BARCLAYS

Special Report | Research
21 February 2020

#virus

China

COVID-19: Activity tracking- watch for a turning point

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Notwithstanding all the caveats on Chinese statistics and unknowns regarding the virus, the broad declining trend seen in China's new cases outside Hubei suggests the government's unprecedented control measures are paying off. The cost of the containment, as expected, is huge. February activity has been in deep contraction, by all measures. In this report, we try to gauge the extent of disruptions and the recovery timeline, as well as when a turning point may arise and risks areas. We try to derive a rough aggregate path for activity on a weekly basis, after cross-checking daily-weekly survey/big data, including operation rates, migration index, and self-reported ratios of resumption from local governments and industrial associations.

Overall, our weekly guesstimates suggest that actual manufacturing activity (Figure 1) likely contracted by 55-60% y/y in the first three weeks of February, due to low operation rates. This brings actual growth in February closer to our heavy (risk 2) disruption scenario than the medium (base case) disruption scenario, as we have outlined in previous reports on *1 February* and *7 February*. The NBS manufacturing PMI is on track to fall below 40 in February, by our estimates, assuming the survey is to be completed by around the 25th of the month.

That said, we see earlier signs of a bottoming in the manufacturing activity contraction, with operation rates picking up pace this past week, especially in more market-oriented and economically important provinces, such as Guangdong and Zhejiang. Barring a re-escalation of the outbreak, we expect more activity indicators to show a pickup in coming weeks. We note that some weekly hard data, such as home sales and to a lesser extent coal consumption, as well coke plant operating rates, have started to recover, albeit still pointing to very weak activity (Figures 8 and 9).

Our base case forecast expects an easing outbreak to lead to an accelerated pace of workers and plants returning to operations by end-February, with operation rates improving to 90-100% in the coming weeks. The week of 24 February remains key to assess the risks.

Such optimism is in part suggested by the Chinese government's commitment to "maintaining the economic social development target and winning the battle against the epidemic" - the "两手抓" strategy highlighted in Politburo meetings since early February (*3 Feb*, *9 Feb*). Many local governments appear to have stepped up directives to accelerate and facilitate the resumption of production while containing the outbreak in the past week. Moreover, despite the shock, we note that some local governments, eg. Zhejiang and Jiangsu provinces, have recently, on 17 February, highlighted that they will keep their pre-COVID-19 2020 growth targets unchanged (Zhejiang: 6-6.5% from ~6.5% in 2019; Jiangsu: ~6%, from 6-6.5% in 2019). In view of these, we expect China to still set its 2020 growth target at 5.5-6% or possibly ~6%, compared with 6-6.5% in 2019.

** This author is a debt research analyst in the Fixed Income, Currencies and Commodities Research department and is neither an equity research analyst nor subject to all of the independence and disclosure standards applicable to analysts who produce debt research reports under U.S. FINRA Rule 2242.*

We are mindful of the risks to such constructive views. Key risk areas to watch include:

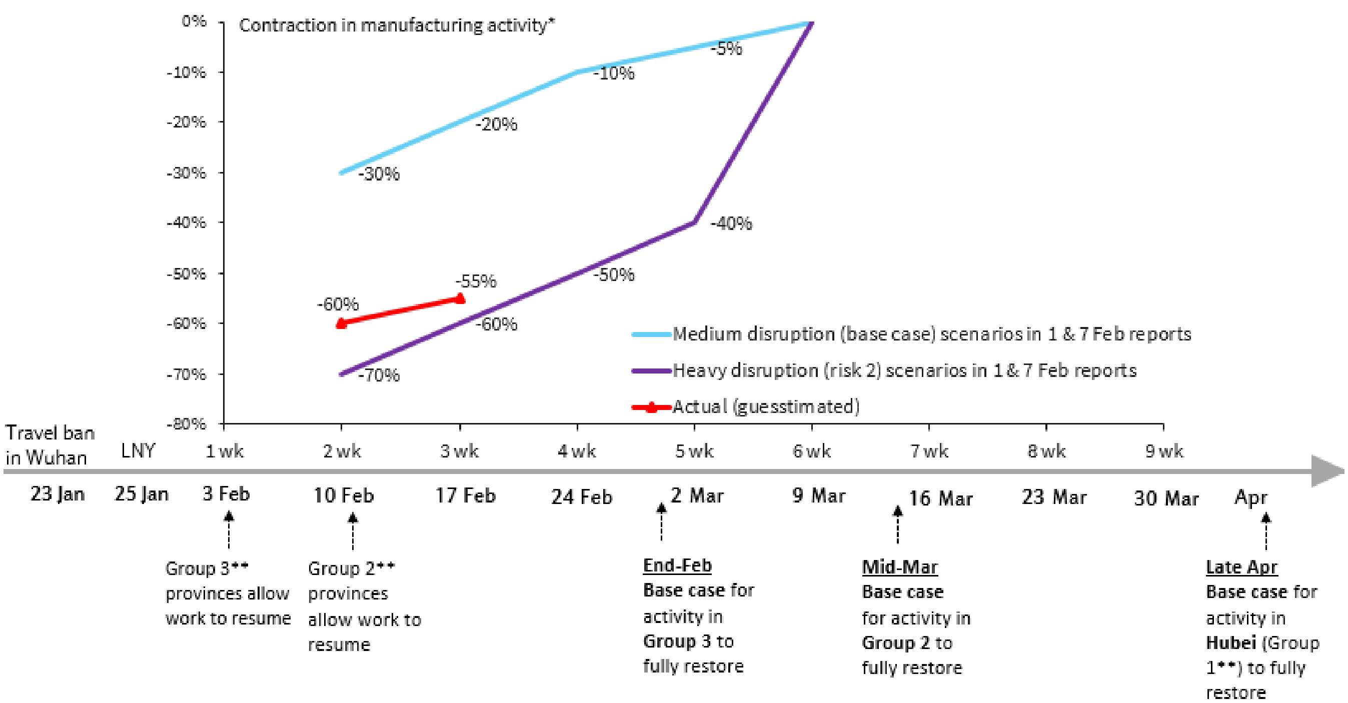
1. **(Longer disruption)** COVID-19 outbreak re-escalates (see more details in the section on the disease development): this is the most important factor that could determine how fast economic activities can return to normal.
2. **(Longer/greater disruption)** Local governments continue to enforce strong containment measures as a precaution against re-escalation of the outbreak, including:
   - home quarantine (requested for all workers or from highly infected regions)
   - denying approval for factory/business resumption
   - restricting inter-province/city transportation
   - local community lockdown.
3. **(Longer/greater disruption)** Practical constraints that deter quick resumption of work:
   - slow recovery in logistics/transportation;
   - slow recovery in upstream supply chains (eg. mining and smelting, steel);
   - lack of sufficient containment equipment during work (eg. mask supply).

Activity tracks more closely to heavy disruption scenario

Our weekly guesstimates suggest that actual manufacturing activity likely contracted by 55-60% y/y in the first three weeks of February, reflecting low operation rates under the strict containment measures as well as practical constraints. This suggests downside risks to our 1Q GDP growth forecasts. That said, our base case expects some accelerated pace of pickup in the operation rates as well as activities in the coming weeks to make up the loss, based on our assessment of the COVID-19 outlook and local government behaviours.

FIGURE 1

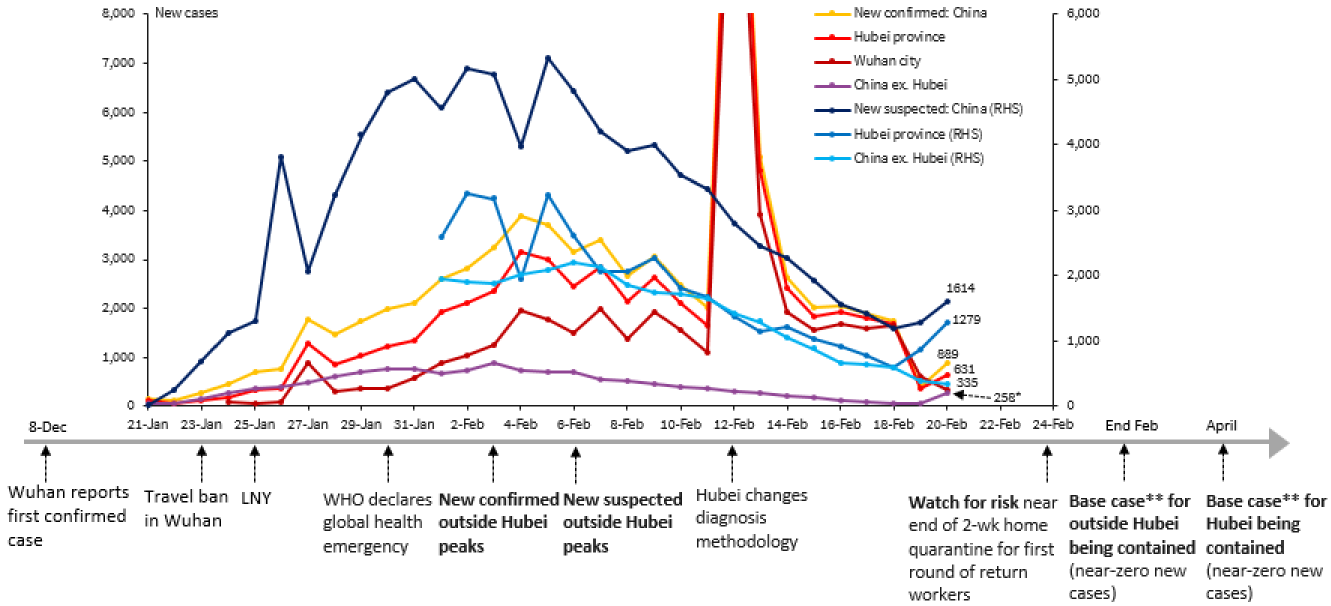
Recovery timeline: mapping operation rates with manufacturing activities



Note: *Manufacturing activities refer to the production output in manufacturing industries (secondary sector with the exclusion of construction and mining industries), which in total accounted for ~30% of China's GDP. ** Group 1: Hubei province (4.6% of China GDP). Group 2: 23 provinces (largely covering central and eastern China, 87% of China GDP). Group 3: the remaining 7 provinces (8% of China GDP). See *China: Coronavirus: GDP forecast downgrade*, 7 February 2020
Source: Barclays Research

FIGURE 2

COVID-19 outbreak: being contained outside Hubei by end-Feb appears on track



*258 new cases ex.Hubei on 20 Feb included 227 from two prisons in Shandong and Zhejiang.
**See China: Coronavirus: GDP forecast downgrade, 7 February 2020

Source: PRC and Hubei NHC, Wind, Barclays Research

Disease developments: Base case assumptions still on track

We think the broadly declining trends in new confirmed (excluding jail cases) and suspected cases support our constructive view that COVID-19 will be contained outside Hubei by end-February (and in Hubei by April). This anchors the assumption of "length of disruption" in our base case forecasts.

Notwithstanding all the caveats on Chinese statistics and the now twice change of methodology (in Hubei), data show that China's new confirmed and suspected cases (outside Hubei) peaked on 3 February and 6 February (Figure 2), respectively, before a sudden rise in new confirmed cases on 20 February. We note this latest jump to 258 largely came from two prisons in the Shandong (200 cases) and Zhejiang (27 cases) provinces, likely reflecting a statistical revision to include previously un-reported jail cases. Excluding the two prison outbreaks, new confirmed cases were still broadly on a declining trend, down to 31 on 20 February from 45 on 19 February.

Inside the epicentre, Hubei province's new confirmed cases peaked on 4 February, before a sudden eightfold surge on 12 February following a methodology change. The new confirmed cases in Hubei visibly declined after 12 February, before the rise on 20 February (in part due to inclusion of prison cases as well). Meanwhile, the suspected cases in Hubei have generally declined since the peak on 9 February, but have shown new signs of pick-up since 19 February, following the intensified city-wide community screening undertaken by the new provincial leadership.

We have in earlier reports (*1 Feb* and *7 Feb*) highlighted 6-8 February and end-February as two windows to watch for turning points. Assuming containment measures are effective, two peaks are expected before these two windows, in view of the lockdown of Wuhan city (from 23 January) and the official return to work in most parts of the country (from 10 February). So the latest jump arguably still falls within our expectations.

We are mindful of the risks and unknowns of the virus, with 24 February still a critical date to watch

Risk of the outbreak lasting longer or re-escalate remains, due to uncertainties related to:

1. more workers traveling back to work sites and resuming production and home confinement being relaxed;
2. further changes in statistical/diagnosis methodology (and incomplete data disclosure) adding to difficulties in making consistent assessment of the outbreak development;
3. new source of outbreak (eg, prisons reported on 20 February), with hospitals and factories among the most vulnerable places (eg. Beijing Fuxing hospital reported 34 confirmed cases on 19 February, and a factory under Panzhihua Iron and Steel in Chongqing reported 2 confirmed cases on 10 February, with another 131 in close contact being observed); and
4. unknown variation in the virus that may lead to increased contagiousness (eg. new type of transmission).

We think the week of 24 February remains critical to assess the risks, especially as it marks the first round of workers returning from their two-week (home) containment. Should there be significant and consecutive increases in new confirmed cases by the end of the week, this could trigger another round of stricter/longer containment measures to force a pause in the ongoing work recovery. Hence a longer "length of disruption" than under our baseline, adding to downside risks to our growth outlook.

Tracking the contraction and recovery path by guesstimating the aggregate operation rates

Investor concerns have turned away from a weak Q1 to when activity will pick up. We discuss our use of provincial-specific operation rate/migration data to guesstimate the extent of disruption/potential recovery. This helps us to paint a macro picture, derive a guesstimate for an aggregate activity path (Figure 1), as well as allow us to cross-check with other sectoral weekly activity data.

FIGURE 3

Tracking operating rates and implied y/y growth across our three groups

	Operation rates (actual vs 2 scenarios) and migration data					Implied y/y growth (actual vs 2 scenarios)		
Groups	**Return to work (official annoucment)**	**Operation rates (offical report: week 10 Feb, 17 Feb)**	**Operation rates (medium disruption assumption: week 10 Feb,**	**Operation rates (heavy disruption assumption: week 10 Feb,**	**Inbound migration as % of last year (actual: week 10 Feb, 17**	**Implied y/y growth (week 10 Feb, 17 Feb)**	**Implied y/y growth (medium disruption assumption: week 10 Feb, 17 Feb)**	**Implied y/y growth (heavy disruption assumption: week 10 Feb, 17 Feb)**
Group 1 (~5% of GDP)	11-Mar	20%*	20%, 30%	10%,10%		-80%	-80%, -70%	-90%, -90%
Group 2 (~87% of GDP)	10-Feb	~40%, ~45%*	70%, 80%	30%, 40%	~10%, ~20%	**-60%, -55%, in between medium and heavy disruption)**	**-30%, -20%**	**-70%, -60%**
Guangdong, Jiangsu, Shandong, Zhejiang (~35% of GDP)	10-Feb							
Guangdong (10.9%)	10-Feb	60%	…	…	~30%, ~35%	-40%	…	…
Jiangsu (10.1%)	10-Feb	65%	…	…	~24%, ~27%	-35%	…	…
Shandong (7.2%)	10-Feb	70%	…	…	~25%, ~29%	-30%	…	…
Zhejiang (6.3%)	10-Feb	33%, ~60%	…	…	~14%, ~19%	-67% (17 Feb: ~-40%)	…	…
Group 3 (~8% of GDP)	03-Feb	~85%, ~90%*	80%, 90%	40%, 50%		-15%	-20%, -10%	-60%, -50%

*Note: operation rate is defined by the share of factories returning to normal production. Sources: Haver, Wind, Barclays Research

Operation rate saw a pickup in the past week, especially in more market-oriented provinces. Following the official production resumption on 10 February, we track the operation rates in China's four economically most important provinces, which together account for 35% of national GDP.

We estimate a pickup in the operation rates over the past week (week of 17 February). According to local government reports, the operation rates in Guangdong, Jiangsu, Shangdong and Zhejiang were 60%, 65%, 70% and 33%, respectively, in the week of 10 February. While these ratios look higher than what's suggested by the on-the-ground information, we think the trend is for a visible improvement in these provinces. Using data for industrial enterprises above designated size (with annual income over CNY20mn), we estimate operation rates in Zhejiang provinces could have doubled from a week ago.

This reflects local government and private businesses' efforts to resume production. *For example, Zhejiang province offer chartered transport, rewards to get rural migrants back to work*. As of 19 February, at least 21,800 workers from provinces with labour surpluses, including Guizhou, Sichuan and Anhui, have been brought in by chartered railways, planes, and buses (*SCMP*, Coronavirus: China's east coast provinces offer chartered transport to get rural migrants back to work, 19 Feb 2020). Cities in GuangDong provinces started this even earlier, with Dongguan (ranking #1 in inbound travel in the week ending 14 February) using chartered buses to bring back migrant workers from Chongqing and Yunan etc.

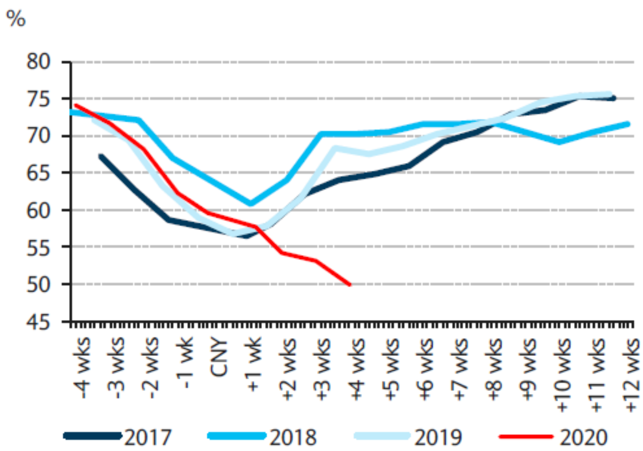
Variations across sectors: we note that the operation rate in labour intensive sectors (represented by textile and rubber: <30% as of week of 10 February) was hit hard compared with high-tech sectors (represented by semiconductor and medical: 60-80%).

Migration data: We also try to gauge the resumption in work by tracking the daily level of travel returning to some areas that rely heavily on migrant workers. If using the 2019 travel during the first three weeks after LNY as a benchmark, we note Guangdong's inbound travel (best among the four) has reached 29% of last year's level, while Zhejiang's progress is the slowest, only recovering to 14% thus far. Overall, as of 20 February, we estimate the inbound migration as a % of last year, was around 20% in Guang Dong, ZheJiang, ShanDong, and Jiangsu.

When will we see the turning point?

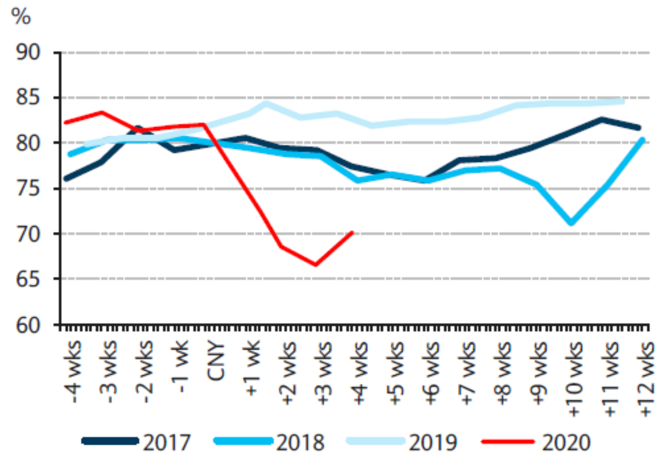
Overall, the two indicators above confirm what is widely known, most high-frequency indicators as of the week ending 14 February, including metals and mining, auto sales and hotel revenue, as well as transportation/travel data (Figure 4-7), all suggest very subdued activities on the ground, hence a large y/y contraction for February.

FIGURE 4
Mining and smelting: steel plant operating rate



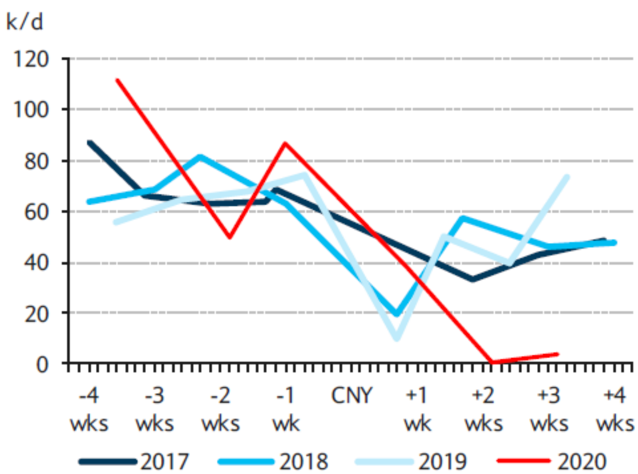
Source: Wind, Barclays Research

FIGURE 5
Mining and smelting: coke plant operating rate



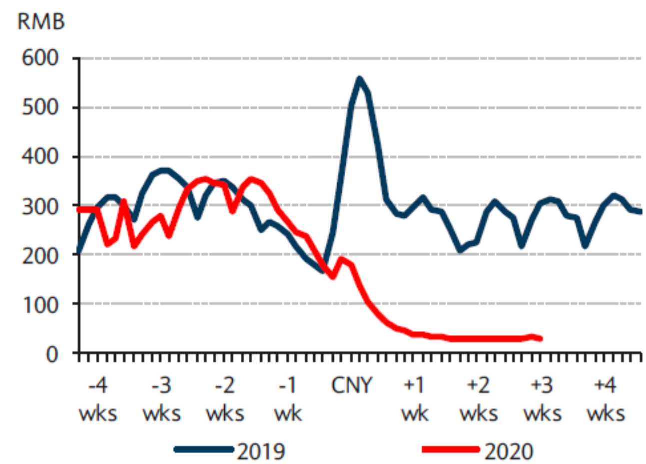
Source: Wind, Barclays Research

FIGURE 6
Passenger car sales



Source: Wind, Barclays Research

FIGURE 7
Hotel revenue per room



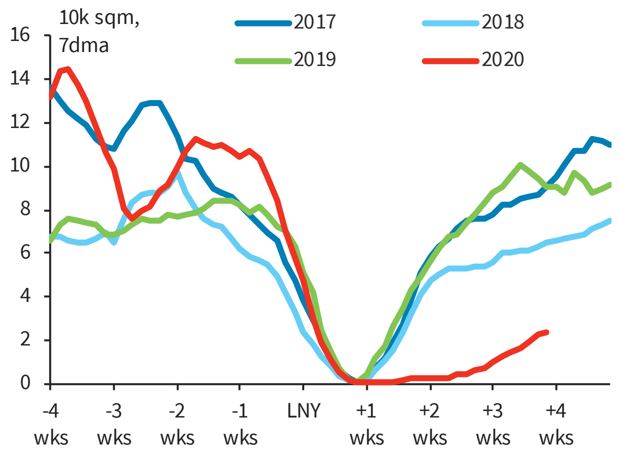
Source: Wind, Barclays Research

That said, we see early signs of bottoming in some indicators. Specifically, some weekly activity data (including coal consumption by six major power plants, and home sales in tier 1 cities, as well as coke plant operating rates, Figure 5, Figure 8 and 9) started to bottom out around 20 February, albeit still at very weak levels, and evaluated cumulatively.

Meanwhile, gauging from the migration data, we think the population returning to work (as suggested by the Baidu Migration index) has also likely bottomed this week, albeit still low relative to last year. The Baidu index shows a visible pickup in inbound population starting from 17 February into Zhejiang. This suggests activities in the coming weeks could pick up at an accelerated pace, with operation rates reaching 90-100% or weekend/more shifts to make up for the losses, as required for our base forecasts to hold, provided no new outbreaks.

FIGURE 8

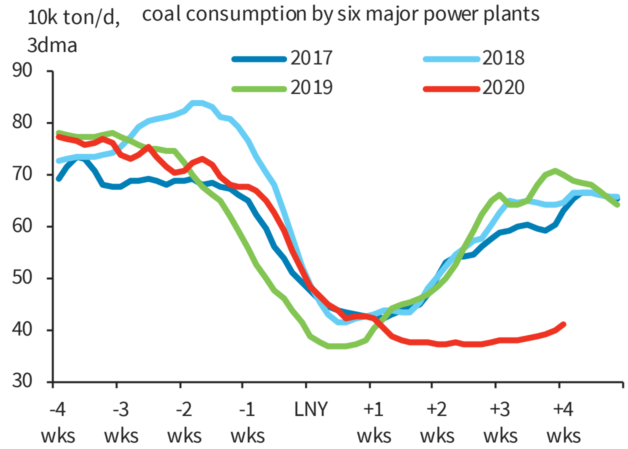
The week ending 21 Feb saw some rebound in home sales…



Source: : Wind, Barclays Research

FIGURE 9

…and coal consumption by six major power plants



Source: : Wind, Barclays Research

Looking ahead, provided there are no new outbreaks or resurging cases outside Hubei, we think it is possible that more activity indicators could show a pickup in the week of 24 February and in March due to: 1) the end of the 14-day quarantine for early returnees; and 2) more provinces in Group 2 of our model gradually easing the restriction on travel and supporting factories to resume production, in addition to provinces that are more market-oriented and have stronger governance capacity, such as Guangdong and Zhejiang.

That said, the NBS manufacturing PMI is on track to fall below 40 in February, by our estimates, assuming the survey is completed by the 25^{th} of the month, as is typically the case, compared with 50 in January and 49.2 a year ago.

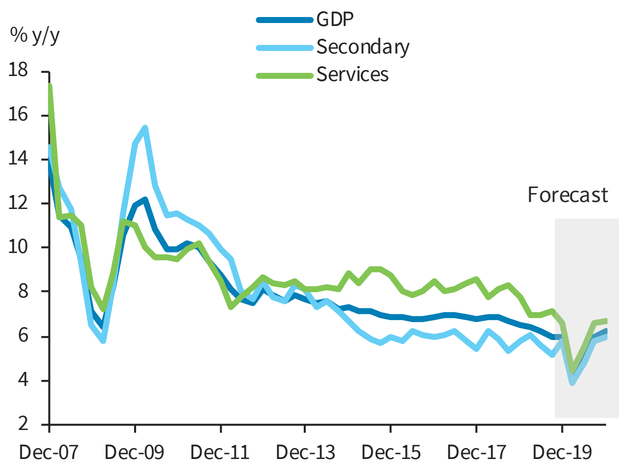
Local governments production and containment capacity and policies, key areas to watch

The huge gap in handling the COVID-19 outbreak across different provinces and cities in China suggests great variations in governance capacity, economic strength, and local leaders' philosophy, in our view. Local government capacity to execute the central government's 两手抓 strategy will be key to watch for the growth outlook.

- **Central government's 两手抓 strategy with an emphasis on returning to work since mid-Feb.** In a Xinhua article released on 9 February, the day before the nation's officials were due to return to work, the central government emphasised the need to meet this year's economic targets, while fighting the virus. The article serves as a reiteration of President Xi's thinking following the Politburo meeting on 3 February (see "Xi chairs leadership meeting on epidemic control", *Xinhua*). In the State Council meeting on 11 February, Premier Li stressed the importance of resuming work and production while the fight against COVID-19 continues. While Hubei's top priority remains epidemic control, he urged other areas (especially less infected parts) to push forward with getting back to work in an orderly manner.

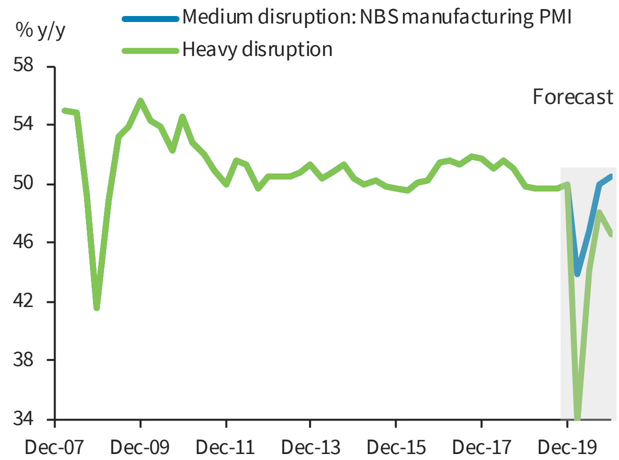
- **Local governments' incentives/restrictions to resumption of work.** We note some economically important provinces vowed to achieve a reasonable growth target in 2020 (see below). Against this backdrop, many east coast provinces have stepped up efforts to resume production since mid-February. For example, Zhejiang and Guangzhou provinces offer chartered transport, as well as rewards to get rural migrants back to work. However, there are also some impairments to the resumption of work for some

FIGURE 10
GDP manufacturing and services



Source: Wind, Barclays Research

FIGURE 11
NBS manufacturing PMI to fall sharply in Q1 before recovering in Q2



Source: Wind, Barclays Research

- inland provinces, largely due to transport restrictions and lockdowns that have hampered the flow of migrant workers, and some programmes of enforced quarantine for returning workers.

- **Local government 2020 growth targets:** In Zhejiang province, where more factories were affected in the first half of February, the local government on the 17th confirmed the growth target of 6-6.5% in 2020, slightly lower than the target of 6.5% in 2019. This means the government will roll out more measures to stimulate growth. Meanwhile, Jiangsu province on the same day, also posted its growth target of 6.0%, versus 6-6.5% in 2019.

- **Local government relaxation of housing policies.** A number of local governments (eg. Shenzhen, Suzhou, Wuxi, Nanchang) have also announced some easing of housing policies. We think such easing measures for property markets in some regions will lend some support to property investment and sales, albeit with a lag (any effect is likely be to be seen from March onwards).

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