AKE Special Report

The Economics of COVID-19

4 March 2020

Key Points

At the time of writing (4 March 2020) official reports say a new strain of coronavirus, known as COVID-19, has reportedly infected 93,573 people. Of these 3,204 people have died. 80,282 of those infected are in mainland China, with 80 other countries or territories also reportingcases – including Italy, Japan, Singapore, South Korea, Vietnam and Thailand.

The most reliable medical advice indicates that outside of China **the overall impact on global public health will be relatively low**. However, the reaction to the outbreak highlights that it is overwhelmingly likely that the largest effect of the COVID-19 virus will not be its direct effect on health. Fear of the virus is resulting in state and individual action to reduce the risk of contagion. These actions will create **economic impacts that will go well beyond the direct health implications of the outbreak**.

The closest historical parallel to COVID-19 is the SARS outbreak in 2002 and 2003, which over two years caused the deaths of nearly 800 people, mainly in mainland China and Hong Kong. However, the importance of the Chinese economy has increased since 2003. In 2003, China was the sixth largest economy in the world – it is now the second. China is the world's biggest importer and the major player in global trade. Thus, **the impact of a slowdown in the Chinese economy on the rest of the world will be significantly greater than it was in 2003**.

The impact of this on Chinese growth is likely to be significant in all scenarios. If the virus is contained, AKE forecasts growth of around -1.5 per cent in Q1 2020 (quarter on quarter). The **contraction could continue into Q2** – tipping the economy into recession.

If the spread of the virus increases, consumption will be badly hit in other nations as well, with the mechanisms similar to those in China. There has already been a notable impact in South Korea, where there are signs of a large decrease in consumption.

It is plausible that there will be a **wide global recession, although the impact is unlikely to be as significant as the 2008 Global Financial Crisis** in the medium term. This report assess the potential economic impact of the reaction to COVID-19. It is based on three scenarios of the potential trajectory of the pandemic, varying from a baseline case, where the virus largely dies out by May 2020, to less likely but more destructive scenarios.

Up to two-thirds of Chinese workers are working from home, and at this stage it is unclear when they will be able to return to work. A consequence is the **unplanned closure of major Chinese factories, leading to shortages of products in both China other parts of the world**. The auto-industry and electronics will be amongst those that suffer. In the baseline case, the economic damage will be temporary. **Chinese equity prices, and Southeast Asian assets more generally, will remain depressed over Q1**, but recover soon after. There will be **potential opportunities to purchase undervalued assets**.

In the worst probable case, there will be a **significant rise in corporate defaults across China**, with few sectors spared. The impact will be **worst for small and medium enterprises**, although a few larger companies will require enhanced state support to see out the crisis. **Global manufacturers will actively attempt to diversify supply chains**, and reduce their reliance on Chinese parts. Vietnam and India could be potential beneficiaries in the medium term.

About us

AKE has over 20 years of experience working with the financial sector, providing clients with political and economic risk consultancy. Our experienced team provides tailored analysis and strategic forecasting, allowing our clients to better assess risks in challenging environments.

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Introduction

On 31 December 2019, Chinese authorities reported a string of pneumonia-like cases in Wuhan, Hubei Province. The Chinese Centre for Disease control reported that the outbreak began at the Huanan Seafood Wholesale Market, although an increasing number of infected people had not had direct exposure to the market. The movement of Chinese residents across the country during the Chinese New Year period faciliated that the spread of the virus.

At the time of writing (4 March 2020) official reports say a new strain of coronavirus, known as COVID-19, reportedly infected 93,573 people. Of these 3,204 people have died. 80,282 of those infected are in mainland China, with 80 other countries or territories also reported cases – including Italy, Japan, Singapore, South Korea, Vietnam and Thailand. One international conveyance, the *Diamond Princess* cruise ship, currently harboured on the coast of Japan has also reported hundreds of cases.

Confirmed cases of COVID-19 as of 4 March 2020

COVID-19 continues to spread, with Italy reporting an infection cluster, and recording 77 deaths. The spread highlights that it may be difficult to contain the spread of COVID-19.

Nonetheless, the most reliable medical advice indicates that outside China the overall impact on global public health will be relatively low, although far from trivial. Most reports indicate that the virus will largely die out by May. Nonetheless, a combination of medical concerns, alarmism, risk-aversion amongst states, concerns over the availability of hospital beds, and the potential to use the outbreak to political ends, has led countries to issue restrictions limiting movement of potentially exposed non-citizens into their jurisdiction.

Many countries have imposed severe restrictions that fall short of a total ban, while others have imposed total bans. Furthermore, over 10,000 flights in and out of China by more than 20 airlines were cancelled by the end January. There have also been mass cancellations on flights to and from Hong Kong.

Fears of the virus and alarmist mainstream and social media reports have led some individuals to exercise extreme caution by dramatically modifying their normal behaviour outside of areas with high infection risks. Actions include reducing interactions with others and cancelling travel plans.

The reaction to the outbreak highlights that it is overwhelmingly likely that the largest effect of the COVID-19 virus will not be its direct effect on health. In particular, the fear of the virus is resulting in state and individual action to reduce the risk of contagion. These actions will create economic impacts that will go well beyond the direct health implications of the outbreak.

Measures that will cause economic damage include a depression in comsumption globally, reduced activity in places where individuals are likely to be in close proximity to each other such as public transport and shopping centres, the shuttering of factories in China and in other places, mandatory working from home in some parts of China, and reduced travel globally.

The following report outlines the potential economic impact of the reaction to COVID-19. It is based on three scenarios of the potential trajectory of the pandemic, varying from a baseline case, where the virus largely dies out by May 2020, to less likely but more destructive scenarios. While the direct effect of the virus may be limited, the economics effects will be serious.

Scenarios

COVID-19 is a new strain of coronavirus and has yet to be extensively researched. The most likely scenario is that the virus will die out within the next months. In general, sunlight cuts the half-life of coronaviruses to 2.5 minutes from around 13-20 minutes. At temperatures of around 30 degrees Celsius, the virus is also likely to become inactive. Asian climates thus tend to be unfavourable for the spread of viruses around May, and climates in the northern hemisphere tends to be less hospitable to viruses in the months following that.

There are still several epidemiological questions which will affect the destructiveness of the outbreak. Firstly, it is unclear how many people have been infected, and thus the likely transmission rate. A large number of potential hosts are asymptomatic, or only have mild symptoms. Independent calculations indicated that there were almost 76,000 infected individuals in Greater Wuhan on 25 January based on the spread of the virus, with the number of infected doubling every 6.2 days. According to Chinese authorities, confirmed cases on 25 January remained under 2,000. The divergence between official and independent numbers in China was also observed case during the Severe Acute Respiratory Syndrome (SARS) outbreak in 2002-2003. Furthermore, limitation in medical capacity across China, and in other parts of the world means that many people with symptoms have yet to be tested.

Secondly, forecasts for the rate of human-to-human transmission varies. Estimates suggest that the rate of transmission, that is the average of number of secondary cases generated by a typical infectious individual, fluctuated between 1.6-2.9 prior to the introduction of travel restrictions from Hubei by the Chinese government on 23 January. Other estimates place the transmission rate at between 3 and 4. It is plausible that the transmission rate has fallen significantly since due to these restrictions were imposed. There is a small risk that the pathogen could mutate and plausibly spread more efficiently.

Thirdly, an early World Health Organization (WHO) estimate places the mortality rate at around 2 per cent, although the rate may be considerably lower given the lack of accurate estimates regarding the number of cases. The mortality rate also appears to be significantly lower outside of Wuhan. The mortality rate in Wuhan, where health provisions are strained, is around 5.5 per cent, while the national Chinese rate outside of Hubei drops to 0.3 per cent.

AKE has put together three rough scenarios for the trajectory of the COVID-19. The scenarios vary based on the spread and length of the epidemic in China, the spread and length of the epidemic outside of China, and the direct health effects of the virus. We then assess the likely economic impact of each.

Baseline Scenario: The spread of COVID-19 within China is limited due to the imposition of restrictions. New cases in China plateau in the coming months, although there could be spikes in the number of cases due to new methods of classification. There will continue to be cases both within China and outside of China, although they will be largely restricted to small communities abroad. There will be a few countries were COVID-19 spreads within parts of the population, but with a few exceptions it does not become an epidemic. The mortality rate outside of Wuhan will remain low, as adequate healthcare provisions mitigate the risk. The virus will cease to be a serious concern by the end of Q2.

Moderate Health Impact Scenario: COVID-19 continues to spread across China, although the number of new incidents decreases over time. There are a number of new cases in other countries, although it does not become a full-scale pandemic – and only a few countries (including Italy, Iran, and South Korea) are badly affected. The mortality rate will remain low outside of Wuhan. The number of new cases will decrease after May, although it will take until the end of the year for the virus to largely burn out.

High Health Impact Scenario: COVID-19 becomes a pandemic, spreading both in China and through the rest of the world. Infections will rise both in China, and in the rest of the world, with incidents in other countries going from cases involving one-off travellers or small clusters to a full-blown outbreak. The virus spreads to countries with weaker healthcare systems, and the mortality rate rises. The virus will eventually be contained by the end of 2020, although it could reappear in future.

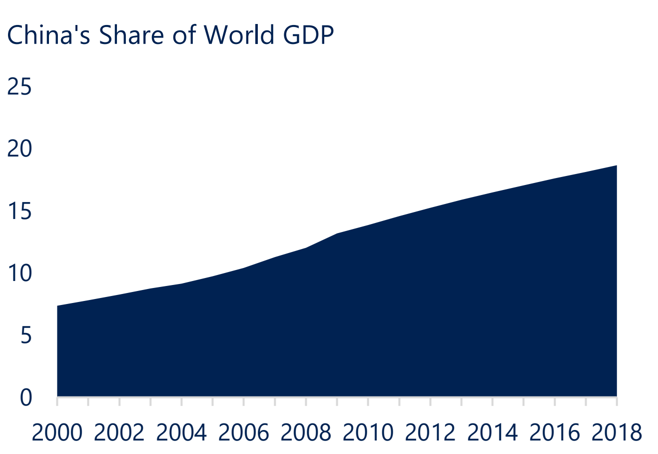
Economics of COVID-19

There are a wide range of estimates on how long the corona epidemic will last, to what extent it will spread, and if and when it will be contained. Furthermore, the reaction to the virus by states and individuals may be exaggerated dependent on future developments. It is thus difficult to calculate its effects on the Chinese and the global economy.

The closest parallel to COVID-19 is the SARS outbreak in 2002 and 2003, which over two years caused the deaths of nearly 800 people, mainly in mainland China and Hong Kong. The outbreak of SARS led to a decline in consumer demand, particularly in China and Hong Kong, and all major markets in Northeast and Southeast Asia suffered from double-digit falls in visitor arrival. The economic impact on China was a fall in Q2 2003 growth to 9.1 per cent (year on year), roughly 1.3 percentage points lower than the average growth rate in the other three quarters of the year. Overall, Asian states lost an estimated US$12-18bln due to SARS.

While the behaviour of individuals in China during to COVID-19 is similar to SARS, the response of the Chinese government and other Asian states has been more dramatic. Beijing reacted by shutting down access to Wuhan and other cities in Hubei, effectively quarantining more than 50 million people. It has also imposed restrictions on workers returning to their jobs. It is plausible that these measures will slow the spread of COVID-19, although it is likely to have increased the negative short-term economic impact.

More importantly is the increased importance of the Chinese economy since 2003. In 2003, China was the sixth largest economy in the world – it is now the second. China is the world's biggest importer and the major player in global trade. Thus, the impact of a slowdown in the Chinese economy on the rest of the world will be significantly greater than it was in 2003.



SARS was also contained, while COVID-19 is spreading more rapidly across the world. There were 8,096 reported cases of SARS, in 28 territories. Outside of mainland China there were only 2,769 cases, with fewer than 1,000 outside of China and Hong Kong. The spread implies that the economic effects of COVID-19 will be substantially greater.

The economic effects of COVID-19 can be broken down into six components:

Consumption

China
One of the most immediate impacts of COVID-19 is on Chinese consumption. Regions and cities accounting for 5 per cent of the Chinese urban population have been locked down. Consumption over the normally peak Chinese New Year period was substantially harmed, particularly given the closure of public transport and major shopping malls in cities like Shanghai, seriously curtailing consumer spending. The harshest restrictions are being lifted, although most remain in place.

Chinese consumers are also autonomously exercising caution beyond those measures de facto mandated by the state by avoiding restaurants, cinemas, and shopping centres.

The sectors that appear to be most affected by the decline in consumption are:

- Transportation
- Hospitality
- Retail
- Entertainment.

Data lags make it difficult to accurately measure the strength of the effect, although unofficial figures indicate that travel spending, one of the sectors most impacted by the outbreak, decreased 40 per cent over Chinese New Year compared to a year earlier. The overall figure may well be higher; China State Railway Group reported that the volume of train travel slumped by 78.5 per cent to 2.6 million on 1 February – the eighth day of the holiday period – from a year earlier.

However, the effects are not isolated to a handful of sectors, and virtually every sector will be impacted. There is data showing contracting consumption of non-basic good, with data showing the purchase of automobiles falling 92 per cent year-on-year in the first half of February 2020. When Chinese markets reopened after the Chinese New Year holiday, the CSI 300 index of Shanghai and Shenzhen-listed equities fell by as much as 9.1 per cent, the worst opening in 13 years. The benchmark closed the day 7.9 per cent lower, with the sell-off continuing. State intervention may limit the fall of equity prices in China, and the stock market is small relative to the size of the Chinese economy. Nonetheless, the decrease highlights the difficulties that Chinese-listed firms are facing.

It is plausible that some companies will be positively affected by the virus, although at this stage it is difficult to know for sure. Restrictions on working means that companies like Zoom Video Conferencing, WeChat Work have seen record-breaking usage. E-commerce will benefit from increased demand, as will online movie and game streaming platforms as citizens confine themselves to their homes. However, the handful of sectors that will gain due to COVID-19 fears are significantly outweighed by those that lose out.

The total impact on consumption in China will depend on three factors. Firstly, how well the virus is contained. The impact of Q1 Chinese growth is likely to be significant in all scenarios. AKE forecasts growth of -1.5 per cent in Q1

2020 (quarter on quarter) if the virus is contained in the next month, which corresponds to around 3 per cent year on year growth. It is plausible that the economy could contract significantly more in Q1, with the contraction continuing into Q2 – tipping the economy into recession.

The second factor is the extent of panic created over the virus. The reaction among Chinese citizens appears exaggerated and may be attributable to a spread of false and misleading information on Chinese social media channels, along with a lack of trust in information released by the state. Media and public perceptions are thus a (negative) economic multiplier. Even a few cases can have totemic significance that outstrip objective reality. Conversely, panic will diminish over time as the novelty of the COVID-19 outbreak wears, new cases no longer make the headlines and as the population becomes more informed about the virus.

Thirdly, the effect on consumption may be mitigated by active state policy. There is likely to be a medium-term offset through expansionary monetary and fiscal policy. The People's Bank of China (PBoC) increased liquidity in the market by 1.2 trillion yuan (US$174bln) on 3 February, although with maturing reverse repos, only around 150bln in net cash was injected. Beijing will continue to loosen monetary and fiscal policy, although there are no indications yet that China will push for a serious credit-fuelled stimulus, given the potential temporary nature of the shock and weakness within the financial system. In the event of a prolonged slowdown, there could be an attempt to significantly loosen fiscal policy, cut interest rates, fast tracking of approvals for refinancing, and support to ensure corporate bond repayments.

Global impact

If the spread of the virus increases, consumption will be badly hit in other nations as well, with the mechanisms similar to those in China. There has already been a notable impact in South Korea, where there are signs of a large decrease in consumption. A large government stimulus package (assisted by aggressive rate cuts from central banks), may help mitigate the impact.

It is plausible that there will be a wide global recession, although the impact is unlikely to be as significant as the 2008 Global Financial Crisis in the medium term. This report assess the potential economic impact of the reaction to COVID-19. It is based on three scenarios of the potential trajectory of the pandemic, varying from a baseline case, where the virus largely dies out by May 2020, to less likely in all but the more destructive scenarios.

COVID-19 is creating a liquidity crisis. Consumption, production and trade are all down. Corporations (particularly small and medium companies) will face difficulties, however the global economy should be able to recover relatively rapidly. In other words, at this stage it doesn't appear that the COVID liquidity crisis will become a serious solvency crisis – a recovery will likely begin once the virus subsides.

Production and supply chains

Up to two-thirds of Chinese workers are working from home, and at this stage it is unclear when they will be able to return to work. A consequence is the unplanned temporary closure of major Chinese factories, leading to shortages of products in both China other parts of the world. There are reports of shortages of basic goods, including toilet rolls in Hong Kong, while components vital in production processes of various goods have been hit.

The global automobile sector is amongst the worst hit, with the sector reliant on just-in-time delivery, and many vital components imported from China. The effect is compounded as Wuhan is one of the top auto-industrial hubs in China, with more than half of the top 20 global parts markers producing components in Hubei province. The hit to the industry has thus far largely been concentrated to manufacturers in China, although Hyundai, the world's fifth-largest automaker, has temporarily stopped production lines at its factories in South Korea due to shortages of Chinese parts. It probable that automakers in other countries will suffer from similar shortages.

There could be a similar impact on global tech supply chains. The effect is partially mitigated, as Hubei is a relatively small contributor to global technology supply chains, but there have been a number of infections in Zhejiang, Guangdong and Henan, which are all major technology manufacturing hubs. Foxconn, one of the major suppliers to Apple, has suspended production. While production could restart within a week, a raft of quarantine rules and transport restrictions could hamper the company's ability to provide vital components to its customers.

It is difficult to predict all the sectors that will be affected. China is vital to global supply chains. In many sectors, Chinese companies provide vital components – and there are few immediate substitutes. Retail globally could be amongst the sectors effected.

At this stage, no other country is imposing restrictions that would harm production. However, if COVID-19 spreads further, it is plausible that work-from-home requirements could lead to slowdowns in production in many other countries.

Corporate defaults

The combined effect on consumption and production – in China and elsewhere – could create financial difficulties for companies worldwide.

There are signs that Chinese companies are facing a liquidity crisis – revenues are depressed, but their costs remain. Essentially there is a mismatch between a slowdown in real economic activity, while financial activity (including the payment of wages and salaries, interest on loans, debt maturation) continues.

The Chinese government has attempted to control the impact through the easier provision of credit, forbearance on defaulted loans and some state support for weaker companies. Nonetheless, it will be difficult for small and medium sized private companies to access these funds, and they will face significant financial hits. Several are likely to declare bankruptcy, albeit with a lag, as they are unable to continue operations.

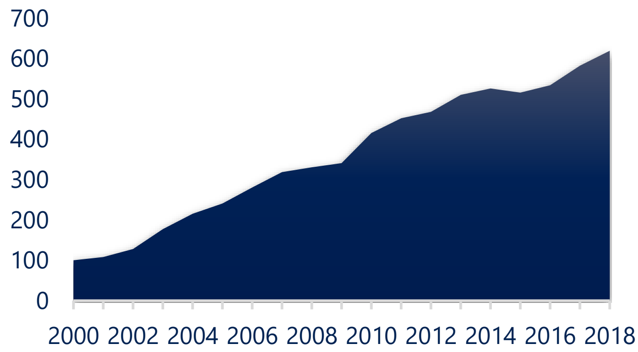
Larger companies with solid financial metrics, potentially with the support of the state, should be able to continue to attract funding, and will be able to see out the crisis in most conceivable scenarios.

If the virus spreads further, and production and consumption is harmed in other countries, without adequate measures – financially weaker companies globally could be badly hit. Default rates will rocket.

Global Trade

The slowdown in the Chinese economy is likely to result in a significant fall in Chinese imports, and thus a reduction in growth in its major trading partners. A slowdown in China could create a number of corporate bankruptcies for both commodity exporters (see below), and those that sell intermediate and final goods to China.

Chinese Imports (2000 = 100)



There are indications that trade will also contract due to limits on logistics infrastructure. Ports in China are already clogged, with warehouses overflowing. It is difficult for Chinese companies to access goods at ports - due to limits in truck drivers and workers. AP Moller-Maersk reports that around two-fifths of China's trucking capacity is offline. There are also roadblocks, which prevent transport within cities.

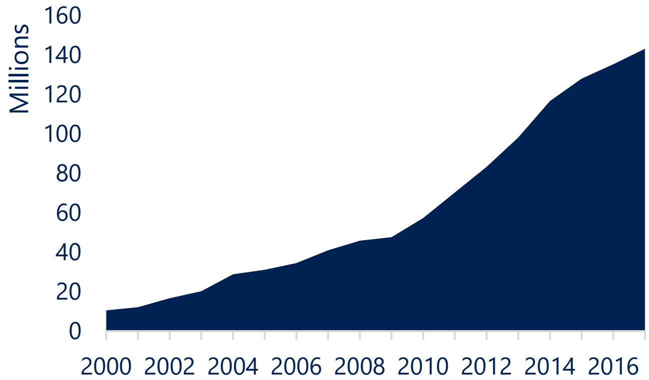
Furthermore, the COVID-19 outbreak has sent the yuan to below US$7, a psychologically important benchmark. It is likely that the yuan will continue to fall, although the pace will be controlled by the PBoC's policy to only allow the currency to trade 2 per cent above or below its daily reference rate. A managed depreciation would allow Beijing to partially offset the impact of reduced domestic consumption on final demand, although that is predicated on the continued production of products for export and the willingness of other countries to continue to import Chinese products.

The weaker yuan could have a significant impact on emerging markets. This is because a lower yuan means imports to China are costlier and creates incentive to buy from domestic Chinese producers. It could also boost Chinese exports. Both factors will be partially mitigated by the lack of availability of Chinese goods. Commodity prices would likely fall. Other emerging market currencies would likely also fall, increasing difficulties in servicing external corporate and sovereign debt.

Tourism

The importance of Chinese tourists has increased significantly over the last decade. For instance, visits from China to the US have increased 1,270 per cent since the SARS outbreak to 2.8 million in 2019. Each visitor spends on average US$6,000 per trip, excluding airfare and money spent on foreign education.

Outbound Tourists from China



The economic damage caused by COVID-19 outside China has been exacerbated by the fall in Chinese tourist numbers abroad, as Chinese citizens avoid airports and flights. Airlines have also cancelled flights to and from China.

The effect is compounded by restrictions imposed by other countries on the ability of Chinese nationals to enter. Restrictions include:

Hong Kong SAR sealed 11 of its 14 border crossings with the mainland. Visitors from Hubei and those who have recently visited the area are banned from entry. Beijing has stopped issuing permits for mainlanders travelling individually and in tour groups to Hong Kong.

Singapore blocked the entry and transit of foreign travellers who have visited mainland China in the previous 14 days. Visas of Chinese citizens to visit Singapore have been suspended, including those already issued.

Taiwan announced a ban on the entry of foreign travellers who have visited mainland China in the previous 14 days starting 7 February.

Indonesia blocked the entry and transit of foreign travellers from mainland China and temporarily banned flights to and from China. Free visa and visa-on-arrival services for Chinese citizens living on the mainland have been suspended.

The Philippines blocked the entry and transit to foreign travellers from China, Hong Kong and Macau, although restrictions for the latter two territories were later eased.

Malaysia blocked the entry and transit of foreign travellers arriving from Hubei, while some states have imposed restrictions on foreigners travelling from mainland China.

The United States has restricted all foreign nationals who have been to China in the past 14 days from entering the country.

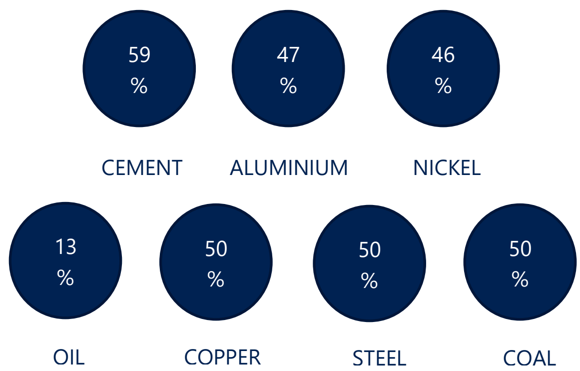
The countries and territories that were the largest recipients of Chinese tourists in 2018 (and thus those most likely to lose directly) are:

1. THAILAND	2. JAPAN
3. SOUTH KOREA	4. HONG KONG
5. TAIWAN	6. UNITED STATES
7. MALAYSIA	8. SINGAPORE
9. INDONESIA	10. VIETNAM

The spread of COVID-19 in Asia and in Italy is also having an impact through general aversion by tourists from around the world to visit areas that are perceived to be at risk. There are widespread reports of travel cancellations, hotel cancellations, conference and event postponements in major tourist destinations, with Thailand and Italy currently the worst hit.

Commodity Prices

Commodity prices worldwide are down significantly since the COVID-19 outbreak. The proximate cause is falling Chinese demand, with transport fuel, air travel, and manufacturing all down. Given China's significant share of global commodity imports, a significant domestic economic downturn is likely to have contagion effects across the globe.



Chinese Percentage of Total Global Demand

Chinese oil demand has decreased around 20 per cent and given that the country consumes 13 per cent of world oil production, global demand has taken a significant hit.

Chinese refineries have indicated that nationwide demand in February will fall by 3.2m barrels a day from last year, roughly equivalent to 3 per cent of global consumption. Brent crude, the international benchmark, has dropped more than 20 per cent since early January, falling below US$55 a barrel on 3 February.

Other commodities, including iron ore, with China accounting for 50 per cent of global steel production, liquified natural gas, and copper are down significantly.

Chinese companies are also cancelling premade orders, which could magnify the stress to commodity producers. For instance, China National Offshore Oil Corp (CNOOC) declared force majeure on LNG contracts due to the COVID-19 outbreak, which is constraining the company from receiving fuel deliveries. CNOOC's force majeure has impacted contracts with Shell, Total SA and the BP-led Tangguh LNG project in Indonesia. This is the first known case of the legal clause being invoked in commodity contracts as a result of the epidemic. Beijing is offering force majeure certificates to domestic companies unable to fulfil contractual obligations due to the viral outbreak. More Chinese commodity importers are likely to follow suit.

Economic Contagion

Singapore and Japan are both exposed, but the overall impact of a Chinese slowdown is mitigated by their strong financial sectors. In contrast, India is least exposed to a downturn in the Chinese economy. India has the least direct exposure to China of all major Asian economies and could be a potential beneficiary of a shift in supply chains from China to other emerging economies.

AKE has constructed the following index to quantify the short- and medium-term risks to a handful of Asia-Pacific economies based on IMF data which is then run through AKE's political and economic risk rating models. The index does not look at the direct effect of COVID-19 on those countries. It focuses on:

- Import risk – How important is China as a major trade partner?
- The supply chain risk – How integrated are emerging markets with supply chains involving China?
- Yuan depreciation risk – How exposed is the economy to the Chinese market more broadly? How dependent is it on commodities?
- Financial risk – How exposed are emerging markets to a withdrawal of capital?

The index indicates that the most exposed countries to a Chinese economic slowdown are Thailand and Cambodia. Taiwan and South Korea's integration with China, particularly their reliance on Chinese-based supply chains, means that both countries are also exposed.

Country	Imports to China	Tourism Risk	Supply chain Risk	Yuan depreciation Risk	External Debt	Reserves	Current Account	Financial Sector	Total
Thailand	3	4	3	4	2	2	1	3	**3.2**
Cambodia	4	2	3	3	3	3	3	4	**3.05**
Indonesia	3	3	3	3	3	2	3	3	**2.95**
South Korea	3	3	4	3	2	2	1	2	**2.95**
Taiwan	3	3	4	3	2	2	1	2	**2.95**
Vietnam	3	3	3	3	3	2	2	4	**2.95**
Malaysia	3	3	3	3	3	2	2	2	**2.85**
Philippines	3	3	3	3	2	2	2	3	**2.85**
Singapore	3	3	3	3	2	1	1	2	**2.7**
Australia	4	2	3	2	1	2	2	1	**2.5**
Japan	2	3	4	2	1	1	2	2	**2.5**
India	2	1	2	1	3	2	3	3	**1.75**

Simulations

This section looks at the likely economic impact of AKE's three scenarios.

Baseline Scenario

Consumption in China decreases dramatically in Q1 2020 (January – March), and it will take until later in Q2 for production levels to return to close-to-normal. The overall impact pushes Q1 growth down to around -1.5 per cent (quarter on quarter). Growth will remain depressed in Q2, although recover over the next several quarters, helped by a moderate stimulus from Beijing, although for the year overall China will miss its 2020 growth target. Growth will return to around 5.5 per cent for the year overall in 2021, although there could be a few quarters of elevated growth, and it will take until 2022 for the economy to expand at 6 per cent. Growth could accelerate further should Beijing introduce heavy stimulus measures. Chinese equity prices will remain depressed for Q1 but will rebound soon after.

Other economies will also see a substantial hit on growth, although the world economy overall is unlikely to be tipped into a recession.

The Chinese economy's weakeness in Q1 will lead to a decrease in imports from its major trading partners. The effect will be short-term, with imports rebounding in the latter half of the year. The yuan will be temporarily weak but will recover by the end of Q2. There will be no significant decrease in imports to China after Q2, and the knock-on effect on other emerging markets will be limited for the rest of the year.

Areas that are dependent on Chinese tourists will face a significant downturn in Q1 and Q2, with a moderate recovery through the rest of the year. Hotels and airlines will be the most affected. Other Asian countries will see tourism from third countries drop significantly in Q1, with a decrease in bookings for Q2. Tourist bookings will likely recover in the early summer, and return to normal by the end of the year.

Commodity prices are likely to recover in the second half of the year, with the financial stress to companies and commodity exporting countries likely to abate.

Factories in Hubei province will remain closed for February, and begin re-opening in late March. The majority of Chinese workers in other parts of the country will return to work in by late March. Returns to normal production levels will be delayed as some restrictions will remain in place, and production levels will take remain depressed for Q2.

There will be shortages of products across the globle. The global auto manufacturing industry will face some shortages, and production will remain below target for Q1. By the end of Q2, normal supply will be back online, although some sectors will continue to face disruptions until the end of the year. There will be minor disruption in global electronics supply chains.

Moderate Health Impact Scenario

Consumption in China will remain depressed for the first two quarters of the year. Production levels will take until May or June 2020 to normalise. Growth is likely to contract in Q1 and Q2 quarter on quarter, although Beijing will introduce stimulus measures to support the economy. It will take until early 2021 for growth to recover, with China's economy unlikely to expand at an annual rate of 6 per cent until 2022 at the earliest (although there could be a temporary bounce-back effect). Equity prices will remain depressed for the first half of the year, but are likely to recover once the rate of new COVID-19 cases decreases substantially. There will be similar effects in other countries, although none will face a decrease in growth comparable to China.

The yuan will remain weak for the first two quarters, and could hit 7.2 to the US dollar, before the Chinese economy starts to recover in Q3. Other Asian currencies will also fall, as they find their economies hurt by a significant fall in exports to China.

Corporate defaults across the world (and in Asia in particular) are likely to rise in late 2020, with a delayed effect resulting in defaults globally rising in 2021. Weaker banks across Asia and in Italy will likely require some financial support from governments. Nonetheless, the negative impact will feed through the system by the end of 2021.

Chinese tourists will reduce trips for the rest of the year, potentially causing significant financial risks to tourism and hospitality sectors across Asia and in Italy. Asian economies and any other coutnries where the risk of COVID-19 is considered high will face significant shortfalls for most of the year, with a recovery near the end of the year and into 2021.

Commodity prices will remain depressed for the year, before starting to rebound in 2021. It will likely take until 2022 for commodity prices to hit sustainable pre-COVID-19 levels. Chinese state companies are likely to cancel orders for commodities, which will increase stress on companies and could lead to bankruptcies. OPEC+ could moderately cut production further to prop up slipping oil prices.

Factories in Hubei province will remain closed for the first quarter, creating serious issues for auto manufacturers, Globally, there will be an attempt to re-jig supply chains to make them less reliant on China. In the interim, there could be shutdowns or partial closures of manufcaturing facilities around the world.

The electronics sector will also face shortages, delaying the production of Apple's new iPhone among other products. The impact on the electronics sector will be relatively minor by the end of Q2, although it will continue to create sporadic disruption into Q4.

High Health Impact Scenario

Consumption and production in China will be weak for the year, and overall growth for 2020 will fall to around 1 per cent. The economy will recover in 2021, although growth will remain significantly below 6 per cent – although there could be a strong bounceback effect later in 2021. The government will rapidly loosen fiscal policy, which will partially offset the slowdown in 2021, although it will take until 2022 for the economy to grow at near potential.

Consumption other countries seriously affected by COVID-19 will be weak. Global consumption could contract worldwide dependent on the spread of the virus.

There will be a significant rise in corporate defaults across China, with few sectors spared. The impact will be worst for small and medium enterprises, although a few larger companies will require enhanced state support to see out the crisis. There will be a rise in corporate defaults in other countries, although with a few exceptions, the overall effect will be mitigated by aggressive monetary policy.

The yuan could fall to 7.5 against the US dollar, with an outside chance that the PBoC will weaken its management of the currency to support the country's export sector. The weak Chinese economy will have significant effects on other Asian economies, with growth depressed in almost all Southeast Asian countries.

Tourist numbers from China will fall significantly, and several Chinese based airlines could face significant stress unless supported by the state. Hospitality sectors across COVID-19 affected countries will face a downturn, and losses are likely to mount. Airlines and hotels are unlikely to recover until mid-2021 at the earliest.

Commodity prices will remain weak well into 2021. Without an intervention by OPEC+, all else being equal, oil prices will create budgetary difficulties for a range of oil exporting states. Other commodity producers will also suffer.

The automobile sector globally will be badly disrupted for the entire year, before returning to normal in 2021. The electronics sector will suffer through the year, although shortages will be less of an issue than in the auto sector. There will be large hits on other manfuacturing sectors as well.

Manufacturers will actively attempt to diversify supply chains, and reduce their reliance on Chinese parts. India, Vietnam, and Thailand are likely beneficiaries. Chinese factories are also likely to react by increasing automation in the medium term, thus reducing their exposure to potential disruption by future contagious diseases.