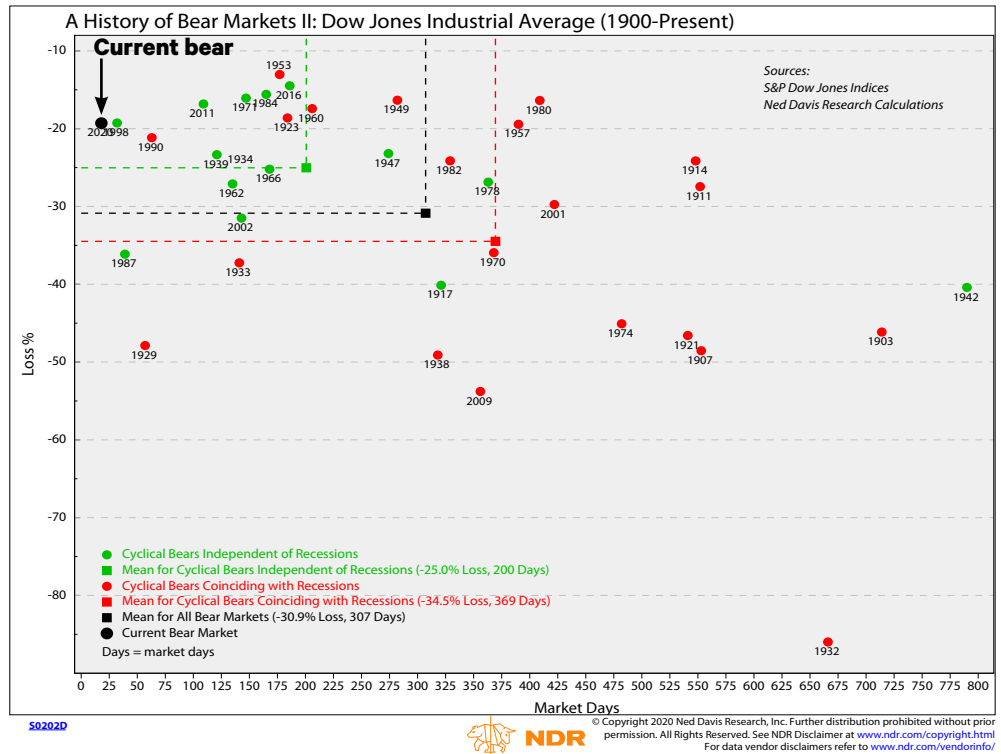
Executive Summary

De-risked across the board

Coronavirus (COVID-19) continues to dominate world news. Since last month's update, the virus' rapid spread outside of China, announcement as a pandemic, and increasing fears of an economic recession have rattled investors. All markets have taken a beating in March thus far — we are officially in an NDR-defined bear market. As such, we made several position changes over the past couple of weeks.

- On March 6, we de-risked in fixed income. **We increased our duration to 110%** from 100%, as the demand for safe, long duration assets continues. In light of recent market developments, **we downgraded investment grade credit, CMBS, MBS, and ABS to underweight**, joining our underweight on high-yield. Treasuries are the beneficiaries at overweight.
- On March 9, we moved to a bearish view on oil.** An OPEC price war occurring in the midst of a global demand shock (i.e., the coronavirus outbreak) is completely unprecedented. We are in uncharted territory.
- On March 10, we went cautious on U.S. stocks**, which means sub-par returns. The market decline has met the NDR criteria for a cyclical bear market. To date, the decline is smaller than the median bear (**chart above**), but more importantly, it is the shortest on record. Market bottoms are a process that take time. The four steps are: 1) oversold; 2) rally; 3) retest; and 4) positive breadth

How the current cyclical bear compares to previous bears



thrusts (without an intervening thrust to the downside).

- On March 12, we shifted 5% from stocks to bonds** in response to model and indicator deterioration. This move brings us more in line with our Global Balanced Account Model at 50% stocks (now underweight), 45% bonds (more overweight), and 5% cash (underweight). We are watching for indicator developments that would be consistent with a bottoming process or continued weakness.
- On March 13, we got more defensive in our U.S. sector allocation. **We lifted**

Consumer Staples to overweight

and Real Estate to marketweight. With many now expecting flat to down earnings growth for the S&P 500, Consumer Staples' mid-single-digit earnings growth should look superior. **We also downgraded Industrials, Financials, and Energy to underweight.**

Economic impact

Whether the hit to economic activity is classified as recession or not will largely depend on its duration. Recent monetary and fiscal policy announcements are trying to mitigate the damage.



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TIM HAYES, CMT CHIEF GLOBAL INVESTMENT STRATEGIST
ANOOP NATH, CFA GLOBAL ANALYST

MARCH 16, 2020

Volatility has returned, stocks downgraded

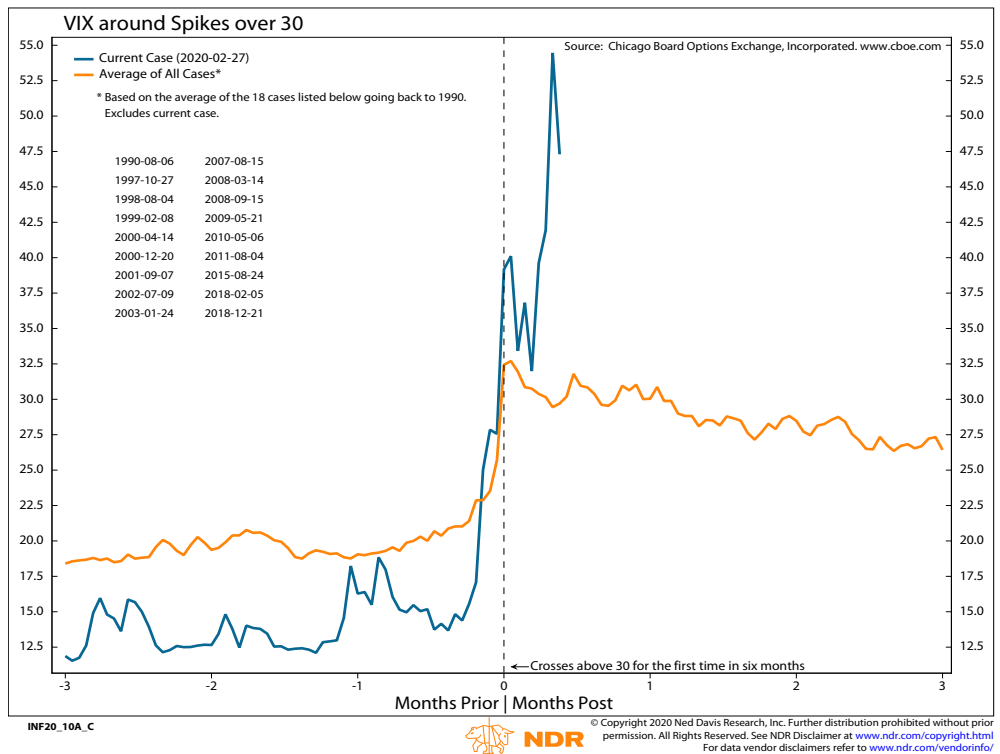
Key Takeaways

- Shifted 5% from stocks to bonds in response to model and indicator deterioration.
- Now 5% underweight stocks and 10% overweight bonds at 50% stocks, 45% bonds, and 5% cash allocation.
- Watch for indicator developments that would be consistent with a bottoming process or continued weakness.

Just when it looked like the global stock market advance would start to broaden — anticipating a strengthening economic recovery — along came the coronavirus panic to knock it back down. And just when the indicator evidence had improved enough to warrant an allocation shift from bonds to stocks, along came the most decisive wave of indicator deterioration since 2018.

With our current intra-month estimate for the Global Balanced Account Model showing the stock allocation dropping to 46% and the bond allocation rising to 50% — with the remainder in cash — **we shifted 5% from stocks to bonds on March 11**. This brings the allocation more in line with the model at 50%

After spiking, VIX tends to stay high



stocks (5% underweight), 45% bonds (10% overweight), and 5% cash (5% underweight).

This move recognizes the magnitude of the economic hit from the coronavirus response and the time that will most likely be required for economic conditions to improve — even if global cases of COVID-19 follow China's trend and start to subside.

It also recognizes that the market's attempt to stabilize and turn higher has failed miserably, with the March 10 rebound more

likely an oversold bounce than the start of a sustained recovery. On February 27, the VIX reached a level that has tended to be followed by a median drawdown of -19.4% in the All-Country World Index. The current drop has been -19.7%, with volatility remaining elevated.

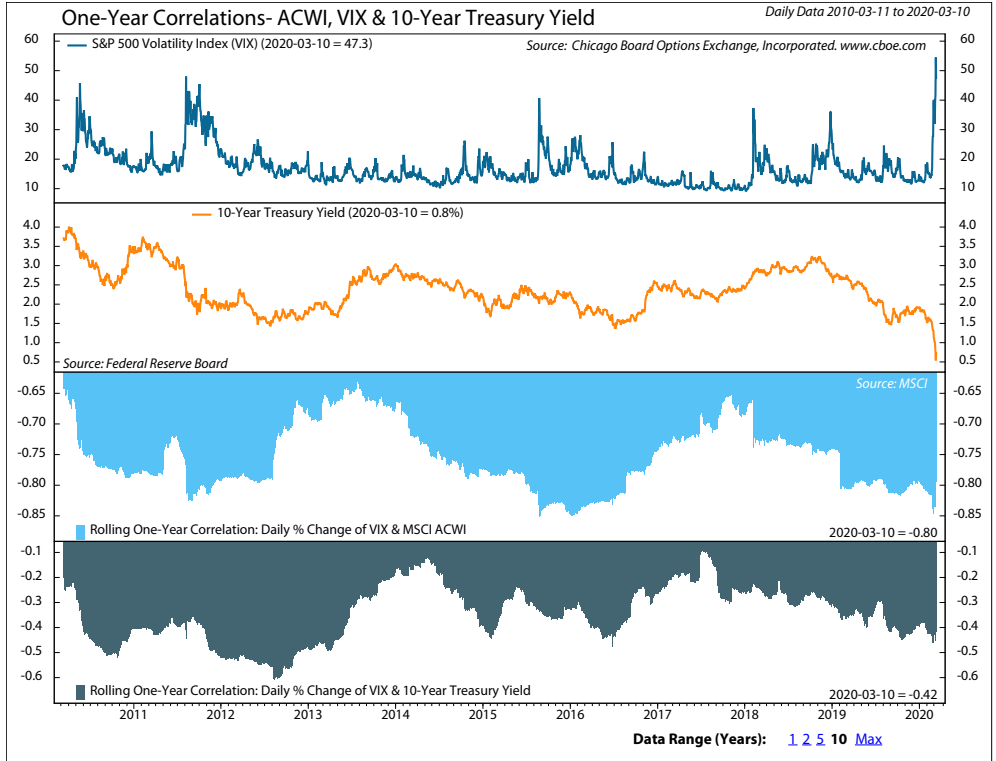
Rising above its Bottom Watch parameter of 43, the VIX has reached levels last seen in 2009. While there's no way of knowing how high the VIX will rise, **history suggests we won't see a return to low volatility any time soon (chart above)**.

Rising VIX, dropping yields and equities

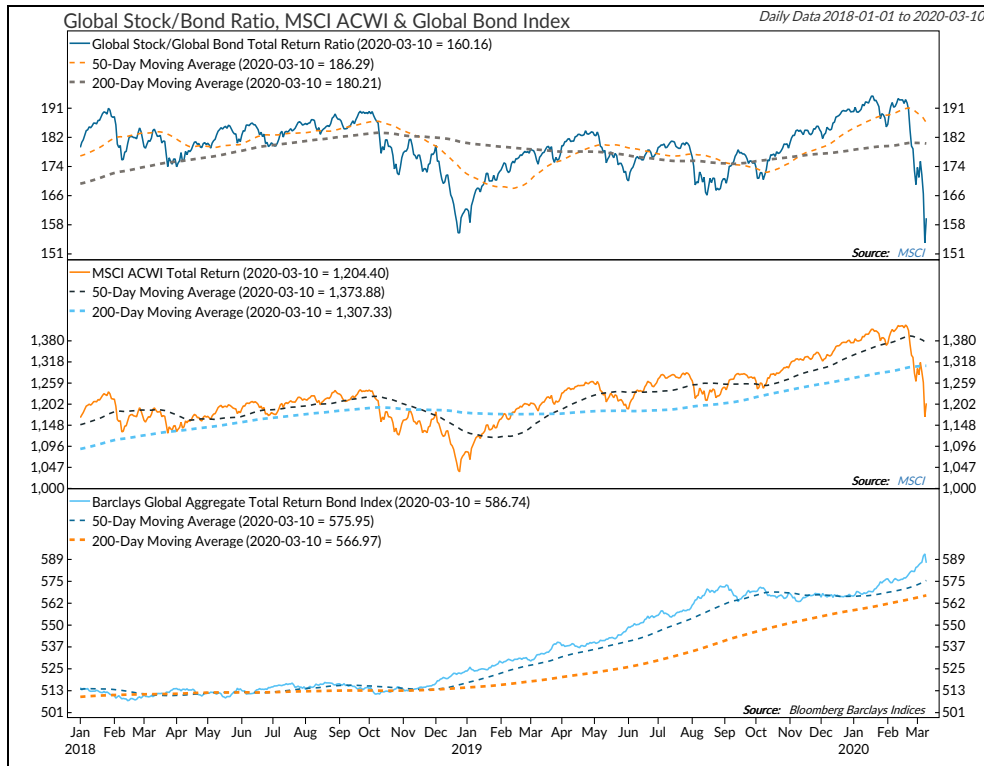
Until volatility subsides to such an extent that a VIX downtrend is established, stocks should have trouble recovering, considering the strong inverse correlation between the VIX and the All Country World Index (ACWI) **(chart right, third clip)**. Given the inverse correlation between the VIX and the 10-year Treasury note yield **(bottom clip)**, falling bond yields can be expected with bouts of volatility.

When coronavirus worries start to subside and global economic activity starts returning to normal, we will likely see stock prices moving higher with rising bond yields and a falling VIX. But there's not yet any evidence that such a recovery is at hand, hence our overweight allocation to bonds and underweight allocation to stocks.

As long as stock volatility remains elevated, high bond volatility can be expected to



Stock/bond ratio at new lows



continue, both persisting with falling stock prices and bond yields. And we would see a continuing downtrend in the ratio of our stock benchmark (the ACWI Total Return Index) to our bond benchmark (the Barclays Aggregate Bond Total Return Index). The stock/bond ratio has now broken its 2018 low **(chart, left)** reaching its lowest level since December 2016.

In our Rally Watch report, the breadth indicators remain broadly negative, with an aggregate reading of just 6% — a sentiment component is all that's favorable. And the downside momentum has become more evident in our 10-indicator Bear Watch report. Three indicators have now reached bear market levels and a fourth is close to following suit.

Yet, we wouldn't dismiss the possibility that most of the damage has been done. Our seven-indicator Bottom Watch report is now

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indicating that the majority of its indicators have reached levels consistent with a market bottom.

Previously when at least half of the indicators have moved beyond their key levels, global stocks have tended to start a sustained rally about a month later (**chart below**). If that happens again — confirmed by breadth thrusts, the majority of our Rally Watch indicators reaching bullish levels, and the model calling for more stock

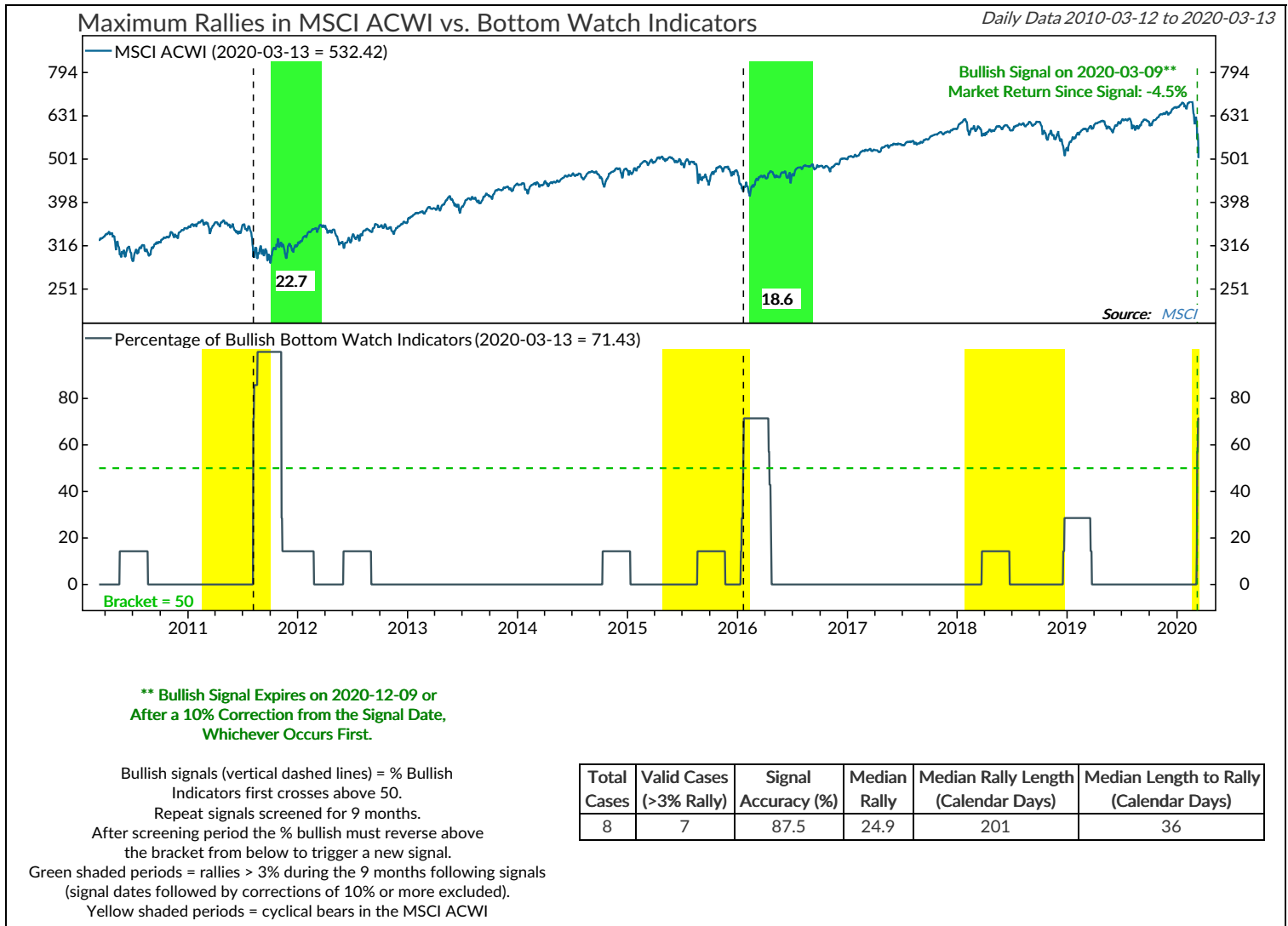
exposure — we would be likely to upgrade stocks again.

However, it would be premature to conclude that a recovery is at hand, given the worsening trend, momentum and breadth reflected by the model, the Rally Watch and the Bear Watch. They have been saying, there may be “more carnage to come.” The worsening global breadth has been a sign that, with economic expectations worsening, investors do not

consider stock valuations justified and would rather seek safety in bonds and gold. Until then, **we would play it safe with an underweight allocation to stocks and overweight allocation to bonds.**

Above excerpted from: “Allocating in volatility” by Tim Hayes, March 11, 2019 (available through NDR’s Institutional product offerings)

Increased potential for market bottom



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MARCH 16, 2020

Cautious on U.S. stocks

Key Takeaways

- Until the market proves it is further along in its bottoming process, we moved to a cautious position on the U.S. stock market.
- The decline has met the NDR criteria for a cyclical bear market.
- To turn positive, watch for economic and earnings clarity, slowing of COVID-19, and technical improvement.

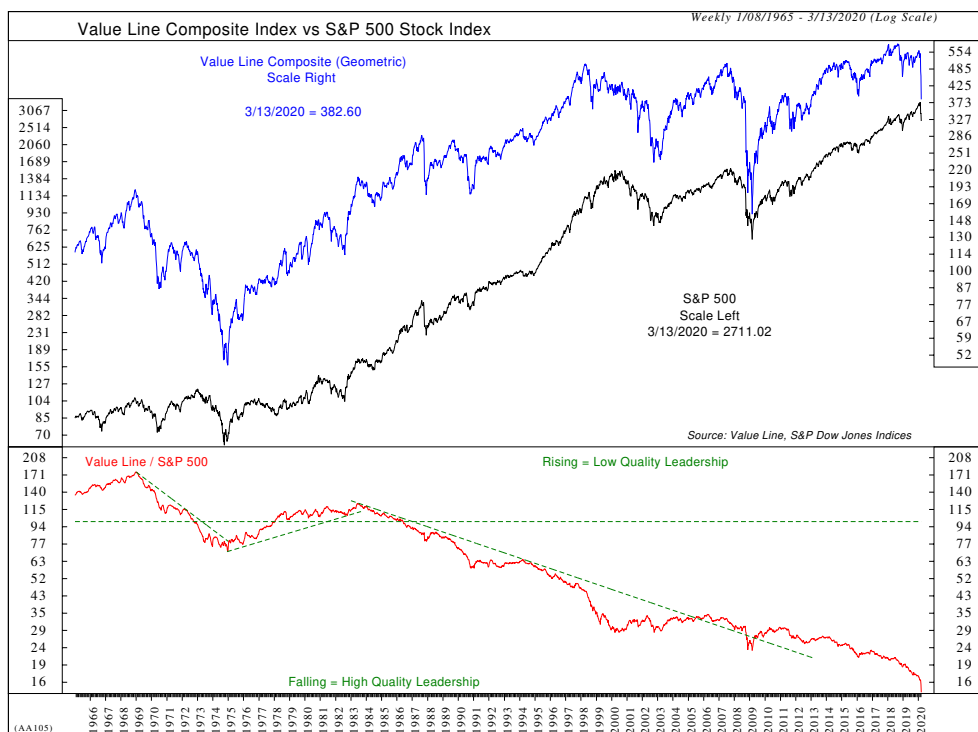
Back to step one

Previously, we discussed the four steps to a market bottoming process. To reiterate, they are: 1) oversold; 2) rebound; 3) retest; and 4) breadth thrust.

Monday's meltdown means that the market is **back to step one** of our four-step bottoming process. Monday could mark a selling climax low, but time is as big of a concern as price. Over 82% of stocks in the NDR All-Cap Equity Series made new 252-day lows on March 9, the most since August 2011.

For the bottoming process to progress, look for rallies with broad participation. Look for declines to have less total volume, less downside volume, fewer stocks making new lows, and fewer stocks below their moving averages.

31% drop in Value Line index met NDR's bear market criterion



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The severity of the decline, recession risks, oil collapse, and earnings revisions imply that the bottoming process could take time. **Until the market proves it is further along in its bottoming process, we are moving to a cautious position on the U.S. stock market.**

Cyclical bear

The stock market decline has met the NDR criteria for a cyclical bear market.

The traditional 20% rule generates multiple “bear markets” during highly volatile periods, so NDR has three criteria — a 30% drop in the Dow Jones Industrial Average (DJIA)

after 50 calendar days, or a 13% decline in the DJIA after 145 calendar days, or reversals of 30% in the Value Line Geometric Index. The Value Line's 31% decline from its 8/29/2018 high meets one of the criterion (**chart above**).

Identifying a bull or bear market can only be done in hindsight. They are not predictions. The value of the objective NDR criteria is that the current bear can be put into perspective. The average cyclical bear market decline is -30.9%. The median decline is 26.0%. At -19.3% on the DJIA, the current cyclical bear is 6.8% less severe than the median.

The median decline is 26.0%. At -19.3% on the DJIA, the current cyclical bear is 6.8% less severe than the median. The most stunning aspect of this bear market is its speed. It has been only 26 calendar days since the DJIA's peak. The median cyclical bear has lasted 358 days (one year).

Recession versus non-recession

Even more so than bull and bear markets, recessions are only known in hindsight. The risk of the coronavirus creating a recession is even harder to handicap because no one knows for how long economic activity will be impacted, but the market appears to be going through the process of pricing in a recession. The median cyclical bear market associated with a recession has declined 35.9% over 517 days (17 months) versus -23.3% over 224 days (7 months) for cyclical bear markets not associated with recessions (**table, right**).

Recessionary bears longer and more severe

Recession and Non-Recession Cyclical Bear Markets		
Metric (Median)	Recession Bear	Non-Recession Bear
Percent Change	-35.9	-23.3
Number of Days	517	224

See T_202 for definitions of bull and bear markets. Recessions based on NBER-defined U.S. recessions.

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Cyclical bears within secular bulls shorter and less severe

Cyclical Bear Markets within Secular Bulls and Bears		
Metric (Median)	Secular Bull/ Cyclical Bear	Secular Bear/ Cyclical Bear
Percent Change	-19.0	-33.7
Number of Days	245	521

Secular bull versus secular bear

The stock market likely remains within a long-term, secular bull market. A piece of positive news for stocks is that cyclical bears within secular bulls tend to be less severe, with a median decline of 19.0%, close to the current decline (**table, left**). Cyclical bears within secular bulls also tend to be shorter, but the median of 245 days (8 months) is much longer than the current cyclical bear. Since the decline was so fast, the time element is as important, if not more important, than price compared to many cyclical bears.

See T_202 for definitions of bull and bear markets. Recessions based on NBER-defined U.S. recessions.

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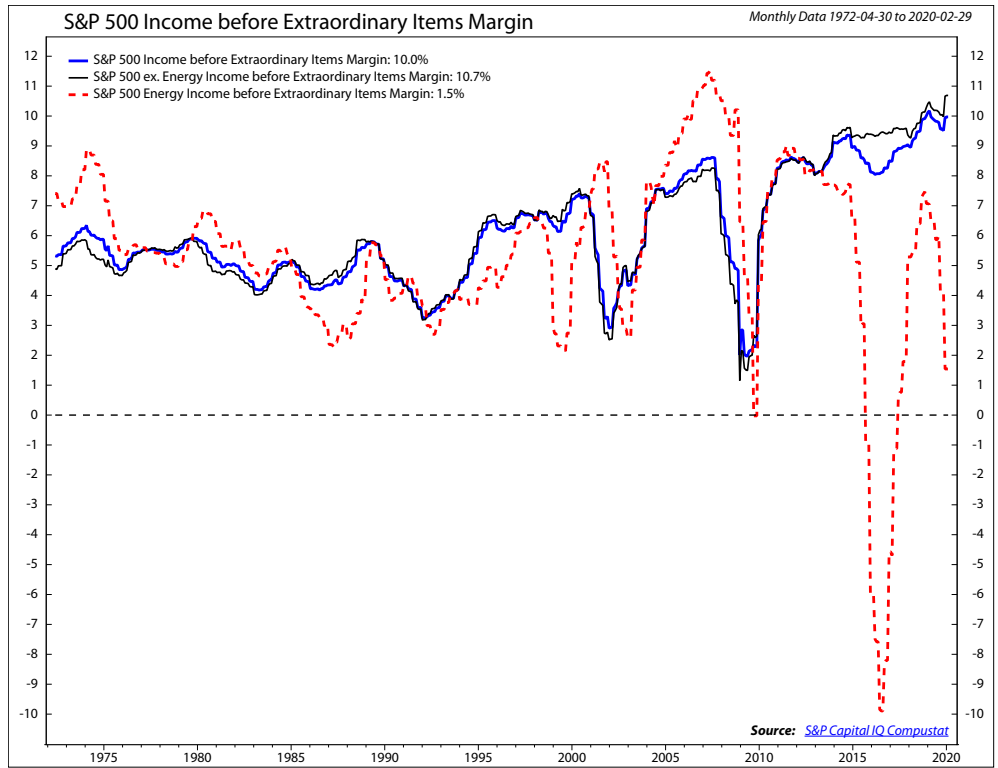
T_202 (excerpt)

Earnings risks

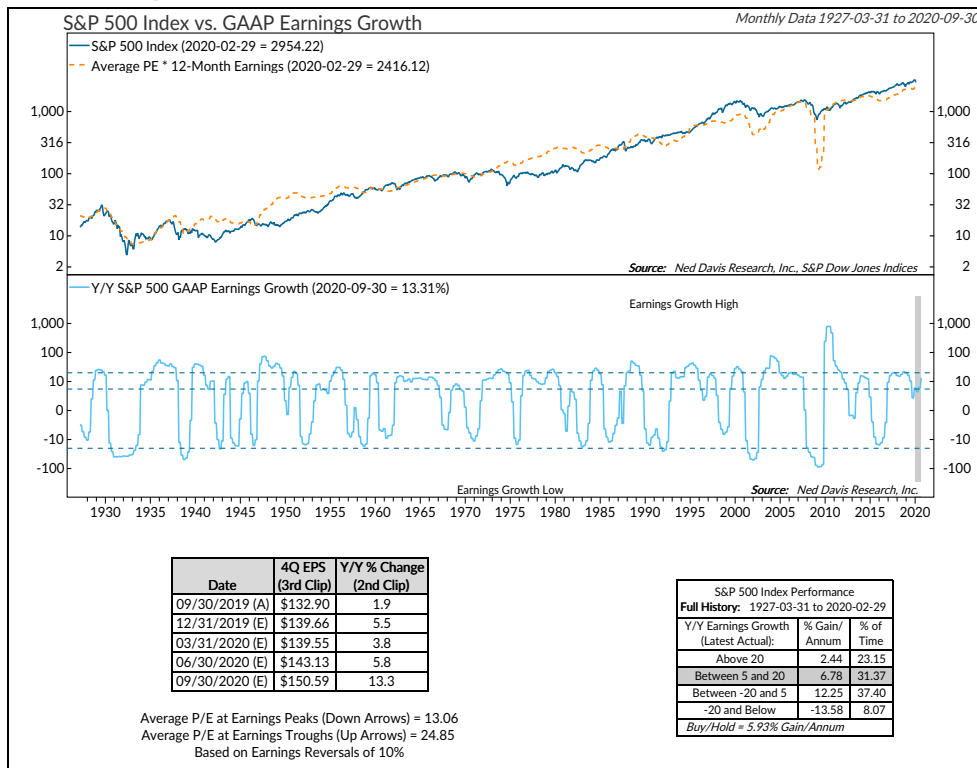
Before Saudi Arabia signaled an oil price war over the weekend, we were concerned that earnings expectations would have to be revised lower. The prospects for lower oil prices add another level to the earnings risk.

In 2015-16, Energy sector profit margins plunged, while the other 10 sectors were little changed (**chart, right**). Energy is a smaller part of the S&P 500 than in 2015, but losses in that sector could drag S&P 500 profits lower. The risk to sectors exposed to coronavirus means that margin pressure will be broader than in 2015-16.

Margin impact will likely be broader than 2015-16



Will EPS growth fall more than 20%?



Trailing four-quarter total GAAP earnings year/year percent change troughed at -15.4% in 2016 (**chart, left**). Consensus estimates are calling for 9.4% EPS growth in 2020, so the risk is for larger-than-normal downward earnings revisions, even if the decline is not as severe as 2015-16. Every post-war earnings decline of more than 20% has coincided with a recession.

The next bull

Assuming the coronavirus does not have a lasting impact on the economy, **the coming monetary and fiscal stimulus combined with a deeply oversold market and extreme pessimism should set up for a powerful cyclical bull market.**

Excerpted from "An NDR-defined bear market. Back to step one" by Ed Clissold, March 10, 2020 (available through NDR's Institutional product offerings)

Customized version of S663



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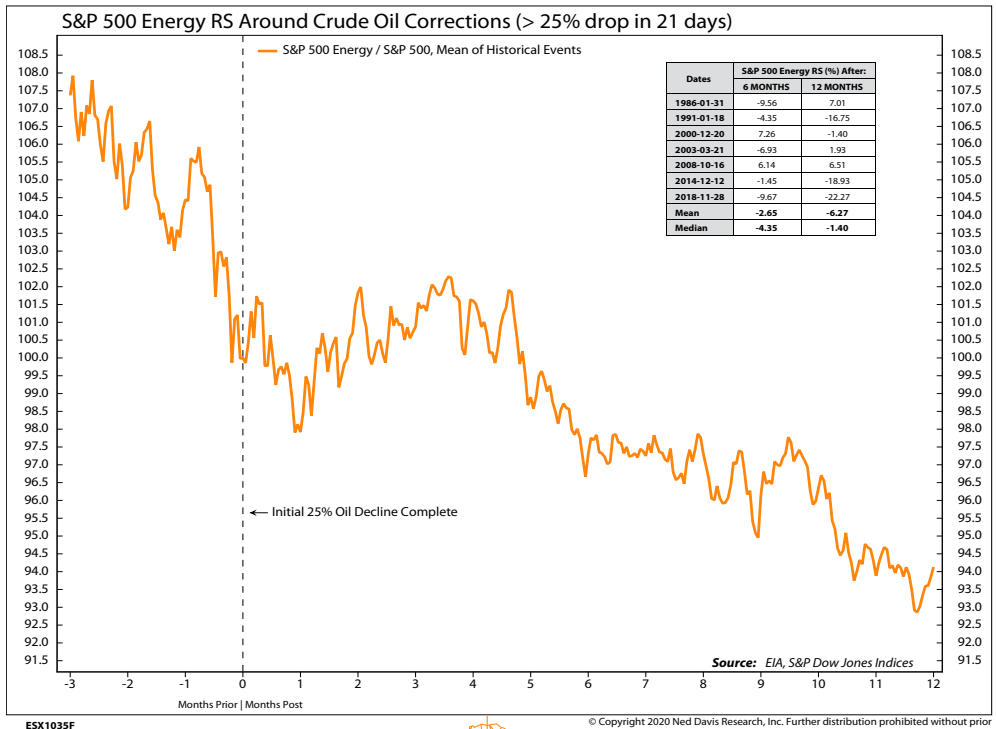
MARCH 16, 2020

Sector allocation shifts exercising caution

Key Takeaways

- Lifted Consumer Staples to overweight, Real Estate to marketweight; lowered Energy, Industrials, and Financials to underweight.
- We also lowered our weighting in Materials, while increasing Health Care and Consumer Discretionary.
- If we head toward recession, we will take more defensive actions.

Expect weakness after large, quick price drops



We are making sector allocation shifts that are in line with NDR's downgrades in stock asset allocation, U.S. stocks, fixed income, and oil outlooks.

Energy to underweight

We are lowering Energy to underweight in response to Warren Pies' downgrade of oil. Getting hit by both a supply shock and a demand shock could be fatal for some Energy companies. The focus now turns to survival — a company's ability to pay dividends and interest expense in an extremely difficult operating environment.

The sector has only outperformed 12 months after WTI has fallen more than 25% in a month in three out of seven cases (chart above).

Industrials to underweight

Industrials seems particularly economically sensitive given its exposure to the slowing global economy, coronavirus, and oil. Transports, carrying less freight and fewer passengers, looks particularly vulnerable. Low oil prices could be a post-coronavirus positive for transports, but we expect capital goods to be negatively impacted by a slowdown in oil-related capex.

Financials to underweight

Financials is one of the worst performing sectors six months after a spike in volatility. We are concerned about Banks in such a volatile

environment. A very low 10-year Treasury yield and flat yield curve can negatively impact net interest margins and banks have to worry about defaults in industries under stress.

Staples to overweight

Consumer Staples' mid-single digit earnings growth is no longer a fear, as the relative growth rate for the current fiscal year is rising and should continue to rise.

With several analyst's estimates now showing flat EPS growth for the S&P 500 for 2020, mid-single digit earnings growth should look pretty good (top chart, page 10).

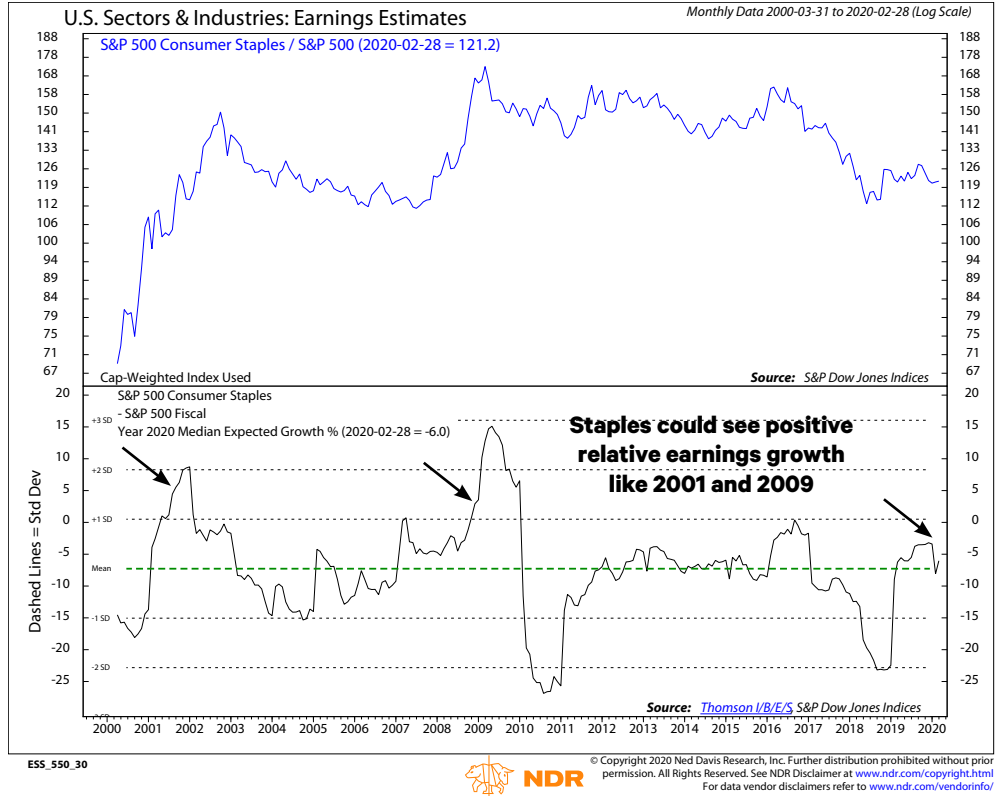
Real Estate to marketweight

Real Estate has the lowest beta and second-highest dividend yield (3.5%) of all sectors and should outperform in this ultra-low rate environment. Investors should be cautious within REITs, however, as some should be negatively impacted by social distancing. Residential and Health Care REITs look like safer places to be.

Increasing Discretionary

We have several reasons for remaining positive and increasing our marketweight allocation on the sector including: relative strength trends in Amazon, the sector typically bottoms before a recession is over, Household Durables should benefit from low rates and a cocooning effect, the most severely impacted sub-industries account for only 36% of sector, consumers should benefit from payroll tax relief/fiscal stimulus and low oil, and it's the only overweight in our sector model.

Expect relative earnings growth to improve



Health Care showing a lower beta over past year

Sector Beta to S&P 500	12-month	60-Month	Difference	YTD
Energy	1.57	1.25	0.32	-44.62
Financials	1.27	1.17	0.10	-26.22
Information Technology	1.22	1.15	0.07	-9.20
Materials	1.22	1.17	0.05	-22.02
Industrials	1.14	1.15	-0.01	-20.50
Consumer Discretionary	0.99	1.08	-0.09	-13.83
Communication Services	0.82	0.94	-0.12	-12.77
Consumer Staples	0.72	0.63	0.09	-8.55
Health Care	0.68	0.90	-0.22	-10.43
Utilities	0.57	0.29	0.28	-6.68
Real Estate	0.24	0.59	-0.35	-8.51

Source: S&P Dow Jones Indices

YTD is year-to-date absolute price return of S&P 500 sector as of 3/11/2020. Source: S&P Dow Jones Indices.

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Health Care most favored

We are reducing our Materials allocation due to global economic concerns and adding to our Health Care overweight — our favorite sector. The coronavirus should keep health care services in demand, and political risk is falling with the rise of health care-friendly Joe Biden. Health Care's short-term beta is significantly lower than its longer-term beta (**table, left**).

Positioning in a recession

If it looks like the economy is heading toward recession, we will get more defensive. We would likely reduce higher-beta Technology and Communication Services weights, while increasing Real Estate and Utilities weightings.

Above excerpted from: "Getting in line with a cautious outlook" by Pat Tschosik, March 12, 2020 (available through NDR's Institutional product offerings)



WARREN PIES, ERP ENERGY STRATEGIST

MARCH 16, 2020

Now bearish on oil

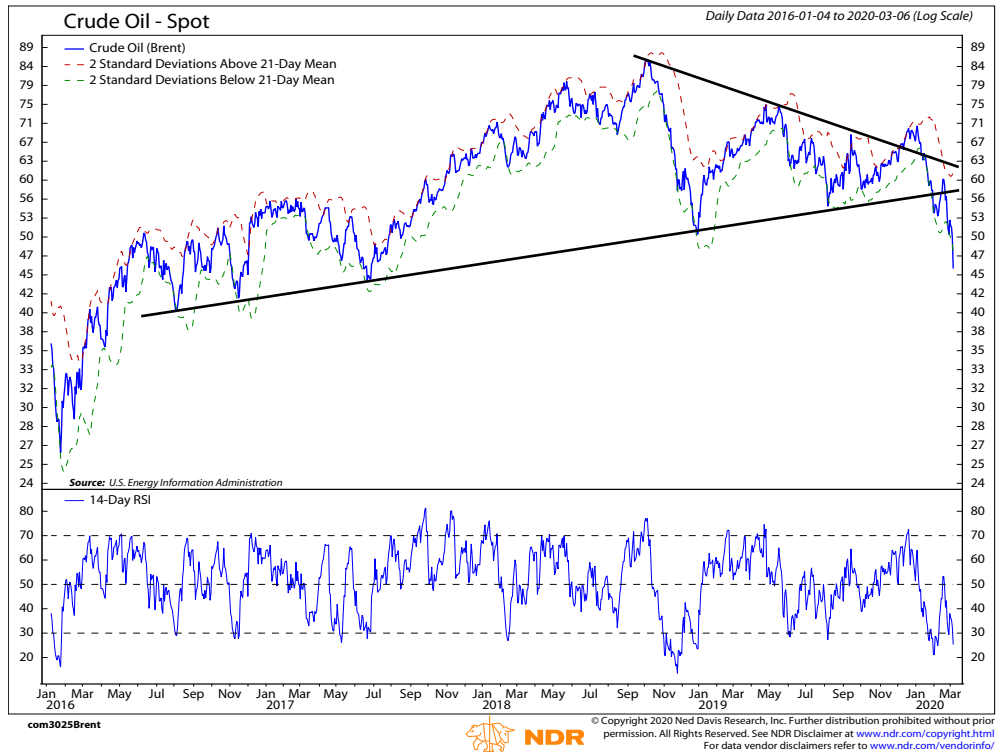
Key Takeaways

- We downgraded oil from neutral to bearish.
- For those with liquidity and guts, oil tankers could be a place to hide.
- Watch contango indicator, ATR, and Energy Trend Model for signs stress is receding.

In January, we downgraded oil from bullish to neutral. On March 9, we moved to a bearish position. What happened? On Friday, March 6, OPEC+ decided to hold hands and jump to their deaths. Entering the week, everyone assumed a large production cut would come from the OPEC+ meeting. However, at the last minute, Russia balked at cutting production further. As a result, the OPEC+ alliance (functionally Russia + Saudi Arabia) formed in 2016 to stabilize the oil market is no more. Leaving the meeting Friday, Russian Oil Minister Alexander Novak summed up the new OPEC+ policy: "Everyone is free to pump-at-will from April 1."

KSA responded by leaking to the press that it was prepared to boost production to 11 million barrels per day by next month

Oil broke down earlier this year



(current production is 9.7 mmbpd). The Kingdom also slashed official selling prices (OSP) for Arab Light crude oil to northwest Europe by \$8 per barrel...undercutting the price of Brent by ~\$10 and Urals (Russia's benchmark) by ~\$8. When futures opened on Sunday evening, Brent crude traded into the low-\$30s. The price war is now official.

In a normal economic environment, OPEC discord is enough to crash oil prices. An OPEC price war occurring in the midst of a global demand shock (i.e. the coronavirus outbreak) is completely unprecedented. We are in uncharted territory. Thus, without a reversal

of stated OPEC policy, oil prices are headed back to their 2016 lows (\$26 Brent) and likely lower **(chart above). Logic dictates we downgrade oil from neutral to bearish. This could be a short-term downgrade.**

Sub-\$40 oil works for no one Whether we are discussing U.S. shale, Saudi Arabia, or Russia, sub-\$40 oil works for no one. And, any long-term bearish oil forecast relies heavily on U.S. production growing steadily.

We remain skeptical that is possible without higher prices.

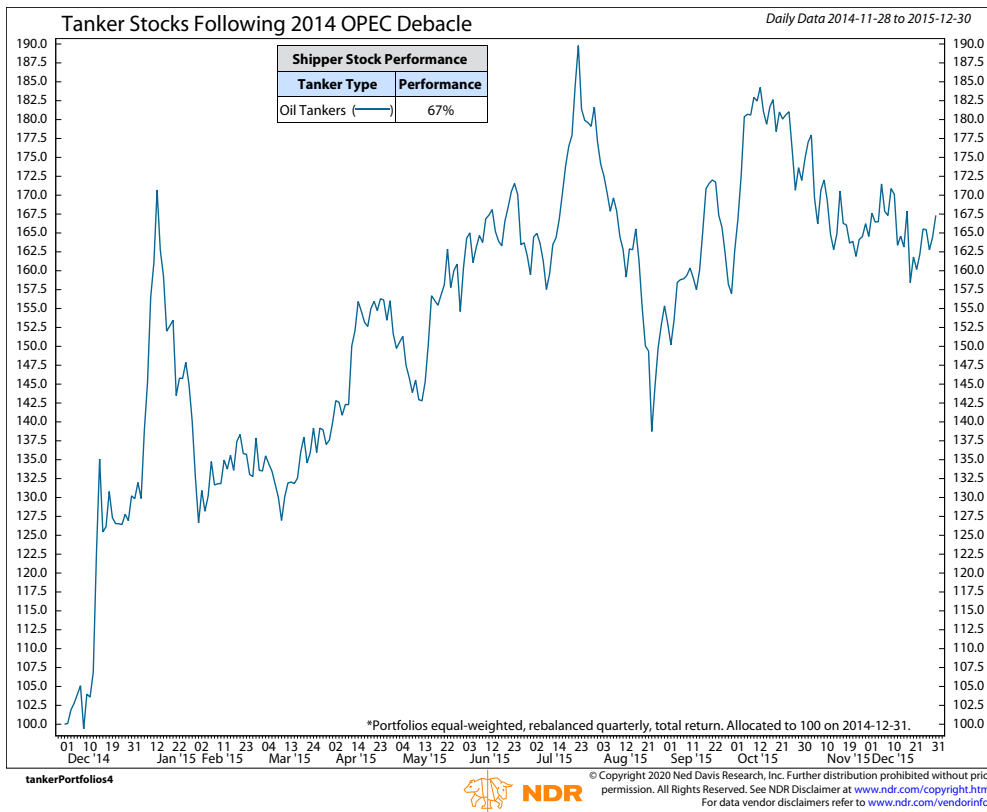
Saudi Arabia cannot handle low oil.

Assuming 10 million bpd production, Saudi's 2020 budget needs roughly \$60 per barrel to bring in the budgeted oil revenue. The Saudi's cannot withstand another two year period like 2014-2016.

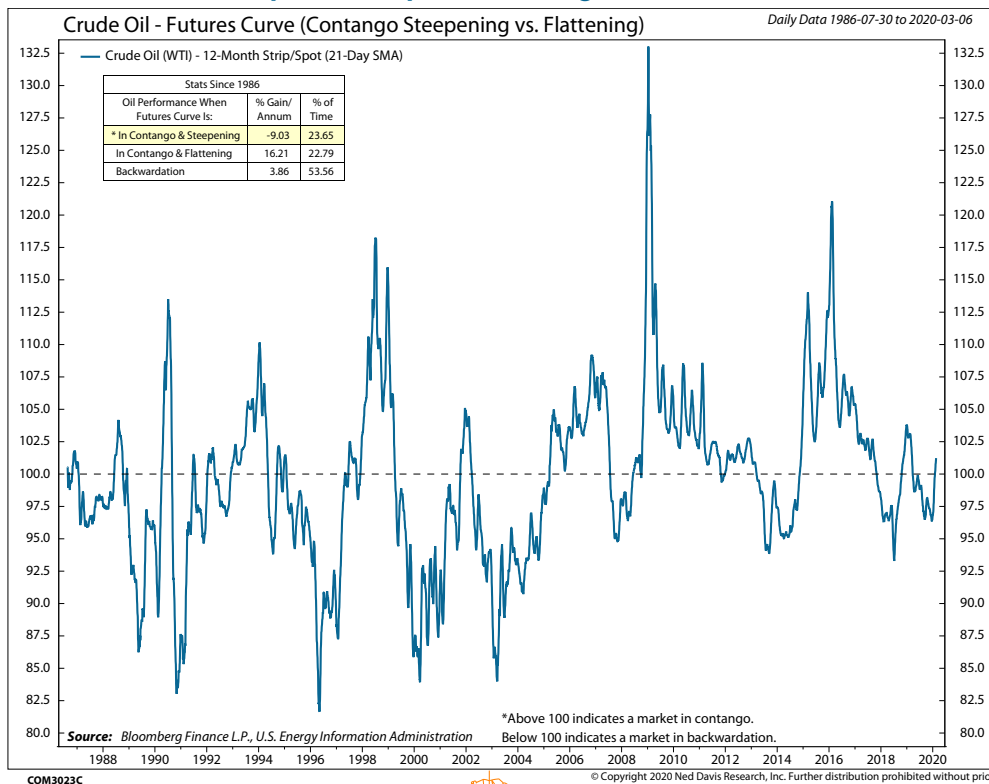
Is there a place to hide right now?

For investors with liquidity and guts, oil tankers should do well. The plunge in oil prices is likely to send futures curves across the petroleum complex into steep contango. Following the last OPEC debacle in November of 2014, a portfolio of oil tankers returned 65% the following year (chart, right).

Oil tankers: Maybe the best place to hide



Curve should slip into super contango



What to watch for Energy equities

Obviously, a weight-of-the-evidence approach will be paramount. However, there are three charts our clients should watch in particular:

1. Contango indicator (chart, left)
2. Average True Range indicator
3. Energy Trend Model

Above excerpted from: "Energy Armageddon" by Warren Pies, March 9, 2020 (available through the Energy Strategy add-on product offering)



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PATRICK AYERS INTERNATIONAL ECONOMIC ANALYST

MARCH 16, 2020

Global PMI clobbered by coronavirus

Key Takeaways

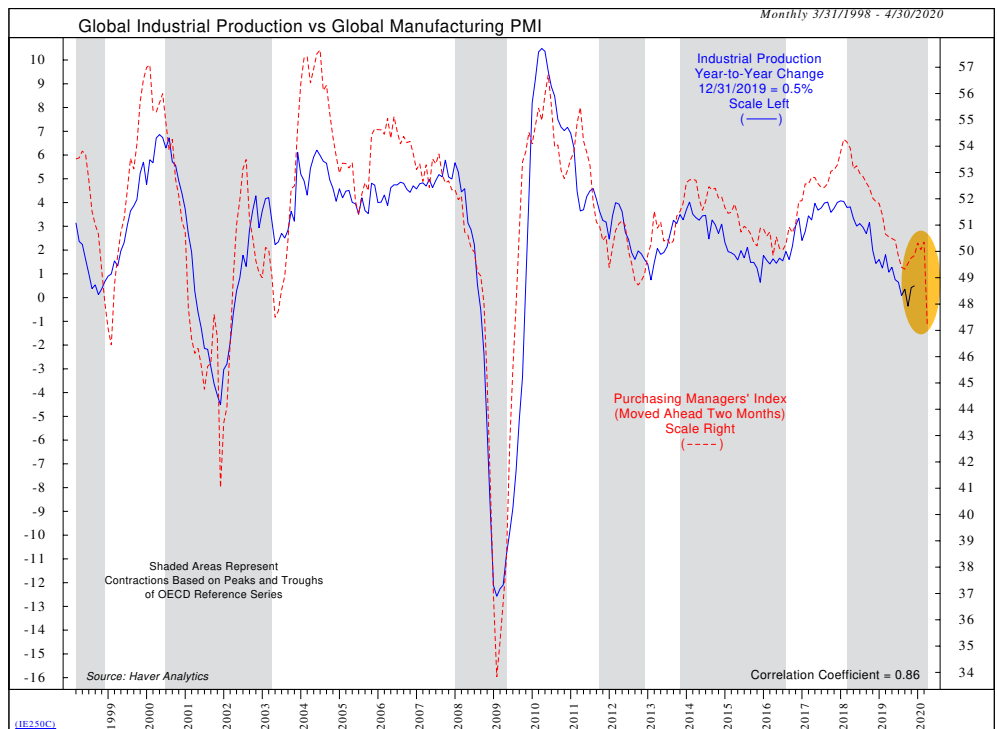
- Global manufacturing activity plunged to a 10-year low, but readings are still not consistent with deep global recession.
- Global breadth held up, as most of the damage was concentrated in China.
- Some evidence suggests that the slowdown in China may be short-lived, which argues for a rebound in activity.

Global manufacturing suffered its worst contraction in February in over ten years as the coronavirus (COVID-19) outbreak wreaked havoc on the Chinese economy. The global PMI slumped 3.2 points, the most since November 2008, right after Lehman collapsed, to 47.2, the lowest since May 2009.

The current reading in the PMI is consistent with a 1.0% annual decline in global industrial production (**chart above**). If realized, this would be the largest fall since October 2009, when production was plunging at over a 3% pace.

Despite the low reading in the PMI, it remains significantly above its record low reading of 33.8 in 2009, the only year the

Global PMI indicates sharp slowdown in global activity



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global economy has contracted since 1980. February's data is also well above the post September 11, 2001 reading of 41.0, when global GDP grew about 2.5%.

If February reflects the worst of the health crisis, the impact on global growth may not be as detrimental. Additionally, prior to the outbreak, the global economy was already building the case for a recovery. Notably, the global manufacturing PMI had increased for five of six months after falling almost exclusively since the beginning of 2018.

Breadth only falls slightly

Despite the large slump in the global aggregate PMI, our measures of global breadth only fell slightly. The share of countries with expanding manufacturing industries is still near its best level since early 2019. Our measure of monthly breadth also fell, but remained in expansion territory.

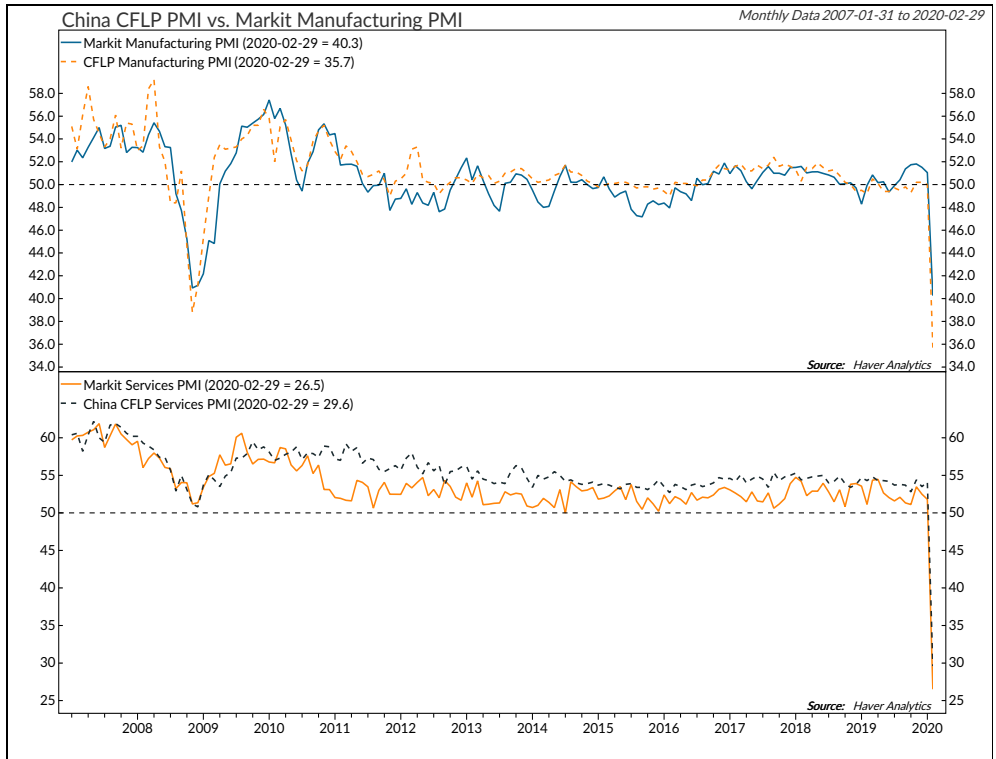
Above excerpted from: "Coronavirus clobbers global manufacturing" by Alejandra Grindal, March 3, 2020 (available through NDR's Institutional product offerings)

All about China

Prior to the COVID-19 outbreak, the Chinese economy was already on the mend, thanks to the easing of trade tensions with the U.S. and monetary and fiscal stimulus. But that came to a bitter end this year as COVID-19 essentially put the economy into standstill for a large part of the first quarter.

The data for February was absolutely devastating. Both the manufacturing and services PMIs plunged into uncharted territory, consistent with sharp declines in economic activity **(chart, right)**. China has not officially been in recession since 1989. Whether the current situation constitutes a recession depends on the longevity of the slowdown.

China's PMIs plunged in February

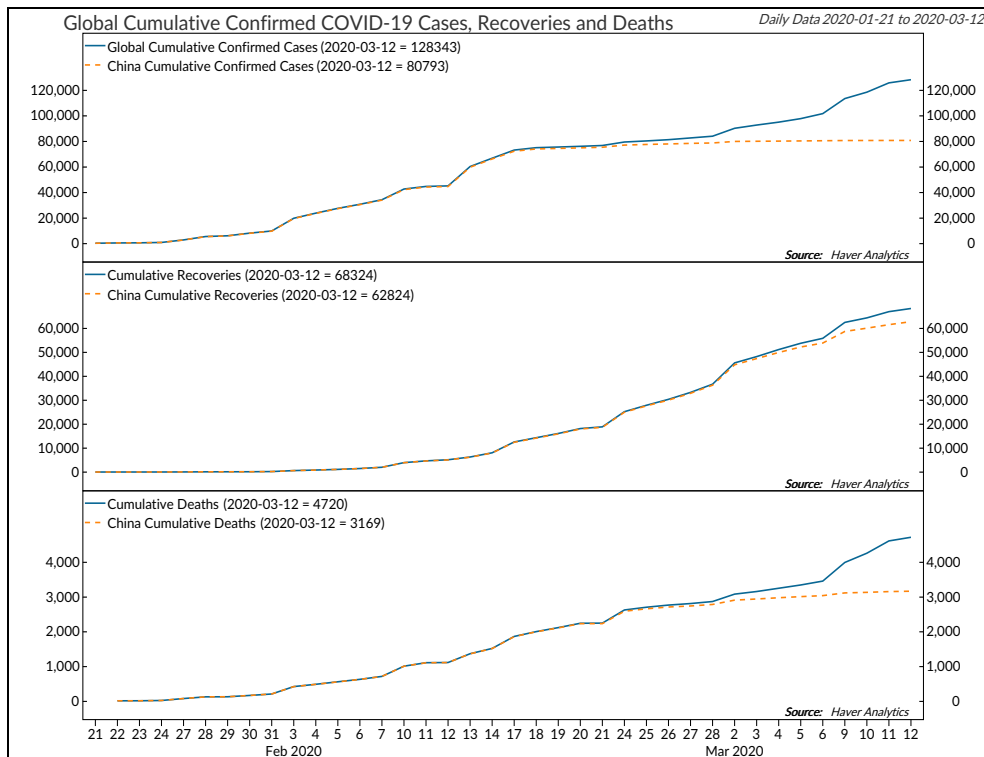


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China's new cases of Covid-19 have slowed



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Some evidence suggests that the slowdown may be short-lived, which argues for a rebound in activity.

The pace of new COVID-19 cases in China has slowed significantly **(chart, left)**. According to John Hopkins University data, since the beginning of March, new cases in China have grown at no more than 200 per day.

This compares to the rest of the world which has seen cases grow by the thousands on a daily basis. Furthermore, about three-quarters of those in China who have been diagnosed have also recovered from the disease.

As a result, production is reportedly getting back on line. According to the China Economic Recovery Index, a GDP-weighted measure of mobility data, 70% of the economy was up and running as of March 9. But this doesn't mean all is clear for China, as there are a range of positive and negative scenarios.

If the Chinese economy is truly rebounding and new cases of the virus ebb, not only will Chinese growth pick up, but so will growth in other parts of the world. The economies most closely

linked to China's economy are in Asia — notably Taiwan, South Korea, Japan, and Malaysia.

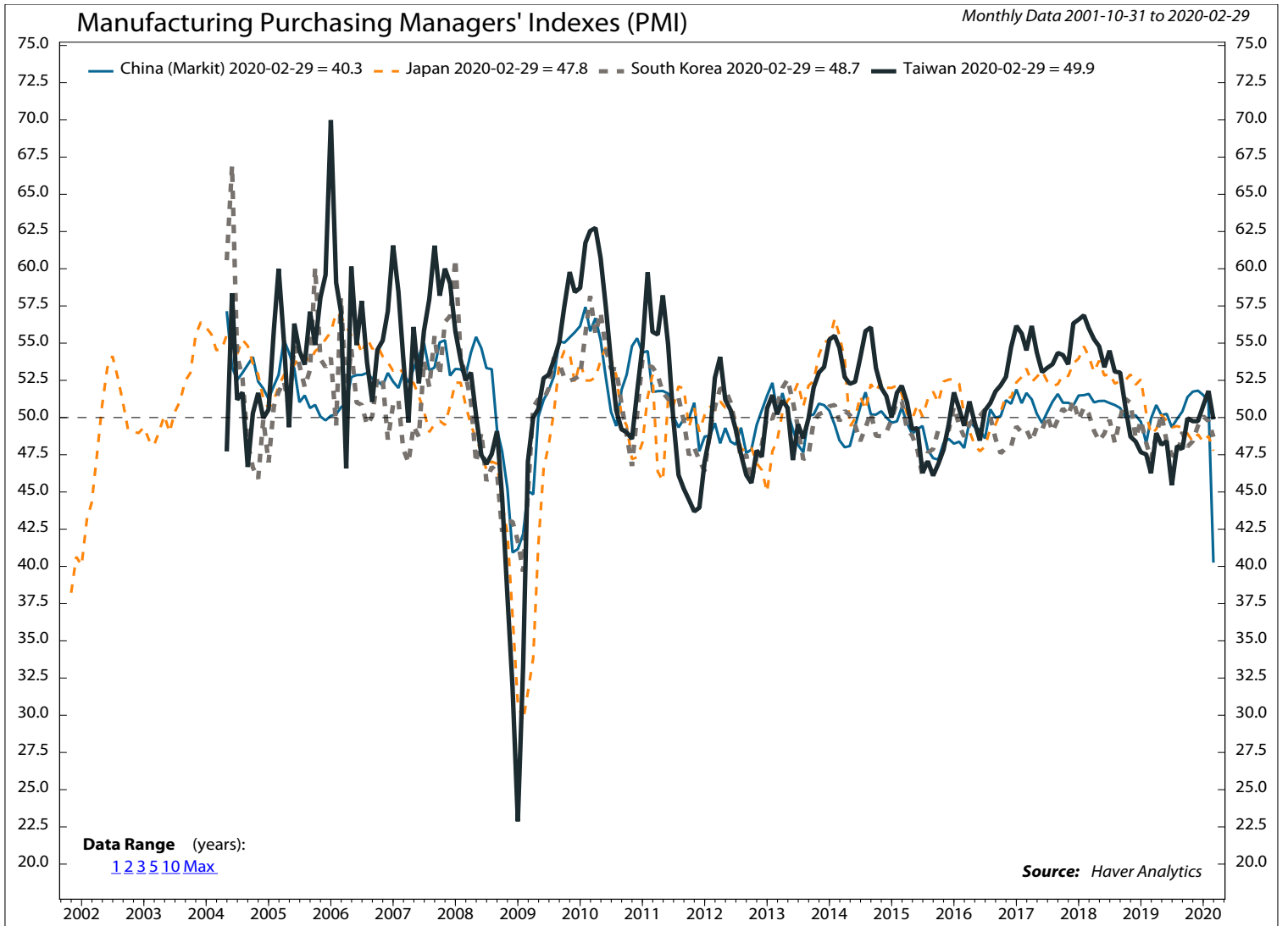
Even if China and Asia recover, the rest of the world could still be in peril, dragging Asia down with it (**chart below**). Many of the world's largest economies are likely still early on in the spread of the virus. Several large European countries have cases in the thousands, led by Italy, which alone has over 12,000. It's highly likely that the eurozone, as well as Japan, whose economy contracted in

Q4 due to a sales tax hike and typhoon, are in recession.

If the global pandemic is not contained, China could also be subject to a second round of the outbreak. It's been found that those who suffer from the virus and recover, could still get it again.

Above excerpted from: "How much will China slow due to Covid-19?" by Alejandra Grindal, March 12, 2020 (available through NDR's Institutional product offerings)

When China slows, the rest of Asia slows too



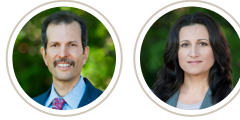
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JOSEPH F. KALISH CHIEF GLOBAL MACRO STRATEGIST
VENETA DIMITROVA SENIOR U.S. ECONOMIST

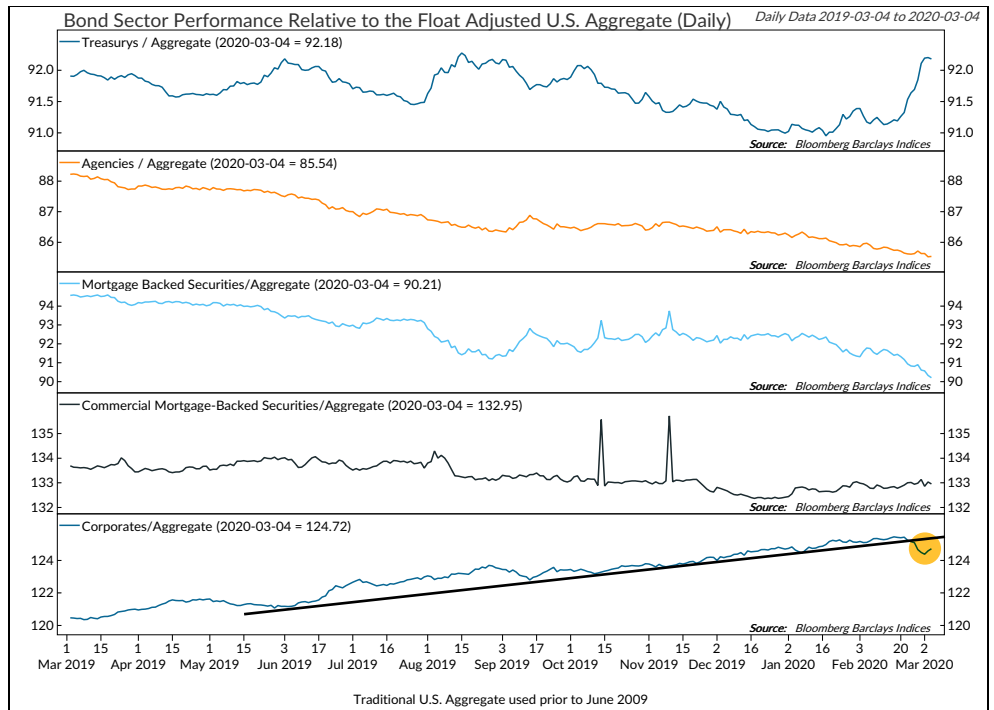
MARCH 16, 2020

De-risking within fixed income

Key Takeaways

- We downgraded credit, MBS, CMBS, ABS and EM (USD) bonds to underweight.
- Increased U.S. bond duration to 110% from 100%, as Germany is on the cusp of confirming a global yield downtrend.
- We increased exposure to the U.K. and Europe at the expense of Japan and remain overweight the U.S.

IG uptrend line broken



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On March 5, we made several position changes in both the U.S. and globally in light of recent market developments — we downgraded credit, MBS, CMBS, and ABS to underweight.

We downgraded investment grade credit to underweight from marketweight, joining our underweight on high yield. The change was primarily driven by technicals, market volatility, and valuation risk. We recommended moving up in quality. We continue to avoid leveraged loans.

Credit technicals are terrible

The break of the investment grade uptrend line is potentially serious (**chart above**), considering that spreads remain historically low. We respected the break. Within investment grade, the Baa/Aa ratio had started to break down.

Within high yield, the Caa/Ba ratio was plunging to new lows. Downside relative momentum was accelerating, especially for high yield.

Market volatility skyrocketed — a negative condition for credit, particularly for high yield. Quality is outperforming. Many strategists pointed to the stresses in energy to explain rising credit spreads. Our concern was broader than energy and we saw further room for spread widening. The market is still not yet at levels we would deem attractive/cheap.

Valuation and credit concerns

In our High Yield and Credit Outlook for 2020,

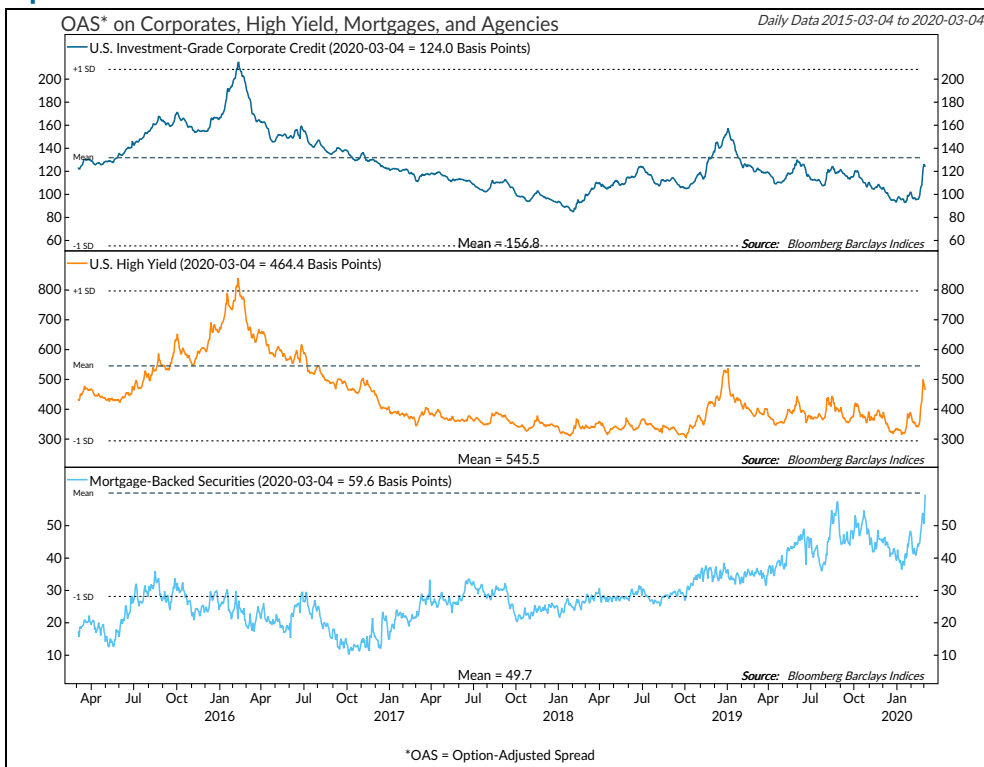
despite an improving economic outlook at the time, I was “hesitant to upgrade high yield due to valuation concerns and some deterioration in corporate fundamentals.” We were “concerned that the credit cushion is being eroded, and that our ability to withstand a downside shock is being reduced.” We are seeing the consequences of that eroded cushion playing out today. And cash levels at funds were not particularly high going into this shock. Finally, selection and diversification have been no panacea. Although there are differences in sector performance, in severe market declines, everything gets sold and correlations go to 1.00.

Downgraded MBS

We also downgraded mortgage-backed securities (MBS) to underweight from overweight. With mortgage rates dropping to record lows, every mortgage holder in America who can will refinance their mortgage, resulting in a spike in prepayments.

Spreads have room to widen **(chart, right)**. Treasuries and other high quality sovereign debt are the beneficiaries.

Spreads have room to widen

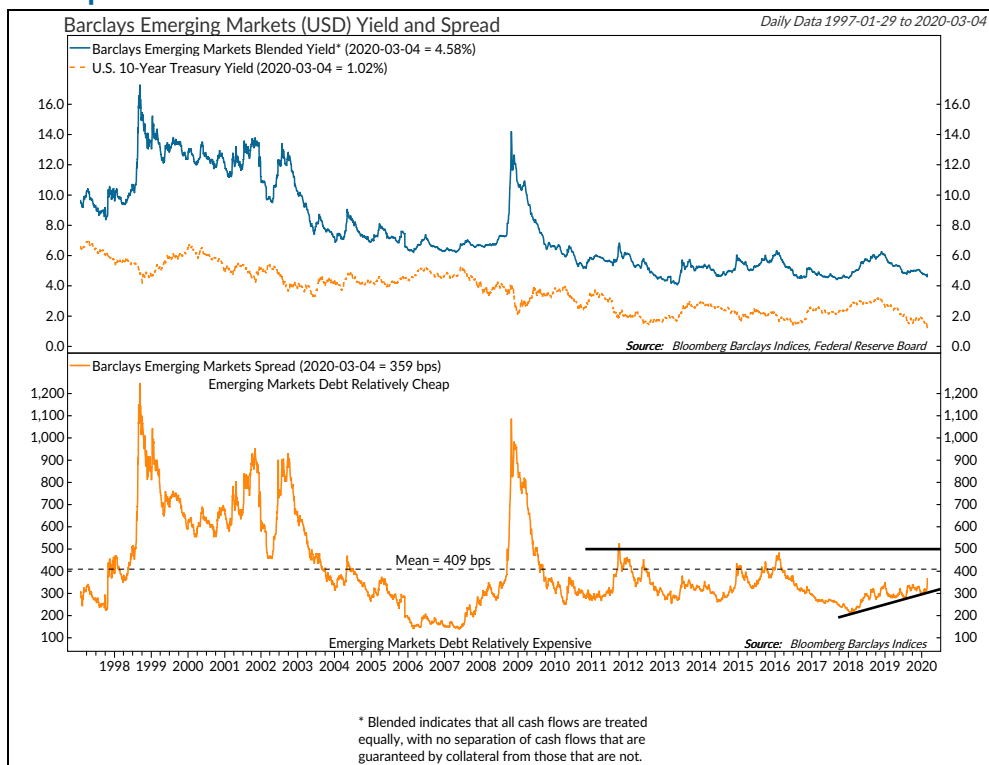


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EM spread could widen to around 500



B195



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Downgraded EM

Although Fed rate cuts and a weaker U.S. dollar could help dollar-denominated debtors, the demand and supply shocks could result in a shortage of dollars. Spreads could widen to around 500 **(chart, left)**.

Additionally, we have been bothered by the renewed stress in repo and money markets. Term repo has been oversubscribed since early February. We saw demand for overnight funding oversubscribed and strong demand recently.

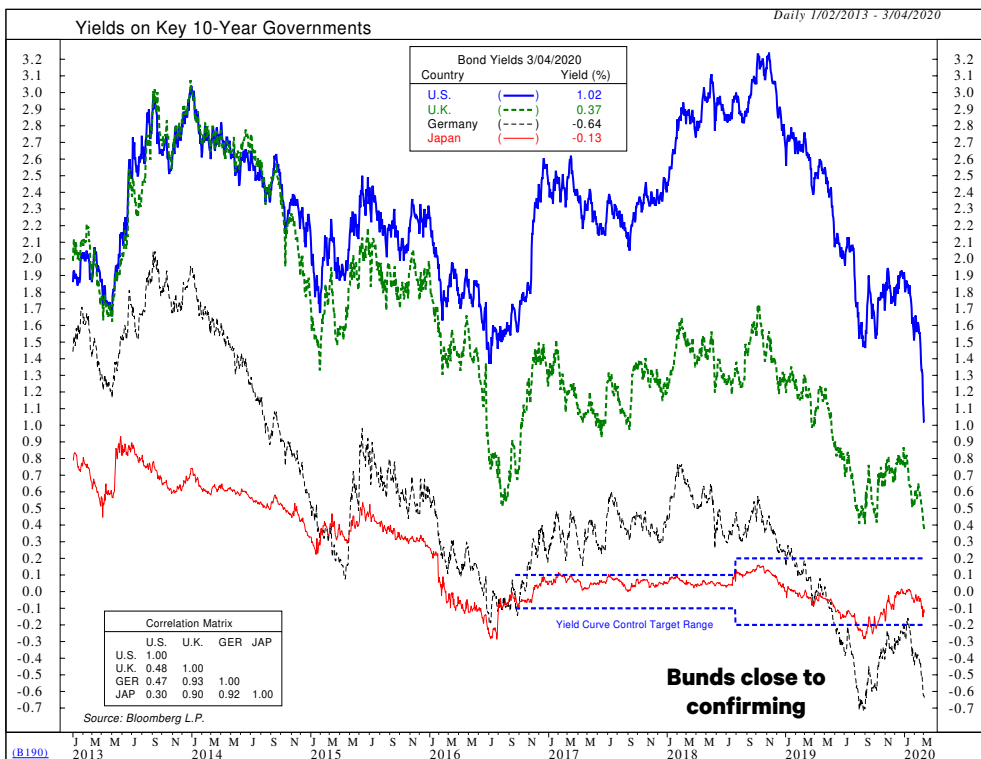
Increased duration

Last November, we moved to 100% of U.S. benchmark duration when 10-year Treasury yields were hovering around 1.7%. With the 10-year Treasury yield below 1%, we increased our U.S. bond duration to 110% from 100%, as the demand for safe, long duration assets continues. The Fed could soon be revisiting the zero lower bound. A resumption of QE could follow, which could nullify the historical tendency for the curve to steepen following intermeeting rate cuts. We are staying neutral for now. Additionally, new lows in German yields would confirm the global bond bull market **(chart, right)**.

Reduced Japan, lifted U.K. and Europe

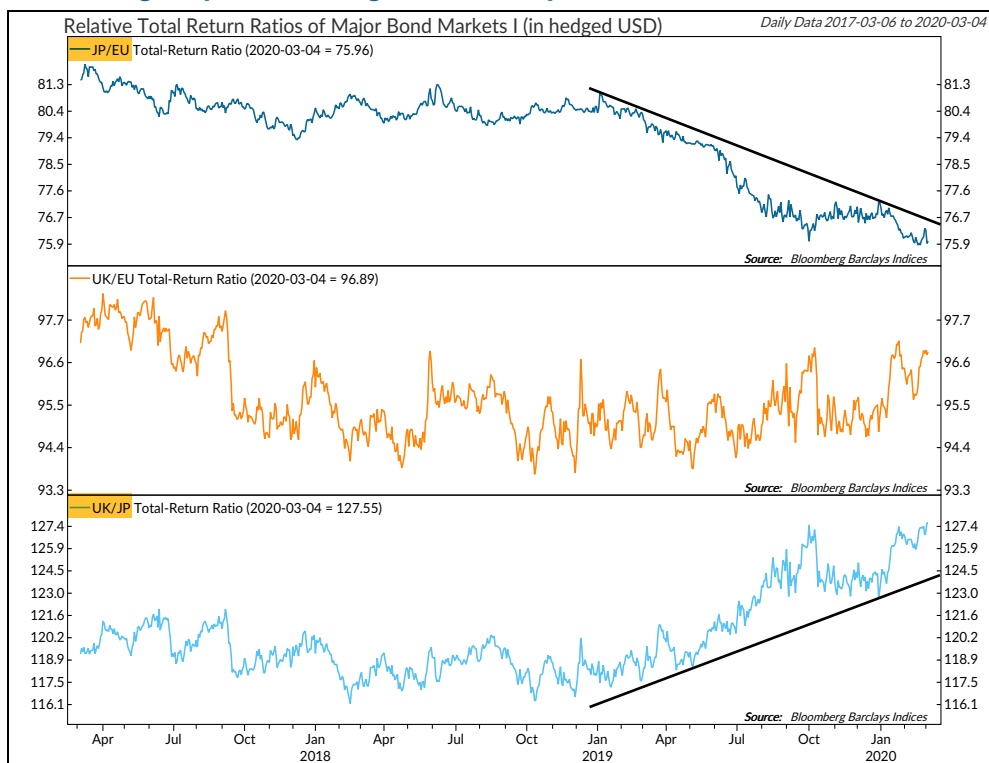
Moreover, we have been bothered that the drop in Treasury yields had not been confirmed elsewhere. Gilts have since confirmed, and bunds are within a few basis points of

Global confirmation ahead?



doing so. Only Japan remains in its own world of yield curve control. As a result, we went further underweight Japan (10% allocation vs. 15%). We increased the U.K. allocation to 8% from 5% (now overweight), and increased the Europe allocation to 27% from 25% (still marketweight) Return trends support our move **(chart, left)**. The U.S. remains overweight at 55%.

Reducing Japan, raising U.K., Europe



What if we're wrong?

We think it is prudent to de-risk, considering that valuations are not attractive and uncertainty is likely to be with us for a while. But if infection rates start to subside and government support packages proliferate, we will have no problem reversing some, or all, of these positions.

Above excerpted from: "De-risking?" by Joseph Kalish, March 5, 2020 (available through NDR's Institutional product offerings)

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Policy responses

The Fed made two intermeeting cuts. First, on March 3, the Fed lowered the target range for the fed funds rate by 50 basis points (0.5%) to 1.00% to 1.25%. Second, on March 15, the Fed slashed the target range for the fed funds rate by 100 bp back to the zero lower bound (ZLB) of 0.00 to 0.25% for the first time since December 15, 2015. It plans to maintain this range until it is “confident that the economy has weathered recent events and is on track to achieve” its goals.

The Fed will also buy \$500 billion of Treasury securities and \$200 billion of mortgage-backed securities. It will also do \$500 billion in unscheduled overnight repo.

We looked at the performance of 10-year Treasury yields, the yield curve, and credit spreads. Historically, 10-year yields were lower one year later (**chart below**). The yield curve steepened.

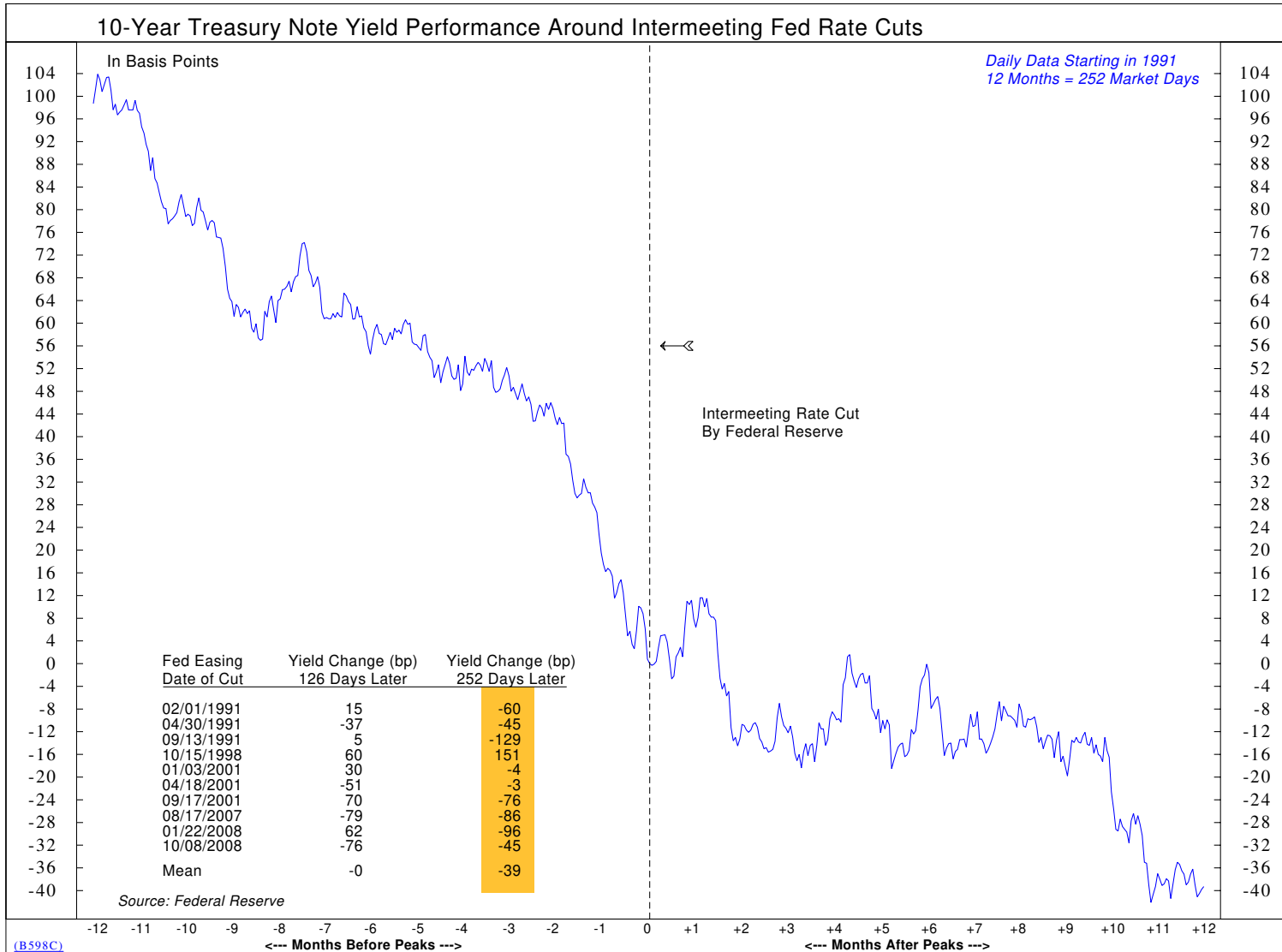
These actions won't narrow credit spreads for

corporates, municipalities, or EM. The Fed is not out of ammunition, but its weapons won't win the war against the virus.

Fiscal support, particularly to help SMEs (small and medium-sized enterprises), is what will be needed to weather the economic storm now swirling around the country.

Above excerpted from: “What the intermeeting cut means” and “Fed fires bazooka

Yields tend to drift lower after intermeeting cuts



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but virus still standing” by Joseph Kalish, on March 3, 2020 and March 16, 2020, respectively (available through NDR’s Institutional product offerings)

Many clients are asking whether the U.S. economy is heading toward recession. The National Bureau of Economic Research (NBER), the official arbiters of the U.S. business cycle dating, defines a recession as: “a significant decline in economic activity spread across the economy, lasting more than a few months, normally visible in real GDP, real income, employment, industrial production, and wholesale-retail sales.”

Our Chief Global Macro Strategist has been using two analogs for COVID-19: the 9/11 terrorist attacks and the March 2011 Japanese tsunami. In both cases, economic activity appeared to stop for a period of time. After 9/11, U.S. economic activity fell by around 0.5% (2.0% SAAR) from August to the November/

December Recession risk and when to turn bullish Spreads have been wider at prior stress points lows, based on monthly indexes. In Japan, activity plunged 8.4% from February to April. With travel, restaurants, entertainment, and schools shutting down, we could meet the “significant decline” definition. But we don’t know if we will meet the time criteria.

What matters is what the markets are pricing in. As of March 9, the S&P 500 was down 18.9% from its peak. There have only been five other declines of less than 20%, which resulted in a recession. The median decline resulting in recession was 35.9%, while the median non-recessionary bear was 23.3%. Both suggest further downside risk.

As for credit, on March 9, investment grade option-adjusted spread (OAS) was 171, while high yield was 642 (chart below). Both were well below all prior meaningful peaks since

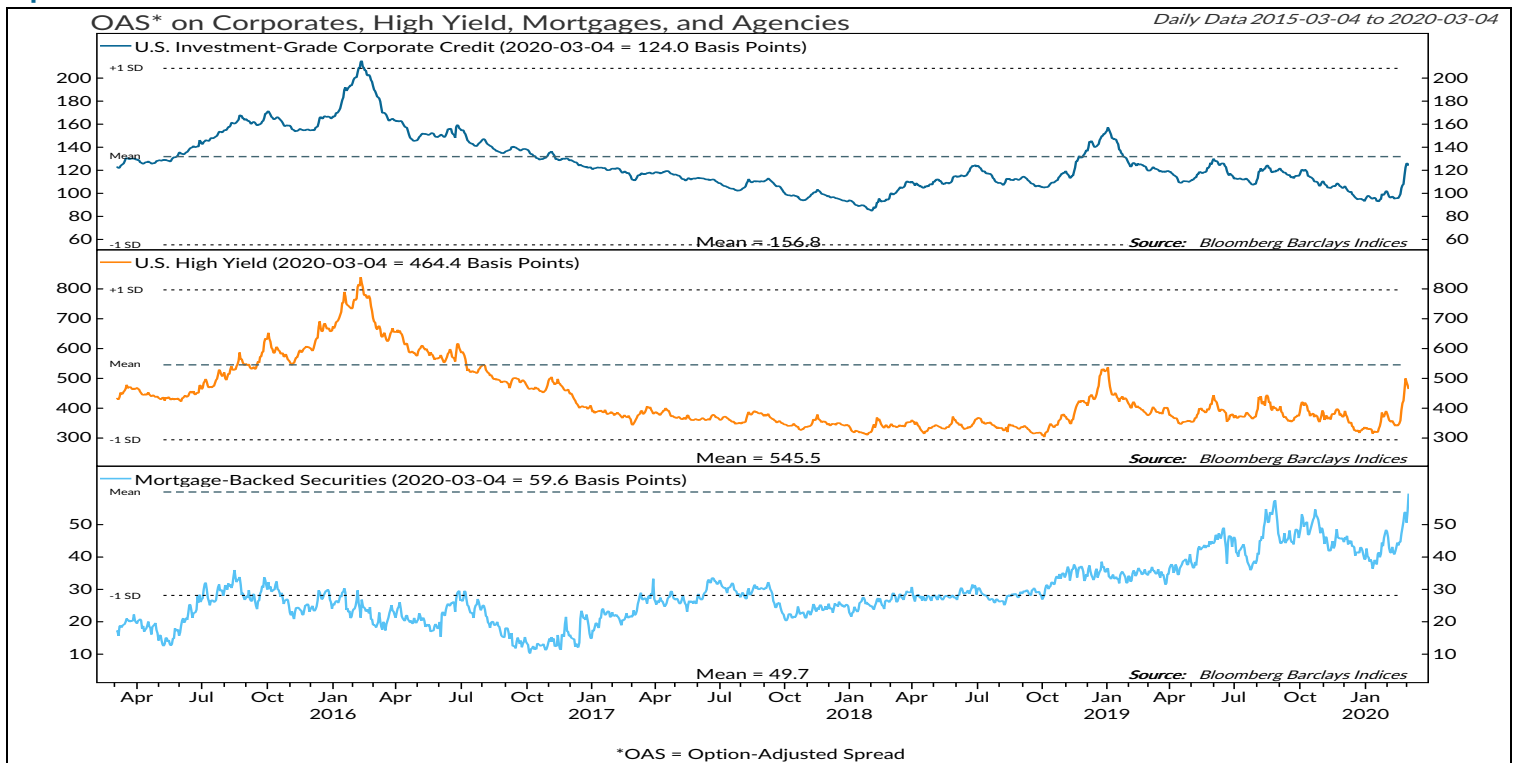
1990. Since OAS history is limited, we also looked at the Baa/Aaa spread going back to the 1920s. The average spread peaked around 200 basis points (2%). On Friday, March 6, it closed at 120, also suggesting further downside risk.

Except for 1945 and 2001, Baa/Aaa credit spreads widened from the beginning of the recession to its peak by a median of 50 basis points. We may not have seen peak spreads.

We are watching three things to turn more constructive on credit and risk more generally: 1) cheap valuation (IG spreads closer to 200 and HY spreads over 800); 2) fiscal policy; and 3) a slowing of virus transmissions.

Above excerpted from: “Recession risk and when to turn bullish” by Joe Kalish, March 10, 2020 (available through NDR’s Institutional product offerings)

Spreads have room to widen



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VENETA DIMITROVA SENIOR U.S. ECONOMIST
JOSEPH F. KALISH CHIEF GLOBAL MACRO STRATEGIST

MARCH 16, 2020

Is the U.S. economy immune to COVID-19?

Key Takeaways

- COVID-19 is both a supply and a demand shock to the economy that will likely lead to slower growth and lower inflation in the short-run.
- While the fallout from the virus raises the odds of recession, there aren't yet widespread signs of one in leading indicators.
- Positive consumer fundamentals, housing market momentum, monetary and possibly fiscal stimulus provide offsets to a fallout from the virus.

No widespread signs of recession yet

U.S. Recession Watch Report

Indicator	Escape Velocity Level	Key Recession Level	Current Level	Date
NDR Recession Probability Model	5	50	4.4	2019-12-31
Breadth of Philly Fed State Leading Indexes	95	70	88	2019-12-31
NDR Economic Timing Model	17	0	23	2020-01-31
NDR Composite Leading Index	3.4	-2.6	0.2	2020-01-31
National Financial Conditions Index	-0.7	0.9	-0.8	2020-02-21
Initial Claims for Unemployment Insurance (4-wk Avg)	350	500	209.8	2020-02-21
Conference Board's Consumer Confidence Index	98.2	63.2	130.7	2020-02-29
Conference Board's CEO Confidence Index	61	43	43	2019-12-31
ISM Manufacturing Index	55.0	48.0	50.1	2020-02-29
ISM Non-Manufacturing Index	55.2	51.4	55.5	2020-01-31

Source: Ned Davis Research, Inc., Federal Reserve Bank of Chicago, Federal Reserve Bank of Philadelphia, Haver Analytics, The Conference Board. Indicators which have reached their escape velocity level are highlighted green. Indicators which have reached their key recession level are highlighted red.

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Since financial markets are forward looking, their collective wisdom would suggest a fallout for the U.S. economy, possibly even a recession. But economic data is typically released with a lag, making an accurate assessment of the economic impact from the virus nearly impossible at this time. Nevertheless, it is important to keep current events in perspective and evaluate both the downside and upside risks to the economic outlook.

While the risk for growth is clearly to the downside, recession is not a forgone conclusion. The U.S. economy is well positioned to withstand the shock, with positive offsets stemming from a robust labor market, strengthening housing market activity, and easy monetary and fiscal policies.

There are several important channels through which the novel virus could infect the U.S. economy:

- Supply chain disruptions
- Operating capital/liquidity shortage
- Weaker export demand
- Negative stock market wealth effect

But there are also several important offsets:

- Consumers working, earning, and saving more
- Stronger household balance sheets
- Housing market activity in an upswing
- Lower energy prices
- The Fed stands ready to provide ample

liquidity

- Fiscal stimulus and automatic stabilizers

Given what little we know about the initial economic impact of the virus in the U.S., we will keep intense focus on leading indicators for early signs of trouble. For now, all but one of the ten key indicators in our Recession Watch Report point to continued expansion ahead (**table above**).

Above excerpted from: "Is the U.S. economy immune to Covid-19?" by Veneta Dimitrova, March 3, 2020 (available through NDR's Institutional product offerings)

Sinking oil prices = sinking economy?

The sharp drop in oil prices this week comes amid a growing number of COVID-19 cases in the U.S. and globally and rising fear of an economic fallout from the virus. The first association with falling oil prices is that they would support more consumer discretionary spending, lower production costs in many industries, lower inflation, and lower inflation expectations. The positive impact, however, will be reduced by the potential downsizing of the mining sector, as less efficient and/or highly leveraged firms exit the field and mining payrolls decline. History is a guide with respect to the latter.

The **table below** shows how mining payrolls changed during eight severe oil price drops since 1983. We find that mining payrolls declined a median of 92,000, or 12.6%, around these events, and took a median of

24 months from peak to trough in mining payrolls. This means that a potential mining payrolls correction could span the rest of 2020 and extend into 2021. This may make the payrolls and economic recovery from COVID-19 slower than it would have been otherwise. Still, a U.S. recession call at this time would be premature.

There isn't yet real economic data that reflects widespread damage from COVID-19. But, the steep correction in risk asset prices suggests that financial markets expect slower economic growth ahead. One of the backstops will be effective monetary and fiscal stimulus, a necessary condition for a more constructive outlook.

The Fed was poised to cut rates again and provide more liquidity, following its intermeeting emergency rate cut in March (see **Policy responses** on page 19). And

President Trump announced discussions of a payrolls tax cut, aid for hourly workers and those who lack paid sick leave, and help for the hardest hit industries. This could cushion the economic blow from COVID-19 and a shrinking mining sector.

Above excerpted from: "Sinking oil prices = sinking economy?" by Veneta Dimitrova, March 10, 2020 (available through NDR's Institutional product offerings)

Oil price drops lead to mining job losses

Mining and Logging Payrolls Around Major Oil Price Declines

Oil Price Decline	Payrolls Peak		Payrolls Trough		Job Loss From Peak to Trough		# Months Peak to Trough	Average Job Loss Per Month ('000)
	Date	('000)	Date	('000)	('000)	(%)		
1986	August 1984	1027	February 1987	759	-268	-26.1	30	-9
1988	October 1987	784	July 1989	730	-54	-6.9	21	-3
1991	May 1990	770	August 1993	656	-114	-14.8	39	-3
1994	December 1993	673	January 1996	633	-40	-5.9	25	-2
1998	January 1998	660	September 1999	591	-69	-10.5	20	-3
2001	June 2001	610	April 2003	566	-44	-7.2	22	-2
2008	September 2008	782	October 2009	661	-121	-15.5	13	-9
2015	September 2014	903	October 2016	644	-259	-28.7	25	-10
Median					-92	-12.6	24	-3

Source: Bureau of Labor Statistics, NDR

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Jobs outlook is deteriorating

Nonfarm payrolls increased 273,000 in February, about 100,000 more than expected. The unemployment rate slipped from 3.6% to 3.5%, matching the consensus, and returning to the lowest level since 1969. The labor market was in excellent shape before fear of COVID-19 started taking over. It is now old news and has little bearing on the outlook for the U.S. economy and monetary policy.

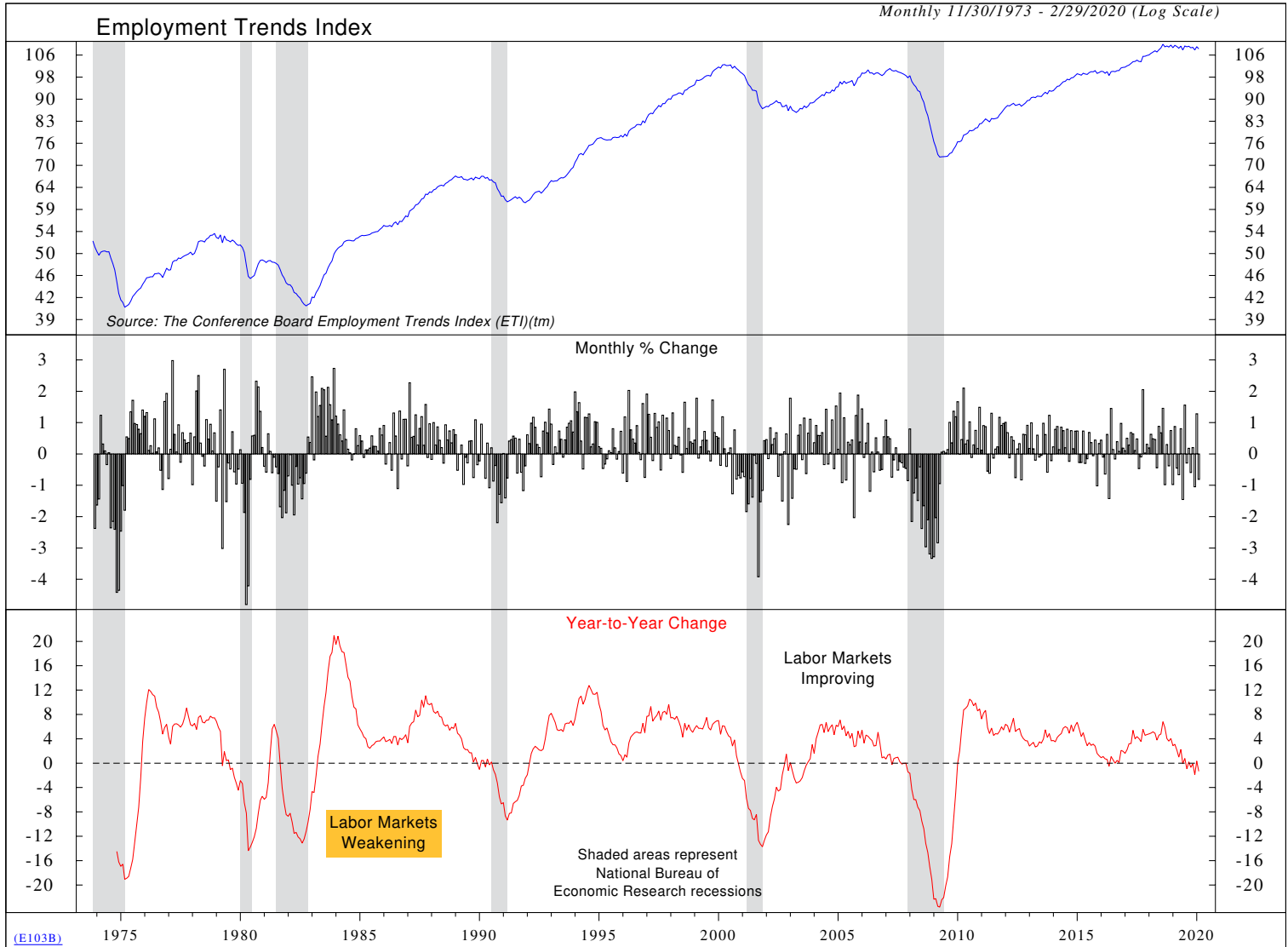
The Conference Board's Employment Trends Index (ETI) fell 0.8% in February and was off 1.3% from a year ago (**chart, below**), indicating some deterioration in the labor market outlook even before the wider spread of coronavirus fears in the U.S. The report stressed the point that the COVID-19 outbreak has created great uncertainty for the labor market outlook.

If the outbreak is contained and economic activity normalizes by April or May, then

the negative impact on labor markets will be limited. But if the outbreak affects the economy through the summer, then layoffs are more likely, particularly in travel, entertainment, lodging, food, and hospitality — especially of less skilled workers.

Above excerpted from: "Can a tiny virus stop a steamroller?" and "Employment trends deteriorate" by Veneta Dimitrova, March 6 and 9, 2020, respectively (available through NDR's Institutional product offerings)

Oil price drops lead to mining job losses



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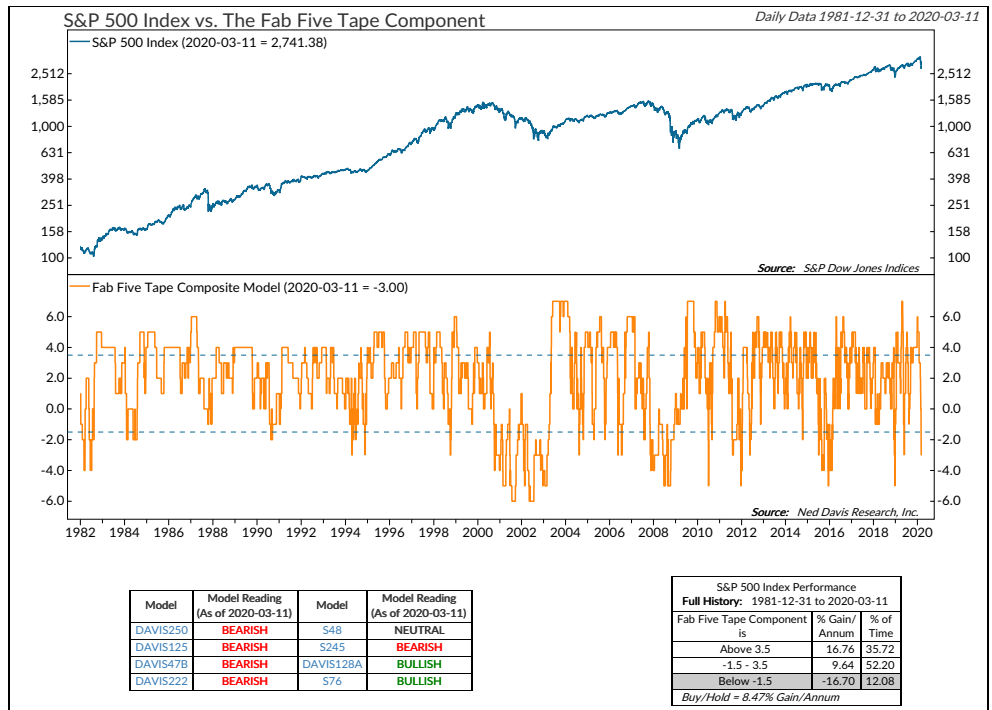
MARCH 16, 2020

Trading strategy more cautious

Key Takeaways

- Fed plus Tape combination indicator and supply vs. demand both flashed bearish signals.
- While the Fab Five Model is neutral, the Fab Five Tape Component is now bearish.
- As a result, my hedge fund trading strategy leans cautious.

Fab Five Tape now bearish, although overall model is neutral



Tape deteriorates

Our indicators that uses the rule, “Don’t fight the tape or the Fed,” went negative after the 2/28/2020 close.

That was due to a tape sell signal, as the S&P 500 Total Return Index fell below its 12-month moving average. This sends the indicator into commercial paper.

Additionally, NDR’s volume supply rose above volume demand on 3/5/2020.

While the Fab Five itself is still at a neutral reading, the Fab Five Tape Composite **shown below** went negative as well on 3/5/2020.

DAVIS501



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Trading strategy more cautious

However, given my strong longer-term concerns over debt and valuations, the negative Fab Five Tape **tilts my hedge fund trading strategy from neutral to cautious.**

As I noted on our conference call last week, I continue to look for a selling climax low, followed by a strong rally, then a test of the selling climax low with many divergences and much less selling pressure.

This should be followed by one, or better yet

two, 10-to-1 up days to restore some upside momentum.

Above excerpted from: “Fab Five Tape turns bearish” by Ned Davis, March 9, 2020 (Ned’s Insights is available through NDR’s Advisory add-on product offerings)

Glossary of terms

Asset Allocation: Ned Davis Research, Inc. constrains the recommended equity weighting (which can theoretically range from zero to 100%) to be limited to a minimum of 40% stocks and a maximum of 70% stocks. Due to the constraint on equity weighting, the combination of bonds and cash can be weighted no greater than 60% and no less than 30% in NDR's recommendations. The benchmark for bond allocation is 35% and for cash is 10%.

Benchmark Duration: The most commonly used measure of bond risk, quantifies the effect of changes in interest rates on the price of a bond or bond portfolio. The longer the duration, the more sensitive the bond or portfolio should be to changes in interest rates. Point of reference for a measurement.

Beta: A number describing the relation of an investment return with that of the financial market as a whole. Numbers greater than one suggest an investment will increase more than the broad market when it is rising, and have greater declines when the market is falling.

Breadth: A technical term used to demonstrate how broadly a market is moving.

Capital Market: Is a market for securities (debt or equity), where business enterprises (companies) and governments can raise long-term funds.

Commercial Mortgage-Backed Securities (CMBS): A type of mortgage-backed security backed by commercial mortgages rather than residential mortgages. When compared to a residential mortgage-backed security, a CMBS provides a lower degree of prepayment risk because commercial mortgages are most often set for a fixed term.

Core Inflation: Is a measure of inflation which excludes certain items that face volatile price movements, notably: food and energy.

Cyclical Bear: Cyclical swings in the market can last from several months to a few years, and are designed to be in line with the primary trend. A cyclical bear market is a cyclical swing when the market is in a downtrend.

Cyclical Bull: Cyclical swings in the market can last from several months to a few years, and are designed to be in line with the primary trend. A cyclical bull market is a cyclical swing when the market is in an uptrend.

Deflation: Is a slight decrease in the general price level of goods and services. Deflation occurs when the annual inflation rate falls but stays above 0%.

Demographics: Studies of population based on factors such as age, race, sex, economic status, level of education, income level, and employment.

Echo Bull/Bear: An echo bear market is a shallower correction which occurs in the equity market that does not coincide with an economic recession. An echo bull market is one that follows and echo bear market.

European Central Bank (ECB): Is the institution of the European Union (EU) which administers the monetary policy of the EU Eurozone member states. It is thus one of the world's most important central banks. The bank was established by the Treaty of Amsterdam in 1998, and is headquartered in Frankfurt, Germany.

Glossary of terms

Eurozone/European Union: Is an economic and monetary union (EMU) of the European Union (EU) member states which have adopted the euro currency as their sole legal tender. It currently consists of Austria, Belgium, Cyprus, Finland, France, Germany, Greece, Ireland, Italy, Luxembourg, Malta, the Netherlands, Portugal, Slovakia, Slovenia, and Spain.

Federal Open Market Committee (FOMC): A component of the Federal Reserve System, is charged under United States law with overseeing the nation's open market operations. It is the Federal Reserve committee that makes key decisions about interest rates and the growth of the United States money supply.

Gross Domestic Product (GDP): The total output of goods and services produced in a given country during a given period.

Lagging Indicator: An economic factor that changes after the economy has already begun to follow a particular pattern or trend; used to confirm long-term trends.

Leading Indicator: An economic factor that changes before the economy starts to follow a particular pattern or trend; used to predict changes in the economy.

Median P/E: Numeric value separating the higher half of a sample, a population, or a probability distribution, from the lower half. This is the middle price-to-earnings ratio of a series.

Mortgage-Backed Securities (MBS): A type of asset-backed security that is secured by a mortgage or collection of mortgages. These securities must also be grouped in one of the top two ratings as determined by an accredited credit rating agency.

MSCI Emerging Market Index: An index developed by Morgan Stanley Capital International, Inc. (MSCI) as an equity benchmark for emerging market stock performance. It is a capitalization-weighted index that aims to capture 85% of publicly available total market capitalization. Component companies are adjusted for available float.



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NDR HOUSE VIEWS (Updated March 12, 2020)

NDR recommends an underweight allocation to equities. We are overweight bonds and underweight cash. When coronavirus worries start to subside and global economic activity starts returning to normal, we will likely see stock prices moving higher with rising bond yields. But there's not yet any evidence that such a recovery is at hand.

Equity Allocation

U.S. | We are marketweight the U.S. relative to other regions but negative on an absolute basis. COVID-19 has driven the U.S. into a cyclical bear, but should create a buying opportunity later in the year. We favor large-caps over small-caps and favor Growth over Value.

INTERNATIONAL | We are marketweight all seven regions within our seven-way regional allocation framework.

Macro

ECONOMY | The global economy is in a sustained slowdown. But recession probability for the U.S. remains minimal in the next six to nine months. Major risks include heightened trade war tensions, a sharp slowdown in China, and political dysfunction in the U.S. and Europe.

FIXED INCOME | We are at 110% of benchmark duration. We are neutral on the yield curve. We are underweight credit, MBS, CMBS, and ABS. We are overweight Treasuries.

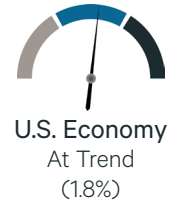
ENERGY | The combination of a demand shock (coronavirus) and an OPEC price war necessitate a bearish oil position.

GOLD | Long-term uptrend intact. We are bullish.

DOLLAR | Our models are mixed.

Economic Summary

March 16, 2020



● Overweight ● Marketweight ● Underweight

GLOBAL ASSET ALLOCATION

- Bonds (45%)
- Stocks (50%) | Cash (5%)

Benchmark: Stocks (55%), Bonds (35%), Cash (10%)

Equities — Regional Relative Allocation

- U.S. (55%) | Europe ex. U.K. (15%) | Emerging Markets (11%)
- Japan (7%) | U.K. (5%) | Canada (3%) | Pacific ex. Japan (4%)
-

Benchmark – U.S. (55.8%), Europe ex. U.K. (13.7%), Emerging Markets (11.8%), Japan (7.2%), U.K. (4.9%), Pacific ex. Japan (3.6%), Canada (3%)

Global Bond Allocation

- U.S. (55%) | U.K. (8%)
- Europe (27%)
- Japan (10%)

Benchmark: U.S. (51%), Europe (26%), Japan (18%), U.K. (5%)

U.S. ALLOCATION

- Bonds (45%) | Large-Cap | Growth
- Mid-Cap
- Stocks (50%) | Cash (5%) | Small-Cap | Value

Benchmark: Stocks (55%), Bonds (35%), Cash (10%)

Sectors

- Health Care | Consumer Staples
- Energy | Industrials | Financials

Those sectors with a benchmark weight > 9%, an overweight/underweight is more than +/- 300 basis points from the S&P 500 benchmark. For smaller sectors, the active bet is +/- 100 basis points.

U.S. Bonds — 110% of Benchmark Duration

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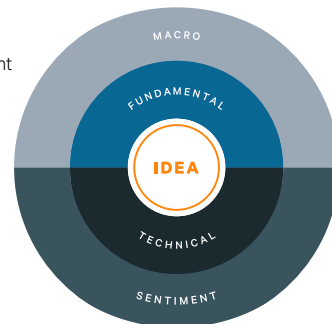
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