

QUARTERLY NEWSLETTER

2020: FIRST QUARTER

125TH EDITION



“Nothing in life is to be feared, it is only to be understood. Now is the time to understand more, so that we may fear less.”

~Marie Curie

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| Equities | | | | | |
|-----------------------|-----------------------|-----------------------|-----------------------|-----|---------------|
| Indices | 1Q20 Total Return (%) | 2019 Total Return (%) | Index Characteristics | | |
| Domestic | | | NTM P/E | P/B | Div. Yld. (%) |
| S&P 500 | -19.6 | 31.5 | 15.5 | 2.8 | 2.2 |
| DJIA | -22.7 | 25.3 | 14.5 | 3.1 | 2.9 |
| NASDAQ | -14.0 | 36.7 | 22.0 | 4.0 | 1.1 |
| Russell 1000 Growth | -14.1 | 36.4 | 20.4 | 7.1 | 1.3 |
| Russell 1000 Value | -26.7 | 26.5 | 12.4 | 1.5 | 3.3 |
| Russell 2000 | -30.6 | 25.5 | 19.6 | 1.5 | 1.9 |
| International* | | | | | |
| MSCI EAFE | -22.7 | 22.7 | 12.7 | 1.3 | 3.9 |
| MSCI Emerging Markets | -23.6 | 18.9 | 11.0 | 1.3 | 3.0 |
| MSCI United Kingdom | -28.8 | 21.1 | 11.5 | 1.3 | 5.8 |
| MSCI France | -27.5 | 27.0 | 12.6 | 1.3 | 4.1 |
| MSCI Germany | -27.0 | 21.7 | 11.7 | 1.2 | 3.9 |
| MSCI Japan | -16.6 | 20.1 | 12.5 | 1.1 | 2.7 |

| Fixed Income | | | Commodities | | |
|-----------------------------|-----------------------|-----------------------|-------------------|-----------------------|-----------------------|
| Indices** | 1Q20 Total Return (%) | 2019 Total Return (%) | Resource | 1Q20 Total Return (%) | 2019 Total Return (%) |
| Domestic | | | Precious Metals | | |
| U.S. Corp - Gov (1-3 Years) | 1.6 | 4.1 | Gold | 4.2 | 18.9 |
| U.S. Corp - Gov (3-5 Years) | 2.5 | 6.6 | Silver | -22.8 | 16.7 |
| U.S. Corp - Gov (10+ Years) | 7.2 | 18.8 | Industrial Metals | | |
| U.S. Treasuries Master | 8.8 | 7.0 | Copper | -19.8 | 6.3 |
| U.S. Corporates Master | -4.1 | 14.2 | Aluminum | -17.3 | -3.7 |
| U.S. Municipals Master | -0.7 | 7.7 | Energy | | |
| U.S. High Yield Master | -13.1 | 14.4 | Brent Crude Oil | -61.7 | 34.0 |
| International* | | | WTI Crude Oil | -67.1 | 35.4 |
| Developed Markets Sov Bond | 2.6 | 5.5 | Natural Gas | -25.1 | -25.5 |

| Key Rates | | | | |
|----------------------------|-----------|------------|-----------|------------|
| Rates | 3/31/2020 | 12/31/2019 | 3/31/2019 | 12/31/2018 |
| U.S. Target Fed Funds Rate | 0.25 | 1.75 | 2.50 | 2.50 |
| 2-Year U.S. Treasury | 0.23 | 1.58 | 2.27 | 2.48 |
| 10-Year U.S. Treasury | 0.70 | 1.92 | 2.41 | 2.69 |
| 30-Year U.S. Treasury | 1.35 | 2.39 | 2.81 | 3.02 |
| 10-Year German Bund | -0.49 | -0.19 | -0.07 | 0.24 |
| 10-Year Japanese Bond | 0.02 | -0.02 | -0.09 | -0.01 |
| 30-Year Fixed Mortgage | 3.45 | 3.72 | 4.27 | 4.64 |

| Currencies | | | | |
|-------------------------|-----------|------------|-----------|------------|
| Indices/ Exchange Rates | 3/31/2020 | 12/31/2019 | 3/31/2019 | 12/31/2018 |
| ICE U.S. Dollar Index | 99.05 | 96.39 | 97.28 | 96.17 |
| USD per EUR | 1.10 | 1.12 | 1.12 | 1.14 |
| USD per GBP | 1.24 | 1.32 | 1.30 | 1.27 |
| JPY per USD | 107.96 | 108.68 | 110.69 | 109.72 |
| CAD per USD | 1.42 | 1.30 | 1.34 | 1.37 |

- The Standard & Poor's (S&P) 500 index provided a total return (price appreciation plus dividends) of -19.6% in the first quarter, its largest quarterly decline since 2008 and worst first quarter on record, as the COVID-19 pandemic gashed economies and financial markets around the globe. As the world came to a halt, the S&P 500 experienced its quickest plunge into bear territory on record, easily outpacing even September 1929's initial decline into the Great Depression. From its daily closing peak on February 19, the S&P 500 took only 16 trading days to reach bear territory on March 12, officially ending the longest bull market in U.S. history just three weeks prior to its 12th anniversary. At its lowest point to date from its peak, the S&P 500 was off over 34% in just a month's time, amounting to nearly \$9.5 trillion in lost market capitalization. On the heels of a 17.6% late-quarter rally that took just four trading sessions, it closed the quarter 15.6% above its low, but still firmly in bear territory off 23.5%.

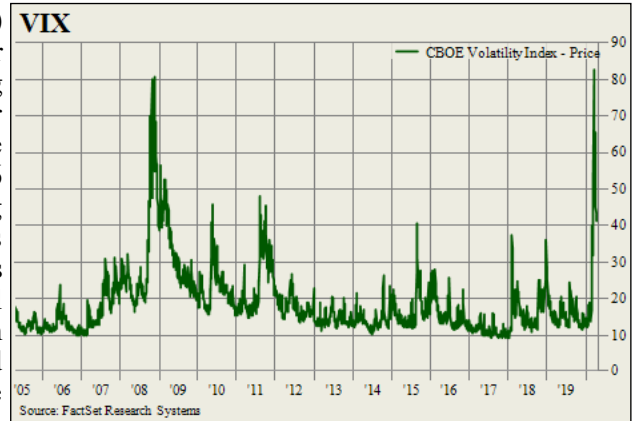


- The decline was broad-based across sectors and market capitalization – every sector of the S&P 500 reached bear territory during the quarter. The Technology, Healthcare, and Consumer Staples Sectors were the strongest performers (-11.9%, -12.7%, and -12.7% total returns respectively), while Energy was the major laggard at -50.5% as plummeting oil prices were exacerbated by pandemic-related problems. Small cap stocks fared worse than large caps, with the Russell 2000 Index returning -30.6% for the quarter.

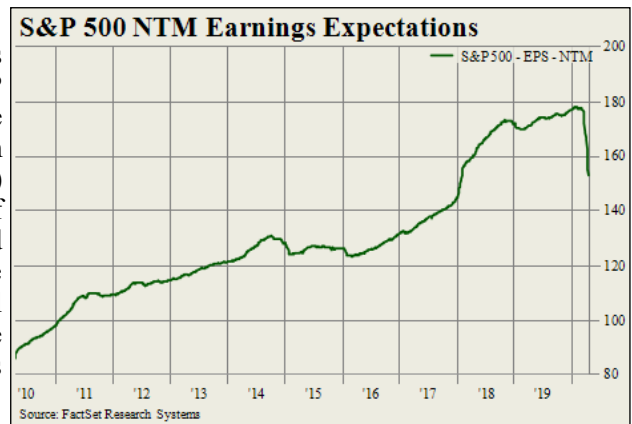


- Broad-based international indices underperformed their domestic counterparts for the quarter. The MSCI Europe, Australasia, and Far East (EAFE) Index, composed of developed international markets, was off -22.7%, and the MSCI Emerging Markets Index returned -23.8%. Although some international indices held up better than others, even countries with contagion curves among the flattest globally have experienced significant market declines. For example, Japan's Nikkei 225 Index and South Korea's Composite Stock Price Index (KOSPI) returned -20.0% and -20.2% for the quarter respectively.
- While bear markets never want for volatility, the recent downturn has made its historical mark in this arena as well. Beginning March 9, on what would have marked the 12th anniversary of the newly-buried bull market, the S&P 500 notched an eight-session streak of daily price moves greater than 4% in either direction, its longest on record. This run included a -11.98% drubbing on March 16 that ranks third all-time in S&P 500 daily decline history. Only the "Wall Street Crash of 1929" at -12.34% and "Black Monday" in 1987 at -20.47% were worse. Both occurred, however, prior to the implementation of trading circuit breakers (halts on trading put in place to reduce extreme volatility in panic selloffs) – "Black Monday" being the cause of their eventual implementation. The extreme volatility was not limited to the downside, however, with the Dow Jones Industrial Average (DJIA) posting its largest single-day gain since 1933.

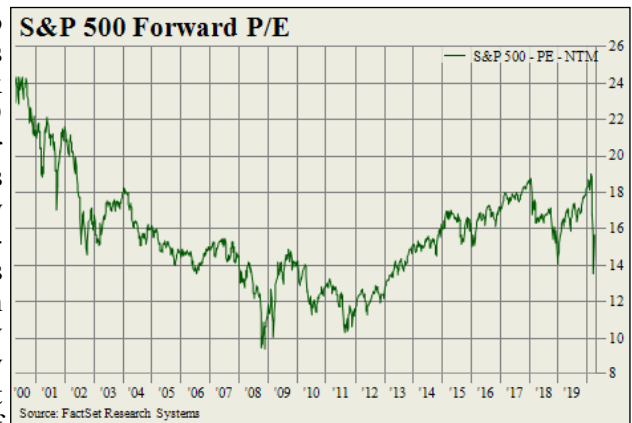
- The Chicago Board Options Exchange (CBOE) Volatility Index (VIX), also labeled the “Fear Gauge,” represents the implied forward-looking volatility of the S&P 500. During the first quarter rout, the VIX spiked above 80 for the first time since late 2008 amid the Great Recession. Its March 16 closing high of 82.69 surpassed the previous closing record of 80.86 set in November 2008, although its intraday peak of 83.56 fell short of October 2008’s 89.53 intraday record. For reference, its historical average is just over 19, it has spiked above 50 on only two occasions since 1990 (2008 and 2020), and a VIX of 80 implies the S&P 500 will experience daily price moves of roughly +/-5%.



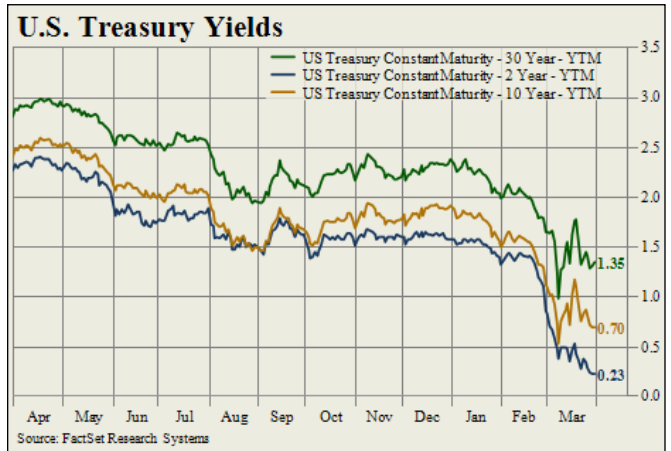
- Earnings are a predominant driver of stock prices long-term. As 2019 ended, analysts estimated S&P 500 first-quarter earnings growth of 4.3%. By the quarter’s end, estimates showed -7.3% growth, which would mark the largest year-over-year (Y/Y) quarterly earnings growth decline since 2009 if realized. All S&P 500 sectors experienced downward revisions, but estimates have varied widely as the onset of the pandemic and shuttering of global economies has left business operations, and thus the ability to generate earnings, at unprecedented levels of uncertainty.



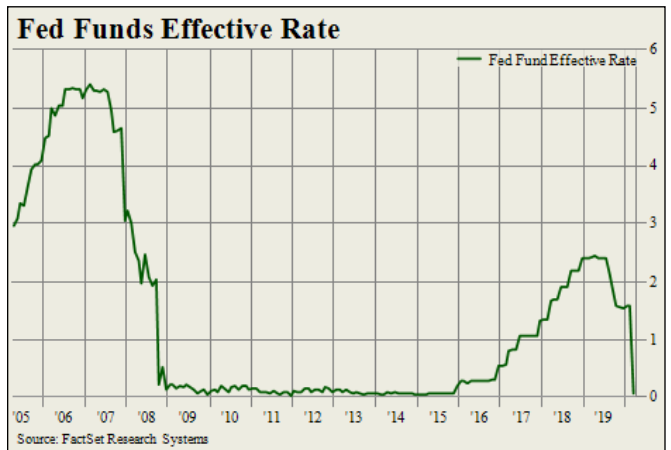
- Such drastic uncertainty in earnings equates to uncertainty in valuations as well. The S&P 500’s forward price-to-earnings (P/E) ratio reached 19.0x next twelve months (NTM) earnings on February 19 for the first time since May 2003. The ensuing bear market reduced the ratio to 15.3x at the quarter’s close, above its 10-year average of 15.0x but below its 20-year average of 15.5x and well below its all-time high of 24.4x reached during the early-2000’s technology bubble. Were stocks overvalued in February? By historical averages, possibly. By interest-rate inclusive valuation models, probably not. Are stocks undervalued now? Given the current correlation of earnings to an external element of extreme uncertainty like COVID-19, the only thing for certain is that stocks are cheaper now than they were in mid-February.



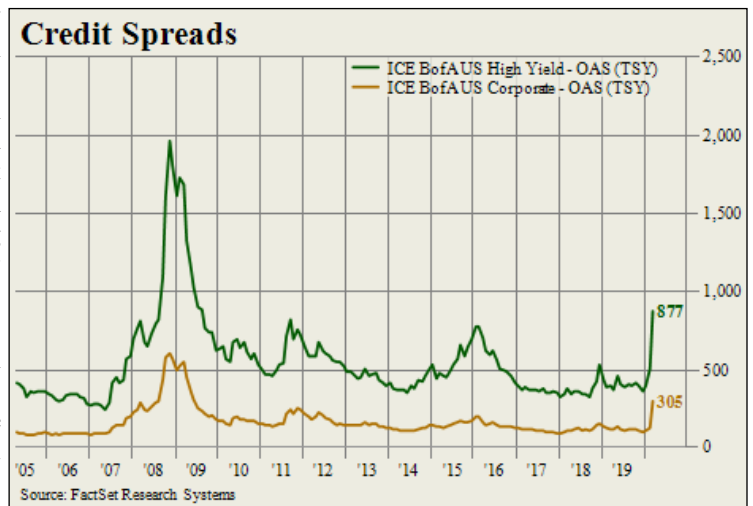
- Certain segments of the fixed income markets provided shelter from broad COVID-19 related economic concerns, while others displayed weakness and illustrated the depth of potential contagion throughout financial markets. Driven by broad decreases in government bond yields, U.S. Treasuries (USTs) in aggregate provided an 8.8% total return in the first quarter as measured by BofA-ML indices. More interest rate-sensitive longer-duration bonds provided stronger returns than their shorter-duration counterparts, as U.S. corporate and government bonds with over 10 years until maturity generated a 7.2% total return. Similar bonds with three to five years until maturity provided a 2.5% return and those with one to three years until maturity gained 1.6% for the quarter.



- The Federal Reserve (Fed) acted aggressively to ease financial conditions through massive amounts of economic uncertainty. On March 3, the Fed reduced the fed funds rate by 0.50% to a range of 1.00% to 1.25%. Just 12 days later, and still prior to their scheduled Federal Open Market Committee (FOMC) meeting, the Fed opted to reduce the fed funds rate to the supposed lower bound of 0.00% to 0.25%. They simultaneously launched an initial \$700 billion quantitative easing (QE) program, reduced emergency lending rates through their discount window dramatically, and cut reserve requirements for many banks to zero. These moves had the effect of pushing short-term UST yields lower. The two-year UST yield decreased from 1.58% to 0.23% over the course of the quarter. The 10-year UST yield ended 2019 yielding 1.92% before pushing to an all-time low of 0.38% on March 9. While the decline stabilized, the 10-year UST ended the quarter yielding 0.70%, indicating continued pessimism over the long-term growth potential of the economy.

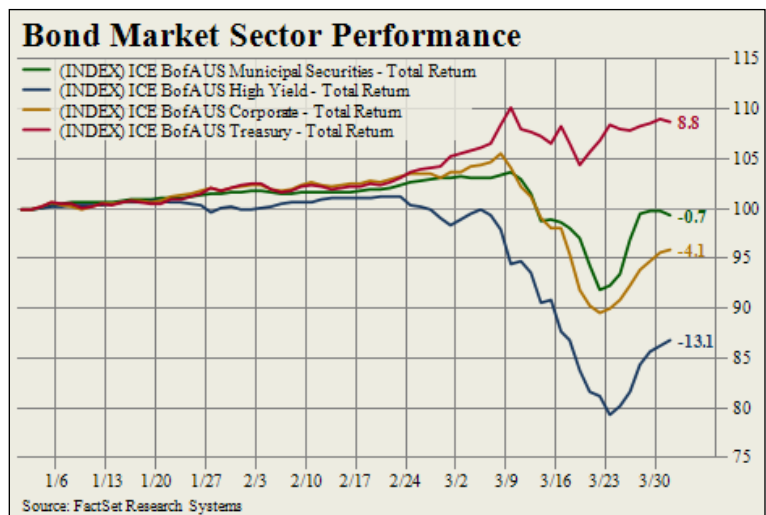


- Concerns that economic conditions may prevent certain companies from paying back their debt weighed on corporate bonds. Credit spreads, the yield differential between corporate and government debt, widened dramatically over the quarter. Investment grade bonds saw their spreads widen from 1.01% to 4.01% over USTs before ending the quarter at 3.05%. This weighed heavily on the performance of these generally high-quality instruments, as investment grade corporate bonds in aggregate lost 4.1% in the first quarter. The Fed stepped in to help alleviate liquidity-based stress in the investment grade corporate bond market via two credit facilities. These facilities utilize U.S. Treasury assets to purchase both investment grade bonds and investment grade bond exchange traded funds (ETFs).



They do not guarantee the debt, but instead help maintain a functioning market for the securities. Notably absent from the Fed's relief measures was a funding facility for high-yield ("junk") bonds. During the first quarter, these bonds lost 13.1% in aggregate, wiping out all of 2019's gains. In April, the Fed stepped in and noted it would maintain liquidity for issuers considered investment grade through March 22, but which were downgraded into the top three tranches of the high-yield category. The Fed went so far as to broaden the extent of its fixed income ETF purchases into the high-yield market as well.

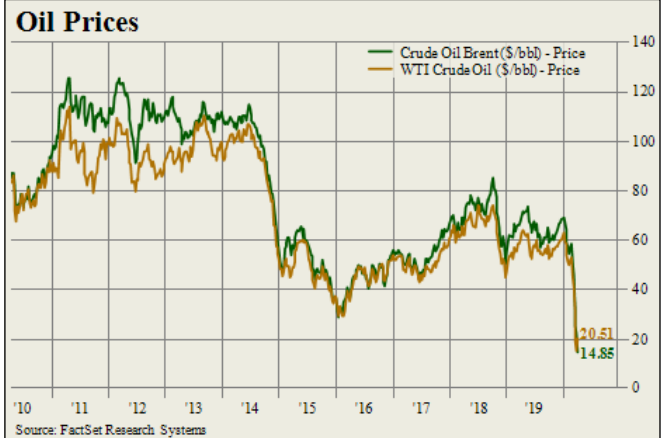
- The market for mortgage securities was not immune to the turmoil of the first quarter. Spreads for mortgage-backed securities (MBS) widened significantly as the market tried to process volatile prepayment and refinancing activity along with uncertainty over the financial health of the U.S. homeowner. Agency (government-backed) MBS saw spreads tighten considerably after the FOMC offered a facility to purchase these instruments and alleviate liquidity dislocations. While some Commercial MBS (CMBS) are agency-backed and have seen liquidity support, the private-label segment of CMBS (which includes heavily impacted hotel operators, casinos, and retail properties) continue to see considerable pressure as people question the solvency of the borrowers. Since the concern of solvency is even greater than liquidity dislocations, these securities are more reliant on robust fiscal policy to allow for commercial borrowers to continue to function.
- Liquidity dislocations extended to the municipal bond market as well, as revenue for state and local governments came into question and large issuers bore the brunt of the first wave of COVID-19 cases. The Fed stepped in to purchase short-term municipal bonds in order to maintain liquidity and funding for local governments and associated agencies. These moves provided a backstop for municipalities and entities such as hospitals by providing a mechanism to attain cash to cover immediate needs. Although short-term liquidity needs have been addressed there remain solvency concerns over the mid to long-term; sub-sectors such as airport revenue bonds still face significant risks. Overall, municipal bonds saw a -0.7% return in the first quarter, after an uncharacteristic 11.4% intra-quarter drawdown.
- With almost all segments of fixed income markets experiencing some level of turmoil, concerns of money market mutual fund stability came into play for this first time since the 2008 financial crisis. Since that time, regulators have enforced increased transparency and stabilization measures such as redemption and liquidity gates based on ongoing solvency metrics. To avoid funds triggering these measures for the first time, the Fed implemented a money market mutual fund liquidity facility to lend to banks on a non-recourse basis. The banks will then be able to act as an intermediary to funds, offering liquidity in exchange for eligible securities at pre-determined rates, which they can then park at the Boston Fed. Regardless of the steps implemented to shore-up the liquidity of these instruments generally viewed as a cash-equivalent, the Fed's broad reduction of rates will significantly reduce the returns these funds offer for the foreseeable future.



Economic data for the first quarter of 2020 will not mean nearly as much as it normally would given that lockdowns imposed in the U.S. and abroad have completely disrupted economic trends. As such, we prefer to discuss in a less-traditional format a few key economic points which can provide perspective entering what economists are forecasting to be a dismal second quarter.

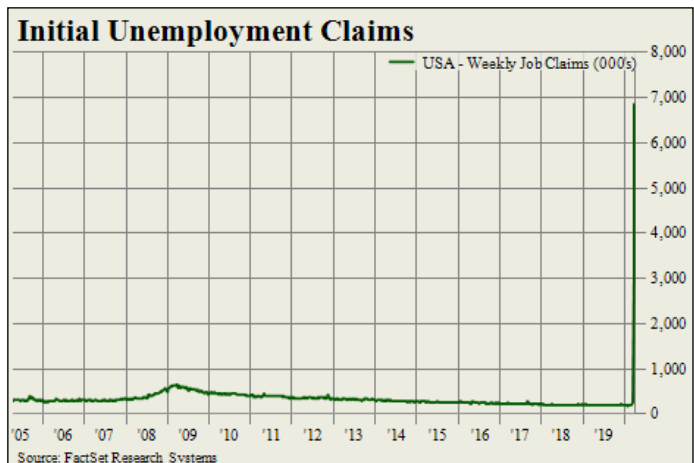
Falling Oil Prices

The price of West Texas Intermediate (WTI) crude fell 66% in the first quarter and 54% in March alone, both historic drops. WTI crude closed 2019 trading at \$61.06 per barrel, ended February at \$44.76, and closed the quarter at \$20.51. Were it not for COVID-19 news and reporting, the price of oil and the conditions that caused it would have been one of the most talked about events of the first quarter. Not all the decline in price was due to the potential global recession caused by COVID-19; most was due to the battle for market share between Russia and Saudi Arabia, who for the past four years had worked together in limiting supply. In March, Russia rejected Saudi Arabia's offer to extend and increase production cuts. Russia's official reason was to see how the COVID-19 pandemic would play out, but it is widely thought the primary reason was to crush shale oil production in the U.S., which has increased from 5 million barrels per day in 2009 to 12.2 million in 2019. The virus lockdown, recession forecast, and ensuing market share battle between Russia and Saudi Arabia have resulted in an oil glut; global supply currently exceeds demand by millions of barrels each day. The world is running out of places to store the excess oil and some forecasts have even called for the price of oil to move into negative territory if supply is not curtailed. Oil price shocks have historically been caused by rising prices; this time it is due to a collapse in oil prices. The U.S. has worked hard to become energy independent, with our companies making significant investments and hiring a substantial number of workers. In doing so, we have unintentionally placed ourselves in the crossfire of a global market share battle. While a benefit of low oil prices is low gasoline prices, consumers are unfortunately not able to benefit much due to the developed world under lockdown as a result of COVID-19.



Skyrocketing Unemployment Data

The reported unemployment rate for March was 4.4%, up from a 50-year low of 3.5% in February, and employers shed 701,000 jobs, snapping a record 113 consecutive months of job creation. While the rate was higher, the unemployment rate is based on household surveys during the week of March 8-14. In the next two weeks 9.93 million filed initial unemployment claims — 3.28 million for the week ending March 21 and 6.65 million for the week ending March 28. To put these numbers in perspective, the previous one-week records for job losses were 695,000 in October 1982 and 665,000 in February 2009. During the Great Recession, it took more than two years for employment to drop by 9 million. The April jobs report, set to be released on May 8, will further reflect the economic toll COVID-19 has on workers and the economy. A scant few months ago, the data reflected more job openings existed than the number of unemployed people to fill them; clearly no longer the case.



Economic Data Beginning to Tell the Story

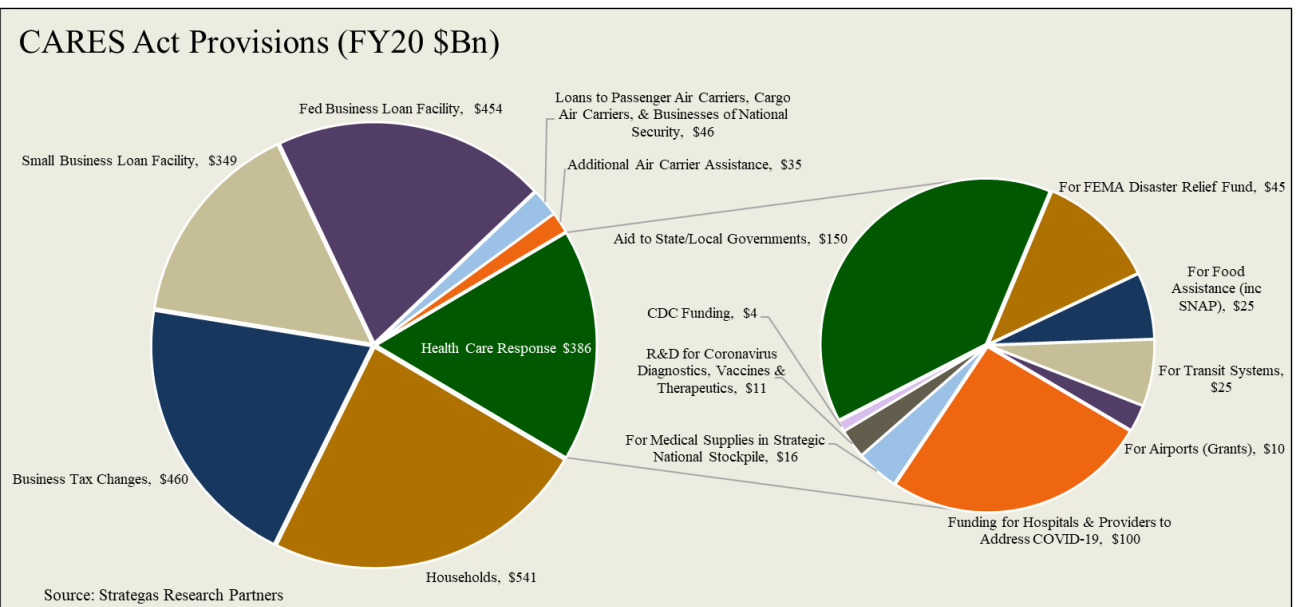
U.S. manufacturing officially stalled last month due to a steep decline in new orders and production. The Institute for Supply Management Manufacturing Index declined to 49.1 in March from 50.1 in February, indicating a small contraction in the manufacturing sector. Even though the results were better than forecast (44.5), this is just a preview of worsening news forthcoming in April and the coming months. As an example, U.S. auto sales showed signs of stress as the first quarter progressed. Sales declined 10% sequentially from the fourth quarter of 2019 and 35.5% when compared on a Y/Y basis to the first quarter of 2019. January and February sales were relatively strong but declined in March, mostly in the second half of the month.

Deglobalization on the Horizon

The practice of dependency and reliance on global supply chains has once again been called into question during this recent pandemic. Price and manufacturing efficiencies historically enjoyed between countries have now become a source of revitalized fear and have been elevated to a national safety and security concern. This is amply evident in the pharmaceutical industry where, according to the Drug, Chemical & Associated Technologies Association, only 28% of the active pharmaceutical ingredients (API) used for medicines taken by U.S. citizens are made in the United States. Nearly 60% of the APIs needed in the U.S. come from the European Union, India, and China. Factory closures and production suspensions are not only disrupting global supply chains of pharmaceuticals, but for nearly all other items needed and/or desired by U.S. consumers as well. While disruption may be tolerable for discretionary purchases, the condition is not acceptable for products required for life, health, and safety. Deglobalization is not just a U.S. sentiment as Jörg Wuttke, Chairman of the European Union Chamber of Commerce in China succinctly stated, “The globalization of putting everything where production is the most efficient – that is over.”

Coronavirus Aid, Relief and Economic Security (CARES) Act

The 880-page Coronavirus Aid, Relief and Economic Security (CARES) Act was signed by President Trump on March 27 and provides over \$2 trillion to stabilize the U.S. economy. It is not a stimulus spending package, which may come later, but rather an emergency relief package. To put the size of the package in perspective, it is 10% of 2019 GDP and will add \$2 trillion to an already \$1 trillion federal budget deficit for fiscal year 2020. The money will be apportioned in five broad categories: individuals via cash payments and unemployment benefits; loans to large corporations and increased assistance for certain heavily-impacted industries; loans and loan relief to small businesses; state and local governments for COVID-19 response and higher education initiatives; and public services such as hospitals and veteran care. The details and recipients of each category are much more inclusive than this list illustrates. To be the most effective, the federal government must distribute this money quickly and efficiently. Determining whether this over \$2 trillion will be sufficient largely depends on the time it takes to transition through the coronavirus-induced slowing economy and, accordingly, many have already questioned whether the package will need to be expanded.



Unprecedented Levels of Uncertainty in Modern Times

The current pandemic, technically caused by the coronavirus SARS-CoV-2, creates the COVID-19 disease, which is the third coronavirus epidemic in 18 years. COVID-19 follows the severe acute respiratory syndrome (SARS) in 2002 and the Middle East respiratory syndrome (MERS) in 2009. Unfortunately, the disease is proving to be the most dangerous of the three, which is quite a statement.

COVID-19 started in China and quickly spread to over 150 countries at last count, creating the greatest global health crisis in decades. Today there is much uncertainty about COVID-19, its transmission rate, infection rate, mortality rate, incubation period, reliability of test results, and even the symptoms. In controlled experiments, almost half of those tested positive were asymptomatic. The number of COVID-19 cases can rise exponentially as in China's Hubei Province, Italy, Iran, South Korea, and Spain. According to the World Health Organization, once someone is infected, the death rate has ranged from over 12% for a period of time in Italy to slightly under 2% in South Korea with a global death rate ranging from 4-6% since March 17. In the U.S., the mortality rate is currently near 4%. The death rate is largely a function of who becomes infected, what stage the epidemic has reached in a country, how much testing a country is doing, the accuracy of the testing, and how well healthcare systems are coping. Some countries do not count deaths as caused by COVID-19 unless someone dies in the hospital. Further, a decline in the mortality rate will lag the decline in reported cases as we are finding at the present time. Also uncertain is how many COVID-19 victims with underlying conditions would have died if no pandemic had occurred. According to the World Health Organization, in a typical year, around 56 million people die around the world – an average of 153,425 per day – approximately 30% from communicable diseases, mostly in Africa and Asia. The high level of uncertainty associated with COVID-19 makes it much more difficult to manage and the outcome much more difficult to forecast.

The buzzword for managing COVID-19 is “flattening the curve,” which means reducing the peak surge in the number of cases to not overwhelm the capacity of healthcare facilities. Countries have taken different steps to slow and contain the number of COVID-19 cases including travel bans, closing borders, quarantines, cancellations and postponements, lockdowns, self-isolation, and social distancing. Almost one-third of the world is under lockdown causing an economic shutdown. The “Achilles heel” for most countries, including the U.S., has been testing. The lessons from China (assuming some reliability of the data) and South Korea to contain COVID-19 are to test early and often and trace contacts.

Unlike SARS in 2002 and MERS in 2009, COVID-19 has quickly disrupted the global economy and financial markets. A pandemic global recession is now expected, dashing the early January hopes of a stronger global economy. COVID-19 should be considered a “Black Swan” event, an unknown unknown, a natural phenomenon that was not predictable and one which is already having profound economic consequences across the globe. What is unusual about this coronavirus crisis is that it embodies both a supply shock and a demand shock to the global economy, something not seen since the 1970s. It has turned into a feedback loop; this coronavirus disrupted supply chains and forced the closure of manufacturing plants, restaurants, hotels, and a multitude of other services resulting in layoffs (supply shock). This supply shock then leads to loss of consumer and business confidence, which then dampens overall demand (demand shock). Lower demand leads to more economic retrenchment and the feedback loop continues, causing declines in production and consumption. In a typical recession, consumers are unwilling to spend; today, they are unable to spend. Together the supply and demand shocks are proving to be the biggest economic shock to the global economy since the 2008-2009 financial crisis and Great Recession, and much more so than at that time. There have been many references to the financial crisis as a precedent, but that is an inappropriate comparison. The period 2008-2009 was characterized by two crises; a financial crisis that caused an economic crisis, with uncertainty on two unknowns. COVID-19 entails much more uncertainty because it has caused a health crisis which is causing an economic crisis and a financial crisis; three crises with the cause very opaque in nature. It is taking strong governmental actions to slow the spread of the virus and bold monetary and fiscal responses globally to mitigate the negative impact of the virus on the global economy.

In most economic downturns, the Manufacturing and Industrials Sectors bear the brunt of the declines. This time the service sector is paying a heavy price. In the U.S., 80% of Gross Domestic Product (GDP) is service-based. This leads to even more uncertainty on the prognosis for the U.S. and global economies. The U.S. economy came into this crisis stronger than the Eurozone and Japan, though, so it has a more solid economic foundation to withstand the economic shocks forthcoming. January and February economic data from China reflect the potential economic impact of COVID-19: auto sales -79.5%, industrial production -13.5%, retail sales -20.5%, and fixed asset investment -24.5%. No sectors of the economy were spared, but the service sector was hit the hardest. Deutsche Bank forecasts China's first-quarter GDP to decline 31.7%.

Economists are revising forecasts for the U.S. and global economies on a weekly basis because of the uncertainty of the endgame; when COVID-19 will be contained. As of this writing, JP Morgan forecasts U.S. GDP declining 5% in 2020 with annualized declines of 10% and 25% in the first and second quarters of 2020 before the economy grows at annual rates of 11% and 7% for the third and fourth quarters. The firm also forecasts personal income will fall 15% and spending 7% if COVID-19 can be contained within a six-month period. Whether this forecast is accurate or not, there is a very high probability that second-quarter GDP in the U.S. will be worse than anything experienced, even in the Great Recession of 2008-2009. Forecasts for global economic growth are more pessimistic as many countries such as Italy, Germany, Japan, and Australia were already on the brink of recession. If Australia experiences a recession, it will be its first in 28 years.

Two consecutive quarters of decline in GDP does not necessarily qualify as a recession in the U.S. The National Bureau of Economic Research has a committee of economists who analyze economic data to determine if and when a recession has started. In the past, this decision was reached several months after the recession actually started. Now, much depends on the duration of the economic decline and the restarting of the U.S. economy; the type of economic recovery that will follow. JP Morgan along with many other economists have forecast a V-shaped recovery in the U.S. At first thought, some of the economists believed this would allow us to avoid a recession. Economic forecasting, particularly at this time, is perilous, and those thoughts of escaping a recession have gone by the wayside. However, at the very least, a V-shaped recovery would mitigate the depth and duration of the recession.

The Fed and Congress have moved quickly and aggressively, as have most countries, to shore up the financial markets and the economy. The Fed stepped up big time in their monetary policy response to stabilize the financial system as they pulled out the toolbox from 2008 and added a few new stimulus measures. First, they slashed short-term interest rates by 1.5% to near zero. Second, the Fed resurrected quantitative easing by standing ready to purchase unlimited amounts of U.S. Treasury and agency mortgage-backed bonds. Third, it set up a dollar swap program with several other central banks to alleviate the dollar shortage. And fourth, the Fed established lending and credit facilities to support markets in commercial paper, corporate bonds, commercial mortgage-backed securities, municipal bonds, and asset-backed securities. The primary objective of the Fed's aggressive response is to make sure credit is available to consumers and businesses and to provide liquidity and stability for the financial markets.

In terms of a U.S. fiscal policy response, Congress passed, and the President signed, the \$2.2 trillion Coronavirus Aid Relief and Economic Security (CARES) Act in a timely manner. In 2008, it took more than a year to pass three different economic stimulus and recovery bills totaling \$1.64 trillion. This time it only took a few weeks and with strong bipartisan support. The CARES Act provides for direct payments to households; increased unemployment benefits; small business forgivable loans; loans to businesses, states, and municipalities; support for Fed lending programs; direct aid to states; tax deferrals; loans and grants to airlines; and funds for hospitals, veterans' care, and public transit. Programs costing \$58 billion were passed earlier.

While the Fed and Congress have been aggressive in their responses, the results of their actions are more uncertain than normal as this is a very different economic scenario. Most recessions are cyclical, caused by central banks raising interest rates to cool expanding economies and inflation, or structural, as in 2008-2009 when household mortgage debt and financial institution debt put stress on the credit markets. The global health crisis caused by COVID-19 is a natural event and not an economic event; the unknown variable is the trajectory of the disease's containment. Done quickly, a V-shaped economic recovery that some economists are forecasting is possible. If the disease is not contained quickly, there will likely be an elongated global recession which will include the U.S. The hope is for an eventual vaccine, and in the meantime the development of treatments to mitigate the medical consequences of the disease.

The COVID-19 crisis has negatively impacted the financial markets which abhor uncertainty. The U.S. stock market experienced its first bear market, a decline of 20% or more, in nearly 12 years as the S&P 500 declined 34.9% from its February 19 high to its March 23 low and volatility surged. The S&P 500 almost reached its historical average for bear market declines, 35.6%, and it did so in record-setting fashion in expectation of a rapid swoon in the economy for the first half of 2020. Investors are, or at least should be, closely monitoring forthcoming economic news to see if the data for the second half of the year and full-year 2021 will improve and, if so, to what degree. Like their equity counterparts, bond markets have become more volatile, especially in the corporate sector. Globally, corporations were recently taking advantage of historically low interest rates by raising large amounts of debt whether needed or not. Nonfinancial corporate debt rose from \$48 trillion in 2009 to \$75 trillion at the end of 2019. Much of the debt will no doubt be downgraded in coming months. Fear and uncertainty have resulted in a global race for cash and dollars. Corporations have drawn on their credit lines and individuals have withdrawn large amounts of cash putting stress on the credit markets. As a result, the U.S. dollar has been in high demand recently and was at a record high relative to a basket of currencies. This has led to a scarcity of dollars – not enough dollars to execute trades and transactions – which is why the Fed announced financing channels with nine other central banks to stabilize the currency markets.

With the surge in volatility due to COVID-19, correlations between asset classes also increased throughout much of March as even assets which typically display low or negative correlations to equities traded lockstep with risk-on assets. For example, while the S&P 500 declined nearly 22.5% over the two weeks ended March 20, gold (often seen as a hedge against extreme volatility) declined more than 11%. Even U.S. Treasury bonds, normally an investor's safe haven, also experienced turbulent trading as prices fell dramatically. Bond prices move inversely to interest rates and over this same time period, the 10-year U.S. Treasury yield more than doubled from 0.50% to 1.25% before subsiding to 0.96%. Money market funds experienced dramatic withdrawals as investors tried to make sense of the turmoil, even running at times from assets other than pure cash. In the week ended March 20, Goldman Sachs had to inject roughly \$1 billion of its own capital into two of its prime money market funds to avoid a potential fire sale of underlying assets at discounted prices as investors withdrew over \$8.1 billion from the funds in just four days.

While first-quarter economic data is only beginning to reflect the downward spiral in the economy, it is important to remember the capital markets are forward-looking and attempt to factor in expected news. This has led some pundits to adhere to a “sell the rumor, buy on the news” approach. However, looking forward is more challenging in today's environment than ever, as the primary driver in the financial markets is not fundamental, but rather peripheral; that third unknown. Given the extraordinary and unparalleled uncertainty in this crisis, investors who remain patient, prudent, and disciplined, as tough as that can be for all of us as human beings, ultimately have the highest probability of realizing success. Any risks taken should be well thought out and calculated. We are following that protocol at Wallington; not unlike other times in our 30+ year history which encompassed difficult market environments. As always, we look to have some type of a safety net in any investments we make for clients and for ourselves. While that net is not foolproof, our approach has worked well if allowed to and with the appropriate time horizon. Even though the containment of COVID-19 is of paramount importance (for

many reasons), we continue to closely monitor the impact of the fiscal and monetary responses taken in the U.S. While there are both positives and negatives associated with them and significant uncertainty as to their outcomes, we are encouraged by the force and timeliness in which they were enacted to offset the economic impact of this pandemic. As tough as the Great Recession was in 2007-2009, what we learned from that experience has positively impacted policy development and enactment during this crisis and provided hope that the economic dislocations will be mitigated. We are even more encouraged and find hope in the recent data that shows there are multiple vaccines reaching Stage 2 trials. And this hope extends well beyond the positive impact such vaccines would have on the economics associated with this deadly disease; but infinitely more so on the lives that would be saved and the toll that the coronavirus is taking on humanity.

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