Confluence INVESTMENT MANAGEMENT

Current Perspectives

By Bill O'Grady and Mark Keller

2020 Outlook Update #2: Storm Warning

We have been updating our 2020 Outlook to keep you informed of our thoughts as conditions evolve. We have refreshed some of the charts from our update last week and added new comments, included below in bold.

Update #2: March 27, 2020 | Update #1: March 16, 2020

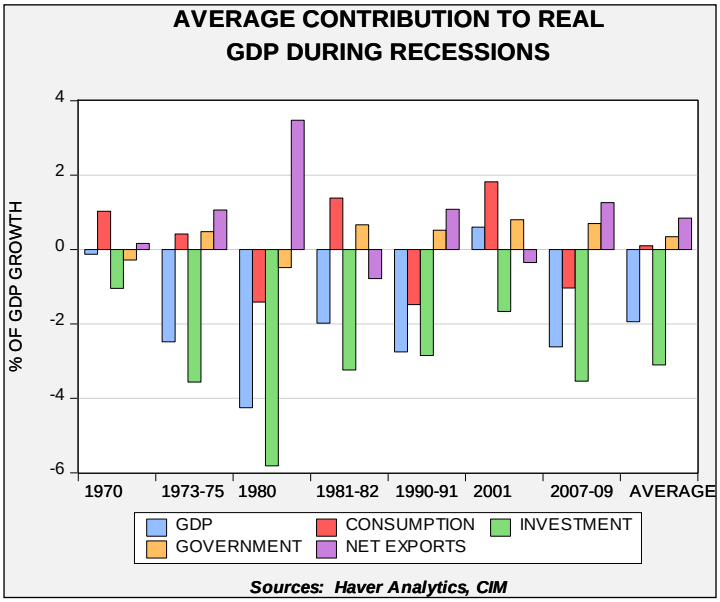
Summary—High Probability of Recession:

1. The economy is facing three simultaneous problems:
   a. A public health crisis—COVID-19 and the economic impact of containing it;
   b. An oil price war and a regional economic slump;
   c. Rapidly rising financial stress caused by (a) and (b) along with underlying unresolved issues.
2. **Although we are weeks away from data confirming that we are in a recession, the qualitative evidence leads us to say that a recession is a near certainty.**
   a. We are now working from the standpoint that a recession is underway.
3. The content of this report:
   a. An overview of how recessions look compared to expansions;
   b. A discussion of the three threats the expansion faces;
   c. The market impact of these three threats.

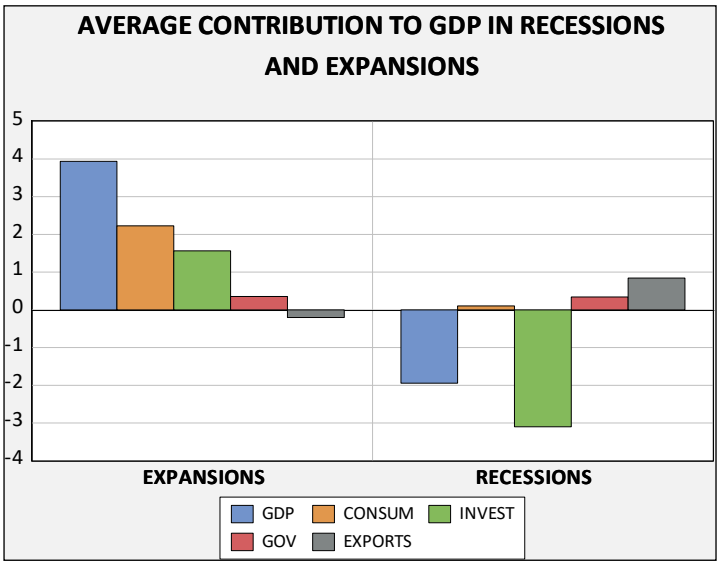
The Economy—An Overview:

So far, the only compelling data that signals a recession is the yield curve, which, in some variants, inverted last year. Although a couple of our closely watched indicators have turned negative, most have not. Due to the sudden nature of the COVID-19 event, we will only begin to see the impact on the economic data in the coming weeks. Usually, there are leading indicators which give us early warning, but the suddenness of this virus will probably not give us that luxury. It is important to remember that there is a lag in data reporting; the numbers released in March tend to cover January and February. Since the economic weakness is happening in March (the reported data pre-COVID-19 was actually rather robust), we won't have a true picture of the damage until April and May. But, reports of empty commercial aircraft, school closures and suspended sports and entertainment are all signs of trouble. We would expect the evidence to become apparent in the coming weeks. ***If we wait until we have full confirmation, it will be too late to be of much use.***

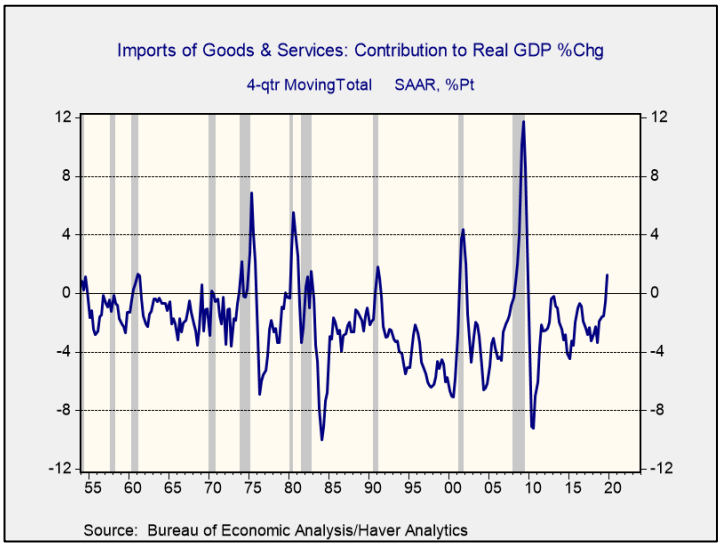
As the data flow comes in, we will update this report. We would also recommend monitoring our Business Cycle Report.



This chart shows the contribution to GDP during the past six recessions. The bars on the far right side of the chart show the average contribution to GDP of the six recessions since 1970. Of these six recessions, two (1970, 2001) were mild. The other four were considered more serious. On average, net exports, government spending and consumption were positive contributors, but the latter component does vary by recession. The biggest negative contributor is investment. Net exports tend to rise in recessions because imports fall due to weaker consumption. Here is a breakdown of the average of all expansions and recessions since 1960.



Even though consumption, on average, remains positive, its contribution falls compared to expansions.



What can we expect this time around? We would expect investment to fall but be partially offset by rising net exports. In fact, we are already seeing a positive contribution from gross imports, something we rarely see outside of recession.

The Three Threats

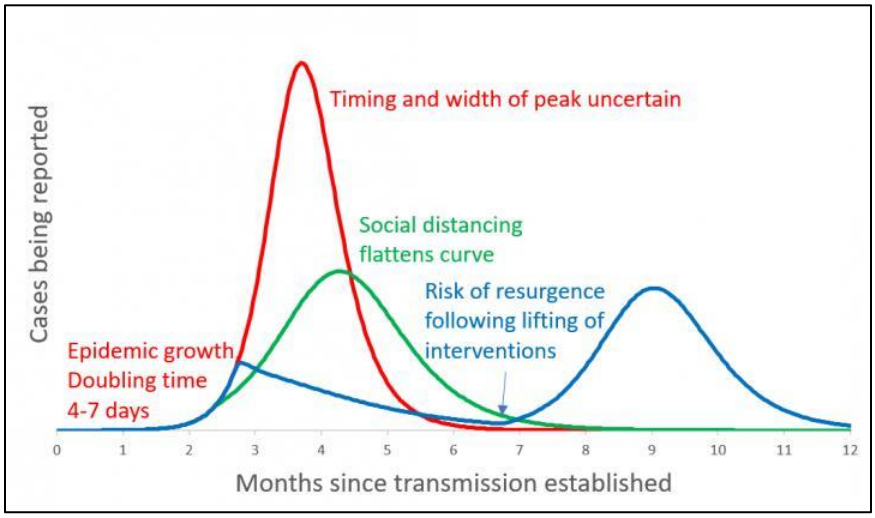
If the economy were merely facing one of the following three threats, we would be less inclined to signal a downturn. But the confluence of these three events increases the odds of a recession and thus is the reason for publishing this report.

COVID-19: Given the nearly constant media coverage of the particulars of this virus, we are not going to discuss it in detail here. We do comment regularly on developments in our Daily Comment and recently published a Weekly Geopolitical Report titled "On Pandemics" which gives a broad overview of the problems such events have and the difficult decisions policymakers face on how to handle pandemics.

For purposes of this report, we need to try to determine ***magnitude*** and ***duration*** from COVID-19. Our position has been that the magnitude of this event will be significant. The disruptions caused by announced shutdowns really have no good analogs in recent history. The closest would probably be the terrorist attacks of 9/11; however, Major League Baseball closed for three days. The National Football League postponed one weekend of games, as did the NCAA. What we are going through now is more akin to a national hurricane or earthquake.

Preparations for and living through this disease are having both supply and demand side effects. Supply is being affected by the disruption of global supply chains and quarantine efforts. Demand is rising initially as households and businesses build inventory for quarantine. Effectively, this is pulling demand forward now which will be lost later in Q2. So, this event will be deep, perhaps shaving 0.5% to 1.0% off of GDP.

In terms of duration, we expect this event to be rather short-term in nature.



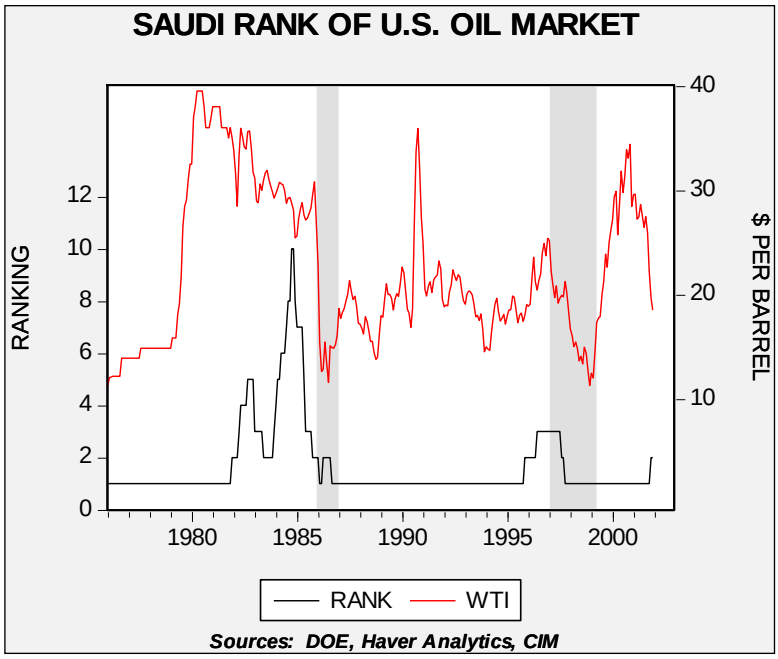
(Source: https://www.eurekalert.org/pub_releases/2020-03/uoo-irt030620.php)

This chart[1] is a schematic of the mathematics of pandemics. The important point of this graph is the "x" axis. It suggests that it takes three to four months for reported infections to peak; the peak is a function of the aggressiveness of social distancing. Using this model, we should expect U.S. cases to peak in June or July. The more aggressive social distance policy, the lower the number of infections. An aggressive social distancing policy will weaken economic growth initially but protect the health system from facing overcapacity which may be catastrophic. Although the U.S. isn't enforcing a social distancing policy as aggressively as China, American actions have been profound and will likely curb the total number of infections at the cost of a significant slowdown.

[1] Here is another handy interactive chart pack.

Oil Wars: The second problem that has emerged is a price war between the Kingdom of Saudi Arabia (KSA) and Russia. At the recent OPEC meeting, the KSA was unable to convince Russia to contribute to supply restrictions and Riyadh announced an all-out supply war. Prices plunged in response. Russia's purported reason for not wanting to cut production was concern that it would lose market share to U.S. shale producers. We suspect this issue is secondary. Given that shale producers can expand and contract output fairly quickly, the only way to seriously reduce U.S. output would be to reduce oil prices into the $30s and keep it there indefinitely. Neither Russia nor the KSA could tolerate those prices in perpetuity. The key to how long this war endures depends on the ability of both nations to tolerate pain.

The following two charts show the KSA's thinking. The Saudis have, in their history, had one market they focused on where they wanted either to be the largest or second largest foreign supplier. In the 1970s through the 1990s, that market was the U.S. There were two reasons for this. The U.S. was the largest importer of crude oil and provided security for the KSA. Thus, the kingdom did not want to lose share in the U.S. because (a) it was the most important market in the world, and (b) it feared the U.S. would view providing security as less critical if the KSA was seen as less important. During two previous market share wars, in 1986 and 1997-99, the loss of share was a triggering event. The chart below shows WTI along with the Saudi rank as foreign supplier to the U.S. market. The gray bars are designated as market share wars.



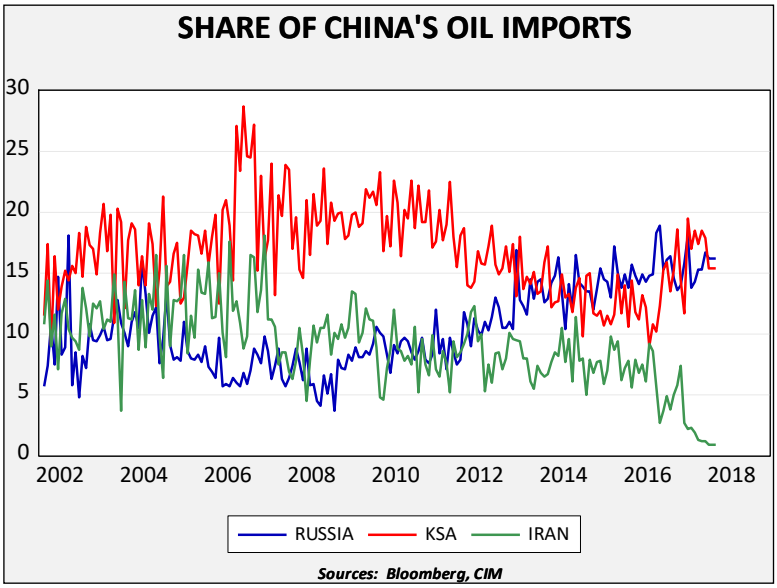
Until 1986, the KSA acted as "swing producer" for OPEC.[2] This led to a near-catastrophic loss of market share in the U.S. In December 1985, the KSA signaled it was abandoning the swing producer role and would retake market share. Oil prices fell from the low $30s to near $10 per barrel before the rest of OPEC capitulated and agreed to output cuts. In the mid-to-late 1990s, the KSA was losing market share in the U.S. to Venezuela, which had invited foreign company oil investment in order to boost output capacity. The KSA retaliated with supply increases into the Asian Financial Crisis. Prices fell from the mid-$20s to near $10. The war ended when Venezuelan President-elect Hugo Chavez signaled an end to the supply war, eventually ending the policy of using foreign investment to lift capacity. Prices rapidly recovered.

This time around, the U.S. is not the target of the KSA. The U.S. has made it clear that it is reducing its security footprint in the Middle East and, with the onset of shale production and a "captured" Canadian oil market,[3] the KSA can't really defend its U.S. share. Instead, it has staked its future on

[2] A swing producer adjusts output to fix a price.

[3] Canada's pipeline system is limited, so most of its output ends up in the U.S. market. This means, at least in terms of the oil market, that Canadian production can be thought of as U.S. supply.

rising Chinese oil demand, and likely hopes that, at some point, it will be able to receive security support from China as well.[4] Therefore, the KSA is committed to be the preeminent oil supplier to Beijing. Russia is threatening that position.



This chart shows the share of China's oil imports from the KSA, Russia and Iran. From 2006 to 2012, the KSA held a dominant share. But, since 2014 (when the KSA reversed its policy on trying to drive down shale oil production via lower prices), Russia's share has been competing with the KSA.

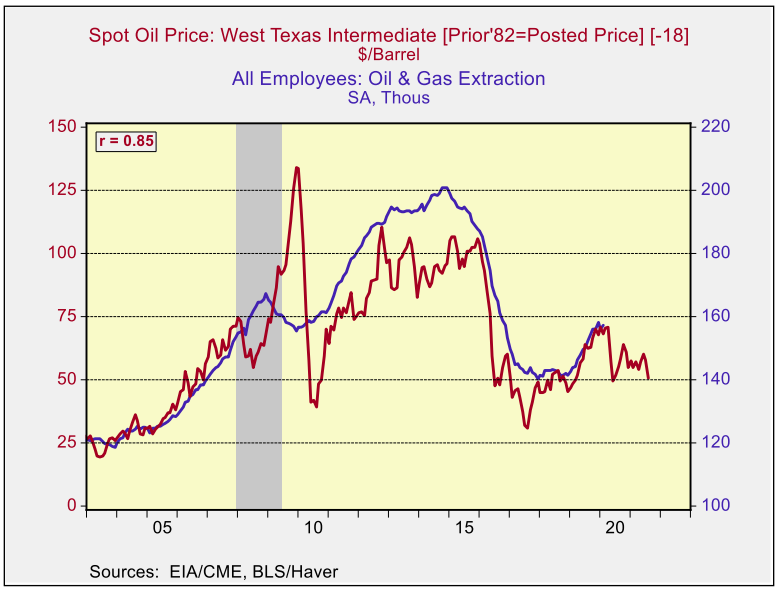
So, given this background, how do we expect this to play out? Most OPEC nations are rentier states; they use revenue from oil to support government spending. In addition, these nations tend to suffer from the "Dutch disease," a condition where a commodity export tends to boost exchange rates, making domestic industries less competitive. This process tends to lift imports and consumers become accustomed to low-priced goods from abroad. As a result, currency depreciation tends to be politically unpopular. When the KSA fought for market share in the past, its competitors tended to avoid currency depreciation, which is an effective buffer to the costs of the market share war. In other words, a foreign oil company sells its product for dollars but pays its workers in local currency. If the currency depreciates, then its production costs compared to output prices decline. Russia has shown a tendency to depreciate the RUB when oil prices decline. The next chart shows that tendency.

This chart shows Brent crude oil prices and the RUB/USD exchange rate (inverted scale). Note that as oil prices decline, the RUB falls with it. If Russia engages in similar behavior, it will give it more "staying power" in the share war.

[4] This is a bit of a pipe dream. Although China's military is growing rapidly, it is still years away from being able to project power beyond its borders.

The KSA will draw down foreign reserves to maintain the price war. It currently holds $501 billion of foreign reserves excluding gold.

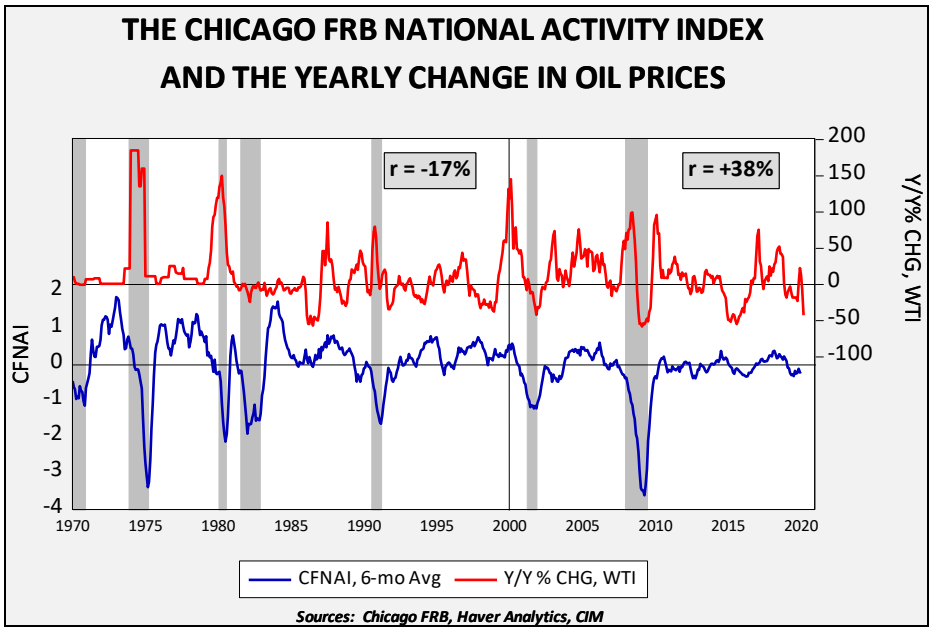
How much will this event affect the U.S. economy? In the oil patch, the impact will be signficant.



Assuming we see $25 WTI, we will likely see nearly 40k jobs lost in oil and gas extraction. But, as the chart shows, it will take about 18 months to occur.

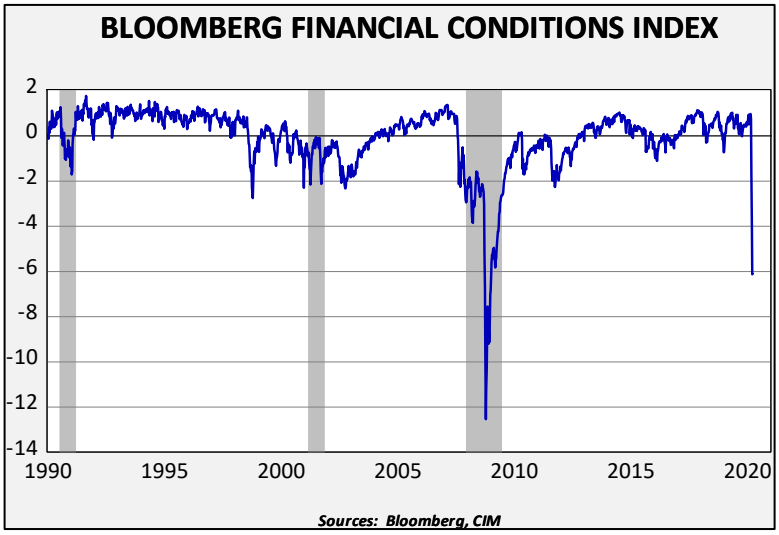
The impact on the overall economy has changed over the years. From the 1970s into the late 1990s, weaker oil prices were modestly supportive for the overall economy. That has changed in this century.

The Chicago Federal Reserve Bank has an Index of National Activity. A reading above zero indicates an economy growing above trend; a negative reading indicates the opposite. On the following graph, we smooth the indicator with a six-month moving average. Note that from 1970-99, the correlation between the yearly change in oil prices and the index was -17%. Not a strong correlation and an inverse sign. Since 2000, as the U.S. shale industry developed, the sign of the correlation has changed and increased to 38%. When prices fell a similar magnitude to what we are observing currently, the index moved from above to below trend. Since we are already below trend, the recent drop in oil prices increases the likelihood of recession. A reading of -0.45 in the National Activity Index is consistent with recession.



The bottom line is that this share war will likely get rather ugly. The KSA is pushing supply into the world market and it has no place to go. The U.S. oil industry will suffer greatly, but production probably won't start to decline until autumn, when price hedges will likely roll off. The president's announcement that the government will begin buying oil for the Strategic Petroleum Reserve (SPR) is helpful. The current capacity of the SPR is 713.5 mb. Most industry observers believe the SPR can logistically accept, at most, 0.5 mbpd; the storage currently has 635 mb, so it can accept 78.5 mb in total. It helps, but won't, by itself, lead to a recovery in prices. And, the action requires congressional approval, which is by no means guaranteed. We expect oil to fall into the $20s in the coming months.

Financial Stress: We have noted a sudden decline in financial conditions as measured by the Bloomberg Financial Conditions Index for the U.S.



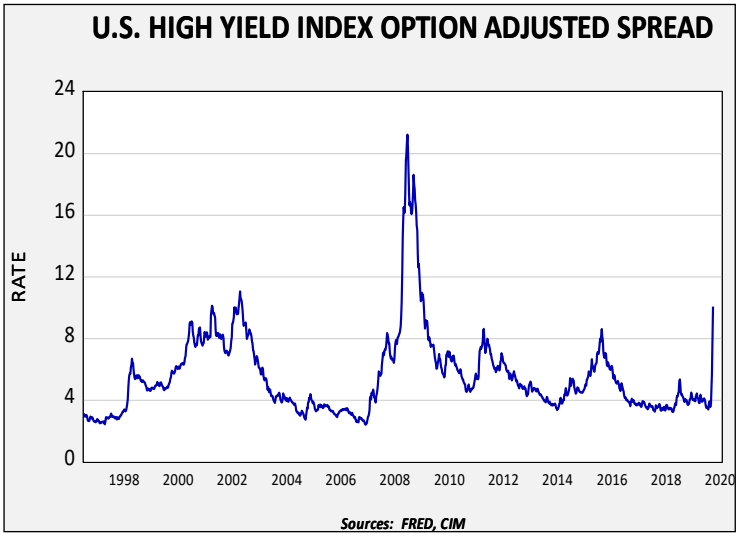
Our data uses the Friday closes for the index. The index is composed of eight variables[5] which are standardized and totaled. The more negative the reading, the greater the level of financial stress. The index was positive until the last week of February. **The current level of stress is now worse than the decline caused by the failure of Bear Stearns.**

This data suggests a serious level of financial problems in the financial system. We have noted difficulties in

[5] TED spread, LIBOR/OIS spread, commercial paper/T-bill spread, Baa/10-year T-Note spread, Muni/10-year T-Note spread, swap volatility, the S&P 500 and the VIX. There are other similar indices with a larger set of variables, but the Bloomberg variation is calculated daily, whereas the others are calculated weekly or monthly.

the funding markets since September. Although the Fed has consistently claimed there was nothing systemic in the rise of repo rates, the persistence of the funding shortages despite the expansion of the Fed's balance sheet by $400 billion argues otherwise.

What is the nature of the financial stress? Its roots most likely lay with interest rates being too low for too long; investors had to extend their portfolio risk to find attractive yields. The financial services industry took steps to provide financial products with more attractive yields. Some of this product creation went to the non-bank financing system which funds itself in the repo markets. If repo markets are disrupted, they can no longer service the debt they used to own the higher yielding assets and liquidations occur. If no liquid market exists for these products, the owners may be forced to sell other assets (gold, Treasuries, equities, investment grade bonds) to find necessary liquidity. Recent weakness in "risk off" assets would tend to confirm rising levels of financial stress. A contributing factor is the plunge in oil prices, which raises default risk among energy companies.

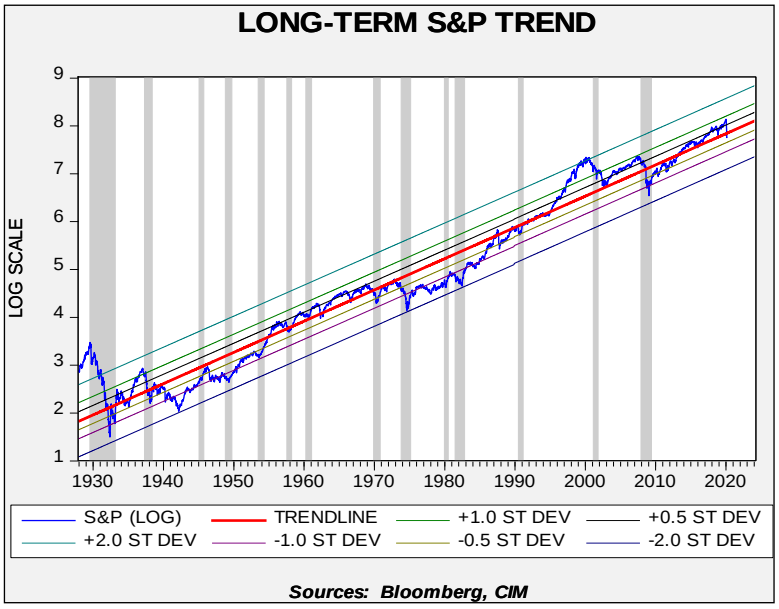


High yield spreads have moved higher in rapid fashion. The speed of the rise is particularly worrisome because it suggests the funding markets are facing serious stress.

The Federal Reserve should be able to corral this problem if it moves aggressively enough to force liquidity into the financial system. However, if those with liquidity, fearing further stress, decide to absorb the injections instead of lending, injecting liquidity may not work. The next step for the Fed would be to directly purchase assets other than Treasuries and mortgages. It is unclear if the central bank has the legal authority to do so. If further actions become necessary, it remains to be seen if the Fed will be able to initiate such actions.

MARKET EFFECTS

Equities: This chart can offer some guidance. It shows the weekly close of the S&P 500 going back to late 1927. We log-transform the index and regress a time trend through the data. The parallel lines represent various standard error levels from trend; the gray bars show recessions. It is obvious that, with the exception of 1945, every recession has led to some degree of stock market weakness.



To compare recessions, we measured the high reached before the recession to the low in the index during the downturn in terms of movements in standard errors. Here is a table of the events.

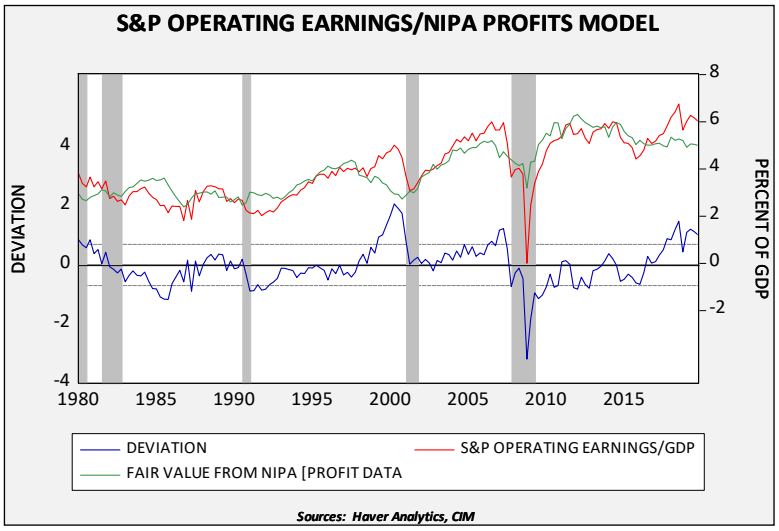
	LOG SCALED	LOG SCALED	LOG SCALED	
RECESSION	HIGH DEVIATION FROM TREND	LOW DEVIATION FROM TREND	RANGE FROM HIGH TO LOW DEVIATION	PROJECTION
1929-33	4.165	-1.674	5.839	383.31
1936-37	1.399	-0.782	2.180	1485.43
1949	-0.843	-1.572	0.729	2541.87
1953	-0.437	-0.917	0.480	2787.37
1957	0.637	-0.240	0.876	2407.30
1960	0.630	0.072	0.558	2708.13
1970	0.558	-0.798	1.355	2015.90
1973-75	0.106	-1.967	2.074	1545.20
1980	-1.188	-1.653	0.465	2803.13
1981-82	-0.857	-1.975	1.118	2201.12
1990	0.113	-0.549	0.662	2605.69
2001	1.689	-0.011	1.700	1774.60
2007-09	0.908	-1.571	2.479	1329.69
now	0.786	-0.037	0.823	
Average				2045.29
Normal Recession				2455.50
Deep Recession				1388.95
w/o Depression				1640.36

The range represents the change in standard error from high to low. So, the Great Depression saw the market fall nearly six standard errors, a true "six-sigma" event. The current decline is consistent with a normal recession, so if policymakers can secure the financial system and absorb the quarantine effects of COVID-19, then equity markets should stabilize soon. A deep recession (but not including the Great Depression) would put the S&P 500 around 1640, a much more profound decline.

The postwar experience doesn't support two consecutive deep recessions, which is why we have argued that the recession following 2008 was unlikely to be a deep one. Of course, we did have consecutive deep recessions in the 1930s: the 1936-37 recession was caused by profoundly inept policy when the Roosevelt administration tightened fiscal policy while the Federal Reserve raised rates. The odds of a similar event occurring in the current situation is improbable; both fiscal and monetary policy are accommodative and will almost certainly become more so. About the only way we have a deep recession is if the policy response is strikingly underwhelming. Although possible, that is a low probability outcome.

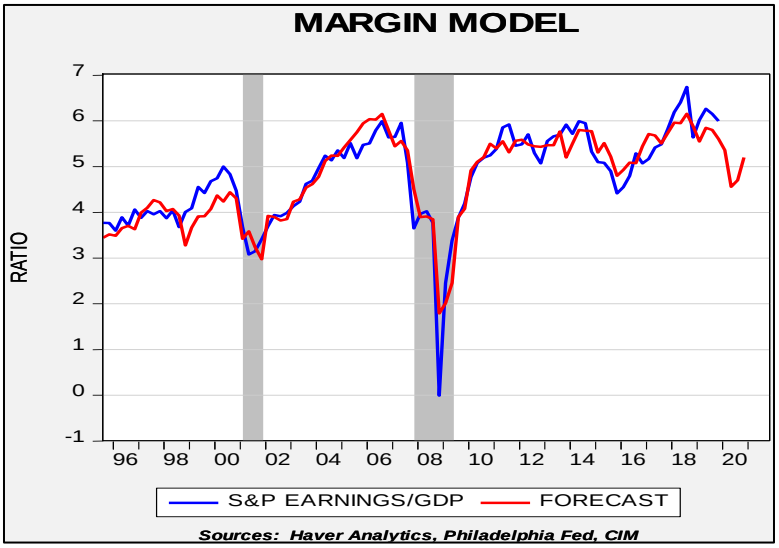
What about earnings? We use two components to build our forecast for S&P per share earnings. First, we use a model to calculate the percentage of S&P earnings relative to GDP and then use the forecast from the Philadelphia FRB's survey of economists for our GDP forecast. The margin model uses a series of variables, including unit labor costs, fed funds, NIPA profits/GDP, the euro, WTI, real net exports/GDP and corporate cash flow. NIPA stands for "National Income and Product Accounts" and is the formal name of the GDP accounts. As part of that accounting, the Commerce Department calculates corporate profits for the entire economy. S&P earnings represent the earnings of the 500 stocks in that index. As the chart below shows, most of the time, the two series, NIPA profits to GDP and S&P earnings to GDP, tend to track each other. But, near the end of business cycles, S&P earnings tend to outpace NIPA profits. It is not completely obvious why this occurs. One explanation is that the longer the business cycle extends, the more that firms in the S&P "massage" their earnings. The phenomenon could also reflect the market power of companies in the S&P compared to the overall economy. But, in any event, once the recession occurs, the two series

tend to converge. And so, at the beginning of the year, one of these variables that concerned us was the comparison of S&P 500 earnings/GDP compared to NIPA profits/GDP; the modeled difference between these two variables has widened and, in the past, has signaled an eventual reversion would bring S&P earnings sharply lower.



The deviation line shows that when S&P earnings/GDP is elevated relative to NIPA profits/GDP, the two tend to correct during recessions. Since we expect a recession now, margins would be expected to decline as well.

Given our assumption of a recession, our new earnings forecast is $127.00 per share. We would expect a P/E of 21.0x, or a reading of 2667.00 by year's end.

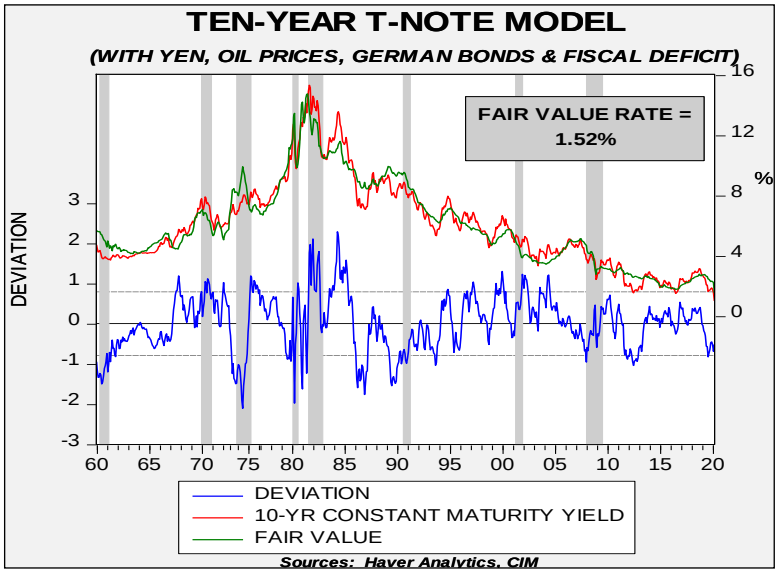


So, in looking at either the trend history or earnings, what do we expect? In the postwar recessions, the average high to low is 23.7%. Using the Friday closes, that would put the low at 2477.65. That is very close to the intraday low of 2478.86 reached on March 12. The spread between deep and normal recessions is wide—average declines of 16.3% compared to 43.5%. If our expectation is that this is a normal recession, further downside for equities is rather unlikely. However, given the level of volatility and uncertainty, a low of 2300 is possible.

	Peak to recession	high to low %	high to low months	Low after Recession	Low to recovery	Low to recovery %
1948	5	-11.3%	12	7	5	8.5%
1953	6	-12.3%	8	2	9	23.5%
1957	1	-19.6%	5	4	5	11.4%
1960	9	-6.8%	15	6	5	19.1%
1969	13	-16.2%	18	5	7	24.9%
1973	11	-48.0%	22	11	7	35.0%
1980	4	-9.6%	7	3	4	22.9%
1981	8	-26.2%	20	12	5	34.6%
1990	0	-18.3%	3	3	7	26.8%
2001	7	-36.5%	13	6	3	16.3%
2007	2	-56.2%	16	14	5	28.6%
2020		-24.0%				
mean: all	6	-23.7%	13	7	6	22.9%
mean: deep	7	-43.5%	19	12	6	32.8%
mean: normal	6	-16.3%	10	5	6	19.2%

History also shows that it takes about five months after the recession starts before the low is set; the shortest on record was 1953, which took two months. **For now, we expect the recent lows to hold but would also expect a choppy basing process for most of the year. By Q4, we should start to see a much better equity market.**

Fixed Income: The two key variables to Treasuries are the policy rate and inflation expectations. For the latter, based off the research of Milton Friedman, we use the 15-year average of the yearly change in CPI and add oil prices to the model to account for near-term variations (which are mostly a function of oil prices). To estimate the fair value of the 10-year T-note yield, we include the JPY/USD exchange rate, German Bund yields and the fiscal deficit as a percentage of GDP as well. The model is suggesting a fair value rate of 1.52%.



In this downturn, long-duration Treasuries have been about the best traditional hedge to equities. However, the usefulness of this instrument going forward could diminish in the coming weeks. Clearly, yields have "overshot" to the downside. Not only that, most government stimulus policies will work best for boosting demand but will do little for supply. The risk is that we get a lift in inflation this summer which could pressure the long end. Although investors will give up a yield by shorting durations, that will probably be prudent. It is far too early to accept a move toward credit risk.

Conclusion

As we noted in our initial report, *2020 Outlook: Storm Watch*, one of the risks for this year was a recession. The combination of COVID-19, an oil price war and financial stress have all combined to dramatically increase the odds of a downturn. The purpose of this report was to lay out our assumed path for the economy, equities and fixed income under conditions of a normal recession. ***Our base case assumption is that this will be a normal recession that lasts around two quarters.***

So far, the response from policymakers, at least in terms of the economy and markets, has been impressive. A very negative Q2 GDP is almost certainly unavoidable, but a prolonged, deep downturn is becoming less likely. There is still a chance to "pull defeat from the jaws of victory," but the policy response so far has been good. If it continues, conditions should improve.

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March 27, 2020