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WHAT MIGHT CHINA'S RECOVERY LOOK LIKE

Views from China and possible lessons for the world



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WHAT MIGHT A CHINA RECOVERY LOOK LIKE?

China's economic recovery is underway following a strong public health response to COVID-19. Consensus estimates suggest that while Chinese GDP growth will fall to 2.5% from 6.1% in 2019, with other large economies entering recession China will once again be the primary source of global growth. China Q1 GDP was -6.8% relative to Q1 2019 – relatively close to the consensus estimate from 57 analysts of a contraction of 6.5%, and materially better than many of the estimates of double-digit contraction. Q1 is seasonally a slower-growth quarter for China, with Chinese New Year. As-of mid-April, signs of recovery can be seen across China, with some schools re-opening, manufacturing PMI rebounding, and people once-again traveling.

Much discussion focuses on the speed of China's recovery, with three broad paths hypothesised:

- A “V-shaped” recovery, with a quick rebound to pre-COVID-19 levels of economic activity, likely within one or two quarters.
- A “U-shaped” recovery, with a much longer period of hardship prior to economic recovery perhaps late 2020 or during 2021.
- An “L-shaped” impact, with limited recovery from the fundamental economic impacts resulting from COVID-19.

We believe that this debate is too simplistic: there is a tendency to treat China as one single economy. In our experience this significantly underestimates the heterogenous nature of China, with huge dispersion geographically. Different sectors of the Chinese economy will experience recovery very differently, and competing influences will shape the path of growth over the next 12-months depending on the sector concentration in each region. This will result in an aggregate “blend” of V, U and L-shaped profiles – the weighting of each allowing different scenarios for the overall economic picture.

The remainder of this paper goes into more detail, using a combination of aggregate data and specific real-time geospatial information as evidence. Taking each component of GDP in turn, in summary we see:

- Manufacturing is already experiencing a V-shaped “bounce” with over 90% of factories back on-line, and many working over-time to meet backlogs in orders built-up during COVID-19 lockdowns. Industrial production in Q1 2020 was down only 8.4% relative to Q1 2019, despite a two-week lockdown beyond the Chinese New Year break implying 17% less operational time.
- Services will experience a more U-shaped recovery, with retail sales down 19% in Q1 2020 relative to the same period in 2019. Within that there is a huge difference between services delivered through traditional channels, which have materially contracted (and may never fully recover), and digital segments which have grown significantly.

- A risk of a broad global recession leading to material global demand-driven contraction which could lead to a more prolonged L-shaped path for China. This will impact both manufacturing and services. It is this path that has the greatest potential to disrupt industries and consumers, however China is in many ways now less dependent on global exports with exports accounting for 17% of GDP compared to 31% in 2009.

Across each of these effects, it is critical to understand regional exposure, not just overall exposure to China. The global financial crisis produced a 15-percentage point gap between the fastest and slowest growing 250+ major cities. We expect multiple “mini-cycles” to play out across the country by industry and region. An L-shaped recovery will only exacerbate the differences between leaders and laggards.

The municipal level response to COVID-19 will further exaggerate differences, as each city implements its own mixture of social distancing, fiscal stimulus, and economic reform policies.

A V-SHAPED RECOVERY IN MANUFACTURING

China's manufacturing is largely operating again. Official surveys indicate more than 90% of factories are back to work. Finished goods inventories are not high, so factories will need to increase production just to meet the backlog of orders, and while container shipments out of China fell as a result of COVID-19, imports remained robust, suggesting ample supply of raw materials. March PMI bounced back to 52.0 (similar levels to pre-crisis) from a low of 35.7, and March 2020 industrial production was only down 1.1% relative to March 2019. We prefer the production to finished goods inventories ratio, as it accounts for stock levels. The ratio was in line with the 2019 average at 1.10.

Certain municipal authorities prioritised large corporates ahead of SMEs, as the latter are bigger drivers of employment and investment. Industry has led the way, with specific government initiatives put into place for firms who are part of the supply chain of critical manufacturing, such as telecommunications giants Huawei and ZTE, electrical appliance makers such as Midea, and car makers like the GAC Group. Looking at recent export data, the regional push to re-open across Guangdong's has resulted in the province leading other export hubs.

One key challenge has been the mobility of a largely migrant manufacturing workforce, especially with many having travelled home for Chinese New Year and then restricted from returning. In response, a number of provinces have chartered trains and flights, as well as in certain cases offering workers cash bonuses to return. Such initiatives have had an impact. Guangdong province recently reported on the example of Biel Crystal, a firm based in Huizhou that supplies glass screens for Apple iPhones. While only 5,000 of their 30,000 workers returned in the first week after the extended Lunar New Year holiday period ended on February 9, an additional 22,000 workers had returned just over a week later following state-provided transportation options.

Clearly manufacturing will also be impacted by global recession; while we go into this in more depth later in this paper it is worth noting that we estimate 40-50% of manufacturing is export-oriented. However, in turn this might be partially offset by government infrastructure investment and specifically targeted fiscal stimulus, which will likely be successful in the large industrial sector (as opposed to SMEs).

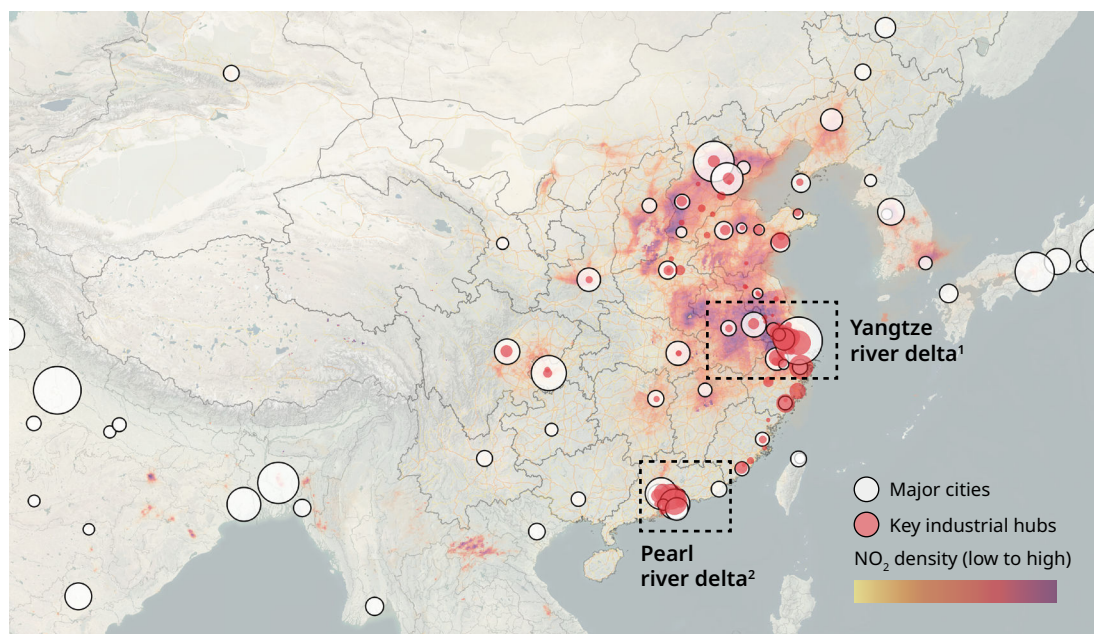
What does the data say on manufacturing?

Relying on official data is not enough and typically provides only national-level insights. We have aggregated a range of alternative datasets to validate and provide greater granularity.

Our proprietary analysis of NO₂ pollution data across 650+ urban areas shows higher pollution levels relative to last year (>10%) in urban areas with large industrial sectors, especially around the Yangtze River Delta.

Readings in other coastal urban areas are lower. The southern Pearl River Delta is an exception as municipal authorities appear to have prioritised recovery with NO₂ pollution levels modestly higher relative to last year and migrant workers returning 10 days earlier relative to Jiangsu and Zhejiang (see Exhibit 1).

Exhibit 1. China's recovery is geographic specific (data as of March 20-30, 2020)



1. Migrant workers' return is delayed. Change in pollution measures against 2019 suggested startup in heavy industries
 2. Migrant workers returned between February 10-25. Pollution measure indicated mixed recovery in manufacturing activity
- Source: ESA data, SRA Intelligence, and Oliver Wyman analysis

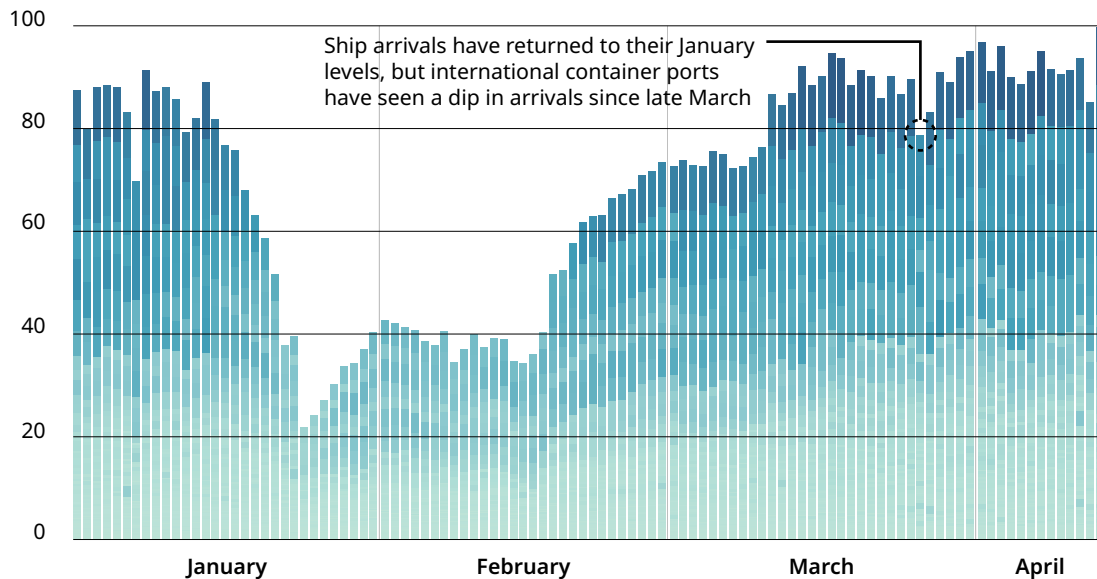
Analysis of Automatic Identification System (AIS) shipping data shows cargo arrivals at the 130 ports across China is moving again. Ship arrivals during the first two weeks of April are running 10% above their early January average. However, ports focused on international cargo trade have seen a dip from their mid-March levels. This may suggest weaker export demand is weighing on manufacturing after initial catch-up shipments, but also could reflect earlier pent-up demand (with ships stuck outside ports) (see Exhibit 2).

Consistent with the government data, our proprietary analysis of Baidu's urban mobility data across 360 cities indicates that migrant workers largely returned to factories between February 10 and March 10. The average distance travelled (250km) to the destination cities has since returned to January levels for most cities, although remains low in Beijing and Shanghai (see Exhibit 3).

Exhibit 2. Container ship port arrivals across mainland China

Port arrivals

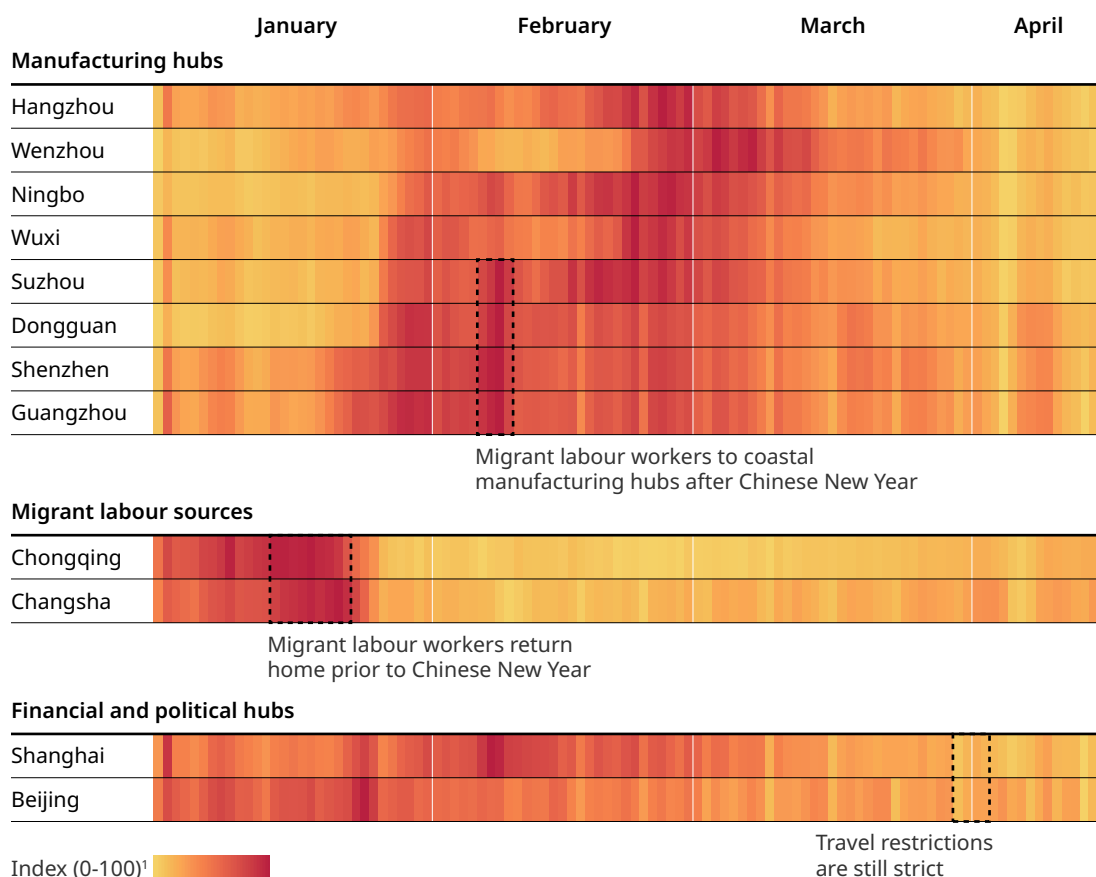
Unique ship MMSI (K per day)



Source: SPIRE, SRA Intelligence, Oliver Wyman analysis

Exhibit 3. Analysis of travel patterns within China

Heatmap indicates peak period in long-distance travel to each city from 361 cities nationally



1. Based on kilometres travelled

Source: Baidu data, SRA Intelligence, and Oliver Wyman analysis

A U-SHAPED RECOVERY IN SERVICES. BUT A “TALE OF TWO CITIES”

China's services sector as-of 2019 represented 54% of GDP (as compared to 39% for the industrial and manufacturing sector and 7% for agriculture). The impact of COVID-19 on this sector, especially within consumer discretionary spending, has been material. Consumer confidence dropped from 126.4 in January 2020 to 118.9 in February – a material change although notably still higher than pre-2018 levels. While the recovery is underway, unlike in manufacturing the rebound will take time and will differ by both type of services and geographic region with China.

In the first two months of 2020, official unemployment figures increased by 5MM, leading to national unemployment rate increasing from 5% to 6.2%. Much of this is concentrated in services businesses. Offline spending in stores, retail, restaurants and leisure travel will take significant time to recover (although many have compensated where possible with delivery models). Again, there are large differences by region and scale of restaurant: already by mid-March 60% of chain and franchise restaurants were fully operating, as compared to an overall rate for all restaurants (including chain and franchise) of only 30%¹. This includes coffee shops: over 90% of the 4,200 Starbucks stores in China have re-opened.

Our recent primary research into Chinese travellers suggests that 37% of the population expect to travel less post COVID-19, while only 12% anticipate traveling more. But behaviours are also likely to change with resulting opportunities: while 36% expected to travel overseas in 2019, now only 23% expect to do so. Post COVID-19, 65% responded that they would be more likely to take self-driving tours, and 48% would be more likely to go hiking or cycling.

While traditional services have been challenged, COVID-19 has accelerated the gap between online and offline spending. A number of early hot-spots have included:

- **Online Healthcare:** Ping'An Good Doctor's new user registration saw a 10x growth relative to 2019 averages. The total number of consultations scheduled in Feb is 9x pre-outbreak monthly average with total visits topping 1.1BN.
- **O2O E-commerce, especially groceries:** Transactions for major players (including Miss Fresh, JDDJ, Hema, Dingdong, and Yonghui) all increased between 200% and 500% during the outbreak.
- **Online education:** Daily active user numbers for major online education apps increased by 1100%-1500% following school cancelation during the outbreak.
- **Remote working tools:** New user increase growth rates in China of Dingding, Zoom and Corporate WeChat hit 700%, 660%, and 300% respectively.

Real-estate transactions in the first three weeks of February fell by over 90% on a seasonality-adjusted basis relative to 2019. However, again the rebound is notable, with early April transactions more than 20% above levels seen in 2019. Large-ticket consumption (e.g. Auto sales) have also fallen considerably. As a result, related traditional consumer banking operations in Financial Services have been materially reduced. Corporate and consumer lending has also declined, and given low interest rates, NIM compression remains a challenge for the Banking sector.

¹ Source: China Hotel Association Research Institute

Somewhat offsetting this is a bump in digital activity in Financial Services similar to that observed in the real economy. Online wealth management has grown materially; for example, Alipay daily mutual fund purchases increased by 400% in the first 2 weeks of February. Digital channels for health insurance have also seen rapid expansion in usage: the online insurance giant ZhongAn registered a 55% premium growth during the first two months of outbreak and expects health insurance to grow by 70% in 2020. Innovative models are also developing, for example the Ant Financial mutual health aid plan has quickly grown to over 50 million users.

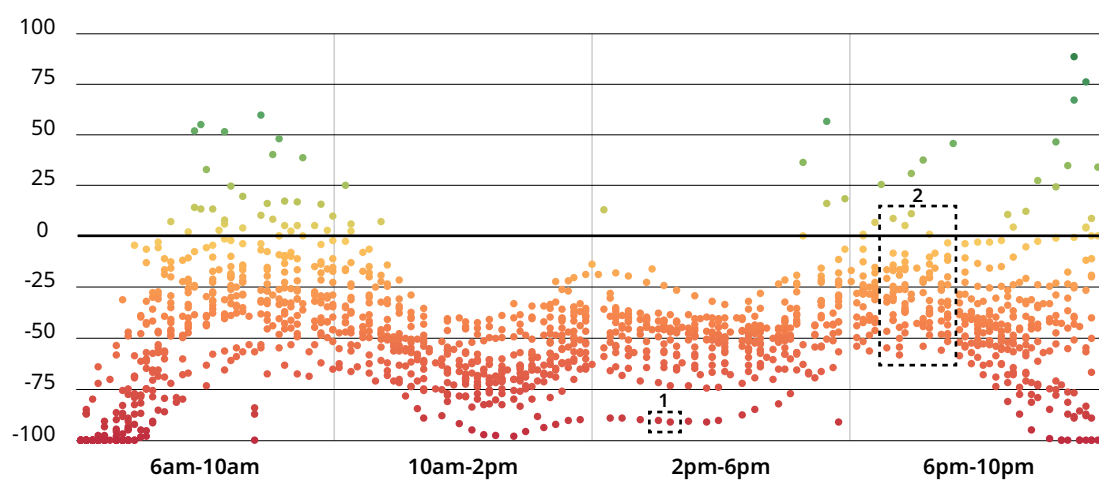
Overall, though, while online digital spending has been growing rapidly, spending remains skewed to larger wealthier cities, and the digital sector itself is heavily concentrated in Shenzhen, Hangzhou/Shanghai, and Beijing. For example, Hema (Alibaba's cashless retail store) is expanding rapidly but still only has branches in 21 cities with Beijing and Shanghai accounting for nearly half the total.

What does the data say about services?

- The economy is still far from operating at full steam, and social distancing policies are restricting mobility. Our analysis of traffic congestion data for 21 cities indicates that traffic levels are still 15% below historical levels. Traffic is especially light during the afternoon commute. A portion of this traffic represents growth in delivery, as models have been adjusted to accommodate COVID-19 (including sealed bags for deliveries and real-time temperature monitoring of drivers).
- Regional differences persist. Guangzhou and Shenzhen are experiencing higher traffic levels relative to Beijing and Tianjin. The faster recovery in the former echoes their relatively earlier pick-up in digital services and manufacturing, but also is influenced by municipalities encouraging use of public transport more in some cities (e.g. Beijing).

Exhibit 4. Traffic conditions for 21 cities

Current traffic conditions relative to historic (early April)



1. Non-peak hour traffic still below average

2. Differences between cities are significant

Source: TomTom data, SRA Intelligence, Oliver Wyman analysis

A POTENTIAL L-SHAPED IMPACT TO CHINA OF THE GLOBAL ECONOMIC SLOWDOWN

While the health crisis has, for now, largely passed across China and restrictions are eased, the projected global recession will have a material impact on China. This has the potential to derail any potential V or U-shaped recovery. The impact is harder to see in real-time data, clearly, but again we see a mix of downside risks with the potential to be offset by various factors.

Downside risks

China is still the world's factory, accounting for the largest share of global trade across a range of goods, from T-shirts (17%), steering wheels (19%), medical PPE (33%), to smartphones (70%). In many cases, these figures have risen during the past few years, not fallen. As global GDP falls, slowing exports will clearly be a drag on growth.

But expect significant variance across specific products based on the last global recession, which matters as economic activities in Chinese cities and provinces are highly concentrated in specific industries and products. During 2009 when total exports fell 15%, there was a wide range in relative performance. Looking at the performance of 900 products:

- The median decline across 900 products was -15%, but the range from the 25th to the 75th percentile was -33% to -1% indicating that certain products will be hurt harder than others.
- Most striking, nearly 200 products recorded >10% **increases** in 2009 across a range of basic products, including apparel, seafood, and home decoration, albeit outsourcing to “then” low-cost China offers some explanation.

We have mapped select export products against the SME supply base nationally to provinces and cities. A few highlights from our analysis show the concentration vulnerabilities:

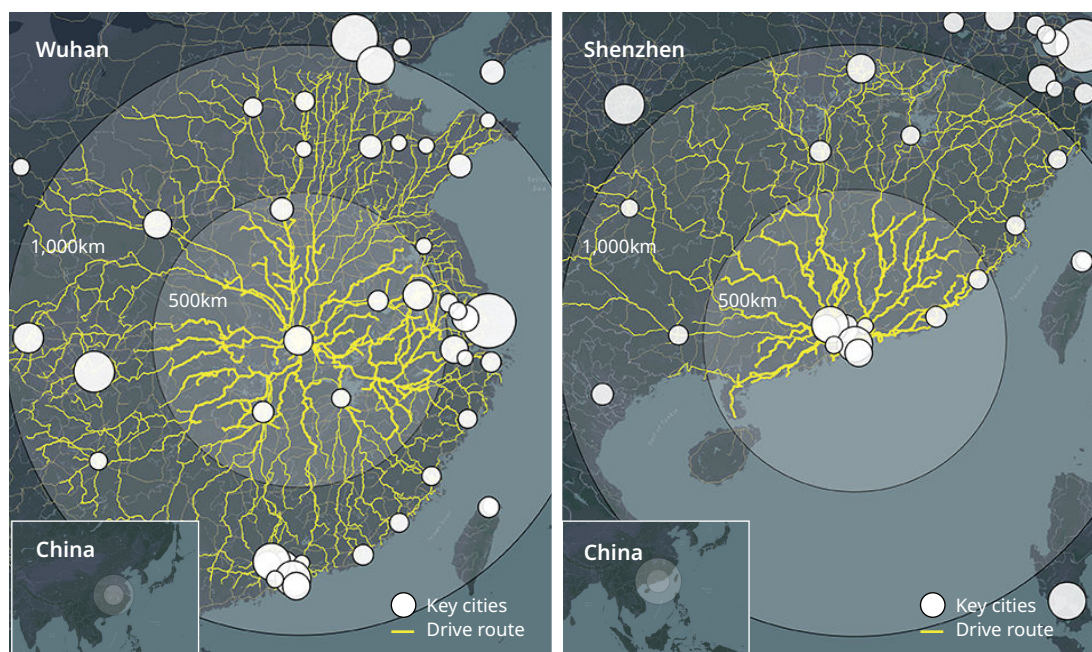
- **Automobile parts:** Ningbo, Guangzhou, Wuhan, Wenzhou, Shanghai, Qingdao, Taizhou.
- **Consumer electronics:** Shenzhen, Dongguan, Suzhou, Shanghai, Kunshan, Chongqing, Wuxi.
- **Industrial machines:** Ningbo, Shanghai, Shenzhen, Wenzhou, Qingdao, Guangzhou.

As the world re-opens, there is also a material downside risk for China of a second wave of infection. The playbook is now well established in China, with regional-level lockdowns applied at the province or city level. A second wave could have a very material implication on the economy overall, especially if not quickly contained through restriction of mobility. Further, the lock-down on global connections would also clearly extend.

Resulting restrictions would have different implications for different parts of China. For example, our analysis shows the importance of Wuhan to inter-China mobility: it is a critical transport hub, reliant on inter-provincial trade with nearly all major trading partners over 500km away. By contrast, Shenzhen's most important trading partners are cities located within 150km (see Exhibit 5).

Exhibit 5. Comparing Wuhan and Shenzhen supply chains

Drive time at 60km p/h	Urban population	
	Wuhan	Shenzhen
8 hours	52 million	90 million
15 hours	294 million	157 million



Source: SRA Intelligence

Potential mitigations

While trade remains critical for China, it is not as critical as during the last crisis, and this will go a long way to reducing the potential impact of the global demand shock. While a global recession will drag on growth, exports account for 17% of GDP compared to 31% in 2009. In addition the Balance of Payments is now relatively balanced – with imports close to offsetting exports, so the currency flows are easier to manage (see Exhibit 6).

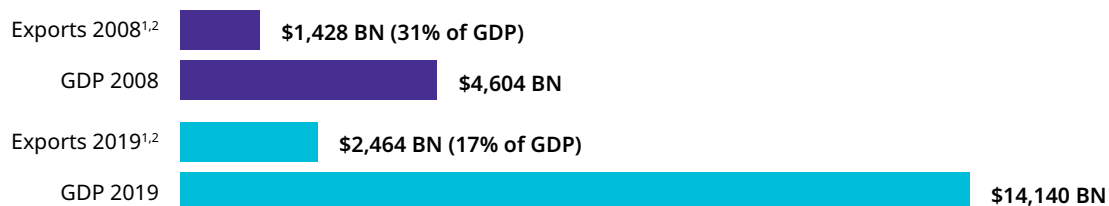
A further positive impact on GDP is that a major portion of China's imports are commodities, energy, and raw materials for exports (e.g. semiconductors). In 2018 16% of imports (\$350BN) was fuel, largely oil and gas. Given the 65% decline in oil prices, this will go a long way to offsetting the GDP impact of falling exports.

The large uncertainty is the impact of fiscal stimulus, with ~\$300BN announced thus far. We believe that additional fiscal stimulus during the current crisis will be limited, given relatively high debt levels and recognition that the last round of spending post-2008 created distortions. Additionally the toolkit will need to look different to 2008: the traditional mechanism for stimulus in China has been large infrastructure investment. However, much of this has already been done, with massive investment over the last 15 years in rail, roads, energy and airports. Much of the recent focus has been more targeted – with specific SME support programs and focus on ensuring consumption is propped up.

With an earlier widening of the value-add tax, there is some scope for fiscal stimulus through reduced taxation, but this remains limited. As a result, the approach more than ever will need to depend on the growing private sector. With large state-owned banks there is capacity to lend and spend money faster than in more advanced economies and it wouldn't be surprising to again see a widening of growth rates between cities and regions.

Exhibit 6. China GDP and export performance

Exports have grown in \$-value since the global financial crisis. But they account for a smaller share of nominal \$-value GDP



1. Consumer electronics; includes notebooks, tablets, smartphones, cellular phones

2. Auto parts; excludes tyres

Source: SRA Intelligence, Oliver Wyman analysis

Exhibit 7. What might the recovery look like? A supply-side view of GDP

GDP component	Outlook	China exposure	Recovery shape	Regional archetypes		
				Large global e.g. Shanghai	Large industrial e.g. Jiangsu	Medium central e.g. Shangqiu
Consumption: Small discretionary			V			
Consumption: Large discretionary			U			
Consumption: Non-discretionary			V			
Government spend			V			
Investment			U			
Inventory			V			
Exports			L			
Imports			L			
Overall		U		U	V	V

Outlook Positive Resilient
Mixed Adverse

Exposure as % of GDP <5% 5-15%
15-20% >20%

Source: SRA Intelligence, Oliver Wyman analysis

LESSONS FOR THE WORLD

Clearly China is an interesting case-study for the rest of the globe, being ~2 months ahead in dealing with the crisis. At the same time, it's also quite different – especially in the ability of the state to dramatically steer both the response to the virus, including very strict ongoing national lockdowns, province-level quarantine arrangements within China, and the use of digital tracking tools using personal data. However, we do think certain facts are broadly of interest:

- While the recovery remains uneven by industry and geography, once restrictions are lifted the speed of recovery can be relatively quick. A mixture of central, provincial, and municipal decision-making had a material impact on the relative speed of recovery.
- The peak return of migrant workers to China's southern manufacturing hubs is now 45+ days ago and has not resulted in significant infections. While some quarantine requirements exist for travel within China (e.g. Beijing), this has not been wide-spread. Municipal authorities have, however, enforced strict standards on places of work.
- Even after lockdowns are eased, populations may limit the distance they travel relative to pre-crisis habits. More regionalised economies may be an outcome of the current crisis, even in China where inter-city travel is relatively easy.
- Fiscal stimulus has a broad range of targets to aim for, as global recession potentially follows the virus crisis. China's regionally lopsided recovery warns against hopes for a broad balanced recovery elsewhere.
- Multinationals in China might be more effected than local companies. Our analysis indicates that the typical Chinese consumer brand has heavy branch exposure to around 17 cities and light exposure to another 50 cities. Foreign brands are more concentrated (>50%) in around 10 cities.

In addition, we believe there are some interesting Asia-specific learnings, notwithstanding the differences, including local funding markets, that exist given the scale of China:

- Southeast Asia's manufacturing hubs are highly concentrated in a more limited number of geographies compared to those in China. Lockdowns may have a disproportionate effect on industrial activity and credit exposure to manufacturing and related sectors.
- Few Southeast Asian countries have the same diversification as China. Bangkok and Jakarta account for between 30% to 45% of their country's national retail portfolio and ongoing lockdowns in those cities cannot be offset by other urban growth hubs.
- China's domestic flights account for nearly 90% of total weekly flights. International travel restrictions remain tight even as restrictions on domestic travel ease. The impact of international travel restrictions is higher across most Southeast Asian economies.
- The regionalised impact on mainland China is key for North Asia given that Japan, Korea, and Hong Kong SAR are typically more exposed to specific provinces or cities owing to the historical pattern of trade and investment, and so are exposed to the uneven shape of recovery.

Hang Qian, Partner at Oliver Wyman also contributed to the report.

About Oliver Wyman

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About Silk Road Associates

Silk Road Associates is a leader in geospatial analytics, providing solutions for the Asian and broader emerging markets using the firm's proprietary SRA Intelligence® analytics. We work with clients across the financial, industrial, private equity, and supply chain sectors.

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