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FUNG BUSINESS INTELLIGENCE

Global Sourcing

Helen Chin
Vice President
E: helenchin@fung1937.com

Winnie He
Research Manager
E: winniehe@fung1937.com

William Kong
Senior Research Manager
E: williamkong@fung1937.com

Denise Cheung
Senior Research Manager
E: denisecheungwy@fung1937.com

Fung Business Intelligence
10/F LiFung Tower
888 Cheung Sha Wan Road
Kowloon, Hong Kong
T: (852) 2300 2470
F: (852) 2635 1598
E: fbicgroup@fung1937.com
W: http://www.fbicgroup.com

Impacts of the COVID-19 outbreak on China's economy and global supply chains

Key messages:

- The rapidly unfolding of the COVID-19 outbreak in China has brought fresh uncertainty to global supply chains across various sectors ranging from textiles and garments and automotive to electronics and pharmaceuticals.
- Production delays, shortage of labour and logistics disruptions, triggered by tough epidemic prevention and control measures enforced by all levels of Chinese authorities, are major supply chain risks facing Chinese suppliers amid the outbreak.
- It is difficult to predict how soon factory operations will fully resume at this point. Some delays in order delivery seem unavoidable. In the near term, shifting sourcing orders from China to alternative production countries in Asia does not seem to be a quick and viable solution, especially since Asian supply chains are highly reliant on Chinese fabrics, components and parts, and some neighbouring countries are already facing capacity constraints.
- For contingency plans, companies sourcing from the disease-impacted areas should urge their vendors to follow strictly local authorities' regulations on worker quarantine and workplace hygiene to avoid worker infection. Meanwhile, buyers or supply chain managers should keep a close eye on the latest news on work resumption in different areas of China and to make agile purchase decisions based on the latest work resumption situations.
- For apparel companies that are urgently looking to diversify their sourcing portfolio, particularly for their autumn/back-to-school season orders, countries or regions that are less reliant on Chinese suppliers, or have a relatively self-sufficient textile and apparel supply chain, such as Turkey, Egypt, Jordan, Mexico and Central America, could be among the first options.
- In the longer term, companies need to thoroughly re-examine their supply chains and devise contingency plans and risk management policies for their supply chains. Businesses should avoid an 'all-in' sourcing strategy which is single-market dependent, and also make

sure that back-up suppliers for every part of their supply chains are ready to go in case of any unexpected events. These mean that production and supply chains now need to be even more diverse and agile.

- Both a diversified sourcing portfolio and a broad supplier network remain key to businesses even after the COVID-19 outbreak is over. As such, companies with a strong global supplier network and deep relationships with suppliers will be in the best position to meet the new challenges in this era of disruptions and great unpredictability.
- We anticipate that the COVID-19 outbreak in China will be contained before this summer. We believe that China's unrivalled capacity, extensive capability and flexibility will make it competent to cope with a sudden surge in backlogs of orders when factory operations fully resume.

I. Background of the COVID-19 outbreak

The first outbreak of the coronavirus disease 2019 (COVID-19) started in Wuhan, Hubei province, in mid-December 2019. The virus has since then spread across China as well as to 25 other countries (as of 17 February). As of the end of 17 February, the death toll in China surpassed 1,800, with cumulative confirmed cases exceeding 72,000[1]. Hubei accounted for over 90% of the death toll and 80% of the confirmed cases. As a cheering development, as of 17 February, the total number of confirmed cases in provinces outside Hubei has been in a decline trend for 14 days since 3 February.

<u>Government-enforced lockdowns and transport restrictions</u>

To contain the epidemic, local governments in Hubei province imposed a lockdown in Wuhan and other major cities on 23-24 January. And the whole province has been under lockdown since the city of Xiangyang shut down its train stations and ferries on 28 January. Outside Hubei, dozens of cities such as Wenzhou, Hangzhou, Nanjing, Guangzhou, Shenzhen, Beijing and Shanghai have also been put in a partial lockdown successively by implementing "closed community management".

Local governments in Hubei province suspended transportation networks including buses, long-distance coaches, trains, airlines and ferries within Wuhan and surrounding cities since they were

[1] Since 13 February, the Chinese health officials have broadened the criteria they use to confirm COVID-19 cases, leading to a sudden surge of confirmed cases announced on that day.

put in a lockdown. Interprovincial highways connecting Hubei to other provinces were also barred except for the transit of relief supplies, food and other emergency services. Some cities and towns in other provinces reportedly set up checkpoints on major highways and at interprovincial borders to restrict the access of non-local vehicles and residents.

Extension of the Chinese New Year holiday

The central government extended the Chinese New Year holidays by three days to 2 February nationwide. Moreover, local governments in at least 21 provinces, regions and municipalities requested factories and businesses not to resume work before 10 February at the earliest, with the exception of medical equipment, pharmaceutical companies, supermarkets, utilities and logistics companies. For example, Guangdong, Jiangsu and Zhejiang provinces announced that the resumption of work will be delayed to 10 February, while businesses and factories in Hubei province will not reopen till 21 February.

Overseas travel restrictions

On 30 January, the World Health Organisation declared the outbreak of COVID-19 a "public health emergency of international concern" as it spread well beyond China. Since then, more than 50 countries or territories have imposed travel restrictions and tightened visa requirements for Chinese travellers to prevent the spread of the COVID-19. The International Civil Aviation Organisation (ICAO) reported on 12 February that globally some 70 airlines have cancelled all international flights to/from the Chinese Mainland, and that a further 50 airlines have curtailed related air operations.

How soon will the outbreak peak?

Profession Zhong Nanshan, one of China's top respiratory disease experts and the first to describe SARS (Severe Acute Respiratory Syndrome) coronavirus as the main pathogen in 2003, predicted on 11 February that the outbreak could peak by mid-to-late February. He said the exact time of the plateau is not predictable, which largely depends on how effective China's prevention and control measures are as more people are on their return journey to work.

Researchers, at the London School of Hygiene and Tropical Medicine, released on 12 February new modelling predictions on future transmission and peak of COVID-19 in Wuhan, in which they estimated the peak in Wuhan would be in mid-to-late February.

Epidemiology Professor W. Ian Lipkin, director of the Centre for Infection and Immunity at Columbia University in New York, also said there should be "dramatic reductions" in mid-to-late February, if methods of containment have been effective.

An earlier forecast released in late January by Professor Gabriel Leung, chair of public health medicine at University of Hong Kong, indicated that the number of cases could peak between mid-April and mid-May in major cities.

II. Impacts on the Chinese economy

1. Comparison against the SARS outbreak

Many economists have predicted that the COVID-19 epidemic will cause more adverse and extensive disruptions to the Chinese economy compared to the outbreak of SARS in 2003, due mainly to extensive affected areas, tough epidemic prevention and control measures and changes in China's economic structure.

	SARS	**COVID-19**
Outbreak origin and time	Guangdong province, November 2002 — July 2003	Wuhan, December 2019 — now
Geographical scope of infection	Spread to 24 provinces and municipalities in the Chinese Mainland, Hong Kong, Macau, Taiwan and more than 30 other economies worldwide	Spread to all 31 provinces and municipalities in the Chinese Mainland, Hong Kong, Macau, Taiwan and at least 25 other countries
Death toll and mortality rate	Infected more than 8,000 people over the course of eight months, with 774 death worldwide; mortality rate: 9.6%	Infected more than 72,000 people over the course of two months, with at least 1,800 death (as of the end of 17 February); mortality rate: about 2.6%
Importance of the service sector at the time of the outbreak	The service sector contributed 46.5% to national economic growth in 2002	The service sector contributed 59.4% to national economic growth in 2019
China's major economic growth driver at the time of the outbreak	Depended more on foreign trade	Depended more on domestic consumption

China's macroeconomic conditions before the outbreak	Boosted by the benefits of demographic dividend and the accession to the World Trade Organisation (WTO) in 2001, China's reform and opening up and economic development entered an acceleration period, with GDP growing at 9.1% in 2002.	Strained by trade tensions with the US, slowing growth and an aging population, China's economy is facing more challenges today than it was during the SARS outbreak. China's GDP grew by 6.1% in 2019, the slowest rate in 29 years. The "Phase One" trade deal between China and the US came into effect in mid-February this year, with most tariffs still in place.
Outbreak response capability of the Chinese government	The Chinese government was accused of covering up the existence of SARS from the outside world as well as from its own people in the first place.	The central and local governments have responded more transparently with tougher measures, including effectively quarantining millions of people in cities and restricting travel to and from affected areas.
China's economic clout in the world	In 2003, China accounted for 4.3% of global GDP and 8% of global manufacturing exports.	In 2018, China accounted for 15.8% of global GDP and 19% of global manufacturing exports. It is now much more integrated in Asia and with the rest of the world than it was in 2003.
Economic impacts of the outbreak on China	China's GDP growth dropped by two percentage points at the peak of the SARS outbreak, but recovered quickly after the containment of SARS. The impact of the SARS outbreak on the Chinese economy was mainly concentrated in the second quarter of 2003. Overall, the epidemic did not disrupt the uptrend of China's economy at that time.	Economic impacts of the COVID-19 are still being closely monitored.

Source : World Bank, Natixis

2. Potential impacts of the COVID-19 epidemic on China's macroeconomy

1) Fall in consumption

The COVID-19 outbreak coincides with the period surrounding the Chinese New Year, which is a high season for consumer spending. Amidst the COVID-19 outbreak, a large number of people choose to stay at home and avoid taking public transport. As a result, retailers of various kinds are the first to suffer. Restaurants and communal places like cinemas[2] and gyms are also witnessing a drastic drop in the number of customers. Moreover, both inward and outbound tourism are impacted as transportation networks have been disrupted or even shut down[3].

2) Suspension of production

The lockdown in Hubei and the extension of the Chinese New Year holidays nationwide have led to prolonged factory shutdowns and production outages. In particular, Hubei, an important manufacturing hub for automotive, electronics, steel and biopharmaceuticals, is under heavy economic blow.

3) Disruptions of external trade

Due to nationwide shutdowns of manufacturing plants and cuts in air and sea freights to some countries, exports of goods from China have been disrupted. Worse still, Guangdong and Zhejiang provinces, two of China's top three export manufacturing hubs, are among those which have the highest number of confirmed cases after Hubei. If the resumption of normal industrial production in these two provinces takes longer than expected, the epidemic could make a big dent in China's exports.

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[2] China's box office revenue on 25 January (the first day of the Chinese New Year) only reached 1.81 million yuan, a mere 0.13% of the 1.45 billion yuan achieved on the same day last year.

[3] During 24 to 30 January, the rail passenger traffic and road passenger traffic in China dropped by 61.5% and 64.6% respectively compared with the same period of the Chinese New Year in 2019.

Ten most impacted provinces/municipalities by confirmed cases and their economic significance

Provinces/ municipalities	Cumulative confirmed cases as of the end of 17 February	Share of China's GDP (2018)	Share of China's industrial value-added (2017)	Share of China's exports# (2018)	Share of China's number of medium and large industrial enterprises* (2018)	Share of China's employment in urban manufacturing (2018)
Hubei	59,989	4.3%	4.3%	1.3%	3.4%	3.4%
Guangdong	1,328	10.6%	11.7%	28.5%	17.4%	21.1%
Henan	1,257	5.3%	6.1%	2.3%	9.2%	5.6%
Zhejiang	1,172	6.1%	6.5%	13.2%	8.1%	6.9%
Hunan	1,007	4.0%	3.9%	0.8%	3.8%	2.3%
Anhui	982	3.3%	3.6%	1.5%	2.7%	3.3%
Jiangxi	933	2.4%	2.6%	1.1%	3.0%	2.5%
Jiangsu	629	10.1%	11.3%	16.8%	11.5%	11.9%
Chongqing	553	2.2%	2.2%	1.8%	2.2%	1.9%
Shandong	543	8.4%	9.5%	7.0%	7.9%	8.2%
Total	**68,393**	**56.8%**	**61.7%**	**74.2%**	**69.2%**	**67.2%**

Note: Guangdong, Jiangsu, Shandong and Zhejiang are the top four provinces that have the largest contribution to China's GDP and exports.

Source: National Bureau of Statistics of China, complied by Fung Business Intelligence; Ifeng.com

3. Economic impact assessment

Economists and analysts are making predictions about the impacts of COVID-19 on China's economy. Most of them believe the country would face a temporary but sharper economic shock than originally thought, one that will be felt around the world. The long-term economic impact of the outbreak will be determined largely by China's containment measures.

Despite near term concerns, we believe that China's economy is resilient enough to withstand the shock caused by the COVID-19 outbreak, and the current epidemic will not leave a long-term scar on the Chinese economy, given China's strong economic fundamentals.

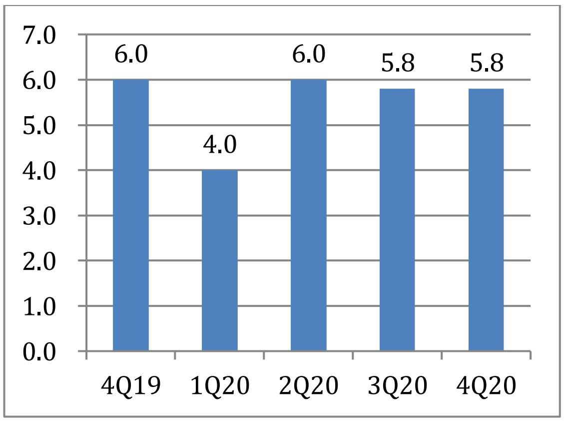
Impact on China's GDP growth

IMF's Managing Director Kristalina Georgieva said on 12 February that the more likely scenario the institution now view is a V-shaped recovery of China's economy as factories gear back up to make up for lost time and warehouses are re-supplied. In other words, the sharp decline in economic activities in China is expected to be followed by a rapid recovery and thus the total impact on China would be relatively contained; therefore, the impact on the world economy would also be contained.

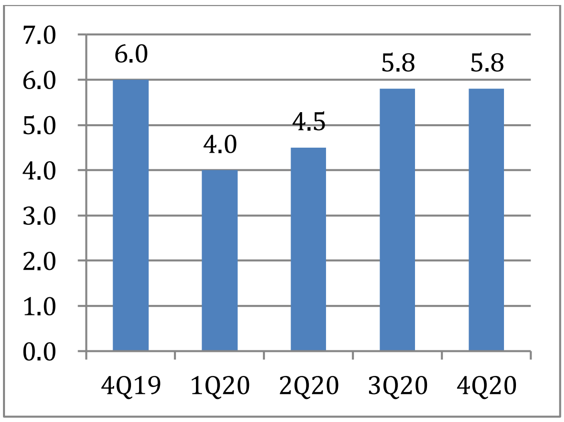
China's GDP growth in the first quarter could fall to as low as 4%, Nicholas R. Lardy, a senior fellow at the Peterson Institute for International Economics, estimated on 11 February. That compares to Chinese government estimates of 6% annual growth before the virus emerged. However, if the number of confirmed new COVID-19 cases continues to decline, then adverse effect on annual growth will be much smaller, he added.

Fung Business Intelligence offers two scenarios for China's economy. If the COVID-19 outbreak could be under control by end-March amid strong government measures to contain the epidemic, we predict that GDP growth in 1Q20 will be reduced by 2.0 ppts to 4.0% yoy, but China's economy will quickly rebound in 2Q20. Even in the pessimistic scenario that the COVID-19 outbreak will only be under control by end-June, we expect that China's economic growth will return to normal in the second half of the year.[4]

GDP growth (%) in optimistic scenario



GDP growth (%) in pessimistic scenario



[4] Projections made by other economists and analysts: https://www.cnbc.com/2020/02/05/china-gdp-2020-banks-trim-forecasts-amid-outbreak.html

III. Challenges facing enterprises operating in the impacted areas

1. Serious shortage of workers

Even if a factory or enterprise gets approval from the government to resume operations, which is difficult in itself, workers might not be able to return to work due to the shutdowns of intra-city and inter-city transportation networks, full or partial lockdown in some cities, and isolation requirements for workers with high-risk exposures.

2. Supply chain disruptions in many industries

Most enterprises have a large number of outsourced parts suppliers, which are located in different areas of different cities and thus facing different policies with respect to production resumption. It is pointless to even try to resume production if upstream suppliers have not resumed work.

3. Transportation problems

Various checkpoints have been set up in inter-city highways and roads, making the transport of materials, components and parts, and finished goods difficult. Due to cuts in air and sea freights to some countries, exports of goods from China have also been disrupted. Shipments to, as well as from, China are becoming more complicated to arrange due to quarantines required at certain ports.

How does the COVID-19 outbreak affect US companies in China?

The American Chamber of Commerce in Shanghai conducted a mini-survey of member companies with manufacturing operations in Shanghai, Suzhou, Nanjing and the wider Yangtze River Delta in mid-February in relation to supply chains and factory resumption. Major results are as follows:

- 48% of companies report their global operations are already impacted by the shutdown;
- 78% of companies do not have sufficient staff to run a full production line;
- 41% of companies say a lack of staff is their biggest challenge in the next 2-4 weeks; 30% of companies say logistics issues will be their biggest concern;
- Over the next few months, 58% of companies expect demand for their output to be lower than normal;
- 38% of companies do not have sufficient masks/other supplies to protect their staff from COVID-19 infection;
- 35% of companies ranked a clearer explanation of requirements as the most important thing government officials could do to speed up factory opening approvals.

SMEs to bear the brunt of the outbreak impact

Small and medium-sized companies (SMEs) in China are the backbone of the country's private sector and play a vital role in employment. Even before the outbreak, many small businesses in China were already struggling with shrinking sales as China's economy logged some of its slowest growth in decades. With business now at a standstill during the outbreak, many are facing existential liquidity crises. Large numbers say they are having difficulties just paying salaries, adding that they can only survive for a matter of months using their current resources, even if Beijing provides support.

Professors from Tsinghua University and Peking University conducted a survey of 995 SMEs in China after the COVID-19 outbreak. Results show that about 85% of SMEs surveyed could not survive for more than three months with their available funds. About a third said they could survive for only one month, while another third said they could survive for up to two months.

IV. Potential disruptions to global supply chains

As the COVID-19 outbreak has caused large-scale factory shutdowns and production delays, the disruptions have started to ripple through global supply chains. When SARS hit in 2003, China manufacturing export share was only 8% and it was 19% in 2018. By moving up the value chain, China has become a much more important player in exporting intermediate goods than before, which means that any disruption in China's production capacity could affect the rest of the world more severely than in the past.

Moreover, global supply chains are becoming increasingly more complex than they were in 2003. Even manufactured items with a very tiny quantity of Chinese content will be affected as production in China is halted, and the increasing complexity of products makes it difficult to replace specialized manufacturers.

Under normal circumstances, factory operations in China generally return to normal in two or three weeks after the end of the Chinese New Year holiday, but the timeline, however, is likely to be pushed back further this year due to local authorities' epidemic prevention and control purpose. Even when factories are up and running, moving goods around and out of China will remain challenging. The longer shipping volumes are depressed, the bigger the backlog when factory operations resume — which may result in logistics bottlenecks.

Industries that rely on just-in-time production in China are dangerously exposed to the supply chain shocks caused by the outbreak. Some may struggle to find alternative sources of supply and some may halt operations due to shortage of components from disease-impacted areas.

Textiles and apparel, automotive, electronics and pharmaceutical supply chains are likely to be hit by the outbreak due to the size of the sectors globally and also their high dependency on Chinese inputs.

1. Textile and apparel sector

While there is not much apparel production in Hubei province, it is an important manufacturing base for the textile industry (which accounted for 5% in Hubei's gross industrial output in 2017), with many fabric material processing, printing and dyeing businesses clustered there. Located in the centre of China, the province also plays a vital role in connecting to China's textile and apparel production bases in the eastern coastal areas. A prolonged transport paralysis means shipment of fibres or fabrics produced in the major production bases in coastal provinces to inland provinces will be delayed. Similarly, the delivery of apparel products and other finished textile products to other parts of China, as well as exports, could also stall[5].

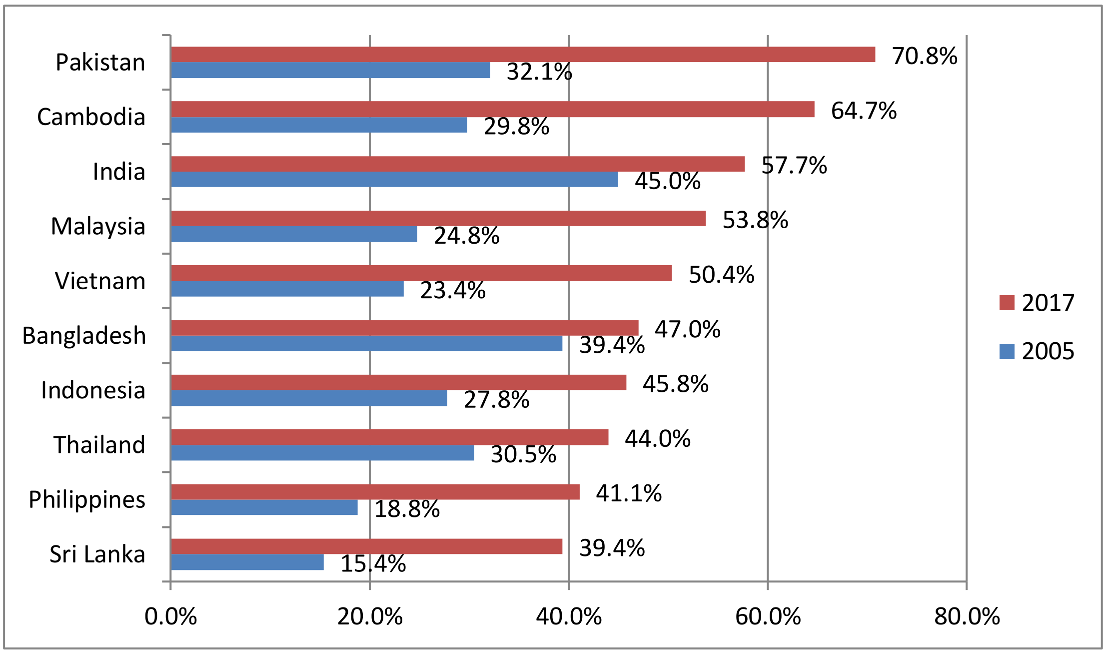
Factory workers returning to Jiangsu, Guangdong and Zhejiang, which account for significant shares of textile and apparel manufacturing in the country, will have travel difficulty due to the traffic control amid the epidemic. It is still unclear when factory operations will fully resume. Some delays in the export of orders seem unavoidable.

With many brands and retailers in the midst of autumn/winter season sourcing, travel restrictions could hinder those orders. Some Western retailers have cancelled planned visits to Chinese factories. Besides, many trade fairs, to be held in China or overseas, have been postponed given the wide spread of COVID-19 in the world.

Worse still, the COVID-19 outbreak could have a knock-on effect on the textile and apparel supply chain in Asia, which relies on China's supply of fabrics, textile inputs and garment accessories. The chart below shows that China is playing an increasingly important role as a textile supplier for apparel-exporting countries in Asia. Thus, shifting sourcing orders to other countries does not seem to be a quick solution at this point.

[5] Wood Mackenzie, "The impact of the coronavirus on the Chinese polyester industry", 3 February 2020

China's market shares in leading textile import markets in Asia (by value)



Source: China's Changing Role in the World Textile and Apparel Supply Chain, Sheng Lu, November 2018

Other sourcing countries impacted by/benefited from the COVID-19 outbreak in China

- **Cambodia: garment factories may face shutdown due to a shortage of raw materials**

The Ministry of Labour and Vocational Training has warned that at least four Cambodian garment factories, which employs 3,000 workers in total, may be forced to shut down for two or three weeks in March due to a shortage of raw materials[1]. More than 60% of raw materials used in Cambodia's garment industry are imported from China. It takes Cambodian factories about 40 days to receive the fabrics after they place the order. Before the Chinese New Year, a lot of fabrics were imported into the country, but then factories in China closed.

- **India: received more buyers' enquiries lately but may also face shortage of Chinese inputs**

Foreign buyers, mostly from the US and the EU, are turning to India to source ceramics, homeware, fashion and lifestyle goods, textiles, engineering goods and furniture from the country as China grapples with the COVID-19 outbreak[2].

However, not all sectors are looking to benefit from China's trouble. India's leather sector is worried because it depends on China for components such as soles and ornaments. Besides, Indian garment exporters buy a large amount of accessories such as buttons, metal buttons, zips, hangers and needles, among other items, from China as they are nearly 40% cheaper than India and other countries. Though the exporters do not see any immediate impact but if the outbreak continues for some time, they need to look for alternative sources of these accessories, which in turn may increase the cost of finished goods by 3% to 5%.

- **Turkey: in talks with several brands and retailers for the production of new seasonal items**

Several fashion retailers that manufacture clothing in China are in talks with Turkish firms about shifting production to Turkey, particularly for new seasonal items[3]. In recent years, Turkish manufacturers have relocated their clothing production up-market as China's dominance grew globally. But the outbreak has sent some European companies back to Turkey. It is reported that Polish fashion retailer LPP has been in talks with factories in Turkey, Bangladesh and Vietnam as a backup plan if production delays in China continue.

- **Bangladesh: woven garment industry may be worst hit due to dependence on Chinese inputs**

Bangladesh's garment industry, which accounts for 80% of the country's exports, is highly dependent on fabrics and garment accessories imported from China. China accounts for over 36% of Bangladesh's imported cotton and textiles and 33% of the country's imported machinery[4]. While Bangladesh has not felt the impact of the outbreak yet, the country's manufacturing sector may be badly hit if supply of raw materials from China continues to be disrupted[5].

Bangladesh's garment factories normally have very small inventories, according to Abul Kasem Khan, a former leader of the Dhaka Chamber of Commerce and Industry (DCCI). Production will be impacted if the outbreak continues into March. Anwar ul Islam Chowdhury, president of the Bangladesh Chamber of Industries (BCI), also chairman of leading clothing manufacturer Evince Group, opined that the woven sector may be the worst victim, as it is highly dependent on imports from China.

Other sourcing countries impacted by/benefited from the COVID-19 outbreak in China (cont.)

- **Vietnam: manufacturing activities held up due to delays in shipments of components and raw materials, as well as travel bans and quarantines of staff**

Vietnam's manufacturing sector is still heavily reliant on components imported from China. Most of the technical materials used by the country's apparel and footwear industry to produce athletic apparel are imported from Guangdong. The furniture industry is also dependent on Chinese suppliers for specialized components such as drawer guides and specific fabrics or leather. The temporary suspension of production in China has caused huge uncertainty in the continuous availability of such production inputs in the near term, as most manufacturers only maintain roughly one month's inventory. The temporary closure of certain border checkpoints has also led to a delay in customs clearance, causing containers to be held up at border gates.

The outbreak has also hindered people flow, with foreign visitors who have visited China in the past two weeks barred from entering Vietnam, and flights and train services between the two countries suspended. There have been anecdotal accounts of travelers in more remote border crossings into Vietnam being denied entry if they have any travel history to China in their passport.[6] Many companies in Vietnam employ Chinese staff, including some senior and middle managers.[7] With some of these employees trapped in Hubei and the rest quarantined upon return to Vietnam, the operation of many manufacturers is hampered.

Adding to the uncertainty is the Vietnamese authorities' tendency to enforce extreme measures with little or no notice in a bid to contain the outbreak, potentially causing further disruptions to business.[8]

[1] The New York Times, 10 February 2020
[2] The Economic Times, 8 February 2020
[3] Daily Sabah, 8 February 2020
[4] 2018-19 fiscal year figures, Bangladesh Bank
[5] All imports from China by plane and ship have been suspended, according to Zafar Iqbal, managing director of AYZ Express Services, a Bangladeshi logistics provider for the garment industry. (Source: The Daily Star, 15 February 2020)
[6] While this is not an official policy, it may be implemented at certain border crossings.
[7] This is in part due to massive manufacturing relocation from China to Vietnam in recent years. According to the estimation by a Taiwanese business owner in Vietnam, there are approximately 50,000 management staff from Chinese Mainland employed by Taiwanese enterprises in Ho Chi Minh City and its vicinity. The number of Chinese Mainland management staff working in Vietnam is estimated to exceed 100,000.
[8] For instance, the Vietnamese government ordered a 20-day quarantine on a community of 10,000 people in Son Loi, 44km from Hanoi, in mid-February in a bid to contain the spread of the COVID-19 outbreak.

2. Automotive sector

Wuhan, where the COVID-19 outbreak was first reported and the most hit by the epidemic, is a major industrial and transport hub in China. Optoelectronics, automotive and parts, and pharmaceuticals industries are the three pillars of Wuhan's industrial development. Meanwhile, Hubei province is one of China's four largest automotive production bases. Due to complexity of the automotive supply chain, production delays in some auto parts enterprises could cause a wide-reaching impact along the global supply chain.

On 4 February, Hyundai, the world's fifth largest automaker, said it was idling all seven of its plants in South Korea due to disruptions in the supply of components coming from China amid the outbreak. It was the first major manufacturer to halt operations outside of China, but it was not alone. On 10 February, Nissan also announced that its factory in Kyushu, Japan would temporarily shut down on 14 and 17 February due to component shortage from China. The car maker expected to restart production in China on 17 February.

20 of the 31 provinces in the Chinese Mainland announced that work resumption for all nonessential businesses would be delayed until 10 February. Hubei announced a further delay to 21 February. These 21 provinces together account for around 85% of vehicle production in China. Even for those car factories due to reopen on 10 February, many remained idle due to local quarantine restrictions and shortage of labour.

According to a research analysis by IHS Markit on 31 January, projected crisis-induced first quarter production loss of the automotive industry would reach around 350,000 units (-7%) if factories are only idled until 10 February. However, if the situation lingers into mid-March, and plants in neighbouring provinces are idled, IHS Markit predicts potential lost production would reach more than 1.7 million units for the first quarter, or about 32.3% decline from its initial expectations before the outbreak began.

3. Electronics sector

Wuhan is the heart of China's "optics valley" and home to many firms making components essential for telecoms networks. Yangtze Memory Technology Corp, one of China's most advanced chip fabrication plants that makes 3D NAND flash memory used in smartphones and computers, is located in the city.

Among China's five largest fiber optic manufacturers, Yangtze Optical Fibre and Cable (YOFC) and Fiberhome have a significant presence within Hubei province. YOFC, for example, has one of the world's biggest preform manufacturing facilities in Wuhan. It is estimated that Hubei province accounts for around 35% of total preform capacity and 21% of cable production in China, equivalent to 20.3% and 11% respectively in the world[6]. Any notable and prolonged closures of Hubei's key factories will cause disruptions to the entire domestic fibre industry and delay exports.

Foxconn, the world's largest contract electronics maker and an important supplier for Apple Inc., received government approval to reopen its Zhengzhou and Shenzhen factories starting from 10 February, while production resumption in other parts of the country, including Kunshan in Jiangsu province, was still pending for approval by local authorities. In its factories in Zhengzhou and Shenzhen, roughly 10% of the workers were back after the extended Chinese New Year holiday as of 10 February. Industry analyst thus cut the forecast for iPhone production by about 10% in the first quarter of the year.

IPad supplier Compal Electronics also postponed plans to resume work at its Kunshan facilities in Jiangsu province from 10 February to 17 February. Besides, the availability of Facebook's popular virtual reality headset, Oculus Quest, which is produced in China, is also affected due to the outbreak.

4. Pharmaceutical sector

It is not well known to the world that China plays a key role in global pharmaceutical sector until the outbreak of COVID-19. Chinese drug factories manufacture key ingredients for antibiotics, diabetes drugs, painkillers and antiretrovirals for HIV for pharmaceutical companies globally.

India, the world's largest exporter of generic drugs, depends on China for 70% of its raw pharmaceutical materials and active ingredients. Most Indian pharmaceutical companies are likely to start running out of their supplies by the end of February unless Chinese drug manufacturers resume production. The COVID-19 outbreak has already caused prices of pharmaceutical ingredients to rise in India as businesses stockpile and sellers start charging a premium[7].

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[6] https://www.crugroup.com/knowledge-and-insights/insights/2020/impact-of-the-novel-coronavirus-on-the-optical-fibre-industry/?utm_medium=Press_release
[7] https://www.ft.com/content/8630c51c-4cc0-11ea-95a0-43d18ec715f5

Even the US drug makers are also reliant on China for pharmaceutical raw materials. For example, 97% of all antibiotics in the US come from China. In July last year, the US — China Economic and Security Review Commission held a hearing on the US' growing reliance on China's pharmaceutical products. China has 15% of the world's facilities that manufacture active pharmaceutical ingredients for 370 essential drugs, while the US has 21% of those facilities, according to the US Food and Drug Administration (FDA).[8]

Large pharmaceutical companies may have stock for two to three months, while small firms' inventories can last for only 30 to 40 days. Even when Chinese factories reopen, large backlogs could cause logistics delays.

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[8] But the agency does not know how much those facilities produce — if they produce anything at all https://www.theamericanconservative.com/dreher/meds-for-china-supply-line/

V. Government policies to support work resumption and boost the economy during the outbreak

1. Measures to facilitate smooth traffic flow

The Chinese government has made special arrangement to restore traffic smoothness and safeguard the normal economic and social order. According to a circular released by General Office of the State Council on 8 February, local governments and authorities should step up efforts to resume highway operations and passenger transport in an orderly manner. Unauthorized closure of highway entrances and exits and setting up unauthorized quarantine checkpoints along highways and at interprovincial borders are strictly forbidden.

As of 12 February, nine provinces and municipalities including Jiangsu, Zhejiang, Guangdong, Shandong, Fujian, Sichuan, Anhui, Hunan and Chongqing have resumed interprovincial road passenger transport, while a total of 17 provinces have restored intra-provincial road passenger transport.

2. Policies to support work resumption

As companies rush to reopen their factories and businesses, they must comply with a myriad of local government regulations to obtain permission to open. These regulations exist at all levels of the government from provincial governments to neighbourhood committees. To promote orderly resumption of business operations and support a stable economy, the State Council released on 8 February a circular to guide local governments in this regard.[9] Since then, dozens of provinces and cities, including Zhejiang, Sichuan, Guangdong, Hunan, Chongqing and Hangzhou, have introduced specific policies to facilitate work resumption.

3. Policies to support SMEs and other impacted enterprises

As the outbreak in China hampers business activity, regional governments are rolling a slew of measures to support SMEs. These measures, vary by province or by city, include but not limited to refunding unemployment insurance premiums paid, delaying the adjustment period of social insurance contribution base, extending the social insurance payment period, providing

[9] http://www.miit.gov.cn/newweb/n1146290/n1146392/c7670020/content.html

training subsidies, deferring tax payments for up to three months, reducing rents, and lowering lending rates.
SMEs aside, other impacted enterprises can also receive financial support from the People's Bank of China, Ministry of Commerce, Ministry of Finance, and the State Taxation Administration, etc.

4. Measures to support foreign-invested companies and foreign trade enterprises

China's Ministry of Commerce released a new set of measures on 10 February urging local authorities to "spare no effort" to facilitate foreign-invested enterprises (FIEs) to resume work and to promote foreign investment.

The General Administration of Customs of China issued ten measures on 16 February to facilitate work resumption of foreign trade enterprises. The measures include simplifying registration and filling procedures, speeding up inspection for imported raw materials and equipment, promoting the import of food and agricultural products, improving pre-export supervision and facilitating certification services.

VI. Updates on work resumption

China's State Council released a circular on 8 February to urge efforts to resume production as soon as possible while protecting workers from getting infected with COVID-19. Since 10 February, more and more enterprises in China have resumed production.

Current status of work resumption in selected provinces /cities (as of 16 February)

Province/city	Number of industrial enterprises above designated size[10] which have resumed work		Number of workers in industrial enterprises above designated size which have resumed work	
	Number of enterprises	As a percentage of the total	Number of workers	As a percentage of the total
Jiangsu[11]	29,230	65%	3,240,000	57%
Zhejiang[12]	24,888	56.2%	--	55.2%
Anhui[13]	7,288	40.4%	887,000	--
Hunan[14]	6,995	42.3%	658,800	23%
Hebei[15]	4,946	37.5%	--	--
Fujian[16]	--	Close to 60%	--	--
Dongguan, Guangdong[17]	5,000+	--	--	--
Foshan, Guangdong[18]	4,717	59.7%	--	--

10 'Industrial enterprises above designated size' refer to industrial enterprises with annual revenue of 20 million yuan or more.
11 https://baijiahao.baidu.com/s?id=1658736231746574077&wfr=spider&for=pc
12 http://zj.people.com.cn/n2/2020/0218/c186806-33805056.html
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VII. Key takeaways for businesses and concluding remarks

Many apparel brands and retailers still wait and see what is going to happen in its supply chain in China amid the COVID-19 outbreak. Some delays in order delivery seem unavoidable. For contingency plans, apparel companies sourcing from the disease-impacted areas should urge their vendors to follow strictly local authorities' regulations on worker quarantine and workplace hygiene to avoid worker infection. Meanwhile, buyers or supply chain managers should keep a close eye on the latest news on work resumption in different areas of China and to make agile purchase decisions based on the latest work resumption situations.

In the near term, shifting sourcing orders from China to alternative production countries in Asia does not seem to be a quick and viable solution at this point for the following four reasons: 1) textile and apparel supply chain in Asia is highly reliant on China's supply of fabrics, garment accessories and other inputs; 2) some neighbouring countries are facing capacity constraints as US retailers have been reducing their exposure to sourcing from China due to the China-US trade war (for instance, Vietnam's capacity is completely full); 3) skill sets/product offerings by some other production countries such as Bangladesh are unable to match/substitute China; 4) management team from China may not be able to return to their factories in other countries in Asia and Africa due to travel restrictions or flight suspensions, which may impact factory operations.

For companies that are urgently looking to diversify their sourcing portfolio, particularly for their autumn/back-to-school season orders, countries or regions that are less reliant on Chinese suppliers, or have a relatively self-sufficient textile and apparel supply chain, such as Turkey, Egypt, Jordan, Mexico and Central America, could be among the first options.

In the longer term, companies need to thoroughly re-examine their supply chains and devise contingency plans and risk management policies for their supply chains. Businesses should avoid an 'all-in' sourcing strategy which is single-market dependent, and also make sure that back-up suppliers for every part of their supply chain are ready to go in case of any unexpected events. These mean that production and supply chains now need to be even more diverse and agile.

Both a diversified sourcing portfolio and a broad supplier network remain key to businesses even after the COVID-19 outbreak is over. As such, companies with a strong global supplier network and deep relationships with suppliers will be in the best position to meet the new challenges in this era of disruptions and great unpredictability.

We anticipate that the COVID-19 outbreak in China will be contained before this summer. Although it is still not known when factories will fully resume at the moment, we believe that China's unrivalled capacity, extensive capability and flexibility will make it competent to cope with a sudden surge in backlogs of orders when factory operations fully resume.

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About the Organisations:

Fung Business Intelligence

Fung Business Intelligence collects, analyses and interprets global market data on sourcing, supply chains, distribution, retail and technology.

Headquartered in Hong Kong, it leverages unique relationships and information networks to monitor, research and report on these global issues with a particular focus on business trends and developments in China. Fung Business Intelligence makes its data, impartial analysis and specialist knowledge available to businesses, scholars and governments through regular research reports and business publications.

As the knowledge bank and think tank for the Fung Group, a Hong Kong-based multinational corporation, Fung Business Intelligence also provides expertise, advice and consulting services to the Group and its business partners on issues related to doing business in China, ranging from market entry and company structure, to tax, licensing and other regulatory matters.

Fung Business Intelligence was established in the year 2000.

Fung Group

Fung Holdings (1937) Limited, a privately-held business entity headquartered in Hong Kong, is the major shareholder of the Fung Group of companies, whose core businesses operate across the entire global supply chain for consumer goods including trading, logistics, distribution and retail. The Fung Group comprises 42,000 people working in more than 40 economies worldwide. We have a rich history and heritage in export trading and global supply chain management that dates back to 1906 and traces the story of how Hong Kong and the Pearl River Delta emerged as one of the world's foremost manufacturing and trading regions. We are focused on both creating the Supply Chain of the Future to help brands and retailers navigate the digital economy as well as creating new opportunities, product categories and market expansion for brands on a global scale.