MARKET INSIGHTS

Market Bulletin

12 March 2020

Monitoring the global impact of COVID-19

The spread of the coronavirus and its impact on global economic activity are increasingly troubling investors. Trying to predict the final outcome is a fool's errand. Instead, in this piece we provide a framework for tracking infection rates globally, monitoring the impact on economic activity using high frequency or daily data, and assessing the economic linkages that could serve to transmit economic stress. We then consider government and central bank interventions that might support the households and firms affected and facilitate an economic recovery, as well as providing an overview of the market reaction to date.

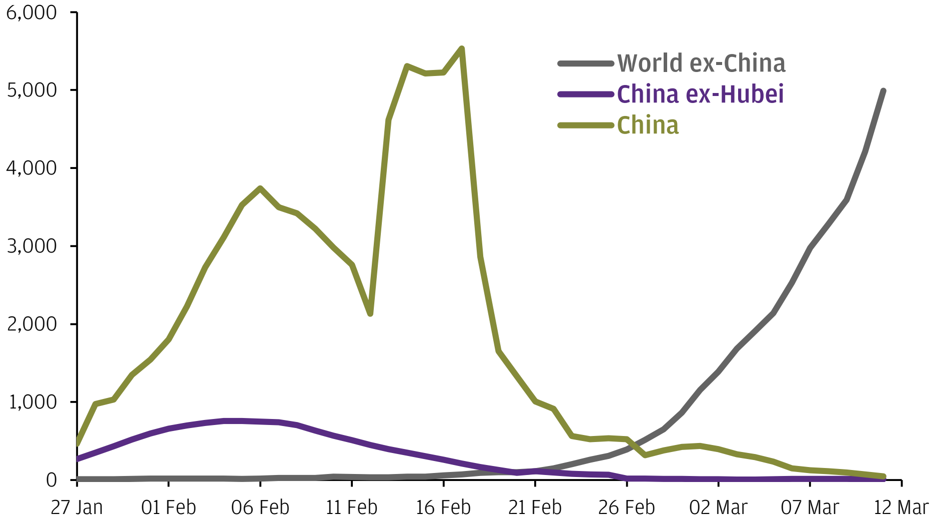
The clear investment implication is that, even more than usual, a well-diversified portfolio is essential. This includes diversification by region but also by asset class. Core government bonds have performed strongly. However, further upside for US Treasuries and UK gilts will be more limited from here unless these central banks shift their guidance that they do not intend to take interest rates into negative territory. Investors may wish to consider alternative diversifiers such as macro funds, or real assets if liquidity is not a requirement.

What are the latest virus statistics?

Exhibits 1-3 provide the latest data on the spread of coronavirus. The daily rate of infection has showed some initial signs of slowing in China and South Korea, though it has taken significant restrictions on travel. Whether a loosening of travel restrictions leads to a resurgence is yet to be seen. Of clear concern is the speed with which infections are increasing outside of China. There has been a notable pickup of cases in Japan, as well as a rise in cases across Europe and the US.

EXHIBIT 1: COVID-19 DAILY INCREASE IN CONFIRMED CASES

Five-day moving average



Source: Johns Hopkins CSSE, J.P. Morgan Asset Management. Data as of 11 March 2020.

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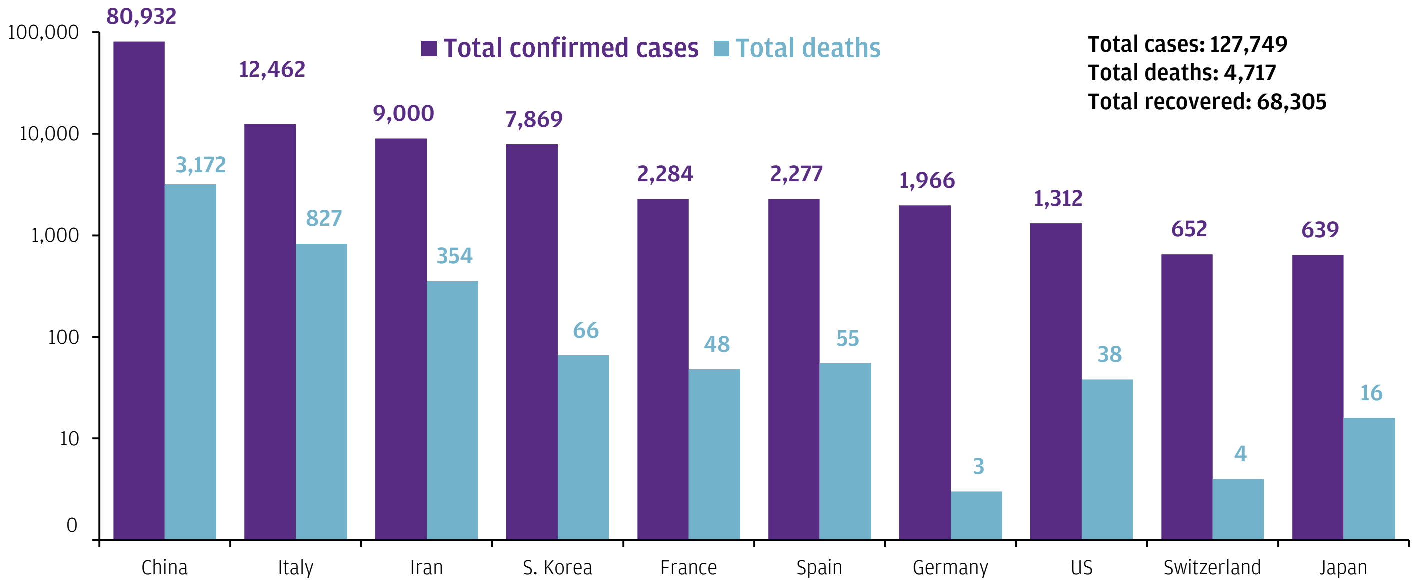
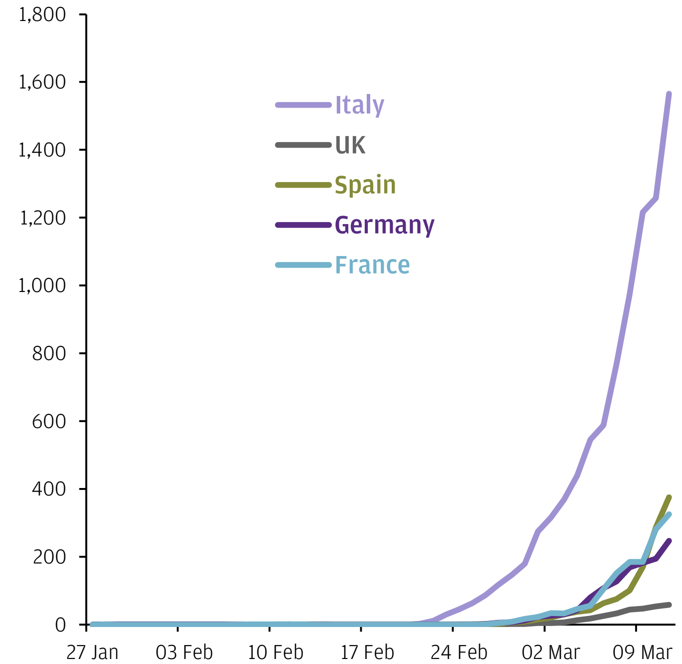
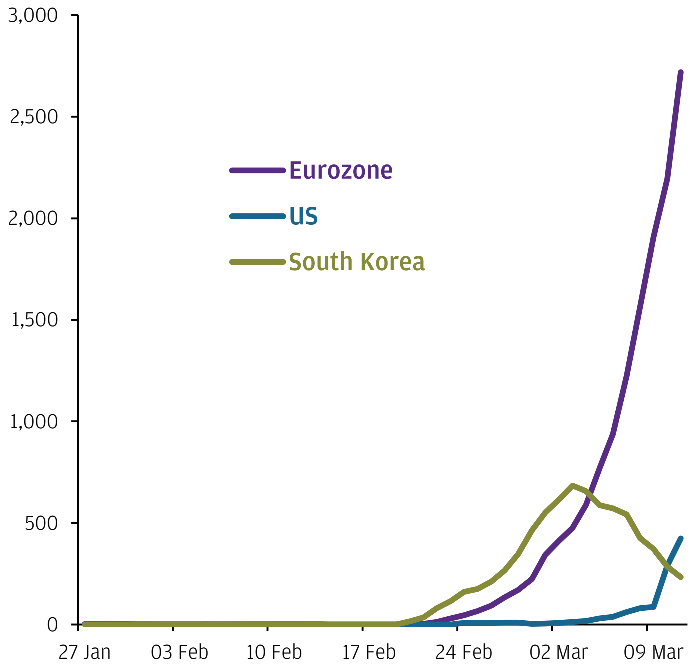
EXHIBIT 2: COVID-19 CONFIRMED CASES AND DEATHS BY COUNTRY
Log scale



Source: Johns Hopkins CSSE, J.P. Morgan Asset Management. Data as of 12 March 2020.

EXHIBIT 3: COVID-19 DAILY INCREASE IN CONFIRMED CASES
5-day moving average





Source: Johns Hopkins CSSE, J.P. Morgan Asset Management. Data as of 11 March 2020.

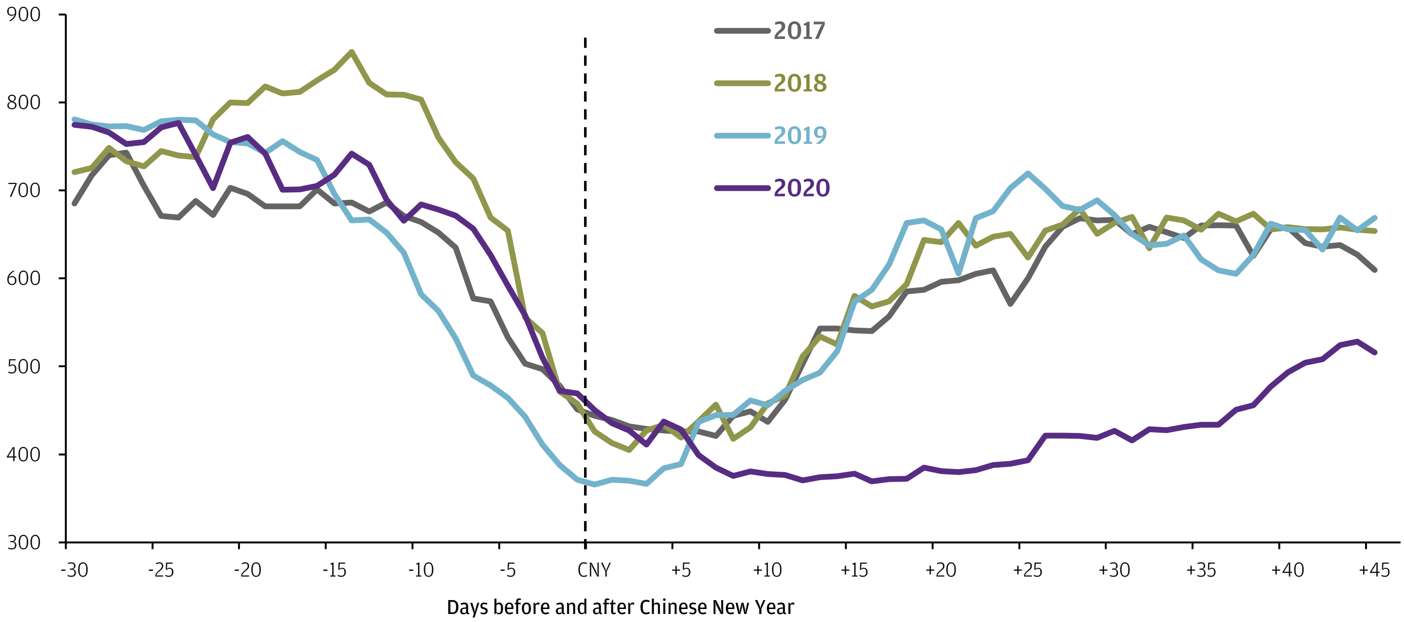
How is current production being affected in China and elsewhere?

The outbreak in China coincided with the Chinese New Year period. To reduce the spread of infection, there have been significant restrictions on travel and production in China. Some key manufacturing provinces, such as Guangdong, Jiangsu and Zhejiang (which together account for 27% of China's GDP and 55% of China's exports), have seen new infection numbers come down significantly. Yet quarantine policy and travel restrictions mean workers are struggling to return to work. This is impacting national and regional supply chains.

The following charts provide what we believe to be the timeliest daily indicators of Chinese activity. **Exhibit 4** shows daily coal consumption, which in turn reflects electricity and energy demand for broader economic activity. Clearly, the rebound that is usually seen after the New Year holiday has yet to materialize. **Exhibit 5** tracks migrant flows into and out of two of the key cities. Again, the flow of workers back to the cities after the New Year celebrations has been delayed, with only tentative signs of a recent pickup.

EXHIBIT 4: COAL CONSUMPTION IN CHINA

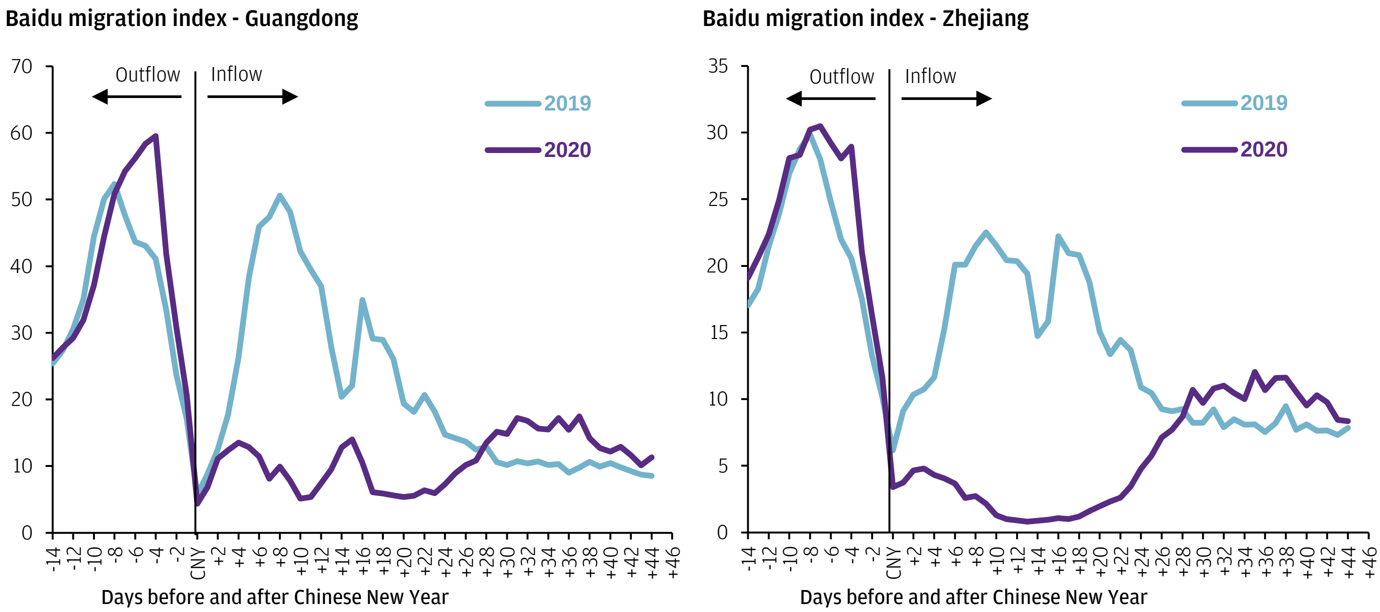
Thousand tons per day



Source: Wind, J.P. Morgan Asset Management. CNY = Chinese New Year. Data as of 11 March 2020.

EXHIBIT 5: CHINESE MIGRATION PATTERNS

Index level



Source: Baidu, J.P. Morgan Asset Management. CNY = Chinese New Year. Data as of 10 March 2020.

Production outages in China alone were enough to give us cause for global concern. China is an increasingly important engine of global growth. In 2018, growth in China accounted for 28% of total global growth.

Exhibit 6 captures the export connections between countries. The Asian countries most exposed to a Chinese slowdown, when considering the importance of their exports as a percent of their total output, are Hong Kong, Singapore, South Korea and Malaysia. The transmission differs by country. In Latin America, while the region has been less affected by virus cases so far, links with Asia via exports and commodities are likely to impact high-beta markets such as Brazil.

EXHIBIT 6: GLOBAL GOODS EXPORT LINKAGES

Goods exports as % of origin country nominal GDP, 2018

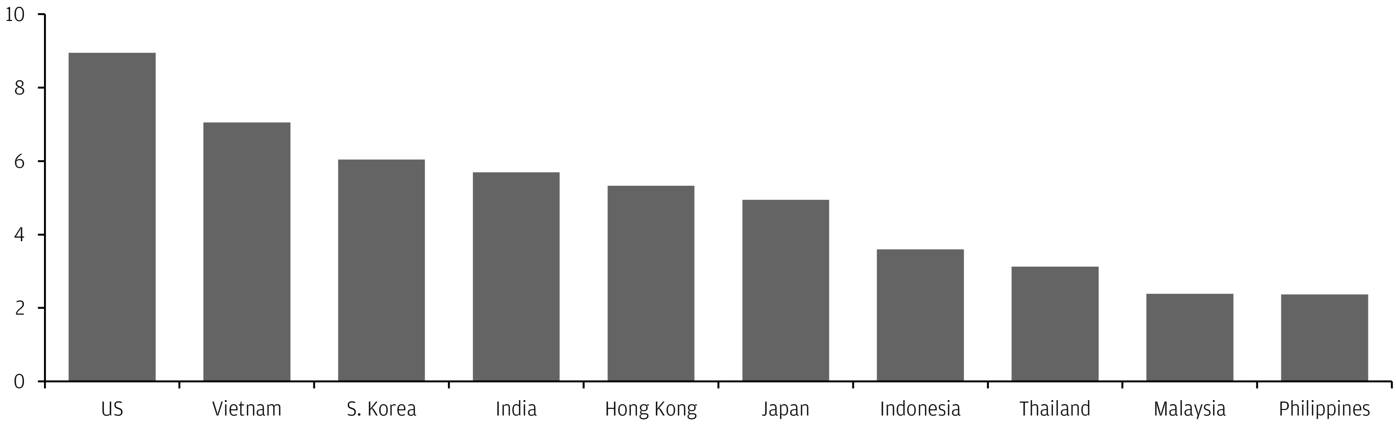
Exports from \ Exports to	Brazil	China	France	Germany	Hong Kong	India	Indonesia	Italy	Japan	Malaysia	Philippines	Russia	Saudi Arabia	Singapore	South Korea	Thailand	UK	US	Vietnam	World
Brazil	-	3.4%	0.1%	0.3%	0.1%	0.2%	0.1%	0.2%	0.2%	0.1%	0.0%	0.1%	0.1%	0.2%	0.2%	0.1%	0.2%	1.5%	0.1%	12.8%
China	0.2%	-	0.2%	0.6%	2.2%	0.6%	0.3%	0.2%	1.1%	0.3%	0.3%	0.3%	0.1%	0.4%	0.8%	0.3%	0.4%	3.5%	0.6%	18.0%
France	0.2%	0.9%	-	3.0%	0.3%	0.3%	0.1%	1.6%	0.3%	0.1%	0.0%	0.2%	0.2%	0.4%	0.2%	0.1%	1.4%	1.6%	0.1%	20.9%
Germany	0.3%	2.8%	3.2%	-	0.2%	0.4%	0.1%	2.1%	0.6%	0.2%	0.1%	0.8%	0.2%	0.2%	0.5%	0.2%	2.5%	3.4%	0.1%	39.5%
Hong Kong	0.4%	86.7%	1.3%	2.7%	-	4.9%	0.9%	1.0%	4.6%	1.2%	1.1%	1.0%	0.3%	3.4%	2.2%	3.7%	1.8%	12.7%	2.9%	157.0%
India	0.1%	0.6%	0.2%	0.3%	0.5%	-	0.2%	0.2%	0.2%	0.2%	0.1%	0.1%	0.2%	0.4%	0.2%	0.2%	0.4%	1.9%	0.2%	11.9%
Indonesia	0.1%	2.6%	0.1%	0.3%	0.2%	1.3%	-	0.2%	1.9%	0.6%	0.7%	0.1%	0.1%	1.2%	0.8%	0.7%	0.1%	1.8%	0.4%	16.7%
Italy	0.2%	0.7%	2.8%	3.3%	0.3%	0.2%	0.1%	-	0.4%	0.1%	0.0%	0.4%	0.2%	0.1%	0.3%	0.1%	1.3%	2.4%	0.1%	26.4%
Japan	0.1%	2.9%	0.1%	0.4%	0.7%	0.2%	0.3%	0.1%	-	0.3%	0.2%	0.1%	0.1%	0.5%	1.1%	0.7%	0.3%	2.8%	0.3%	14.9%
Malaysia	0.3%	9.6%	0.4%	2.0%	5.2%	2.5%	2.2%	0.4%	4.8%	-	1.2%	0.2%	0.3%	9.6%	2.3%	3.9%	0.6%	6.3%	2.4%	69.0%
Philippines	0.0%	2.6%	0.3%	0.8%	2.9%	0.2%	0.3%	0.1%	2.9%	0.6%	-	0.0%	0.0%	1.3%	0.8%	0.8%	0.2%	3.2%	0.3%	20.4%
Russia	0.2%	3.4%	0.5%	2.1%	0.1%	0.5%	0.1%	1.0%	0.8%	0.1%	0.0%	-	0.0%	0.2%	1.1%	0.0%	0.6%	0.8%	0.1%	27.2%
Saudi Arabia	0.3%	4.9%	0.6%	0.1%	0.1%	3.4%	0.4%	0.7%	4.2%	0.4%	0.3%	0.0%	-	1.5%	3.4%	0.7%	0.2%	3.3%	0.1%	37.9%
Singapore	0.3%	13.6%	1.3%	1.7%	13.0%	3.3%	8.9%	0.2%	5.4%	12.0%	2.1%	0.2%	0.2%	-	4.2%	4.2%	1.5%	8.5%	3.2%	110.7%
South Korea	0.3%	9.4%	0.2%	0.5%	2.7%	0.9%	0.5%	0.3%	1.8%	0.5%	0.7%	0.4%	0.2%	0.7%	-	0.5%	0.4%	4.3%	2.8%	35.2%
Thailand	0.3%	5.9%	0.4%	1.0%	2.5%	1.5%	2.0%	0.3%	4.9%	2.3%	1.5%	0.2%	0.3%	1.8%	1.0%	-	0.8%	5.5%	2.5%	49.5%
UK	0.1%	1.0%	1.1%	1.7%	0.4%	0.2%	0.0%	0.5%	0.3%	0.1%	0.0%	0.1%	0.2%	0.2%	0.3%	0.1%	-	2.3%	0.0%	17.0%
US	0.2%	0.6%	0.2%	0.3%	0.2%	0.2%	0.0%	0.1%	0.4%	0.1%	0.0%	0.0%	0.1%	0.2%	0.3%	0.1%	0.3%	-	0.0%	8.1%
Vietnam	0.9%	17.2%	1.6%	2.9%	3.3%	2.7%	1.5%	1.2%	7.9%	1.7%	1.4%	1.0%	0.1%	1.3%	7.6%	2.3%	2.4%	19.8%	-	99.6%
World	0.2%	2.2%	0.8%	1.5%	0.8%	0.6%	0.2%	0.6%	0.8%	0.3%	0.2%	0.3%	0.1%	0.4%	0.6%	0.3%	0.8%	2.9%	0.3%	-

Source: IMF, Refinitiv Datastream, J.P. Morgan Asset Management. Green shading indicates low economic dependence for origin country on exports to destination country and red shading indicates high economic dependence for origin country on exports to destination country. Data as of 11 March 2020.

Supply chain links are much harder to evaluate given data limitations. Indeed, the experience of the Japanese tsunami in 2011 provided a prime example of how analysts underestimated the economic disruption due to a lack of reliable data on supply chains. We do know that China is the top exporter of intermediate goods (9.4% of global exports of intermediate goods) and an important component of US supply chains (**Exhibit 7**).

EXHIBIT 7: WHAT ARE THE DESTINATIONS FOR CHINA'S INTERMEDIATE GOODS EXPORTS?

% share of total Chinese intermediate goods exports, 2018



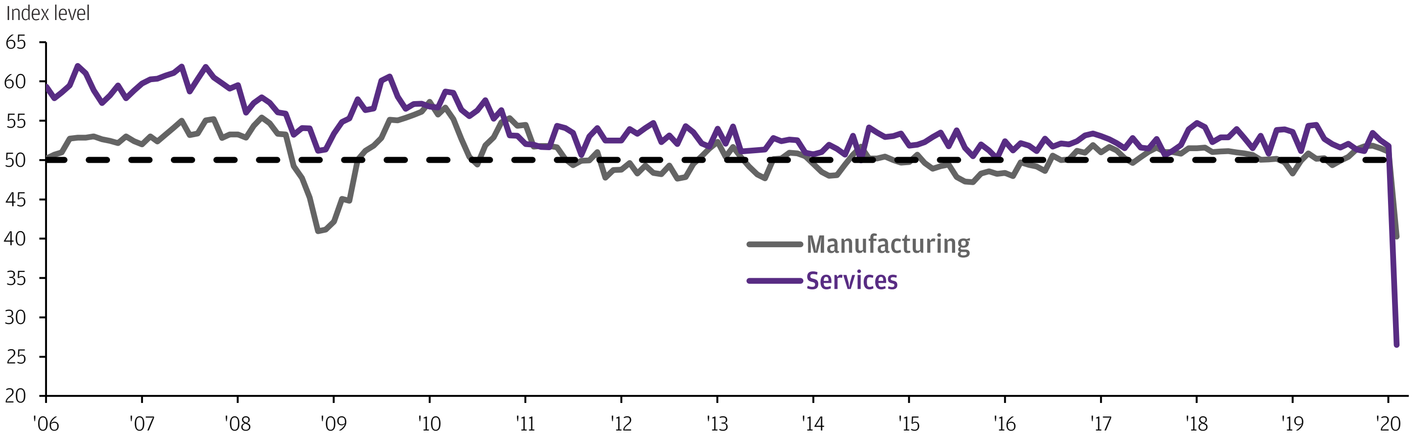
Source: World Bank, J.P. Morgan Asset Management. Data as of 11 March 2020.

Clearly the question is no longer merely one of how a Chinese slowdown will affect global growth.

As the infection spreads and travel restrictions broaden in other parts of the world, businesses will increasingly feel the impact on their revenues. As China's recent data shows, the impact will be broad. The manufacturing sector will be affected by lasting supply chain disruptions but the effect is likely to be most strongly felt in the services sector (**Exhibit 8**). Airlines, hotels, restaurants, cinemas and concert venues are amongst those most likely to be affected.

How long the travel restrictions last depends on the spread of the virus, and the scale of preventative measures required to reduce the rate of infection. This is something we cannot predict. What we can assess is the measures policymakers are deploying to support businesses during the period of production shutdowns and weak revenues. If the measures are effective they will reduce the likelihood of a vicious cycle whereby firms cut back on staff, business investment, inventory orders and so forth. If firms are given this near-term support they will be well placed to return to business as usual when the infection rates peak. A recovery by year-end would be feasible.

EXHIBIT 8: CHINA MANUFACTURING AND SERVICES PURCHASING MANAGERS' INDICES



Source: Markit, J.P. Morgan Asset Management. Data as of 11 March 2020.

What will the policy response be?

What might such 'effective' stimulus look like? In our view, the answer lies with targeted fiscal measures. This might happen via subsidies – helping a firm meet rent and wage costs. Similarly tax breaks (such as temporary relief from business rates) would allow firms to cope with a period of weak profitability. The commercial banks may also have a role to play in allowing a period of forbearance and short-term relief on debt and interest repayments. The German short shift programme, established in the global financial crisis, was an excellent example of a policy designed to limit the medium-term fallout of a demand shock. 1.5 million German workers were moved to a short shift. But companies were subsidised by the Federal government so that the net wage loss to the end employee was reduced with no burden on the company's balance sheet. Such measures don't come cheap – the estimated fiscal cost was EUR 8bn though arguably the cost of inaction would have been far greater.

EXHIBIT 9: FISCAL AND MONETARY POLICY RESPONSES BY COUNTRY*

Country	Fiscal response	Monetary response
China	• Non-performing loan recognition temporarily relaxed • Various government fees and charges waived or delayed (contributions to social security, medical insurance)	• People's Bank of China lowered 1-year Loan Prime Rate by 10 basis points (bps)
Europe	• European Commission will create a EUR 25 bn fund directed at vulnerable parts of the economy	
France	• Increased public guarantee from 40% to 70% on short-term loans to small and medium enterprises • 'Eligible' businesses given opportunity to temporarily suspend employment (with employee receiving state insurance) and temporary relief from corporate tax and social contributions	
Germany	• German companies to gain access to government funds, when 10% of workers are affected by work stoppage, in order to help continue paying staff	
Hong Kong	• HKD 10,000 (~1,300 USD) to be given to each permanent resident aged 18 and over as part of HKD 120 bn (~4% of GDP) relief fund	• Hong Kong Monetary Authority lowered its base rate by 50 bps to 1.5% in line with the Federal Reserve to maintain the USD-HKD currency peg
Italy	• EUR 13bn (~0.7% of GDP) aid package including subsidies to workers, tax suspensions, utility payment postponements, renegotiation of bank loans (for companies) and mortgages (for households) and special measures for companies that lose 25% of revenues • Package could increase to EUR 25 bn in size	
Japan	• JPY 430.8 bn (~0.08% of GDP) package focused on small businesses in need of financing (package includes improvements to medical facilities and subsidies to working parents who must take leave because of closed schools)	• Bank of Japan has pledged to provide ample liquidity, offering to buy JPY 500 bn in government bonds
Singapore	• USD 5.6 bn (~1.5% of GDP) fiscal stimulus specifically targeting relief measures including a corporate income tax rebate of 25% for 2020	
S. Korea	• Stimulus package of KRW 11.7 tr (0.6% of GDP) to assist vulnerable sectors including small and medium enterprises and self-employed	
UK	• GBP 7 bn (0.3% of GDP) of measures to provide direct support to households and small businesses, including more widespread sick pay, reduction or exemption of business rates, a new temporary loan scheme with government guarantee of up to 80%, and a GBP 3000 cash grant to approximately 700,000 eligible businesses • UK banks to offer mortgage holidays for customers affected by the virus	• Bank of England cut interest rates by 50 bps to 0.25% and introduced a new Term Funding scheme with additional incentives for Small and Medium-sized Enterprises (TFSME). Countercyclical capital buffer reduced to 0% from 1% for 12 months
US	• USD 1 bn in loan subsidies, enabling USD 7 billion in low-interest loans to be provided to small businesses	• 50 bps rate cut in Federal Funds Rate to 1.00-1.25% target range - the first cut since 2008 outside of scheduled meeting

Source: Bloomberg, J.P. Morgan Asset Management.*Note that this table does not include government spending to support health services, but focuses on measures to support private sector activity. Fiscal measures are those announced to date. Data as of 12 March 2020.

We are seeing some of these policy measures deployed, particularly in Asia (**Exhibit 9**). The Hong Kong government has announced an HKD 10,000 (~USD 1,300) payment for each citizen aged 18 and over. So far, the global response has been more muted. The G7 finance ministers meeting on 3 March provided warm words but very few concrete proposals. High levels of government debt – an overhang from the last global recession – are no doubt contributing to the hesitancy in some regions. In Italy, tax breaks have been announced, but only for companies that experience a 25% fall in revenues. Whilst we have conviction that governments will eventually react with a meaningful fiscal stimulus, we are much less certain it will be deployed in a timely, pre-emptive manner.

Monetary policy can act more swiftly. The central banks have certainly shown willing, with the Federal Reserve and Bank of England even delivering an inter-meeting rate cut. Other central banks will have to follow with further stimulus to prevent an appreciation of their currency if nothing else. Of course few have the ammunition that the Fed has.

Will looser monetary policy help? We wouldn't dismiss entirely the role monetary policy can play. Rate cuts and new asset purchase schemes could provide some support to asset prices (as investors are forced to search for yield) and encourage governments to spend given they can finance larger deficits at cheap interest rates. Liquidity provisions might also help the banks and prevent a tightening in financial conditions. But we would be more confident that the virus effect will be manageable if we see fiscal stimulus being used as the main defence.

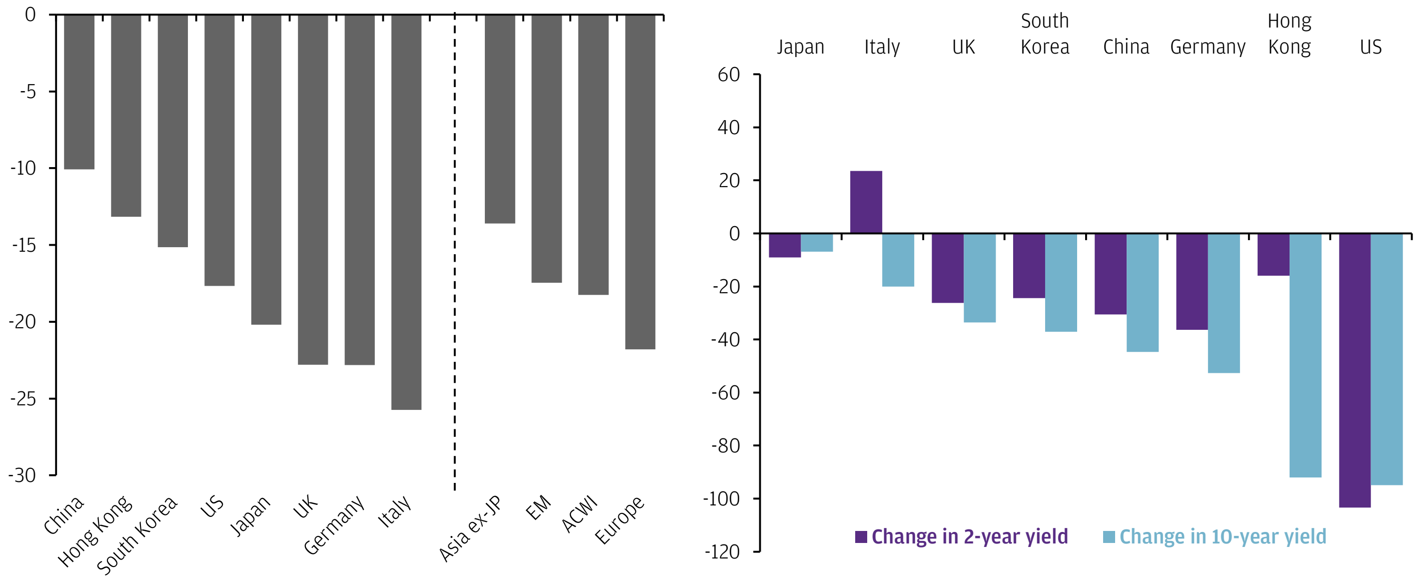
In summary, it will be as important to track indicators of hiring intentions in the coming months as indicators of new orders to assess whether policy stimulus has proved effective.

How have the markets reacted?

Up until mid-February, stock markets appeared relatively resilient, particularly outside of the worst-affected areas. The likelihood of decisive action on the part of the world's policymakers no doubt helped support expectations of a strong rebound in activity once the spread of the virus was contained. There has been a meaningful increase in both short- and long-dated government bond prices since the fears emerged in mid-January. In recent days, with the news of the increase in cases outside of China, there has been more of an impact on global equity markets (**Exhibit 10**).

EXHIBIT 10: MARKET REACTION

%, stock market price returns, local currency unless specified (LHS); government bond yield in basis points (RHS) – changes since 17 Jan 2020



Source: (Left) Bloomberg, DAX, FTSE, Hang Seng, MSCI, Standard and Poor's, TOPIX, J.P. Morgan Asset Management. MSCI indices are used for China, S. Korea, Europe (EUR), ACWI (USD), Asia ex-JP (USD), EM (USD). Other indices used: Germany: DAX; Hong Kong: Hang Seng; Italy: FTSE MIB; Japan; TOPIX; UK: FTSE-All Share; US: S&P 500. (Right) Bloomberg, J.P. Morgan Asset Management. Past performance is not a reliable indicator of current and future results. Data as of 11 March 2020.

Conclusion

It is too early to assess the ultimate impact of the coronavirus on economic activity and corporate earnings. The sooner the virus is confidently contained, the quicker the recovery in economic activity will be, particularly given policy stimulus will no doubt be deployed to assist in that recovery. However, the more the virus affects activity in other regions, and the longer the period of reduced travel to restrict the transfer of the infection, the greater will be the impact on corporate earnings. For now, investors should maintain a balanced approach to asset allocation given the uncertain nature of the outbreak. Risk aversion is likely to prevail if more countries see the number of cases rise in the weeks ahead. The rising number of cases in Europe, particularly in Italy, and the US is also focusing the minds of European and US investors on the potential global impact from rising infections.

Core government bonds have performed strongly. However, further upside for US Treasuries and UK gilts will be more limited from here unless these central banks shift their guidance that they do not intend to take interest rates into negative territory. Investors may wish to consider alternative diversifiers such as macro funds, or real assets if liquidity is not a requirement. In terms of risks, credit spreads could widen further, with high yield credit most at risk. Within equities, defensive sectors should outperform if the outlook deteriorates.

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