

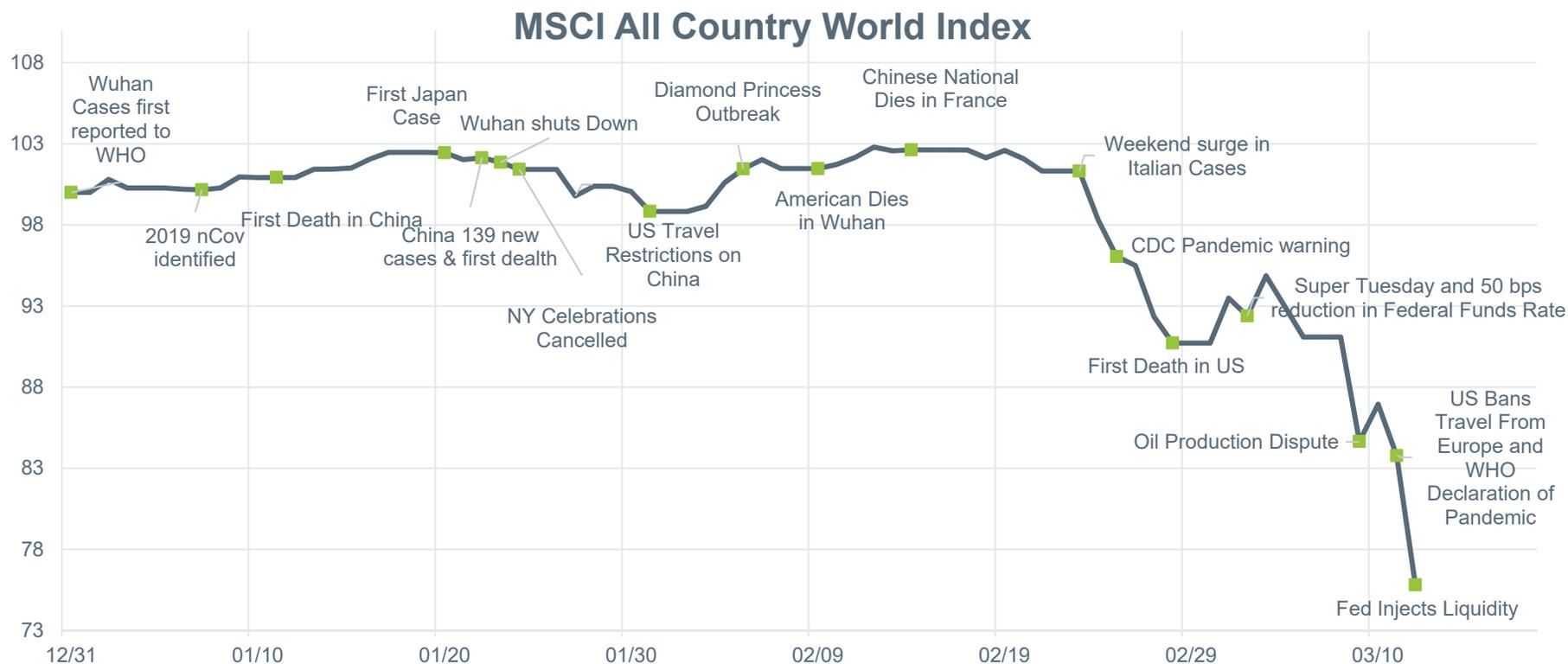


2020 Update: COVID-19 and Economic Implications



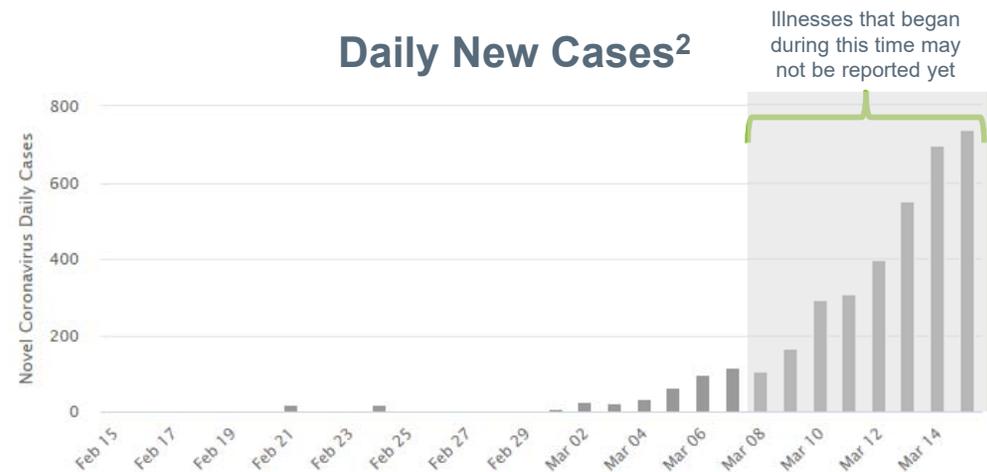
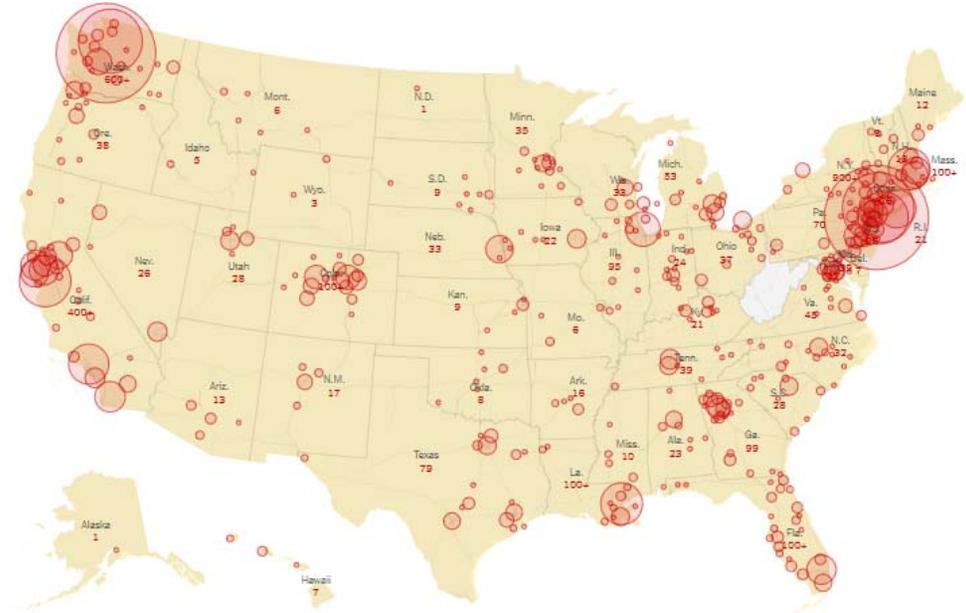
Introduction

- Over the last several weeks, investors have faced increased market volatility due to uncertainty surrounding developments with the new Coronavirus (COVID-19) and other geopolitical events:
 - Oil production/price disputes between Russia and Saudi Arabia.
 - 2020 Presidential Election brings the potential for a significant shift in US policy.
- Given the rapidly evolving nature of “COVID-19” and the related ongoing developments, this analysis is meant to provide a brief update on an ongoing situation.
- The following slides provide an overview of key developments thus far on these topics as well as the implications for investors.



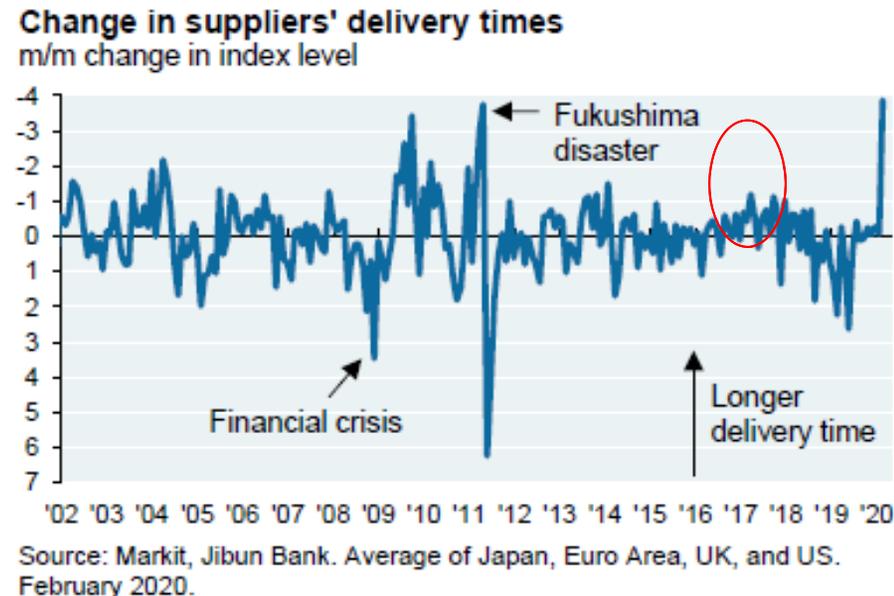
COVID-19 United States Impact

- In the United States, cases jumped to approximately **4,000¹ over the weekend**, suggesting that widespread reach of this virus in the United States has already begun and will continue.
- A few of the more notable countermeasures implemented to date domestically include:
 - Emergency interest rate reductions of 150 bps by the FED over a two week timeframe
 - Federal Reserve injection of liquidity and announcement of new QE
 - Travel bans on China, UK, and Europe; domestic travel ban may be considered
 - Economic relief plans to provide low-interest loans for affected small businesses and Congress to vote on a COVID-19 aid package. Further plans include instructing the Treasury Department to defer tax payments for impacted individuals and businesses
 - Many states have closed schools, public spaces, and are imposing social gathering bans



Economic Impact of COVID-19

- From an economic perspective, global supply chains and consumption broadly are taking the brunt of the impact.

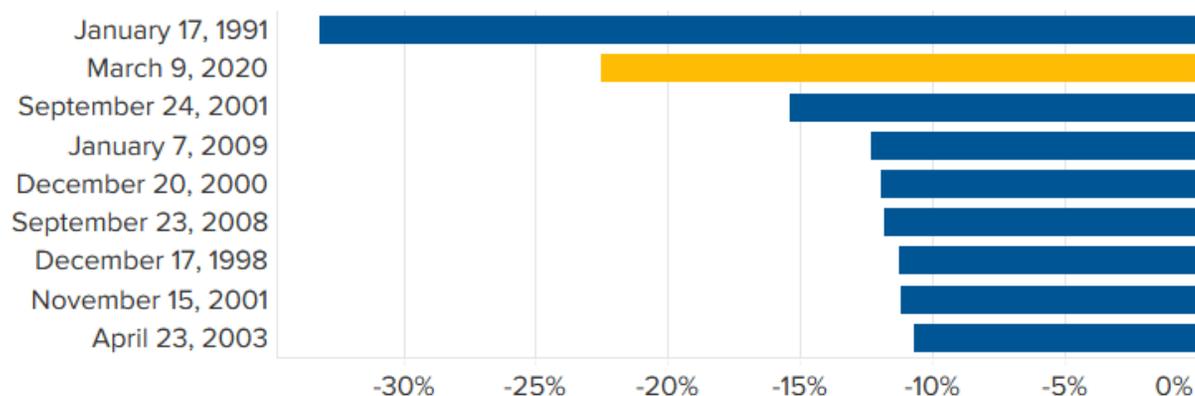


- First quarter growth impact is likely to be skewed toward Asia, but the ***UK, US, and Europe are not far behind given the delayed, but significant spread of the virus to these regions.***
 - Q2 likely to suffer the biggest negative impact domestically; full year growth estimates revised downward by -100 bps to -200 bps.
 - Largest disruptions to certain areas of the economy – most notably travel, tourism, and entertainment activities – which account for about 7% of GDP.
- Using China as an example, consumption dropped to a fraction of historical levels.
 - Early signs of improvement as the rate of new cases has slowed, but still expected to translate to material decline in global GDP.

Oil Production and Price Disputes

- Further exacerbating the global economic picture is volatility inspired by disputes between oil producing countries, specifically Russia and Saudi Arabia, over production levels and price.
- The sell-off in crude began the first week of March following the failure of the OPEC deal with its allies to reduce production as a countermeasure to lessened demand due to COVID-19.
 - OPEC attempted to reduce supply (i.e. production) among the allies, but Russia did not comply.
 - In turn, Saudi Arabia slashed prices, putting additional pressure on the energy sector.
 - As a result, on Monday March 9th, oil prices dove 24.6% settling at \$31.13 per barrel as investors feared the possibility of an oil price war. Not surprisingly, this was WTI's second worst day on record.

Largest Single Day Percent Drops in Oil Prices
(as of 3/9/2020)

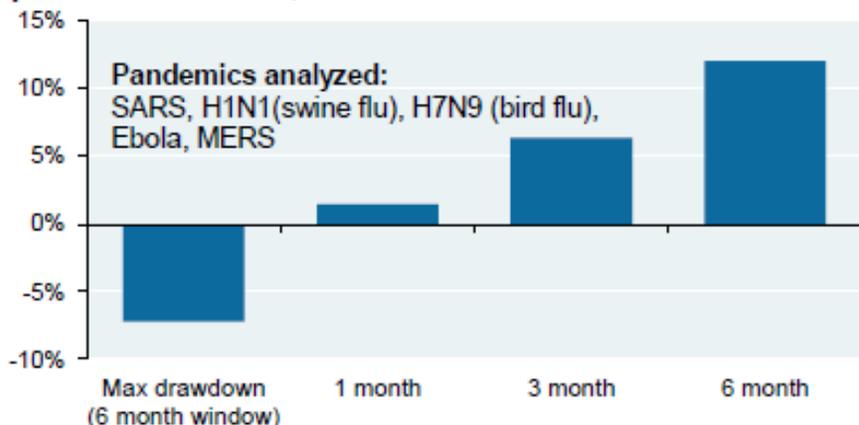


- As the economic picture improves in Asian countries, the dynamics within the oil industry and energy sector overall may improve. That being said, we are likely in the early to middle stages of this oil supply/price issue.

Performance Following Pandemic Drawdowns

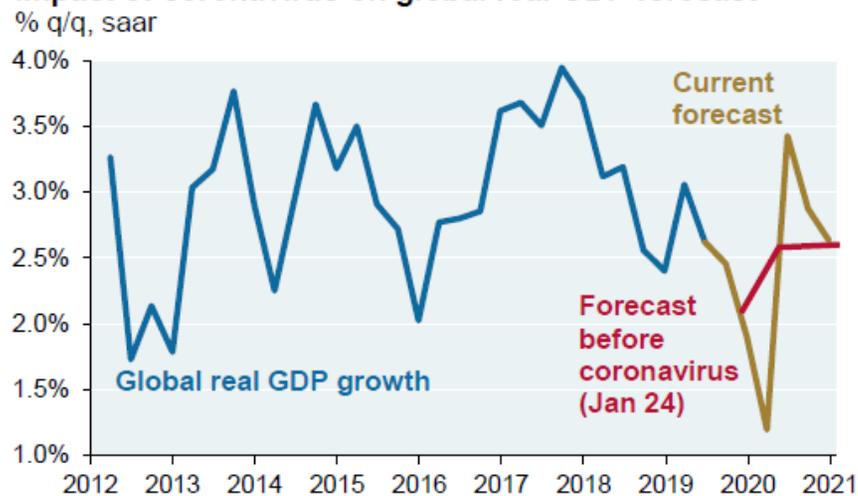
- Although past stock performance is not always indicative of future results, average S&P 500 performance (as well as GDP) during and after the start of pandemic outbreaks historically demonstrate a similar pattern.
- However, comparisons across pandemics is difficult as the impact from the magnitude and timing of the COVID-19 pandemic is still uncertain.

Average S&P 500 performance during and after start of pandemic outbreak, Total return %



Source: J.P. Morgan Asset Management. 2020. Past performance is no guarantee of future results. It is not possible to invest directly in an index.

Impact of coronavirus on global real GDP forecast

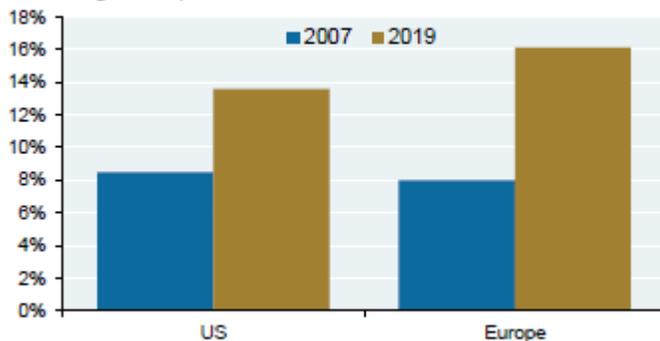


Source: J.P. Morgan Global Economic Research. February 2020.

Comparison to 2008-09 Global Financial Crisis

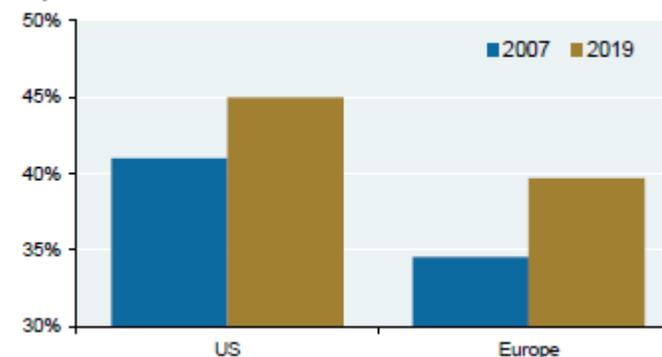
- Some investors may draw parallels between the current drawdown and that of the 2008-09 Great Financial Crisis (GFC). It is important to remember, however, that from a liquidity perspective, thanks to reform following the GFC, the US financial system is now better positioned to demonstrate greater resilience than it did during the GFC (true for Europe as well, but to a lesser degree).

Rising capital ratios
Risk-weighted capital ratio



Source: Federal Reserve Bank of New York, Bloomberg. Q4 2019.

Improving liquidity ratios
Liquid assets as % of short term liabilities



Source: FDIC, Goldman Sachs, JP Morgan. Q4 2019.

Falling bank loan-to-deposit ratios



Source: Fed, ECB. December 2019.

The Role of the Federal Reserve

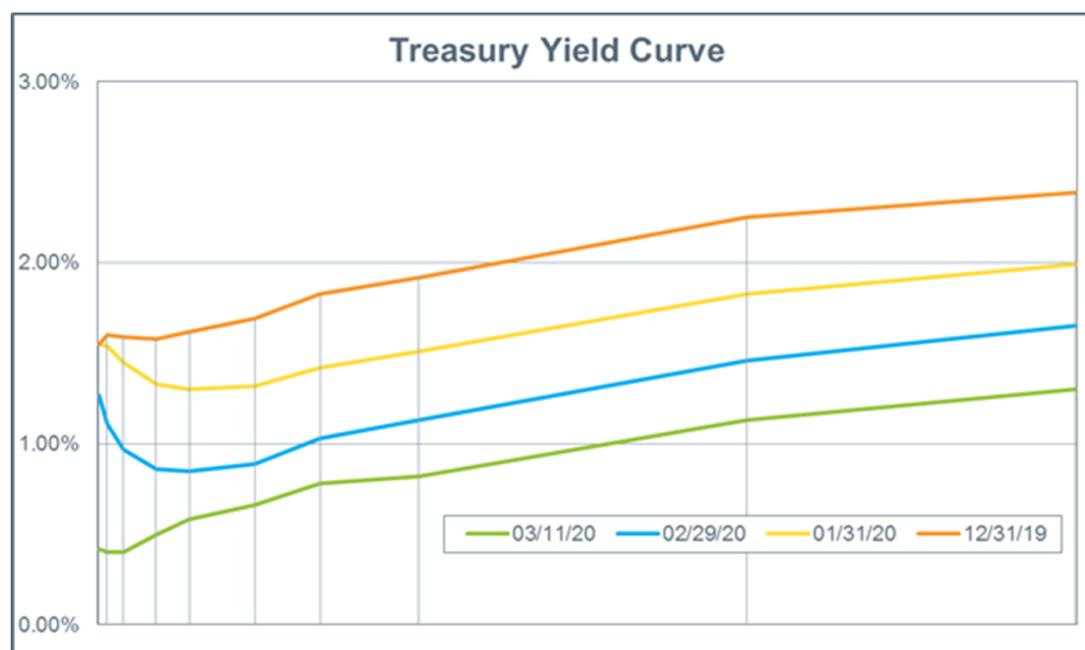
- The Fed issued emergency rate cuts of 50 basis points on March 3rd, and 100 basis points March 15th, reducing the fed funds rate to essentially zero in an effort to support the US economy during the pandemic.
 - Markets have generally reacted poorly to Fed actions thus far, as a signal of perceived weakness
- Market participants generally expect the continuation of monetary intervention where possible, but given historic easing, the Fed's tool box has steadily decreased, as evidenced by extreme lows in the US 10-year Treasury yield.



- On March 12th, the Fed introduced measures of liquidity injection; on March 15th announced new quantitative easing in the form of at least \$700 billion of asset purchases; markets continue to digest as volatility remains high.
- Fiscal policy has the potential to play a much larger role, with the Senate expected to pass a coronavirus relief package this week, and further stimulus under consideration.

Update on Fixed Income Markets

- As expected, US Treasuries have provided a safe haven for investors nervous about market risks.
- Rates were generally on a slow downward trend to start the year, but began a steeper decline toward the end of February. In particular, between February 28th and March 9th, the 10-year Treasury fell to just 0.54% (a 76 basis point drop from the 1.30% start).
 - It had fallen to just 0.32% in overnight trading, the lowest point on record.
- The decline has been across all maturities. The 30-year treasury also fell to a record low 0.70% overnight before ending Monday, March 9th at 0.99%, putting all Treasury yields below 1% for the first time in history.
- Yields have risen as the week progressed, but remain well below the levels seen at the beginning of the year.



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