Global Macroeconomic Outlook
April 2020

Global Economic Outlook

The lock-down of the global economy to slow the spread of the COVID-19 pandemic led the IMF to materially alter expectations for economic growth.

- The IMF now forecasts a decline in global GDP of 3.0% in 2020, followed by a sharp recovery of 5.8% in 2021.
- In advanced economies, GDP is projected to decline by 6.1% for 2020, and recover by 4.5% in 2021, as economies reopen and progress is potentially made on a vaccine for the virus. The US is expected to fare marginally better, declining 5.9% in 2020 and recovering by 4.7% in 2021. The Japanese economy is expected to decline by 5.2% in 2020, but only recover by 3.0% in 2021.
- The Euro-area is forecasted to take the greatest hit to growth, declining 7.5% in 2020 and recovering 4.7% in 2021. Expectations for economies like Spain and Italy, which implemented some of the most stringent and aggressive quarantine and containment measures, are heavily influencing weakness across the broader region; those economies are anticipated to decline by 8.0% and 9.1%, respectively.
- Growth projections are also weak for emerging economies, although China is expected to post positive growth of 1.2% for 2020, and a significant 9.2% in 2021. The positive growth expectations are due primarily to the Chinese government's ability to quickly impose aggressive distancing measures, largely isolate and contain the virus, and then quickly move to re-open their economy.
- Inflation is projected to decline, consistent with decreased economic activity, with inflation across most developed economies expected to be below 1.0%; in some countries, such as Japan, deflation is expected.

	Real GDP (%)[1]			Inflation (%)[1]		
	IMF 2020 Forecast	IMF 2021 Forecast	Actual 10 Year Average	IMF 2020 Forecast	IMF 2021 Forecast	Actual 10 Year Average
World	-3.0	5.8	3.7	2.5	3.4	3.5
Advanced Economies	-6.1	4.5	2.0	0.5	1.5	1.5
US	-5.9	4.7	2.3	0.6	2.2	1.8
Euro Area	-7.5	4.7	1.4	0.2	1.0	1.3
Japan	-5.2	3.0	1.4	-5.2	3.0	1.4
Emerging Economies	-1.0	6.6	5.1	4.6	4.5	5.2
China	1.2	9.2	7.6	1.0	3.0	2.5

[1] Source: IMF. World Economic Outlook. As of April 2020 Update. "Actual 10 Year Average" represents data from 2010 to 2019.

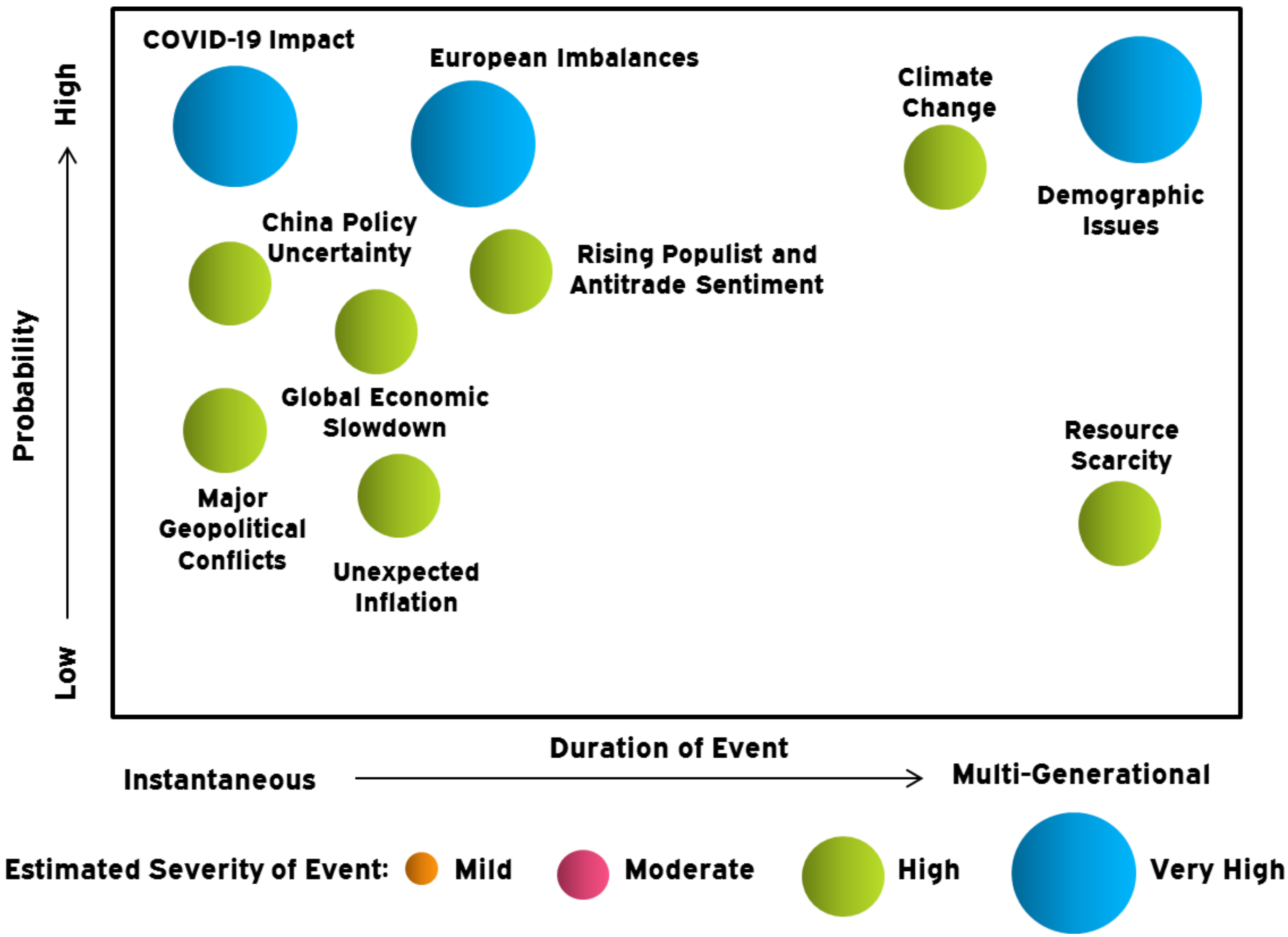
Global Economic Outlook (continued)

In an effort to stem the expected significant declines in economic activity, fiscal and monetary authorities across the globe responded with immediate and aggressive stimulus measures.

- US fiscal and monetary responses have been unprecedented. Fiscal authorities released over $2.4 trillion in directed stimulus, while monetary authorities cut policy rates back to effectively zero, deployed trillions in stimulus measures, backstop liquidity, and funding programs to mitigate the economic deterioration.
- Japanese authorities deployed measures similar to US policies, directing fiscal stimulus where needed most, including loans to small businesses and direct stimulus to consumers, while the central bank continued, and expanded, their quantitative easing purchase program. The Bank of Japan also expanded collateral and liquidity requirements, and initiated 0% loans to businesses directly hit by the virus.
- In the euro-area, countries have launched stimulus packages targeting areas of their economies hit hardest by virus-related restrictions. The European Central Bank also took directed measures, with targeted long-term refinancing operations for small and medium sized business and a 750 billion euro emergency purchase program, which was subsequently expanded to include lower-quality corporate debt.
- Fiscal and monetary policy in China was already quite accommodative prior to the onset of the COVID-19 crisis, but as the pandemic developed, policy makers took further steps to support the economy. Additional tax cuts, low-interest rate loans, and extra government payments to qualifying citizens represented the bulk of the fiscal response. On the monetary side, policy rates were cut, repo facilities were expanded, and reserve requirements were lowered further.

We acknowledge the wide breadth of new issues being presented by the pandemic, and among those we are considering are the following: 1) Economies opening too soon from virus-related restrictions, and ultimately needing to re-deploy distancing policies; 2) Consumers permanently, or for an extended period of time, changing economic behaviors; 3) Persistently high unemployment due to a significant number of companies not surviving the economic downturn; 4) Virus-related fears negatively impacting the future of globalization, and; 5) An increase in sovereign debt risk due to the record issuance by governments.

Macroeconomic Risk Matrix



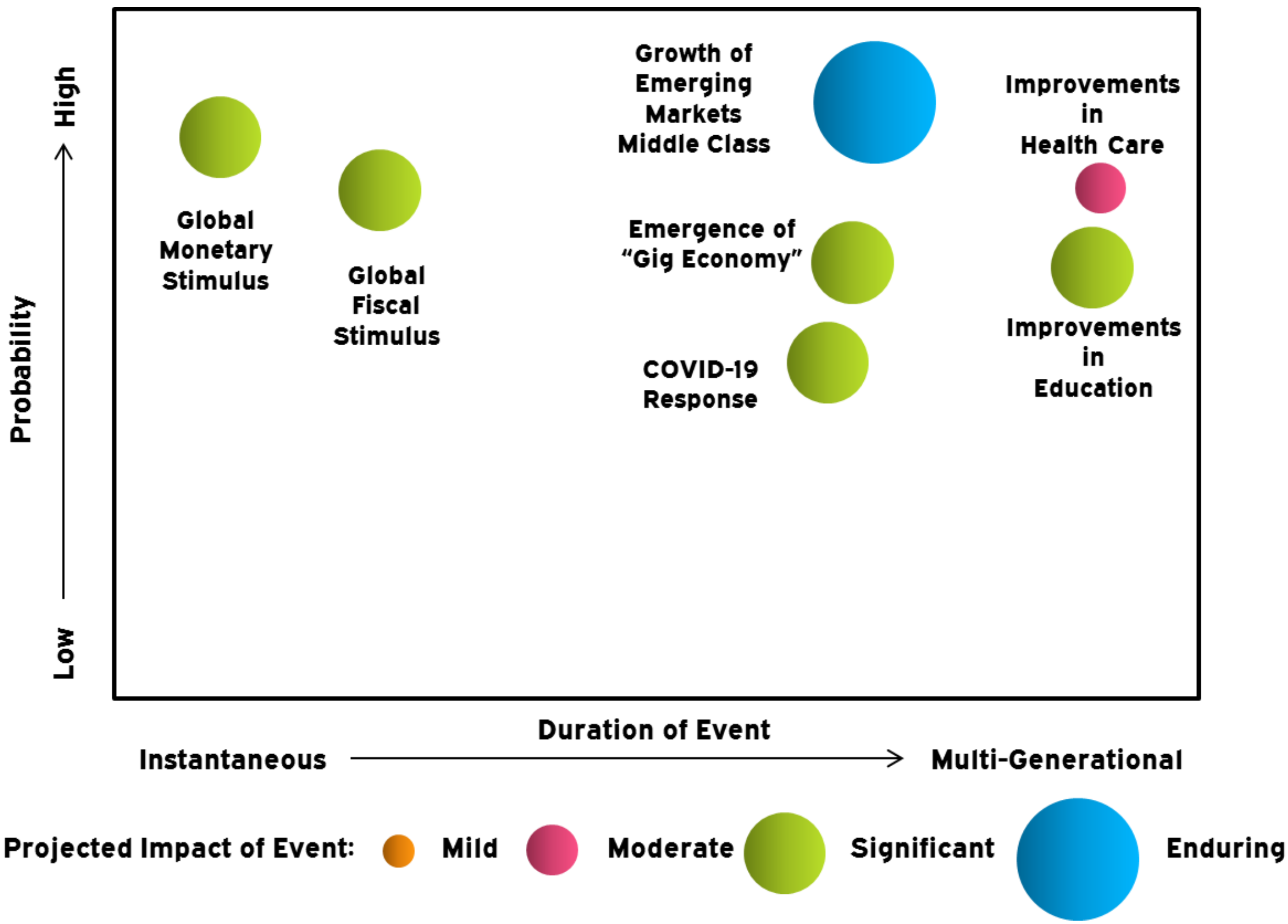
Macroeconomic Risk Overviews

China Fiscal and Monetary Policy Uncertainty	The process of transitioning from a growth model based on fixed asset investment by the government to a model of consumption-based growth will be difficult. Some progress has been made on trade tensions with the US with the passing of a phase-one trade deal, but many issues still need to be resolved. The management of capital outflows is another key issue in China with officials tightening regulations to stem outflows. As China tries to manage a smooth economic transition through fiscal and monetary policies, heightened financial risks exist. The recent outbreak of the coronavirus in China could further weigh on the economy, and others, going forward.
Climate Change	The earth's average temperature has been increasing since preindustrial times with the pace accelerating over the last 35 years. Increased levels of greenhouse gases like carbon dioxide have been the main cause of higher temperatures as they trap heat in the atmosphere. Warmer temperatures have led to the melting of glaciers and polar ice and increased precipitation in wet regions and reduced it in dry regions. The economic impacts of climate change are many, including declining crop yields, effects on livestock health, shifts in tourism, damage to infrastructure (rising sea levels and more extreme weather), and higher levels of disease and malnutrition.
COVID-19 Impact	Developments with the COVID-19 pandemic are of principal and immediate concern. Clarity on when a vaccine might be available for public distribution will be the greatest factor impacting when the global economy may re-open and begin to rebuild from the record job losses and the significant decline in global GDP. Relatedly, market participants have also been discussing the potential increase in risk across sovereign debt markets, particularly the US Treasury market, amidst the significant increase in debt issuance necessary to fund the stimulus measures. While current appetite for safe-haven assets remains robust, as markets begin to recover and demand for these assets wane, selling pressures on the back of the record issuance could push yields higher than otherwise might be expected. As yields rise, debt servicing by the government could become a greater concern.
Demographic Issues	In Japan and Europe, birth rates have declined for decades, resulting in populations becoming older and smaller relative to the rest of the world. In China, their so-called "one child" policy helped to reduce population growth, but has created other issues for the government. As life expectancy increases, the prior policy creates complications with a low working base left to support a relatively large and aging population. These demographic trends will have negative long-term impacts on GDP growth and fiscal budgets, amplifying debt problems.
European Imbalances	Structural issues persist in the Eurozone, related to the combination of a single currency and monetary authority with 17 separate fiscal authorities. Within the European Union, tensions exist, as highlighted by political changes in Italy and the prior UK referendum, related to policies on immigration, laws, and budgetary issues. The UK officially left the EU in January 2020, and has now entered an 11-month transition period where the two parties are attempting to negotiate a trade deal.

Macroeconomic Risk Overviews (continued)

Global Economic Slowdown	The shutdown of the global economy has largely guaranteed recessions for a significant number of countries over the near-term. The question now is the degree of economic deterioration and the duration of the recovery once it takes hold. As the number of cases and deaths from the virus continues to rise, restrictions remain in place for many countries, and expectations for a vaccine are measured in months if not years, it is likely too early to reasonably assess when this risk declines.
Major Geopolitical Conflicts	While a phase-one trade deal with China was agreed upon in 2019, the Trump administration continues to apply pressures on China to proceed with additional trade negotiations. However, with a recent increase in rhetoric from the US due to the administration's insistence that China be held more accountable for the spread of the COVID-19 virus, relationships are likely to remain strained (if not escalate) over the near-term. Additionally, tensions between India and the regional Muslim community have risen of late, due to Prime Minister Modi and his government revoking special status for Jammu and Kashmir in 2019, a plan to strip millions of people of their citizenship, and concerns regarding immigration laws that consider religious affiliation. Recent developments related to the virus have further soured relationships, as India's Muslim community faced backlash due to a particular Islamic sect holding a large gathering as restrictions on public gathering were being deployed, resulting in a significant increase in infections and a subsequent deterioration in diplomatic relationships..
Resource Scarcity	The growing world population, urbanization, and a growing middle class, particularly in emerging economies, could all lead to a scarcity of resources, including food, water, land, energy, and minerals. As natural resource demand continues to grow, rising commodity prices may hurt the living standards of many and increase the risk of geopolitical conflicts.
Rising Populist and Antitrade Sentiment	Tariffs started by the US against China and some of its allies, along with elections/votes in the US, Europe, UK, and Mexico highlight growing populist/antitrade sentiment. Stagnant wages, growing inequality, and the perception of jobs being lost abroad are key contributors to ongoing unrest. Reducing trade and imposing tariffs will likely lead to higher prices, reduced efficiencies, and heightened tensions between countries. As economies begin to recover from the COVID-19 crisis, the risk remains for certain areas to be blamed for the outbreak and the emergency measures taken disproportionally benefiting some, further increasing tensions.
Unexpected Inflation	Developed countries across the world are struggling to generate inflation despite record low (or negative) interest rates and monetary and fiscal stimulus. Most traditional measures of inflation remain near or below central bank targets, despite traditionally stimulative efforts, declining unemployment, and wage growth. With expectations for a significant increase in inflation low, an unexpected rise could be disruptive leading to higher rates and lower growth and valuations. Further, the inability for authorities to meaningfully impact the direction of inflation could prove problematic should deflationary-forces take hold.

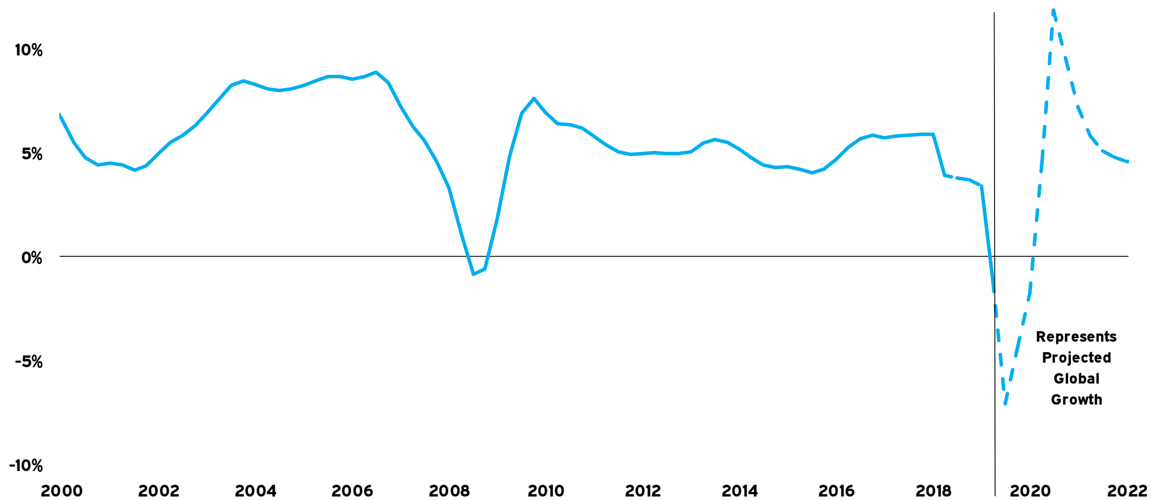
Positive Macroeconomic Trends Matrix



Positive Macroeconomic Trends Overviews

COVID-19 Response	A significant number of public and private companies are aggressively working towards a vaccine, rebuilding personal protective equipment supplies and capabilities, and changing business operating frameworks to better support the immediate societal changes due to the pandemic. The collective efforts of the global community, and the lessons learned from the various measures taken, will provide valuable guidance for addressing pandemic-related risks in the future.
Emergence of "Gig Economy"	The "gig economy" will take a material hit due to the virus related economic shut-down, but should ultimately continue to grow once the recovery is meaningfully underway. The new structure allows workers flexibility in the jobs they take, their schedules, and offers the ability to work outside of a traditional office. For companies, it has led to lower labor and overhead costs (more employees are working remotely), flexibility in hiring workers temporarily, and lower recruiting and training costs.
Global Monetary Stimulus	The record stimulus measures taken by global central banks have provided a meaningful support to financial markets. With policymakers openly stating their strategy is to keep policy extremely accommodative until the COVID-19 induced crisis has passed with a measured degree of confidence, easy financial conditions should provide support for riskier and higher-yielding assets, and support broad economic growth.
Global Fiscal Stimulus	Consistent with the emergency measures taken by monitory authorities, fiscal policy has turned notably accommodative amidst the COVID-19 crisis. A number of countries, including the world's largest, have unleased record levels of direct stimulus to support their respective economies. Measures have taken many forms, including direct cash disbursements to consumers, extension of unemployment benefits, and loans and grants to small- and mid-sized businesses.
Growth of Emerging Markets Middle Class	In emerging economies, the middle class is projected to grow significantly over the next twenty years. This growing middle class should increase consumption globally, which in turn will drive GDP growth and create jobs.
Improvements in Education/Health Care	Literacy rates and average life spans have increased globally, particularly in emerging economies. Higher literacy rates will drive future growth, helping people learn new skills and improve existing skills. Longer lives increase incentives for long-term investments in education and training, resulting in a more productive work force and ultimately more growth.

Global Nominal Gross Domestic Product (GDP) Growth[1]

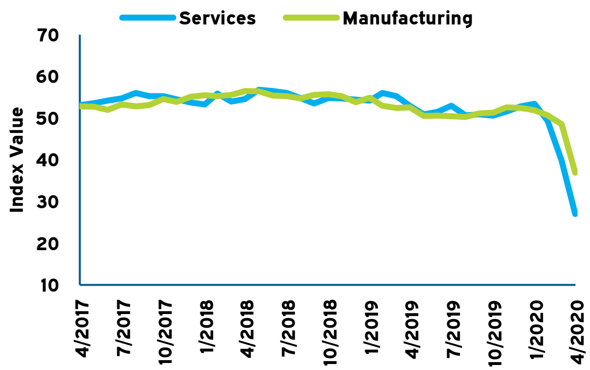


- Global GDP is expected to experience a significant decline in the second quarter of 2020 due to the COVID-19 pandemic and the severe economic restrictions to stem the spread.
- Estimating the depth and duration of the decline are challenging due to the uniqueness of this crisis. Forecasts by some market participants suggest global GDP could decline by as much as 9% in the second quarter, before rebounding modestly over the remainder of the year.
- Further, commentary around GDP estimates suggests the risks are generally skewed to the downside, as some countries have begun removing social distancing policies despite a lack of meaningful improvement in the capacity to test for the virus, the expectation for a vaccine, or advancement in the ability to treat infected persons.

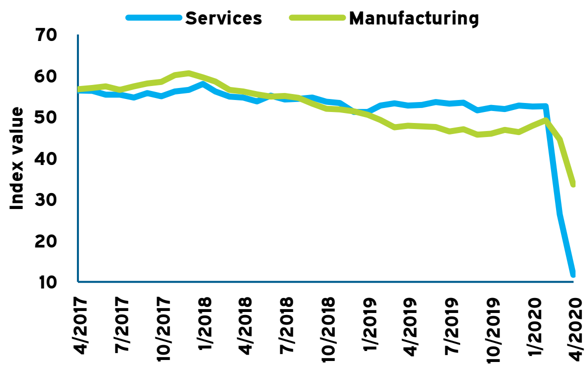
[1] Source: Oxford Economics. Updated April 2020. GDP data after Q1 2020 are estimates.

Global PMIs

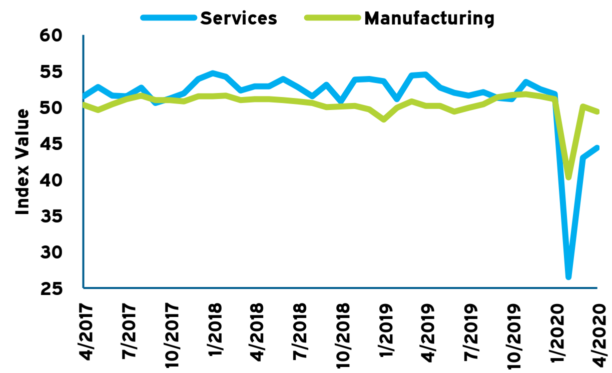
US PMI[1]



Eurozone PMI[2]



China PMI[3]



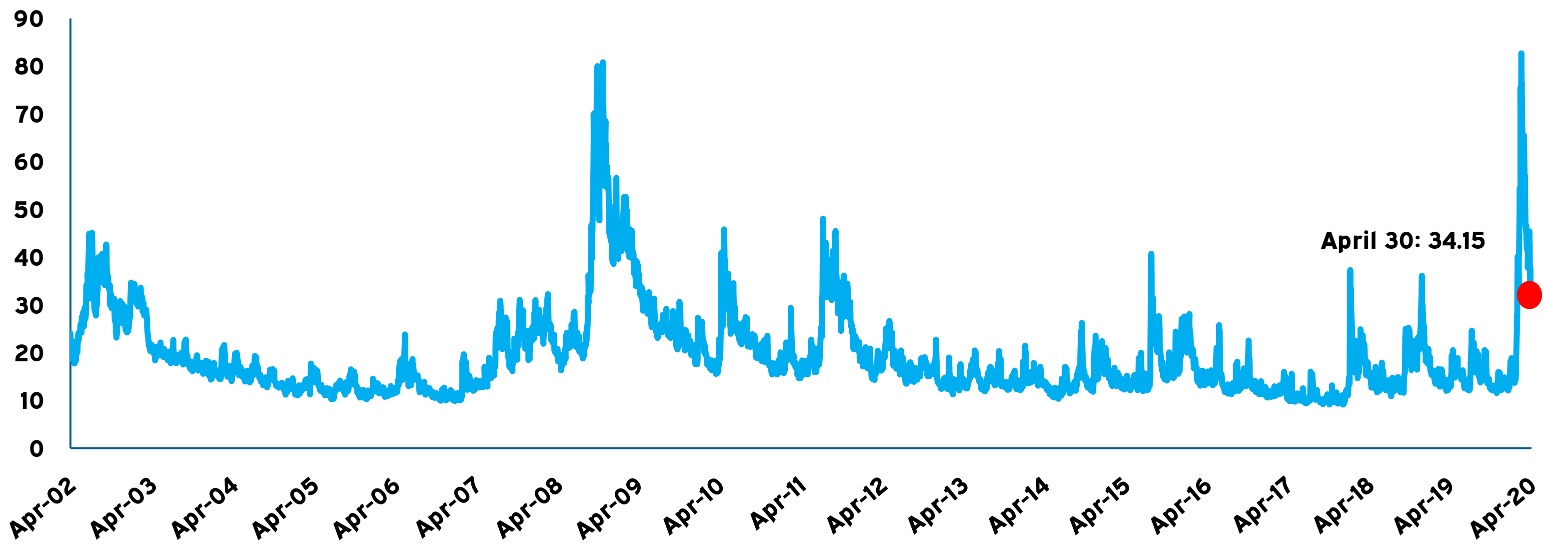
- Purchasing Managers Indices (PMI) based on surveys of private sector companies, collapsed across the world to record lows, as output, new orders, production, and employment have been materially impacted by closed economies.
- Readings below 50 represent contractions across underlying components and act as a leading indicator of economic activity, including the future paths of GDP, employment, and industrial production.
- The services sector has been particularly hard hit by the stay-at-home restrictions in many places.
- Recently, sentiment improved in China as the economy started to reopen, but risks remain to the downside including the potential for a spike in cases.

[1] Source: Bloomberg. US Markit Services and Manufacturing PMI. Data is as of April 2020.

[2] Source: Bloomberg. Eurozone Markit Services and Manufacturing PMI. Data is as of April 2020.

[3] Source: Bloomberg. Caixin Services and Manufacturing PMI. Data is as of April 2020.

Volatility[1]



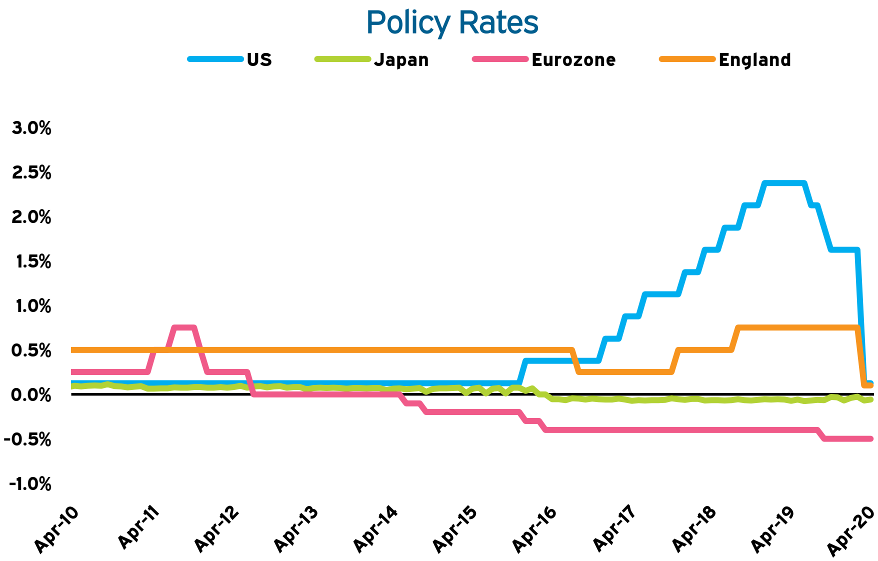
- With the recent fiscal and monetary support and corresponding improvement in investor risk sentiment, expectations of short-term volatility, as measured by the VIX index, continue to decline from record levels but remains elevated.
- At the recent height, the VIX index reached 82.7, surpassing the pinnacle of volatility during the GFC, showing the magnitude of the crisis, and of investor fear.
- Going forward, there remains the risk of additional spikes in volatility, as investors continue to process the impacts of COVID-19 and the effectiveness of the policy response.

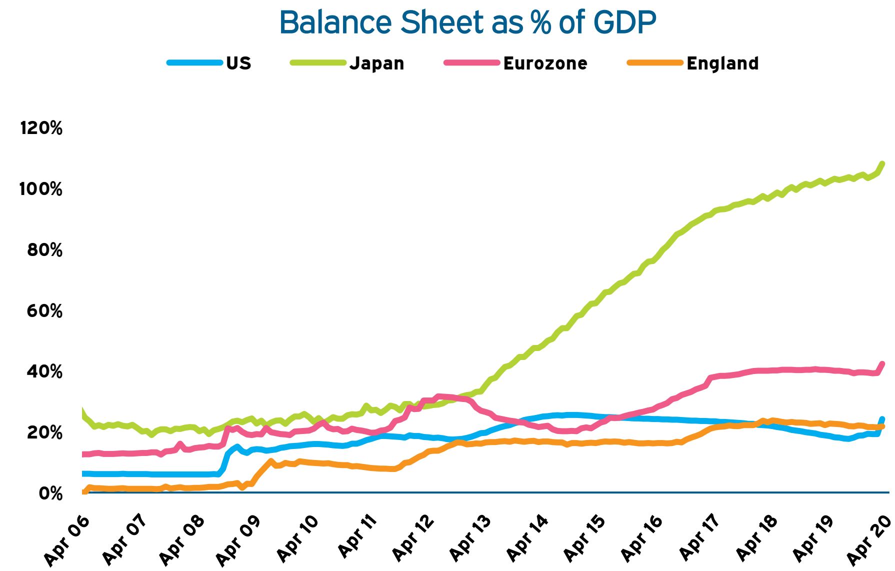
[1] Bloomberg. Represents daily VIX data and is as of April 30, 2020.

Policy Responses

	Fiscal	Monetary
United States	$50 billion to states for virus related support, interest waived on student loans, flexibility on tax payments and filings, expanded COVID-19 testing, paid sick leave for hourly workers, $2 trillion package for individuals, businesses, and state/local governments. Additional $484 billion package to replenish small business loans, provide funding to hospitals, and increase testing.	Cut policy rates to zero, unlimited QE4, offering trillions in repo market funding, restarted CPFF, PDCF, MMMF programs to support lending and financing market, expanded US dollar swap lines with foreign central banks, announced IG corporate debt buying program with subsequent amendment for certain HY securities, Main Street Lending program, Muni liquidity facility, repo facility with foreign central banks, and easing of some financial regulations for lenders.
Euro Area	Germany: Launched 750 billion euro stimulus package. France: 45 billion euro for workers, guaranteed up to 300 billion euro in corporate borrowing. Italy: 25 billion euro emergency decree, suspending mortgage payments for impacted workers. Spain: 200 billion euro and 700 million euro loan and aid package, respectively.	Targeted longer-term refinancing operations aimed at small and medium sized businesses, under more favorable pricing, and announced the 750 billion euro Pandemic Emergency Purchase Program. and then expanded the purchases to include lower-quality corporate debt
Japan	$20 billion in small business loans, direct funding program to stop virus spread among nursing homes and those affected by school closures, discussion of additional relief in the coming months, and $240 billion supplementary spending (pending).	Initially increased QE purchases (ETFs, corporate bonds, and CP) and then expanded to unlimited purchases and doubling of corporate debt and commercial paper, expanded collateral and liquidity requirements, and 0% interest loans to businesses hurt by virus
China	Tax cuts, low-interest business loans, extra payments to gov't benefit recipients.	Expanded repo facility, policy rate cuts, lowered reserve requirements.
Canada	$7.1 billion in loans to businesses to help with virus damage.	Cut policy rates, expanded bond-buying and repos, lowered bank reserve requirements.
UK (BOE)	Tax cut for retailers, small business cash grants, benefits for those infected with virus, expanded access to gov't benefits for self and un-employed.	Lowered policy rates and capital requirements for UK banks, restarts QE program and subsequently increased the purchase amounts.
Australia	$11.4 billion, subsidies for impacted industries like tourism, one-time payment to gov't benefit recipients.	Policy rate cut, started QE.

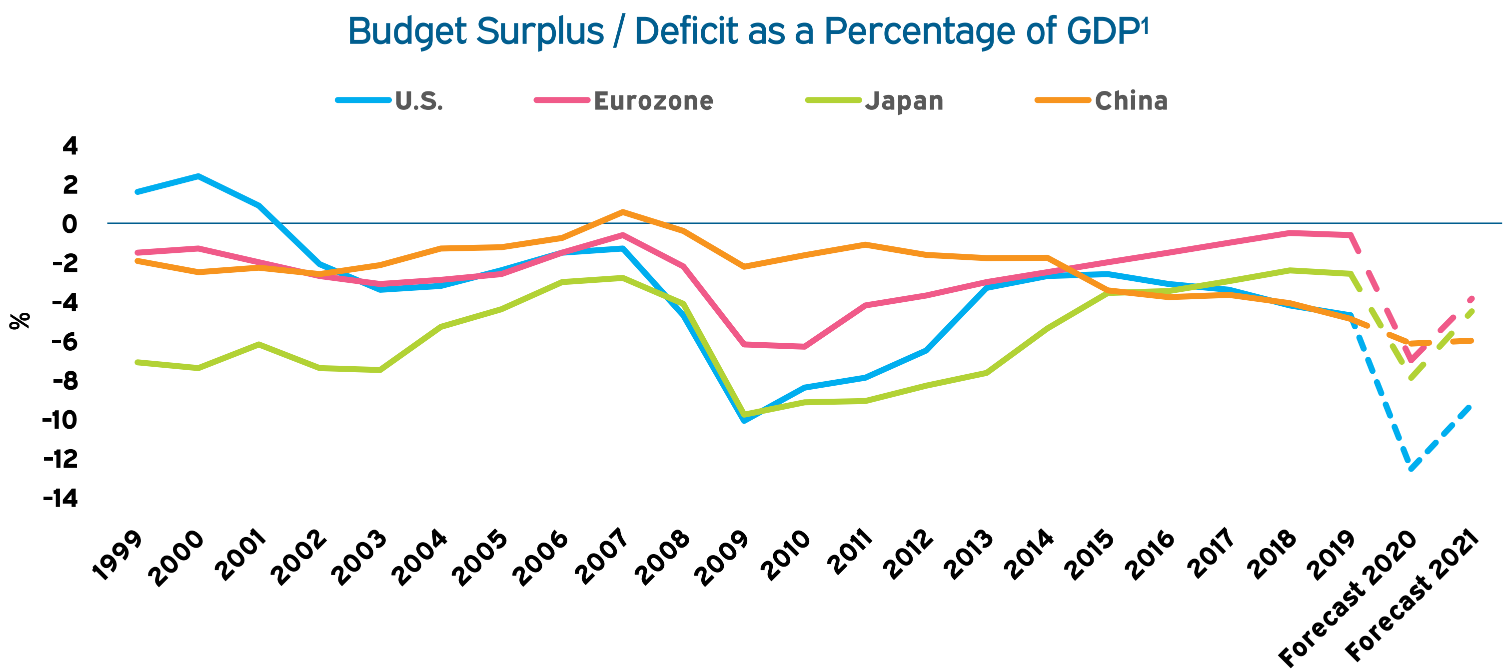
Central Bank Response[1]





- Global central banks took aggressive policy actions as signs of economic deterioration emerged due to the restrictions put in place to stop the spread of COVID-19.
- Broad measures include the cutting of policy rates, deploying emergency stimulus through expanded quantitative easing, liquidity programs to support funding markets, targeted refinancing operations, and forward guidance commitments to keep monetary policy accommodative until the pandemic is thoroughly under control.
- Uncertainties remain regarding the effectiveness of monetary policy supporting the economy through COVID-19, as well as their potential inflationary impacts and the ballooning of balance sheets.

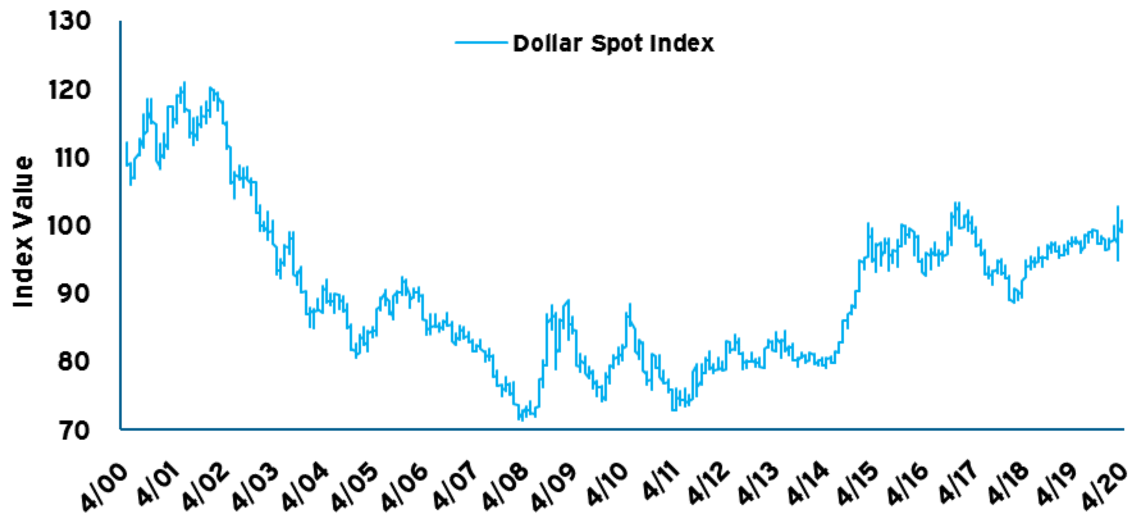
[1] Source: Bloomberg. Data is as of April 30, 2020.



- Budget deficits are expected to deteriorate meaningfully for developed economies due to the massive fiscal support and the severe economic contraction's impact on tax revenue.
- If fiscal and monetary policy stimulus measures fail to meaningfully stimulate growth over the coming years, deficits could remain historically high and potentially require additional sovereign debt issuance to cover the shortfall, which increases default and interest rate risks.

[1] Source: Bloomberg. Data is as of December 31, 2019. Projections via IMF World Economic Outlook April 2020.

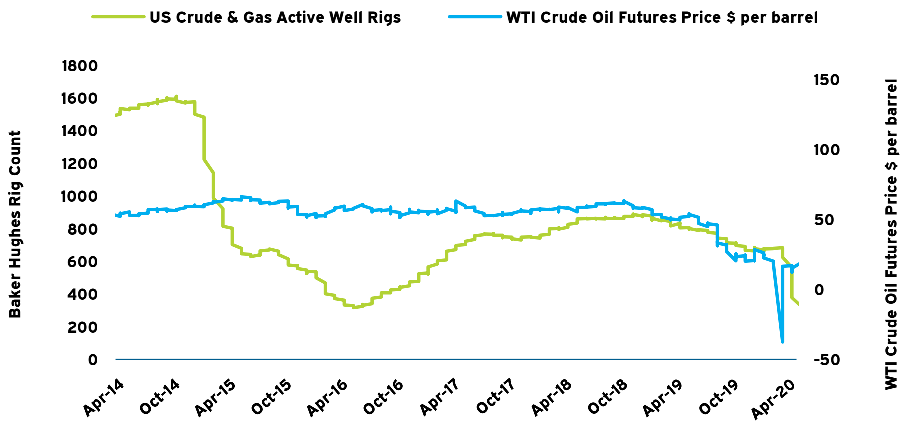
US Dollar versus Broad Currencies[1]

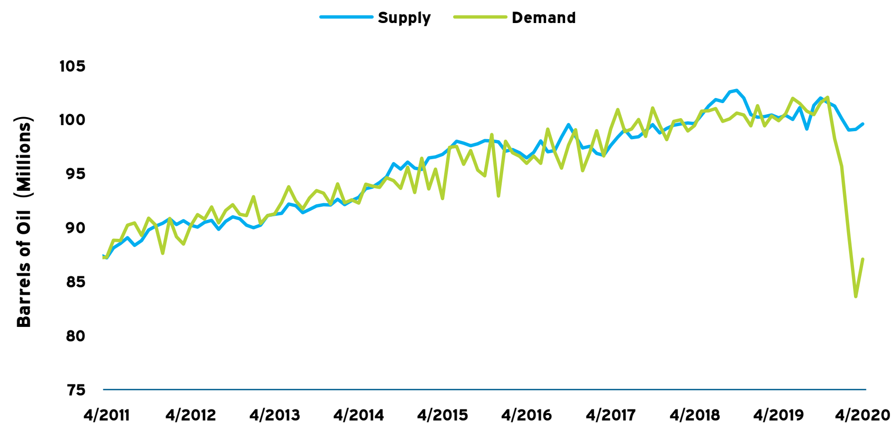


- When financial markets began aggressively reacting to the COVID-19 developments, the US dollar experienced notable selling pressure as investors sought safe-haven exposure in currencies like the Japanese yen.
- As the crisis grew into a pandemic, investors' preferences shifted to holding US dollars and highly liquid, short-term securities like US Treasury bills. This global demand for US dollars led to appreciation versus most major currencies.
- To help ease the heighted demand for US dollars, the Federal Reserve, working with a number of global central banks, re-established the US dollar swap program, providing relief to other currencies.
- A strong US dollar makes US goods more expensive for overseas consumers and causes commodity prices outside the US to rise, affecting foreign countries, and particularly emerging markets.

[1] Source: Bloomberg. Data is as of April 30, 2020.

Oil Price and Rig Activity[1]

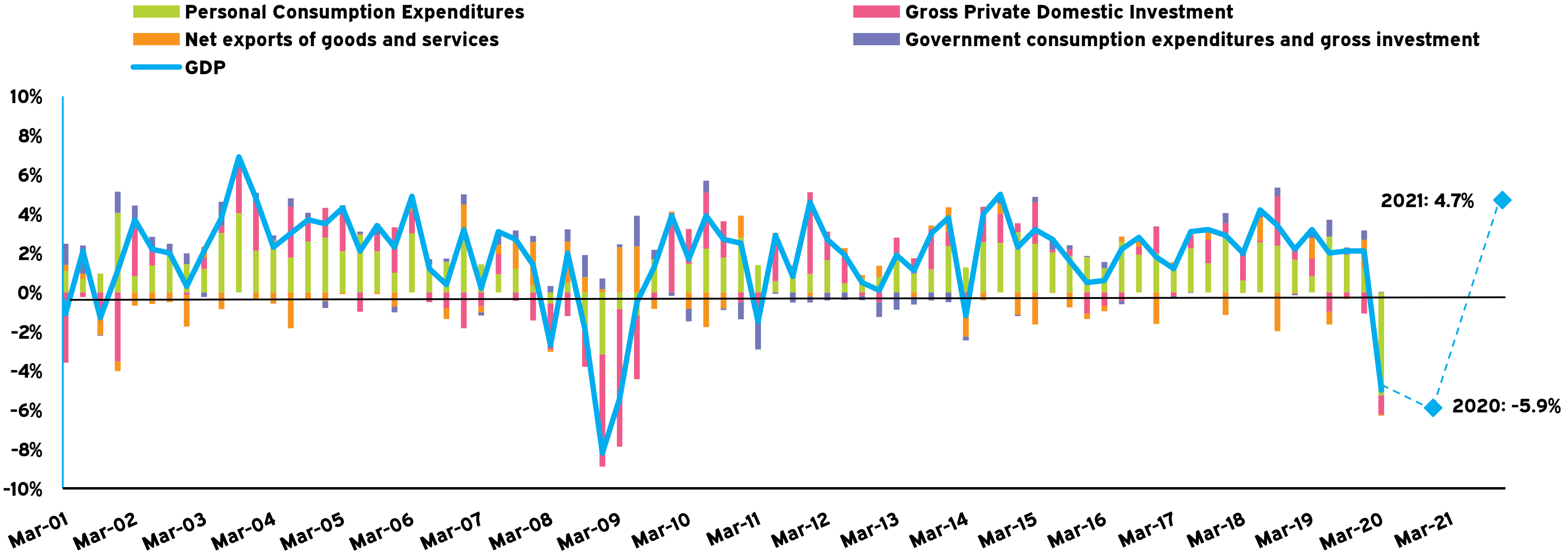




- Recently, in an unprecedented move, oil prices plunged to negative levels on concerns over storage capacity in the US due to declines in demand, leading producers to pay to offload their oil for May delivery. Consistent with demand disruptions, active well rigs declined to multi-year lows as companies shutter drilling operations.
- Negative prices were driven by the futures market stipulation of physical delivery of oil at contract expirations. As the May expiration date approached, traders sold the contracts given extremely low demand and storage constraints.
- Prior to this, oil markets were already under pressure as the virus lowered global growth expectations, and prices deteriorated further when Saudi Arabia initiated a price war after Russia's decision to not participate in the proposed OPEC+ supply cuts. Russia ultimately agreed to participate and this, along with optimism over economies starting to reopen, provided some support to oil recently.

[1] Source: Bloomberg. Data is as of April 30, 2020.

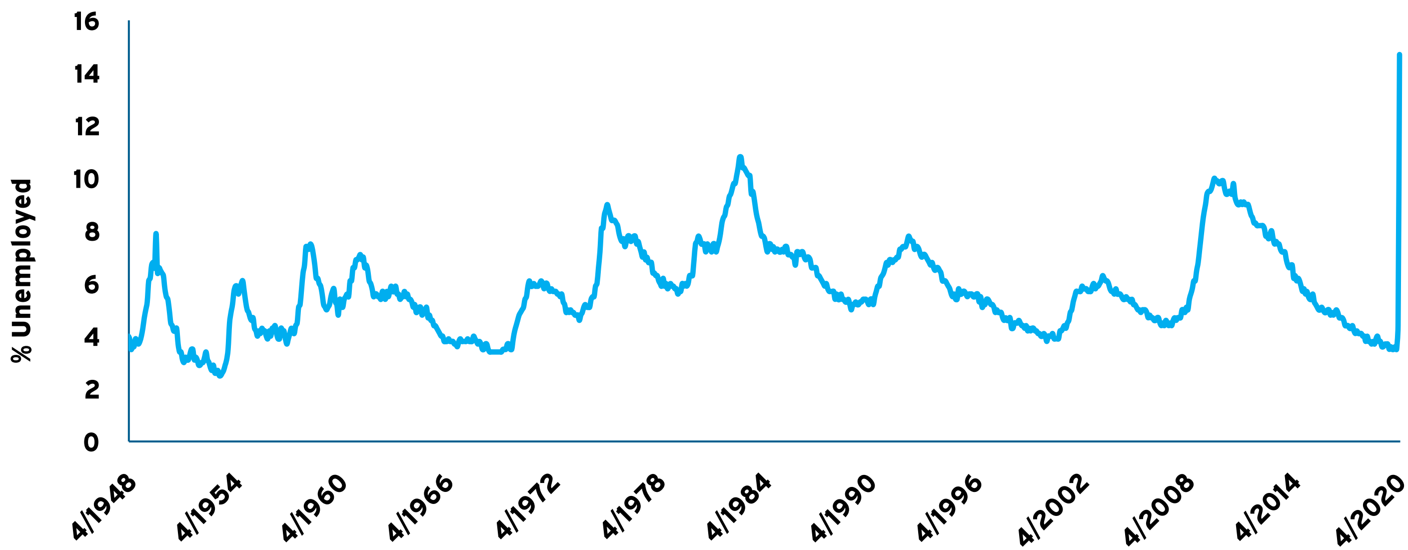
US Real Gross Domestic Product (GDP) Growth[1]



- The third estimate of first quarter US GDP showed a decline of 5.0%, slightly more than the initial -4.8% estimate, and a dramatic change compared to the prior quarter increase of 2.1%.
- The decline in first quarter GDP was primarily due to government "stay-at-home orders" as a response to the COVID-19 pandemic. Personal consumption expenditures was the biggest drag on GDP growth, falling the most since 1980.
- US growth is forecasted to rebound by 4.7% in 2021, as the economy normalizes. The risk remains though that opening too soon could cause a spike in cases and consumers might be slow to return to their prior behaviors.

[1] Source: US Bureau of Economic Analysis. Data is as of the first quarter of 2020 and represents the third estimate. Annual projections via IMF World Economic Outlook April 2020 thereafter.

US Unemployment Rate[1]

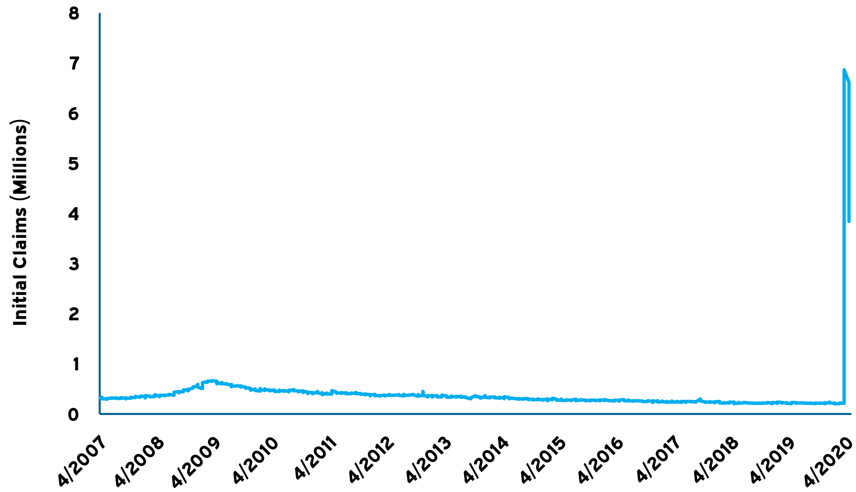


- April unemployment came in at 14.7%, slightly below estimates of 16%, but representing the highest level since the Great Depression.
- The Bureau of Labor Statistics commented in their release that a large number of workers were likely being misclassified as “employed but absent from work” versus “unemployed on temporary layoff” and that the unemployment rate could be 5% higher than reported.

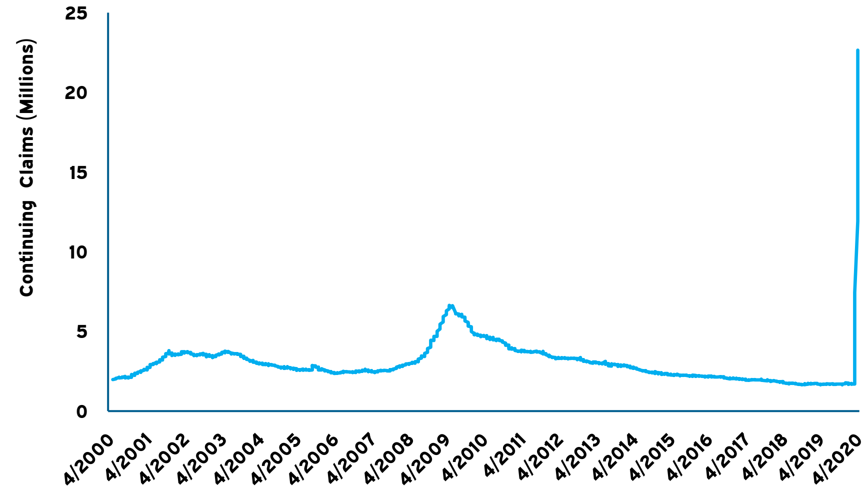
[1] Source: Bloomberg. Data is as of April 30, 2020.

US Jobless Claims

US Initial Jobless Claims[1]



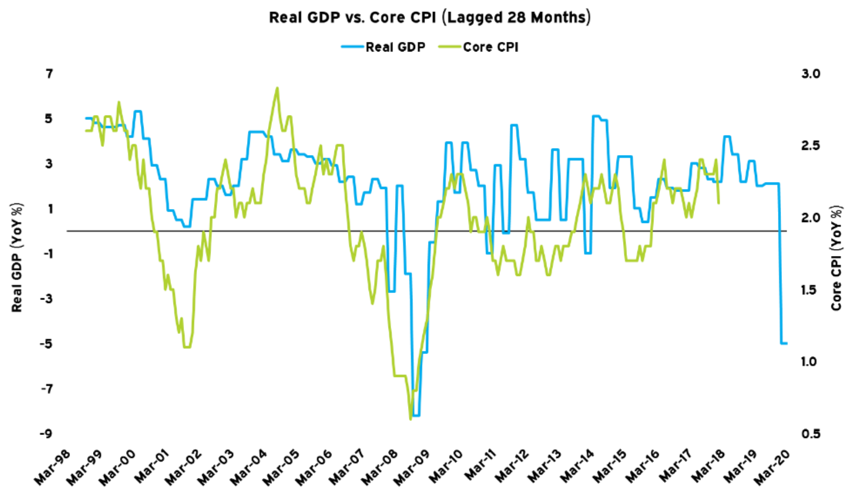
Continuing Claims[2]

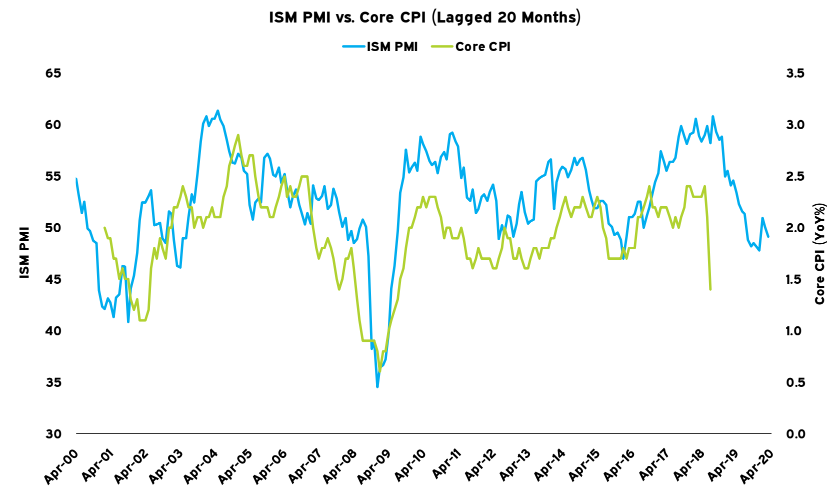


- Through April, over 33 million people filed for initial unemployment benefits. This level exceeds the 22 million jobs added since the GFC, highlighting that this situation is without precedent.
- Continuing jobless claims (i.e., those currently receiving benefits) also spiked to a record level of 22.6 million people.

[1] Source: Bloomberg. First reading of seasonally adjusted initial jobless claims. Data is as of April 25, 2020.
[2] Source: Bloomberg. US Continuing Jobless Claims SA. Data is as of April 24, 2020.

US Inflation[1, 2]





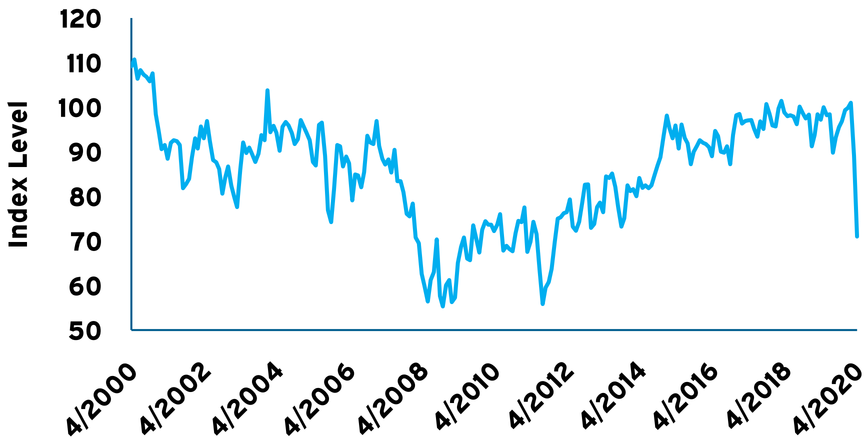
- Inflation is considered a lagging indicator, representing past economic conditions.
- This leads to economic conditions today being a means of forecasting future inflation levels.
- Real GDP and manufacturing indicators, like the ISM Purchasing Managers Index, have historically been useful indicators of future inflation.
- Recently, manufacturing data and GDP declined dramatically from their peaks, leading to aggressive fiscal and monetary responses in the US (and globally) to help mitigate the impact of the pandemic on the global economy.
- As fiscal and monetary policy measures stimulate the economy, we could ultimately see increases in growth and inflation but, in the short-term, deflationary risks are of a greater concern.

[1] Source: Bloomberg. Data is monthly and as of March 31, 2020 for Core CPI. Data for US Real GDP is quarterly and as of the first quarter (third estimate). It is compared to each monthly CPI data point for the respective quarter for illustrative purposes.

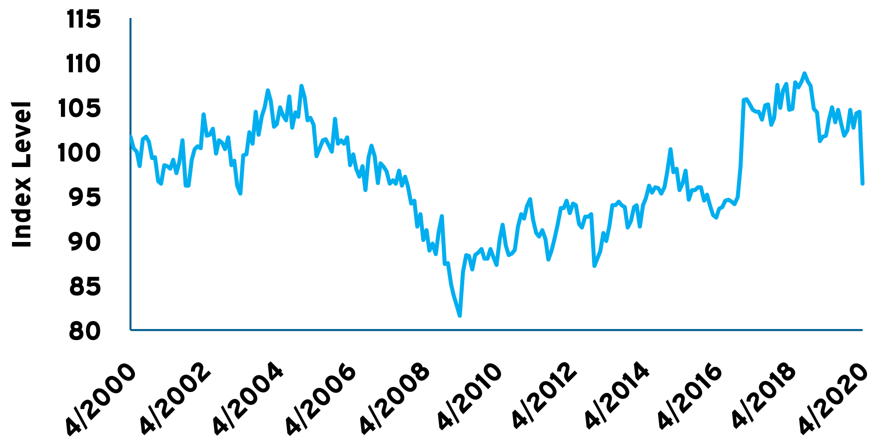
[2] The last data point for ISM PMI and Core CPI represents the April 30, 2020 value.

Sentiment Indicators

University of Michigan Consumer Sentiment[1]



Small Business Confidence[2]



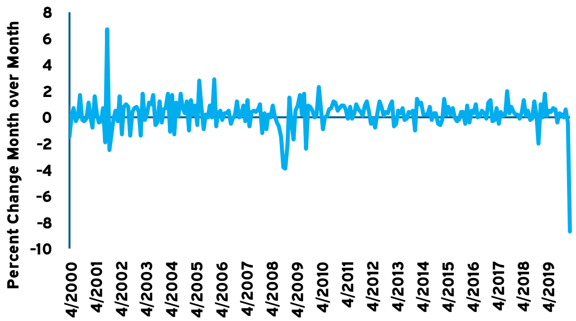
- The attitudes of businesses and consumers today are often a useful indicator of future economic activity.
- Consumer spending comprises close to 70% of US GDP, making the attitudes of consumers an important driver of future economic growth. Additionally, small businesses comprise a majority of the economy, making sentiment in that segment important too.
- As restrictions caused many businesses to close and employees to be laid off, sentiment indicators saw corresponding declines, with potentially more to come as the impact of the virus evolves.

[1] Source: Bloomberg. University of Michigan Consumer Sentiment Index. Data is as of April 30, 2020.

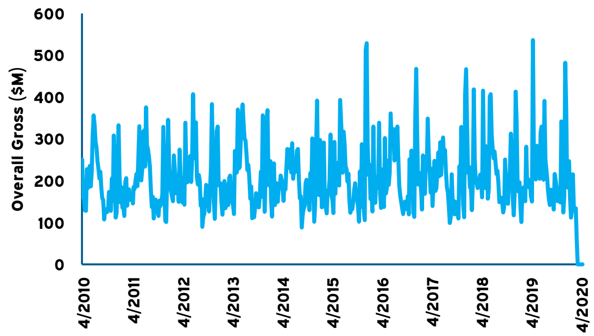
[2] Source: Bloomberg. NFIB Small Business Optimism Index. Data is as of April 30, 2020.

US High Frequency Data

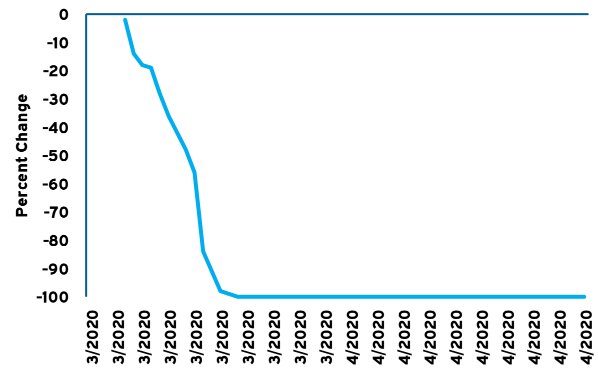
US Retail Sales[1]



Box Office Sales[2]



Restaurant Traffic[3]



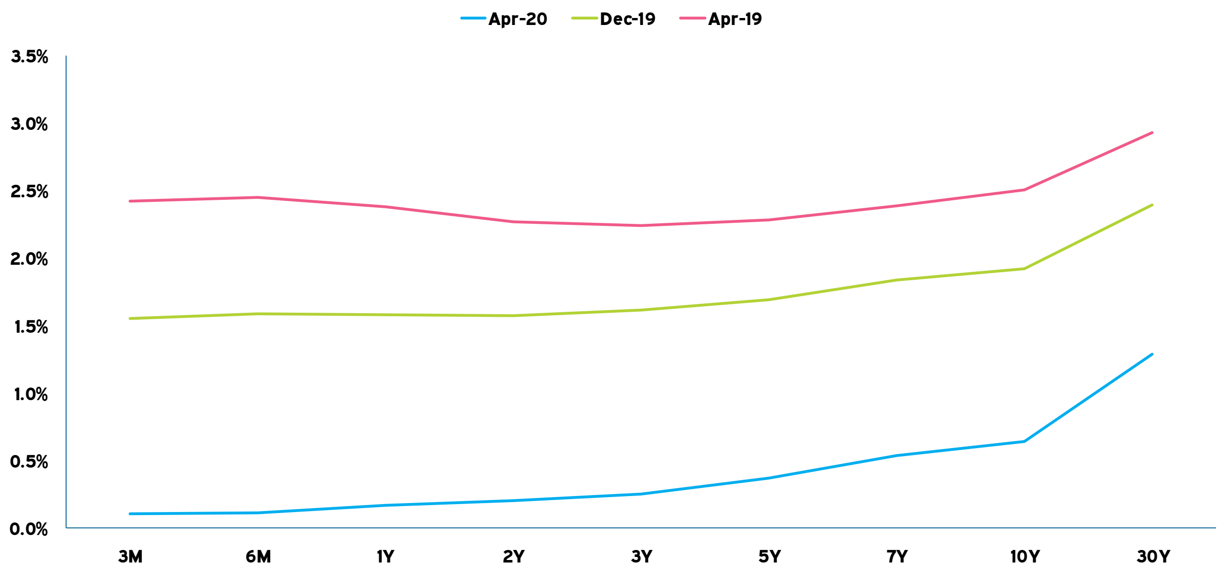
- Due to stay-at-home orders and forced business closures, many industries have seen revenues plummet, and in some cases, virtually vanish.
- Companies operating in the retail, restaurant, and movie theater industries have been impacted dramatically.
- Looking forward, improvements in these indicators could offer early signs of a decline in the virus' economic impact.

[1] Source: Bloomberg. Data is as of April 30, 2020 and represents the adjusted Retail Sales SA Monthly % Change.

[2] Source: Bloomberg. Represents overall domestic weekly overall box office gross. Data is as of April 30, 2020.

[3] Source: Bloomberg. This data shows year-over-year seated diners at restaurants on the OpenTable network across all channels: online reservations, phone reservations, and walk-ins. Only states or cities with 50+ restaurants in the sample are included. All such restaurants on the OpenTable network in either period are included. Data is as of April 30, 2020. Index start date 2/19/20.

US Yield Curve[1]

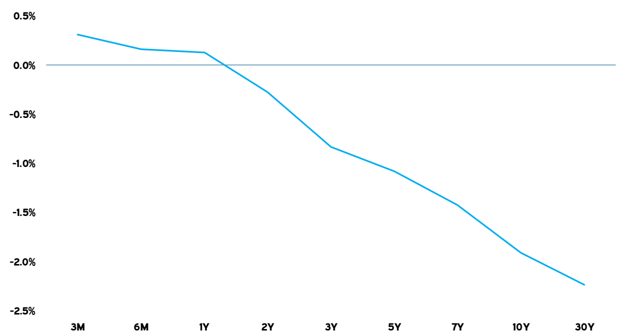


- The US Treasury yield curve has declined materially since last year.
- Cuts in monetary policy rates lowered yields in shorter maturities, while flight-to-quality flows, low inflation, and lower growth expectations, particularly given indications that economic growth could slow by record amounts, have driven the changes in longer maturities.
- The Federal Reserve's unlimited quantitative easing purchase program has provided further downward pressure on interest rates.

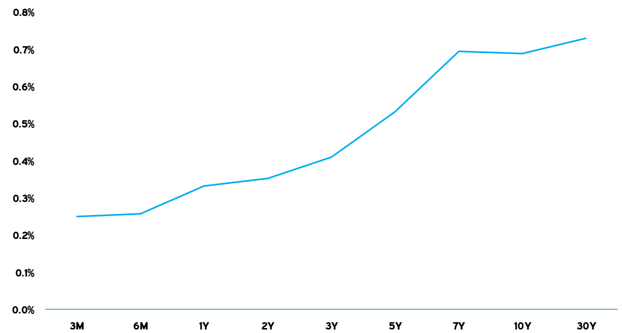
[1] Source: Bloomberg. Data is as of April 30 2020. Numbers represent month-end values.

Government Sovereign Debt Curves[1]

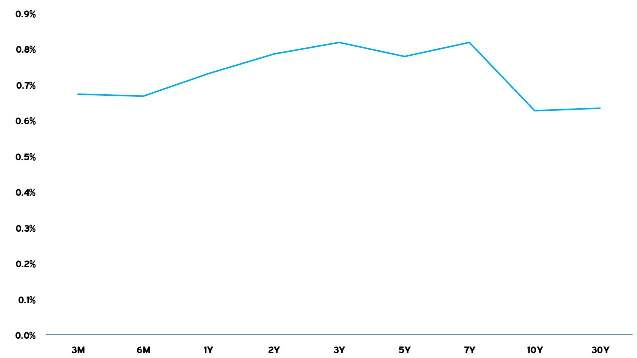
US/Italy Rate Differential



US/Japan Rate Differential



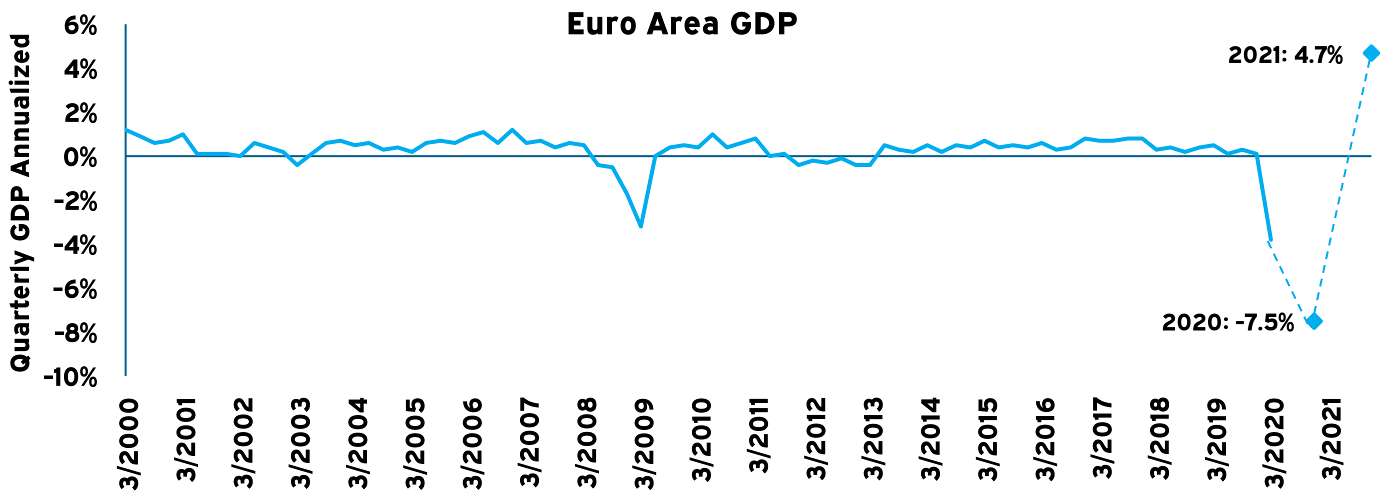
US/Germany Rate Differential



- The difference in interest rates between the US and other countries narrowed dramatically versus the last quarter, as the entire US yield curve shifted lower.
- This dynamic was driven by the Federal Reserve's policy response on short-term rates, a broad decline in US growth and inflation expectations, and the perceived safe-haven quality of US Treasuries during the height of investor fear.
- Compared to Japanese and German sovereign debt yields, rates remain higher in the US across the yield curve. However, the majority of the US yield curve is now lower than that of Italy, given greater risks to the Italian economy from the impact of COVID-19.

[1] Source: Bloomberg. Data is as of April 30, 2020. Rate differential data represents the differences in the yield for a US Treasury at each maturity versus the respective similar bond for each country.

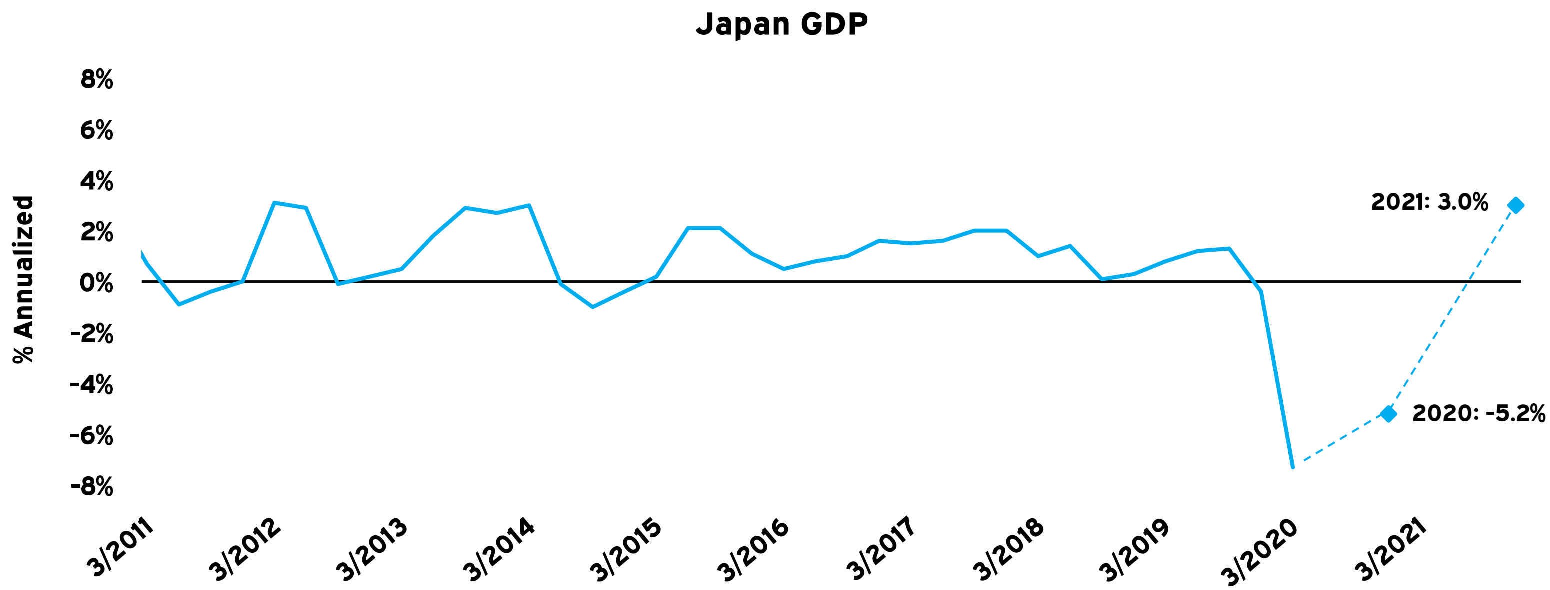
European Economic Conditions[1]



- Euro area GDP fell 3.8% in the first quarter, slightly more than the 3.5% estimate, but consistent with weakness experienced across other developed economies. Projections for the full year are approximately -7.5%.
- Economic growth is expected to be around 4.7% in 2021 for the broad euro-area, but with the same risks as the US of potentially reopening economies too soon.
- Major economies such as France, Spain, and Italy have been materially impacted by distancing measures, and are expected to decline by as much as 7.2% (France), 8.0% (Spain), and 9.1% (Italy); recovery estimates for 2021 are around 4.5% for all three economies.

[1] Source: Bloomberg. Data is as of the first quarter of 2020. Annual projections via IMF World Economic Outlook April 2020 thereafter.

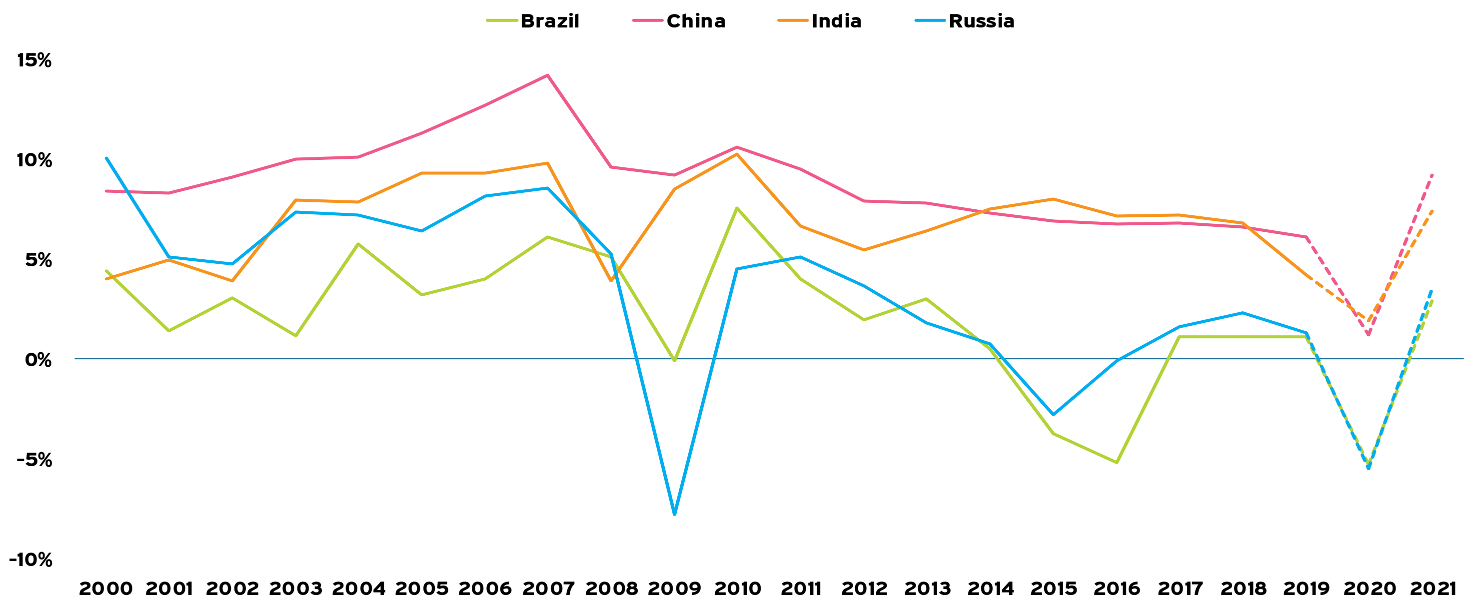
Japanese Economic Conditions[1]



- Before the spread of the COVID-19 virus, Japan's economy was already experiencing stress, with GDP declining 1.8% in the fourth quarter of 2019, as consumption declined due to the October sales tax hike.
- In the first quarter, GDP declined by an additional 0.9% driven by COVID-19 impacts and bringing Japan into a recession.
- Of all the major economies, Japan's central bank had the largest stimulus in place coming into the crisis that they, like others, expanded to offset the economic impact of restrictions.
- Similar to other major economies, the Japanese economy is expected to decline in 2020, but recover in 2021.

[1] Source: Bloomberg. Data is as of the first quarter of 2020. Annual projections via IMF World Economic Outlook April 2020 thereafter.

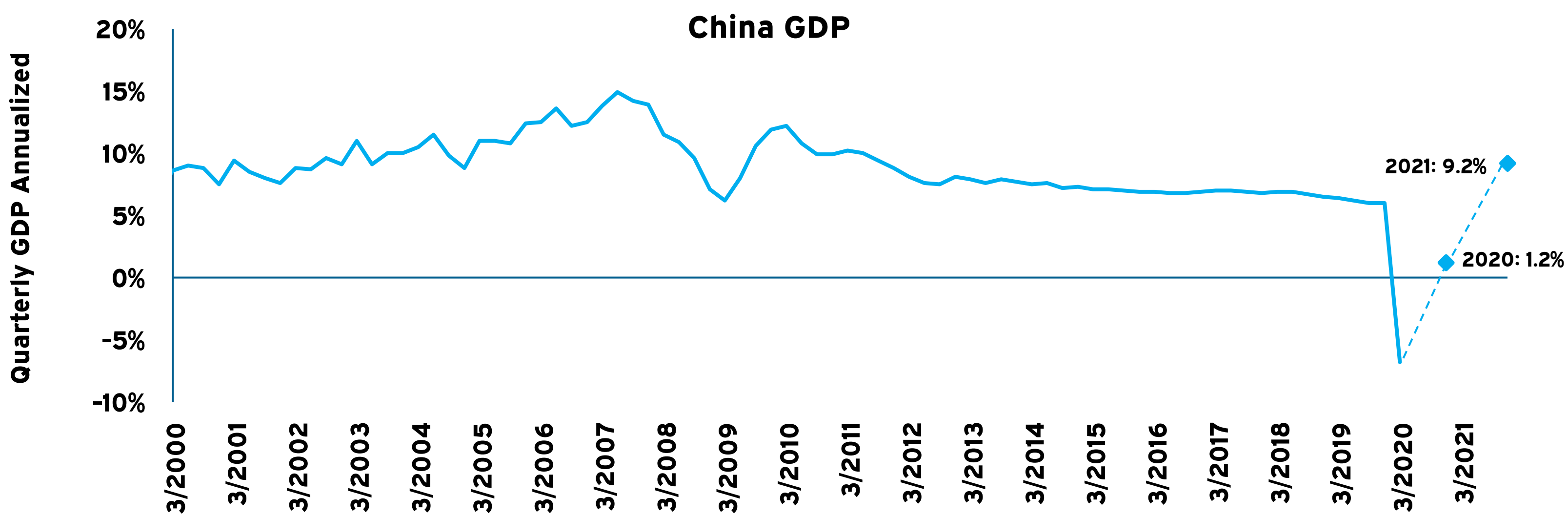
Emerging Market GDP[1]



- Emerging markets, broadly, are expected to see economic deterioration similar to developed economies.
- However, some economies such as China and India, are expected to experience less impact, largely due to the aggressive societal measures taken to mitigate the spread of the virus, which, in the case of China, has allowed authorities to re-open sooner than other economies.
- However, as some countries also experience increased infection rates after re-opening parts of their economies, it is far too early to express much confidence in recovery estimates.

[1] Source: IMF. World Economic Outlook. April 2020 update. Estimates start after 2019.

China Economic Conditions[1]



- Growth projections are also weak for emerging and developing economies, although China is expected to post positive growth of 1.2% for 2020, and a significant 9.2% in 2021.
- The positive growth expectations are largely due to the Chinese government's ability to quickly impose aggressive distancing measures, largely isolate and contain the virus, and then quickly move to re-open their economy.

[1] Source: Bloomberg. Data is as of the first quarter of 2020. Annual projections via IMF World Economic Outlook April 2020 thereafter.

Summary

Several issues are of primary concern in the mid- to long-term:

1) Economies opening too soon from virus-related restrictions, and ultimately needing to re-deploy distancing policies.

- A number of countries, including the US, are beginning to lift social distancing restrictions. These measures have helped slow the spread of the virus, but there is a significant risk in lifting them without proper testing and without following recommendations from experts. The result could be a meaningful increase in infections, and potentially another spike that again puts medical facilities at risk of being overwhelmed. This could move governments to re-impose distancing measures, which would likely depress employment and economic growth.

2) Consumers permanently, or for an extended period of time, changing economic behaviors.

- The COVID-19 pandemic resulted in an immediate change to societal norms that could last beyond the actual virus. Changing consumer spending and work-environment preferences could negatively impact large events including concerts and sports, dining out, travel, and leisure activities. As consumers make up a large portion of developed economy GDPs, this could have a significant impact and drive many companies to failure with lasting impacts on the economy.

Summary (continued)

3) Persistently high unemployment due to a significant number of companies not surviving the downturn.

- Persistently high unemployment due to the failure of companies (and potentially entire sectors) could adversely impact the growth of economies and, subsequently, government spending on mandatory and discretionary services going forward.

4) Virus-related fears negatively impacting the future of globalization.

- Appetite for globalization was already waning before the pandemic, as seen in the increase in populist and anti-trade sentiment over the last few years. This has been perhaps most evident in the trade wars initiated by the current US administration against a number of its trading partners, including China and Europe. With an increase in rhetoric regarding certain countries not doing enough to limit the spread of the virus outside their borders, as well as restrictions on transportation and sanitation concerns, many countries could elect to advance policies that limit globalization.

5) An increase in sovereign debt risk due to the record issuance by governments.

- Sovereign debt issuance needed to fund emergency fiscal stimulus measures for impacted countries has been record setting. Unfortunately, sovereign debt levels, particularly for the US, were already at record levels. With this increase in debt issuance comes an increase in risk of sovereign nations not being able to pay back their debt in the future should revenue fail to meet debt payment requirements. This is particularly critical for the worlds' largest economies, such as Japan with a debt to GDP ratio of over 200%, and the US at nearly 110%.

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