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Catching the COVID-19 Knife: Preparing for An Economic Shock and Resuscitation

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Summary and Breaking News

This is, in our view, a true Black Swan set of events.

The world economy is facing a health care crisis that will cause a major global disruption in business activity and everyday life. In this extensive Special Report, we want to ensure that you calmly understand the nature of the health issues and likely economic impacts as well as the responses taken and those still needed to adequately address the crisis.

Contained herein is information on many elements of the COVID-19 pandemic and its trajectory. We talk about the varied health care responses of governments in the East and West to the virus, from containment to mitigation to an even more bold experiment in the UK. Our analysis explains why curve flattening is good health care policy with a big economic price tag. We review the untimely nature of the Russia-Saudi oil price war and its impact on credit markets. Our Special Report contains estimates of the expected fall in economic activity in Q2 and Q3 of 2020. And we also review last week's stock and bond market activity and "What the Markets Are Telling Us" that we may not be hearing. Finally, we talk about the market malfunctions last week that underscored the Fed's decision to move again in an emergency fashion to ensure market order amidst this extraordinary set of events.

We now expect the US economy to contract 4%-5% in the second quarter, and Eurozone economies to contract 5%-10% in the period. While China will likely soon begin a rebound from a similar negative pace of quarterly decline in 1Q, overall global growth will likely range from 0%-1% for the full year 2020. Corporate profits will likely fall 15% this year.

Beyond the Fed's strong monetary policy steps noted below, important further fiscal steps are needed to avoid worse outcomes than our new assumptions. Support for small firms and individuals who will not earn incomes during the Covid-19 shutdowns can still avoid a spiral of insolvency and economic contraction after the virus passes. We view the near-term outlook as quite challenged, but our confidence has increased somewhat that policymakers are now awakened to the risks.

This Evening

On Sunday evening, the US Federal Reserve took a second emergency action in less than a week, slashing interest rates by 125 basis points to 0-0.25%. In addition, the Federal Reserve committed to restore market liquidity with $700 billion in US Treasury and Mortgage Backed Securities Purchases, a cut to zero in US bank reserve requirements, and USD swap line expansion in conjunction with other central banks. We expect other central banks to make announcement tomorrow.

The Fed's actions recognize the severity of the health and economic threats posed by the COVID-19 virus.

Catching the COVID-19 Knife: Preparing for An Economic Shock and Resuscitation

Equity and bond market valuations are the sum of expectations for the economy and of policy makers. Last week, with the largest and fastest sell off in 30 years, we saw a sea change in those expectations. The primary negative drivers that took the S&P and Eurostoxx indices into bear territory (-27% and -32%, respectively) were twofold: 1) the **forthcoming** economic shock that COVID-19 will deliver to global markets and 2) the poor preparation by Western governments to deal with the health, social and economic consequences of the virus as it crashes into our personal and business lives.

Figure 1: S&P 500 Daily Market Moves

Source: Haver Analytics as of March 15, 2020.

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This past week saw a bigger and fast decline in stocks than in 2008, 2000, 1998 and 1987. **We think that as sharp as the 2020 decline was, there are reasons to suspect that we are in for more volatility and a potential further downward movement in both equity and credit markets**. As we recently wrote (see **Strategy Bulletin | Credit takes petroleum-led hit)** these circumstances are very different than the 2008 financial crisis. 2008 was intrinsic, a crisis due to undercapitalized banks underwriting and syndicating toxic mortgages.

These 2020 exogenous shocks are unique and require aggressive policy responses. Simply cutting rates will not lift demand or curtail the supply of oil. What will be necessary is a huge fiscal response by the governments around the world. Further, the required fiscal response spending needs to be highly targeted to ensure that individuals and business maintain their fiscal health amidst a “virus attack” that will last for a few months. This is in anticipation of a massive rolling economic slowdown. The slowdown will roll in waves across the European and US economies, slow the nascent recovery of China, put pressure on commodity prices and producers globally and potentially hurt forward sentiment. As you’ll see on below, we have estimated the Q2 and Q3 GDP and EPS estimates. These assume a “3 month to peak” virus impact rolling from Europe to the UK to the US.

All of this is happening very quickly and at a time when information, both data and images, easily runs ahead of policymakers. Most people in the US and Europe learned of the existence of this novel virus in China in early January, 2020 and are now struggling to understand what the virus, oil shock and impact of poor market performance itself will do to the global economy in the near term and as it recovers.

History tells us that markets are often the leading indicator for the economy. We expect this time to be no different. While we see an exceptional “buying opportunity” ahead, we also see significant risks that policymakers may fail to protect the “healthy” parts of the economy from being “infected.” Here, we are using the disease metaphor purposefully. If industries most heavily impacted by Covid-

19 fail (take airlines, for example) the impact of their shuttering would ripple through the real economy and the financial system. As discussed Friday (see **Strategy Bulletin | Market disorder sets in as COVID-19 fears outpace policymakers**), the banking system's capacity to absorb losses under normal circumstances is much higher now than in 2008. But these are anything but normal circumstances. Governments are likely to need to support individuals whose jobs are temporarily unavailable, businesses whose ability to operate is impaired and banks who may not receive expected cash flows. A spiraling down of economic impacts that are not directly related to the virus's immediate impacts is a rising risk in the absence of strong government policy interventions.

If policymakers in the US, Europe and Asia can get the public through COVID-19 with their psyche and pocketbooks intact, we should see a meaningful and sharp recovery begin within 2020. Policymakers will have to move swiftly and in size to inject capital and confidence to address this shock and that is what our base case assumes. Given now lowered rates, there is immense capacity for bailouts and fiscal support packages, but the political will and organization needs to be as strong as it was in '08 for markets to believe they will succeed.

On Friday, US equity markets snapped back 9% after the largest one day drop since October 1987 (-10%). The was after the US government belatedly acknowledged the depth of the health, business and social crisis the country and the world faces in COVID-19. Yet, it will become readily apparent that the President's initial dollar amounts were nowhere big enough to fill the GDP gap left by the virus. **We need to see a fiscal and monetary policy response that is extremely large and effectively targeted to become bullish on the near-term market outlook. With the** public's shock over the dangers of the virus rising, the sooner we see such actions, the better the long term results may be.

Global equity valuations are moderate given persistent low interest rates. We think that clients will be able to "buy the dip" when credit markets resume functioning properly and when pricing becomes well differentiated again. Last week's abnormal treasury, credit and ETF markets speak to the market's illiquidity and vulnerability. Once we have reached a bottom in credit markets within the coming quarter, we can expect to see the equity markets recover substantially. But so long as investors are worried about their bonds and the banks, volatility shall dominate. As volatility drop and spreads narrow, we will know that the time is ripe for markets again.

This Black Swan

Notably, a Black Swan is an event that is (a) hard-to-predict and well beyond the realm of normal expectation, (b) highly improbable on a mathematic basis and (3) an event so shocking that we, individually and collectively, are unable to grasp its full significance in real time.

What we know today is that there is – at the same time – the COVID-19 pandemic, a Russia-Saudi oil war, a significantly diminished collective response due to deglobalization and a stock market crash. Deglobalization is the literal disintegration of economic, political, social and trade between nations and their governments. While someone in the future may try to explain this moment as rational and predictable (a definitional requirements of a Black Swan), it is certainly without precedent in history and unpredictable along its present path and long-term impact.

The COVID-19 Pandemic

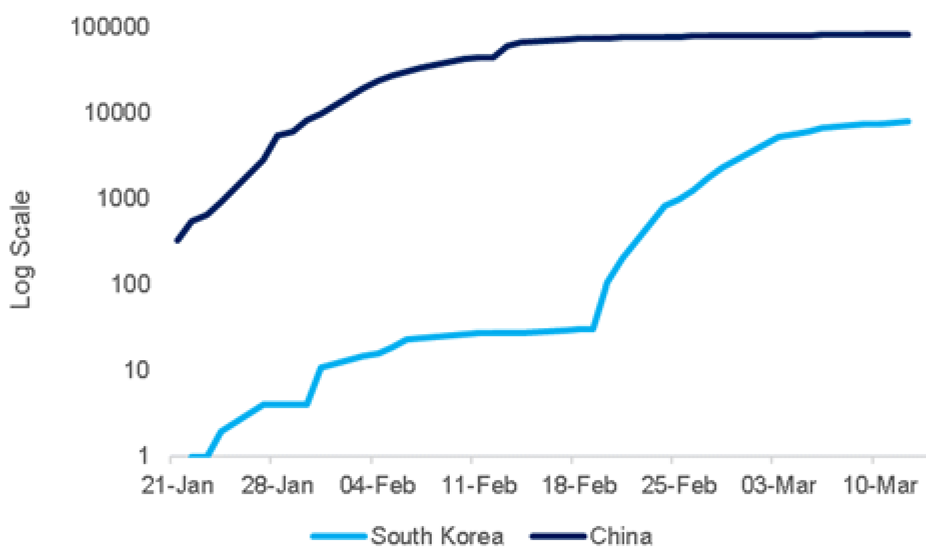
Just this week – the week of March 9th, 2020 – the World Health Organization declared COVID-19 a pandemic. The virus is now present in 152 countries and territories just 80 days after it was discovered in Wuhan, China. According to Statistica, there were 4.5 billion scheduled passenger flights in 2019. In the first two months of 2020, this provided efficient means for a disease without vaccine or treatment to reach all corner of the globe.

Successful Approaches to Limit Spread

China's apparently successful "contain at all cost" response gave the world hope that the virus would remain "just" an epidemic and a controllable one at that. China used a massive regional lockdown, forced quarantining and a social shutdown, to curtail the disease. As of March 14, 2020, China had 80,844 cases and 3,199 deaths.

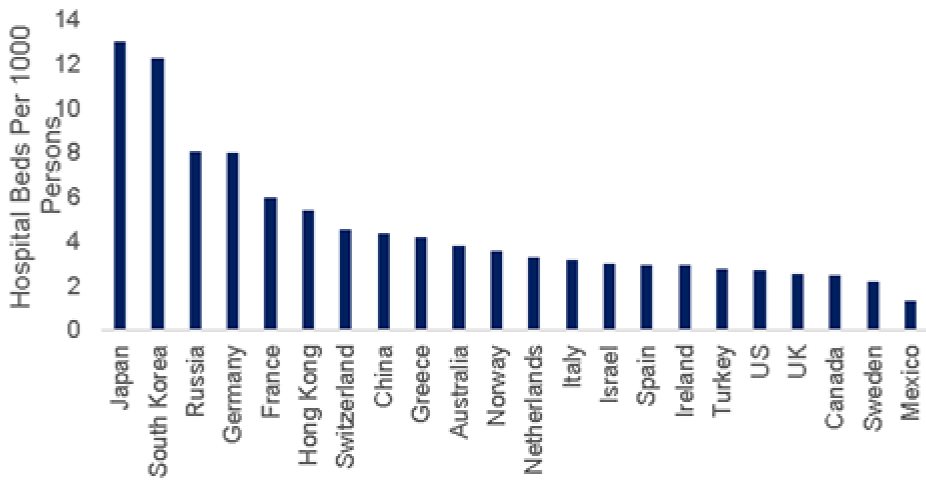
South Korea adopted a different approach combining massive free testing and treatment. This approach corralled the disease and kept new infection rates low. As of 3/14/20, South Korea had 8,164 cases and only 75 deaths. The low mortality rate is attributed to early diagnosis and the availability of advanced health care for serious cases. The South Koreans also took hygiene very seriously and followed government requirements to limit social interactions.

Figure 2: Confirmed Cases of Covid-19 Infection



Source: Haver Analytics and NYTimes as of March 15, 2020.

Figure 3: Hospital Beds Per 1000 by Country



Source: World Health Organization as of March 15, 2020.

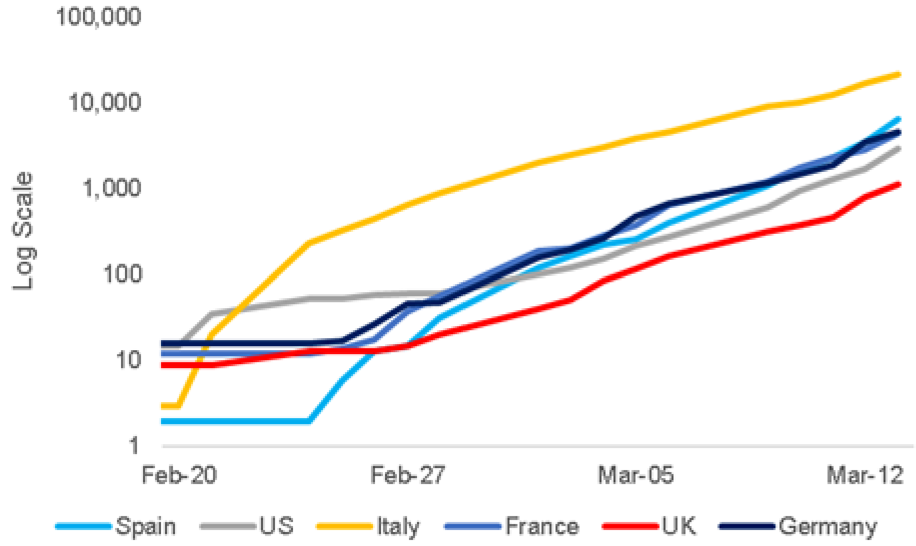
And in Europe…

Then there is Italy. Italy first entered into a regional lockdown in Lombardy on March 7 and then a national lockdown on March 8, in an attempt to bring the virus under control. Italy went from around 20 cases three weeks ago to 21,157 as of 3/14/20, with 1,441 deaths. It is now the Hubei of the Western world. Italy did not have a massive testing effort underway prior to the lockdown and is now engaged in a full-on containment strategy to stop the spread of the virus via social distancing and a shutdown of all “non-essential” businesses, leaving just supermarkets and pharmacies open.

The Italian government called upon China to ship 30 tons of emergency equipment, including breathing machines, oxygen helmets and masks, which arrived in Rome last week along with nine Chinese Covid-19 experts medical experts. An unused trade fair pavilion in Milan is presently being transformed into a field hospital with 600 ICU beds.

This weekend, France and Spain and France began similar lockdowns. They, too, are willing to risk a massive economic contraction to limit the spread and medical impact of the disease. (Spain 6,391 cases/196 deaths; France 4,469 cases/91 deaths each as of 3/14/20). Each of these European countries derives a large share of economic activity from tourism (between 10%-15%), with such activity likely to be near zero for the next couple months at a minimum.

Figure 4: Confirmed COVID-19 Infections by Country



Source: Haver Analytics and NYTimes as of March 15, 2020.

The UK's Risky Strategy

Boris Johnson's government has adopted an entirely different strategy for managing the pandemic. The UK is not shutting down the business of Britain, but rather allowing COVID-19 to spread to allow citizens to build up "a kind of herd immunity" so that more people are immune to this disease subsequently. Sir Patrick Vallance, England's chief scientific adviser, says that it would require roughly 60 percent of Britons to become infected to reduce the probability of a second surge in COVID cases next winter. There are many scientists who question the wisdom of the UK government and who project a large amount of fatalities, especially among the elderly.

The Prime Minister has been public, pragmatic and blunt, stating that the coronavirus "is the worst public health crisis for a generation." He has asked UK manufacturers including Rolls Royce and JCB to redirect their current production lines to help produce ventilators, as if in wartime. And even though he appears willing to risk higher mortality rates from COVID-19, Johnson is said to be likely to impose a massive quarantine of the elderly in Britain. Those over 70 may be instructed to stay in strict isolation for four months. There are also other measures under consideration including the forced requisitioning of hotels, private hospitals and other buildings as temporary hospitals.

In the United States…

Looking across the Pond, the Chinese and Europeans watched the United States live in a state of denial. The US reported its first case on January 20th. On February 26th, the President named Vice President Mike Pence as his coronavirus coordinator, but also noted that, "the risk to the American people remains very low." Just days before declaring the coronavirus a National Emergency on March 13, 2020, the President called COVID-19 a "foreign virus" and suspended flights from Europe casting the virus as if it was an immigration issue, even though roughly 10 million international passengers had already visited the US in January and February.

The US was also not testing its citizens rigorously. As of March 14, 2020, the United States has tested just 19,000 people tested compared with 250,000 in South Korea, a country less than 1/6th its size according to the Covid tracking project. The failure to have sufficient testing was acknowledged by the head of the CDC, Dr. Anthony Fauci, director of the National Institute of Allergy and Infectious Diseases. He said in Congressional testimony, “The system is not really geared to what we need right now," referencing the lack of coronavirus test kits in the United States, "That is a failing. Let's admit it."

Businesses, local and state governments in the US responded in early March, 2020 even as the federal government hesitated. Following the CDC’s guidelines, large and small businesses began taking decisive action to address the spread of the virus. Businesses initiated work from home policies to split workforces, schools were closed in a growing number of states, 39 governors declared states of emergency, all major sporting events in the United States were postponed or cancelled, Disney closed its theme parks, Apple closed its retail stores and cruise ships were ordered to stop taking passengers from US soil. The first US city declared a lockdown, as Hoboken, NJ (across the Hudson from New York City) imposed a curfew and travel restrictions. Slowly, but surely, the social and business lives of Americans were being curtailed, as air, train, subway and bus traffic was slowed down for the first time ever.

Curve Flattening

The purpose of the efforts in continental Europe and the US is “curve flattening”, a very different health strategy than in China, South Korea, Hong Kong and Singapore where the goal was “containment”. Curve flattening is an attempt to mitigate the spread of the disease by reducing its peak impact. This strategy is used after containment fails and is designed to reduce the peak burden on health care systems. The rationale for elongating the disease’s exposure to a broad population is to avoid hospitals and health care facilities from becoming overburdened. There is a risk that a deluge of sick patients coming to overcrowded hospitals will have an insufficient amount of staff and supplies. Thus, hospitals may be unable to provide supportive care to the most sick patients, leading to greater fatalities. This is a circumstance that the US and Europe and have not seen before in peacetime.

Health Care Impacts and Mortality Rates

There are four critical differences between COVID-19 and the flu. The first is its degree of contagiousness. This virus is 2.5 to 3 times more contagious that influenza. The second is its ability to spread silently as the period before symptoms arise is 3-14 days and many people who do get the disease are asymptomatic. The third is the degree to which patients require supportive care. Once at the hospital, up to 20% of patients require respiratory support. And the fourth is the mortality rate. The lowest reported mortality rate is 0.7% is South Korea and up to 3% elsewhere. Seasonal flu is 0.1% by comparison.

Hospital Capacity Issues

According to Dr. Ezekiel J. Emanuel, Vice Provost of Global Initiatives at the University of Pennsylvania and Dr. James Phillips, Chief of Disaster and Operational Medicine at George Washington University Hospital, as noted from these excerpts from the NY Times, March 12, 2020:

- The United States has fewer than 800,000 hospital beds, about 68,000 adult intensive care unit beds of any kind, and fewer than 100,000 ventilators. As the coronavirus spreads, this will not be enough.
- If 5 percent of the 325 million people living in America get Covid-19, the current data suggests that 20 percent of them — 3.2 million people — will require hospitalization and 6 percent — 960,000 people — will require beds in intensive care units for many days. Covid-19 patients will simply overwhelm our health care system.
- Hospitals, doctors and the American public must prepare, strategically and emotionally, for the real possibility that rationing will be necessary. Agonizing choices may be required to determine which patients get lifesaving treatments and which patients do not.
- Rationing lifesaving interventions is horrendously wrenching. No one wants to choose which patient gets a ventilator and which patient may die because he or she does not. The priority should be health care workers; police, firefighters and other emergency workers; and those who keep water, electricity and other necessary systems functioning, because they can save the lives of others. Covid-19 — not humans — will force us to make those choices."

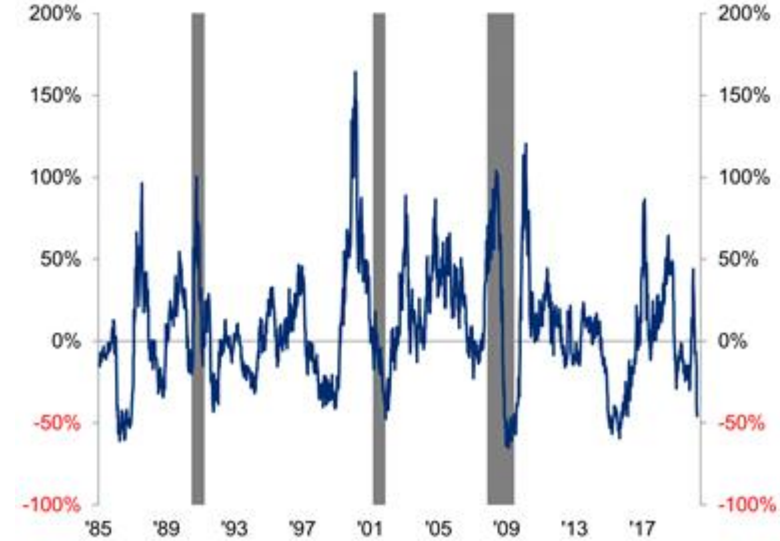
The Russia-Saudi Oil War

Amidst the global pandemic and the first major decline in demand for oil in years, a "supply" war between Saudi Arabia and Russia broke out on March 8. This could lead to a supply overhang of up to 4 million barrels per day, causing inventories to rise and creating a destructive price drop until production shuts down for the highest cost producers who will be unable to continue operating at a loss.

More importantly, this "oil shock" hit both credit and equity markets sharply on Monday, March 9th. Losses in the industry ranged from 25% to 50% in equities and high yield energy bond prices declined by 20-40%. The market was delivering a harsh message that many US and Canadian oil and gas producers would be harmed and some would need to seek restructuring or outright fail.

This crisis in energy spilled over to the broader high yield market that had been relatively sanguine through early March 6th. It also negatively impacted bank equities and credit to those names that were most exposed to the industry. Obviously, the banks are far more well-capitalized than in prior cycles and crises. Nonetheless, the oil shock led to a credit shock and major withdrawals by investors of ETFs and funds in the high yield space.

Figure 5: WTI Year-to-Year Price Change (%) and Recessions



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The Markets Are Telling Us All Something, But Are We Listening?

The decline in equity markets on Thursday, March 12 represented the worst single-day decline since October 19, 1987. However, the context of the "Covid" market drop of 2020 is far different. The disorderly 20% drop of "black Monday" or even the more gradual (but similarly sized) correction of 4Q 2018 were functions of interest rates interacting with other asset prices. Monetary policy can change with a committee decision. Covid-19 is not presently subject to human control. The present market revaluation is largely the result of the shocking realization that economic activity will be derailed globally to mitigate the impacts of a viral pathogen.

As discussed above, nation by nation, culture by culture, decisions are being made as to what sorts of disruptions to life are necessary to limit exposure to the virus. It is impossible to know perfectly how the virus spread will be impacted by "social distancing" and to know how each public will behave in the face of the virus. We have seen how draconian and swift government actions in Asia can contain the virus at very significant economic cost, with strong health care outcomes. results. We have seen their populations follow guidance, limit social contacts and maintain hygiene. US and European governments have reacted far less stringently due to structural and political norms that make such centralized action rare, save for wartime. So, Western countries are beginning to respond to the pandemic in that way for the first time in modern history. One should expect poorer outcomes that have been seen in Asia.

Market Malfunctions

As discussed last week **(**see Market Disorder Sets in As COVID-19 Fears Outpace Policymakers**)**, the immediate drop in transportation fuel demand from the Covid shock served as a catalyst for wider vulnerabilities in petroleum markets. The global oil industry is still significantly dominated by a few state actors and the OPEC cartel. The surge in US shale oil production from the many unaffiliated small producers over the last decade has served as a severe blow to the ability of OPEC+Russia to control oil prices.

Last week, Russia chose to walk away from a Saudi-led output reducing plan to balance supply in markets. This appears to be an attempt to break US producers with a severe and lengthy oil price collapse. As noted, US high yield energy bonds collapsed in price with this development at the start of last week. It does not shock or surprise us at all that transportation-linked industries see "crisis-level" weakening in credit and equity markets.

More importantly, the unknowable scope of the global economic downturn intersected with the oil crisis and impaired wider market functioning over the course of last week. Changes in market structure since the Global Financial Crisis (GFC), such as limits on bank proprietary trading - which supports liquidity and market making – short selling limitations, circuit breakers and limitations on the use of proprietary capital are also likely factors.

By late last week, most government, municipal bonds and corporate credit markets apart from US Treasuries saw limited liquidity and unprecedented gaps between bids and offers. The inability to liquidate even high quality assets appears to have left some holders selling US Treasuries, causing US yields to rise. The Federal Reserve began to intervene in the US Treasury market as a first step to address this. We believe market illiquidity and a so-called "short squeeze" was largely responsible for Friday's historically large rise in US share prices in the final half hour of trading.

As recently as one month ago (see "Germs of Steel", Quadrant, February 14**),** we had commented on the absence of credit market pressures as a backdrop for equities. High yield credit markets have since "caught down" to equities. However, when assets high up in the capital structure are weakened and liquidity is poor, it can severely distort the long-term value of equities in markets and vault volatility. This is a clear lesson from the Global Financial Crisis, even if the underlying causes are entirely different now.

Weakening credit markets for all borrowers – even those not directly impacted by virus disruptions – tends to impair wider economic growth for a period of time. This can last beyond the period during which governments and individuals interrupt normal activities to avoid the virus. Over prolonged periods, it can weaken the solvency of healthy firms and households, making economic recovery weaker and the slowdown longer. As such, it suggests strong government intervention steps are needed. Credit market dislocations would be temporary if government interventions, including lower rates and targeted fiscal stimulus are done in size and with speed. Amid high levels of global savings, record low interest rates and low inflation, governments are better positioned than many understand to provide a "bridge" over the "Covid chasm." Today, we saw the Fed take such action. Importantly, fiscal policy makers in the US Congressional and Executive branches must follow up

Projections of Global Economic Activity: 2Q Likely the Worst

Imposing social distancing is meant to slow the spread of the virus and therefore "flatten the curve" of the rising infection rate. The goal is to avoid overwhelming healthcare systems that can be inundated by thousands of very ill patients needing supportive card and interventions. A decision to impose social distancing by governments and business has the opposite effect on economies. Mitigation strategies increase the severity of economic disruptions. This carries risks of creating a self-reinforcing negative dynamic that can then also lengthen any temporary economic slump.

Over the coming month, we would not be surprised to see global air travel fall as much as 65%, including domestic flights in areas of the world where the virus impact is waning or governments chose not to take action. We would expect this to persist over most of the second calendar quarter. Travel and tourism receipts, which represents 10%-15% of continental European GDP, may fall substantially over the period, even within countries. Global cross border goods trade may fall 10%-20% in 2Q, with significant supply chain interruptions the rerouting of certain products to different transportation modes with air freight such down and the availability of workers to unload ships severely limited.

In March, significant precautionary spending increases by the public should continue to buoy consumer spending measures, though shortages and inventory depletion are becoming prevalent. Auto sales, which are largely discretionary, should conservatively fall 15%-20% in the US and Europe, with a slightly smaller drop of 10%-15% globally. Real estate transactions will slow, though an overall decline in construction should be less than 5% given the longer-term planning and “inertia” of the construction process. Broader capital investment, which is dominated by maintenance spending, should fall less than 10% in the quarter, even with severe logistical disruptions. Aspects of spending like software upgrades should see very little impact. Government spending will increase materially, but its growth will likely lag far behind the scope of the private sector contraction. Continental Europe will lead the western contraction beginning within the first quarter, while the US appears to building toward a contraction centered in Q2-2020.

China’s economy will contract about 5% annualized in the first quarter 2020, with its year/year growth rate cut in half to about 3.5%. Its economy is beginning to expand again in the second quarter. We expect large, effective micro-level interventions in China’s economy and large scale stimulus to provide social stability and growth. However, China will face economic headwinds from trade weakness as the virus impacts demand for China’s exports.

Europe’s economies will likely contract marginally in 1Q 2020, but may contract 5%-10% in2Q and somewhat less in 3Q. The US economy will grow near a 2% pace in 1Q 2020, but seems likely to contract 4%-5% in 2Q.

Overall, the world economy may contract 1-2% in 2Q and grow 0%-1% this year. Even with the largest drop concentrated in 2Q, US and world EPS will likely fall at least 15% this year. A Q3-2020 rebound will benefit from a very weak starting point, but the extent of the following :

1. A peaking in infections within the northern hemisphere by May.
2. Large scale fiscal stimulus from most impacted countries and specific targeted micro-stimulus including industry bailouts, small and medium-sized business lending and direct support for individuals whose jobs are temporarily eliminated.
3. Monetary policymakers working in conjunction with fiscal policymakers to avoid any restraints. The Fed’s swift decision to bring the funds rate close to zero and resume asset purchases satisfies only part of the requirement. The Fed and US government would ideally provide supporting finance for new government lending vehicles to support

impacted business. The ECB and BOJ would support larger increases in government spending to finance amid high levels of monetary accommodation, but weak borrowing.

What's Needed From Policy Makers

Without any of the xenophobic connotations, we need policymakers to react to the coronavirus impact with the mentality of winning a war. The UK has bent industry to assist with the building of critical ventilators. Others, such as the US, could do the same with critical timing. Policymakers already appear to be working as fast as possible toward approving experimental medical treatments amid the longer time frame needed to create an effective vaccine.

Most importantly, we see "disaster relief" needed on a micro-level basis. Firms and individuals seeing their business and pay evaporate as a result of the impact need outright grants to weather the impact, much like insurance payments. This has been done in the US with events like hurricanes Sandy and Katrina on a small scale. Similarly, bailouts that had net present value after the financial crisis are needed to preserve capacity in the most impacted industries, such as airlines.

A decade of extraordinarily easy monetary policy did nothing to awaken inflation. The current supply shock and shortages will see some prices spike, but the larger danger is a deflationary slump. Negative yielding government bonds actually reduce government debt burdens when borrowing rises. The need for governments like Germany to spending freely and end wider constraints on others in the Eurozone is needed to avoid an even more costly shock. A 3-12 month period of free spending, with targeted grants to those effected by Covid-19 are not permanent, programmatic expansions. The US government, for example, can very effectively provide more money to a wide swath of US workers with a temporary suspension of the payroll tax, merely enlarging a toll that has been effectively used in the past.

As the private sector absorbs the unusually hard stops to economic activity for virus precaution, each week should be considered critical timing to act and limit the damage.

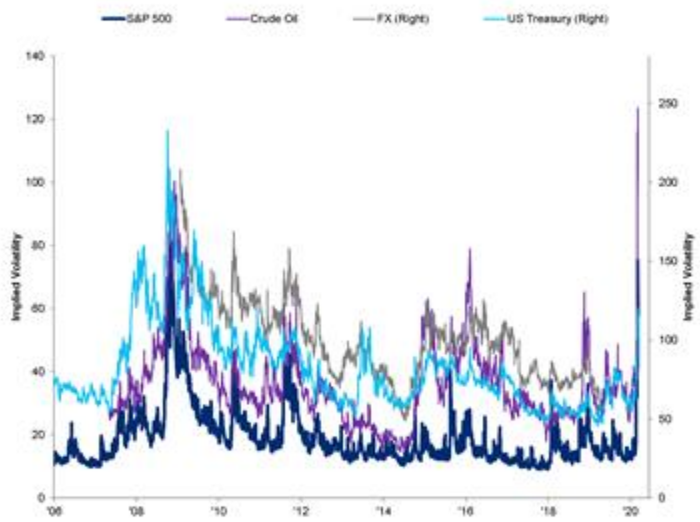
Likely Volatility, Lower Lows, Entry Points For Investors

As we noted, the poor functioning of markets increasingly accounts for the large swings down and up again. Investors should not take too much comfort with Friday's rise in US shares in this context. Realized volatility is rising. We need to remember that volatility tends to fall much faster than underlying cash investments recover (see figure 6).

In capital markets, after US shares have already fallen 25%, qualified investors could earn a significant return over a one-year period if they are willing to own a note obligating then to own broad equity markets only if they fall another 25% in a year's time, a period when the crisis is highly likely to have passed. It should be noted that the investor should be willing to lose their principal invested

And there are areas within the markets, including high quality US and European equities (especially dividend growers), leading companies in emerging markets and industries poised for sustained growth over the next 5-10 years that will be further mispriced when panicked investors make the poor decision to sell into volatile, illiquid markets.

Figure 6: Cross Market Implied Volatility



Source: Bloomberg as of March 15, 2020.

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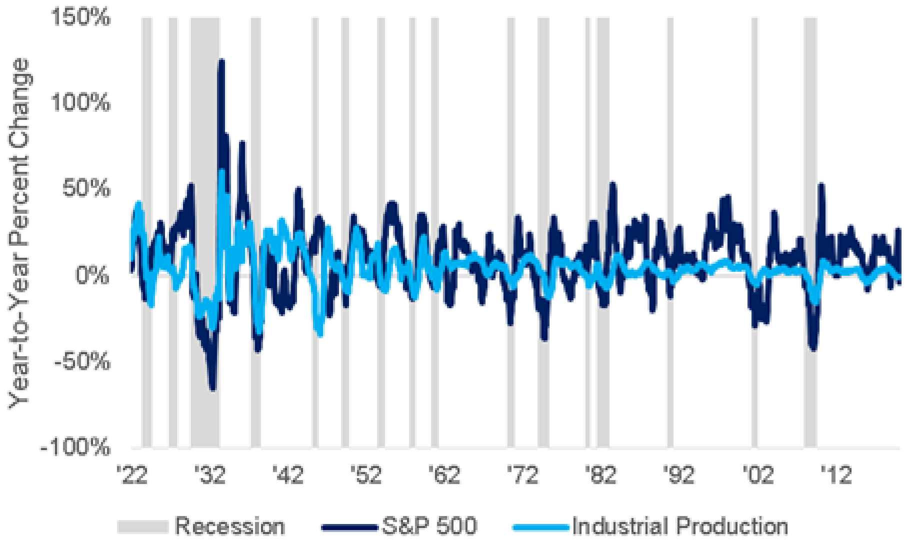
In the coming few weeks, investors in broad equity and credit markets should expect the roller coaster to continue, with equities biased to further retrenchment. This is because we believe the public's response to facing the virus is in its earliest stages in the US to a great extent and in Europe somewhat less, lagging economies like China and Italy. We expect that uncertainty over the actual peak of virus impacts to remain high for 4-8 weeks.

As discussed in previous comments, there is no good reason why economies that haven't experienced booms must contract; when banking systems are healthy; and inflation is low. Even as Covid-19 is an external shock, history shows the economy and asset prices remain linked. Equities will fall and rise in proportion to the severity and duration of the economy's decline (see figure 7). This virus and its impacts are an exogenous shock, but not one that can or will deliver a knock-out punch to the global economy.   Covid-19 will be history at some and the lessons that it will inform will be important ones to protect people and businesses from future health matters of an even more serious nature.

Figure 7: S&P 500 and Industrial Production



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Malcolm Spittler, Joe Kaplan, Maya Issa and Joe Fiorica contributed to this report.