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Anatomy of the Covid-19 recession in China

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The consensus of our global economics team is now that the Covid-19 pandemic will cause a severe global recession. The size of the shock in Q2 will likely be unprecedented in the 70 years of the post-World War II economic history.

In this note, we present a more granular picture of what has happened in China's economy since its Covid-19 outbreak in late January. Based on available information, we try to describe happened to households, corporates, and the financial markets during the outbreak: what were the constraints they face? How did they respond?

For households, the income shock is likely very large during the outbreak. Households cut more than half of their discretionary spending on items such as automobile, apparel and home appliances. Spending on cell phones, entertainment and pharmaceuticals were impacted to a lesser extent, but growth rates were nonetheless negative. They substituted dining spending with more food purchases during restaurant closures. Despite all these spending cuts, household savings were likely reduced in Feb, in contrast with previous downturns when they increased savings.

The corporate sector suffered from spontaneous supply and demand shocks, but the recovery of demand is likely much slower than supply. This is evident from the fact that industries that saw plummeted retail sales also had bigger decline in output. Output decline is less severe in upstream capital intensive industries, such as steel and oil refinery. This suggests, however, that intermediate goods inventory is likely piling up, which may have caused their prices to fall sharply.

China's domestic financial markets were remarkably resilient during the Covid-19 outbreak. We think the main driver of market sentiment is not from government policies or intervention, but from the slowdown of epi curve itself. Market gained confidence when they trusted the outbreak is going to be under control.

The value of this analysis is twofold: (1) it could inform our outlook for China's economy in the coming months and quarters; and (2) it could serve as a reference point for those who want to understand what is likely to happen to other economies, and thus inform the decisions by market participants and policymakers around the world.

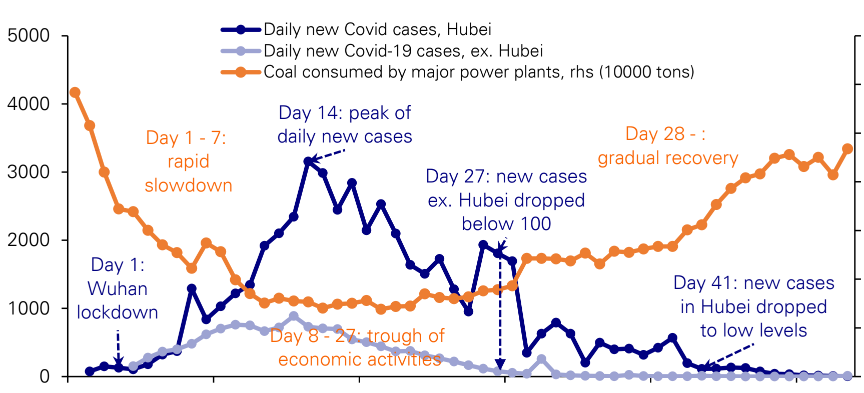
1. A brief timeline of China's Covid-19 outbreak

Studies now suggest that the novel coronavirus was already quietly spreading in Wuhan in at least early December. It was largely unnoticed, however, owing to the small number of reported cases and limited media coverage. The real wake-up call for most people was the government's high-level press conference on Jan 20 and the subsequent decision to lock down Wuhan on Jan 23, one day before the Chinese New Year holidays. To better illustrate the sequence and timing of events, we define the day of Wuhan lock down as Day 1 in our timeline (Figure 1).

- Economic activities shrunk rapidly in the first week after Wuhan lockdown (Day 1 to Day 7). The number of confirmed cases increased exponentially. Economic activities had largely came to a halt, owing to both voluntary social distancing and strict containment measures taken by local governments nationwide. Movie theaters and shopping malls were closed, celebrations events and restaurant bookings were canceled, buses and subway trains were empty. Only essential businesses, such as grocery stores and food deliveries, stayed open.
- Trough of economic activities (Day 8 to Day 27). Civil servants were back to work and financial markets were reopened on Feb 3 (Day 12), but most businesses remained closed until at least Feb 10 (Day 19). Even after that, business reopen progress was very slow initially. Daily new cases peaked on Feb 5 (Day 14), but stayed high in Hubei; it dropped more rapidly outside Hubei to below 100 on Feb 18 (Day 27). People were generally still avoiding going out, and those businesses who wanted to reopen need to get approval often from various government agencies.
- Gradual recovery (Day 28 onwards). Business reopening accelerated during the week of Feb 17-24 (Day 26-33). Local governments became more supportive of businesses; some costal city governments even sent buses to pick up migrant workers from inland provinces. By late February, restaurants and shopping malls have gradually started to reopen, but it was not until March (Day 39 -) that these places started to become crowded and city traffic to get busier. Finally, Wuhan's lockdown was partially lifted on March 25 (Day 63), and will be fully lifted on April 8 (Day 77).

In the following sections, we will first examine how households behaved during the Covid-19 shock in Section 2, followed by corporates in Section 3 and financial markets in Section 4. We discuss outlook for in the last section.

Figure 1: A timeline of Covid-19 outbreak in China



Source : Deutsche Bank Research, China CDC, news reports.

2. Households: severe income shock, massive spending cut

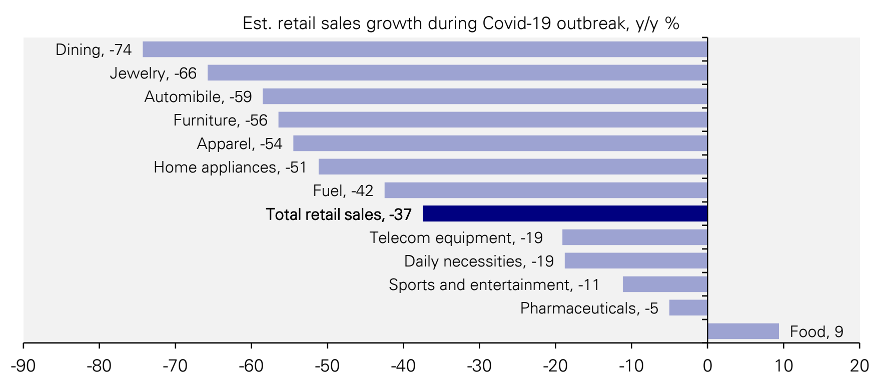
Chinese households suffered from two spontaneous shocks during the outbreak:

1. A halt to work and social life. Most people stayed at home during the extended CNY holidays, except civil servants and essential businesses. Even after the holidays ended, many continued to stay at home or work remotely, owing to various constraints such as travel restrictions, slow start of businesses, and childcare needs during school closures.
2. A negative shock to current and prospective income. In Feb, loss of income happened largely for migrant workers, small businesses, and those working in most severely affected sectors. A recent Peking University study suggests that workers in hotels, restaurants, retail, and construction businesses lost about half of their income in February. Migrant workers also lost about half of their income. More broadly, many were afraid that their future income may decline should the outbreak last longer.

Facing large uncertainties, the normal response is for households to cut spending and increase savings. What happened this time is, however, somewhat different.

Data suggest that households indeed cut spending: we estimate that aggregate retail sales dropped -37% during the Covid-19 outbreak (Figure 2). Households cut dining spending by 3/4, in part owing to the shutdown of most restaurants except for takeouts and deliveries. In turn, they survived by increasing food purchases (9%). They cut discretionary spending massively, such as on jewelry (-66%), cars (-59%), apparel (-54%) and home appliances (-51%). Interestingly, households cut less their spending on telecom equipment (-19%), possibly because smartphones were what they needed the most during self quarantine at home. Other spending categories that were more resilient during the outbreak include daily necessities (-19%), sports and entertainment goods (-11%), and pharmaceuticals (-5%).

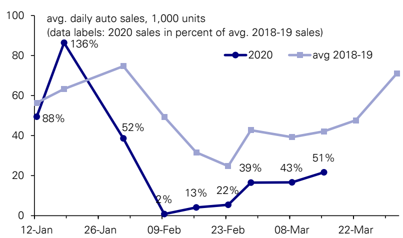
Figure 2: Covid-19 shock to retail sales



Source : Deutsche Bank Research, NBS, WIND
Note: NBS reported only retail sales for Jan and Feb combined. To estimate retail sales growth during Covid-19 outbreak (Jan 23 to end-Feb), we assumed that retail sales in Jan 1-22 were growing at the same pace as in 2019, , and calculated implied growth for Jan 23 - Feb 29.

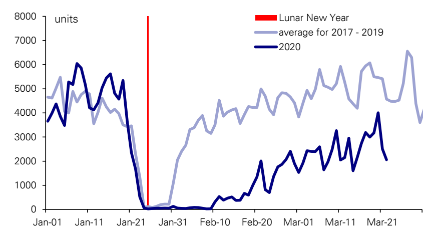
A good example of durable goods purchases is auto sales. February is typically a slow month for auto sales, but is has become much slower this year. Since Jan 23, auto sales shrunk to 52% of previous years' levels in the last week of January, and further collapsed to almost zero in the first week of February. Sales stayed at very low levels until a strong rebound in the last week of Feb. By mid-March, auto sales have recovered to about half of normal levels. Similar patterns are also observed from property sales: very slow sales for the 4 weeks since Jan 23, followed by a pick up in late February. Sales recovered to about half of normal levels by mid-March, and further to about 55-60% in the third week of March.

Figure 3: Covid-19 shock to auto sales



Source : Deutsche Bank Research, CPCA

Figure 4: Covid-19 shock to property sales



Source : Deutsche Bank Research, WIND

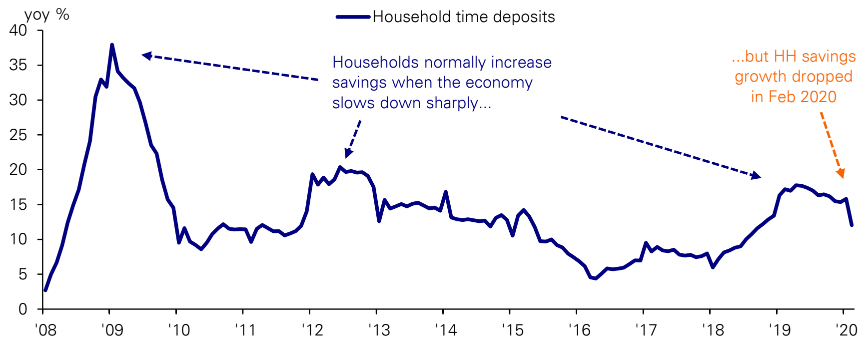
However, the aggressive cut on spending does not seem to have boosted household savings. Instead, household bank deposits growth dropped sharply in February 2020. This is very different from previous slow down episodes when household deposits growth generally accelerated (Figure 5).

How to explain this? The most plausible reason we can think of is that the income shock must have been very large during the Covid-19 outbreak, such that households had to draw down their savings somewhat, even though spending has already been cut by a lot. Another reason could be that households might have thought that this shock will only be temporary, after which life will soon return to normal. Therefore they are happy to draw down some of their savings.

The fact that most people were able to keep their jobs during the outbreak likely helped their confidence. Despite the sharp economic contraction, unemployment rate rose only by 1ppt to 6.2% in Feb. The government has done a lot to ensure employment, including by waiving employer social contributions (RMB 124bn of employer contributions were waived in the month of February alone; the MoF estimates RMB 500bn in total will be waived by June) and by encouraging banks to continue lending to businesses (the PBoC set aside RMB 800bn of re-lending to support bank lending to affected business).

However, if households had hoped the shock will only be transitory in Feb, it should be clear to them now that the Covid-19 pandemic will stay at least until summer. The economic impact will be longer than people had initially thought. Unemployment rate will likely rise further. Households will likely turn more risk averse and increase savings, similar to what they did in previous episodes. This will in turn delay the ongoing consumption recovery. Household consumption will unlikely return to normal levels soon, absent further support from the government.

Figure 5: Households reduced savings during the Covid-19 outbreak



Source : Deutsche Bank Research, PBoC, WIND

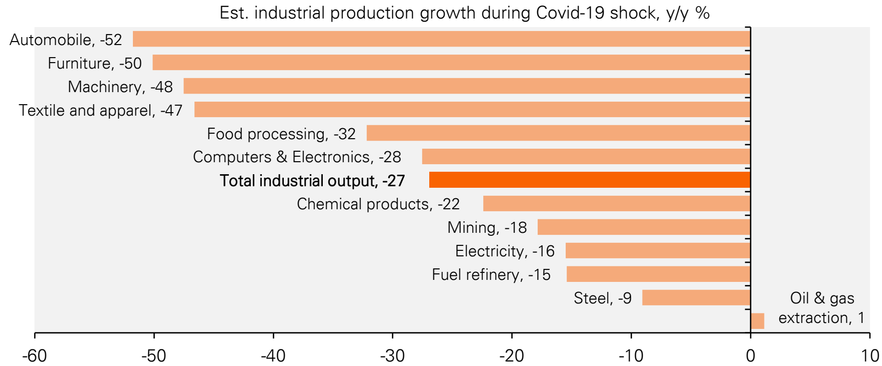
3. Corporates: supply recovered, demand shock persisted

Businesses were hit hard during the Covid-19 outbreak across the board. Both the manufacturing and the services sectors were negatively affected. In the manufacturing sector, industrial output fell by 27% y/y in February. A key question is: was this output decline driven mainly by a supply shock, or a demand shock?

The answer is likely both, and their relative importance has likely shifted over time. Initially, bottlenecks are likely on the supply side. Production could not be ramped up because most people were staying at home until at least Feb 10. Many factories were closed, others operated at minimum capacity by workers who did not take leave during the CNY. Sectors that depend heavily on migrant workers, such as textile and electronics, were hit the most by the supply shock. The supply shortage also had some spillover effects to the world: in mid-Feb, a few auto factories in Korea and Germany reportedly halt operation owing to lack of parts from Chinese suppliers.

Starting from late February and into March, the lack of demand has evidently become the binding constraint. Figure 6 shows the breakdown of output growth by industry. Note that many of the industries that had the worst drop in output also happened to be the sectors that saw plummeting retail sales, including automobile (-52% IP versus -59% retail sales), furniture (-50% IP versus -56% retail sales), and textile and apparel (-47% IP versus -54% retail sales). Machinery production (-48%) was likely driven by weak investment. While food processing (-32%) might have benefited from higher food retail sales, it was not sufficient to offset the negative impact from hotels and restaurants shutdown.

Figure 6: Covid-19 shock to industrial production



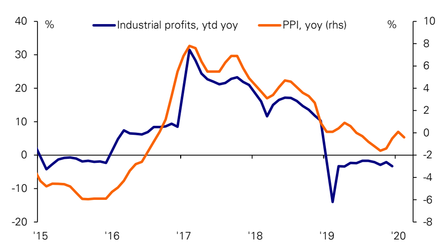
Source :Deutsche Bank Research, NBS, WIND
Note: NBS reported sectoral industrial production for Jan and Feb combined only. To estimate IP growth during Covid-19 outbreak (Jan 23 to end-Feb), we assumed that IP in Jan 1-22 were growing at the same pace as in 2019, and calculated implied growth for Jan 23 - Feb 29.

The industries that were more resilient to the shock were largely upstream heavy industries, such as oil and gas extraction (1%), steel (-9%), electricity (-16%) and mining (-18%). They likely suffered less from the supply shock and were able to maintain higher production capacity. But the disconnect between upstream and downstream production also means that inventories are likely building up. This, combined with record low oil prices, creates heavy deflationary pressures on producer prices. Average price of 42 industrial materials has already dropped 8% since mid-January, and will likely drop further. PPI deflation in 2020 will likely be comparable to, if not worse than, then 2015-16 period. The manufacturing sector will likely suffer from higher inventories and reduced profit margins at least for the next few months.

Figure 7: Industrial material prices have dropped 8% since beginning of outbreak

Source : Deutsche Bank Research, NBS, WIND

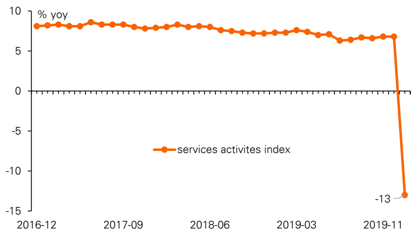
Figure 8: price drops will likely reduce industrial profits



Source : Deutsche Bank Research, NBS, WIND

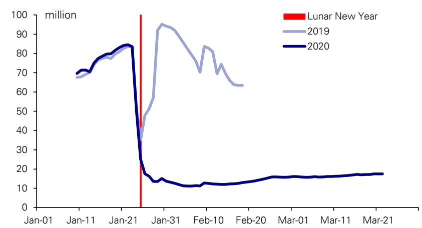
The services sector was also severely affected by the outbreak. The official services activities index dropped 13% yoy in Jan-Feb. This headline figure did not reveal extremely large divergence among different services businesses: on the one hand, dining, hotel and travel businesses were hit the hardest, and recovery was very slow. Passenger travel volume fell by 90% initially, and is still 65% below normal levels as of today. Restaurant revenues fell 75%; hotels likely also suffered from similar magnitude of revenue shortfall. On the other hand, two subsectors still had positive growth in Jan-Feb: financial services (+4.5%) and IT services sectors (+3.8%). Online services such as video streaming and online learning also likely boomed during the outbreak.

Figure 9: Services activities dropped 13% y/y in Jan-Feb 2020



Source : Deutsche Bank Resarch, NBS, WIND

Figure 10: Passenger travel volume has not recovered much



Source : Deutsche Bank Resarch, Ministry of Transport

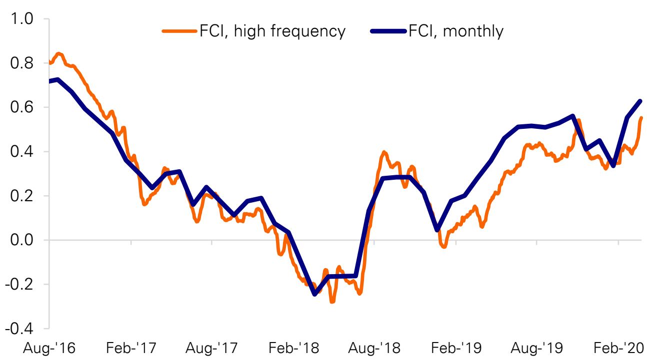
Most of the Chinese government's policy support thus far are targeted at businesses rather than individuals. Supporting businesses is important because, in China's context, they are more vulnerable to income shocks than households. In 2016, Chinese households owned about RMB 100trn of liquid financial assets and only RMB 40trn financial debt, in part thanks to their high savings rate. In contrast, corporates are highly leveraged; they had only about RMB 60trn of liquid financial assets but RMB 170trn of debt. Absent regular revenues, most businesses' cash balance cannot last for more than a few months. Moreover, it is not in China's business culture to fire employees at the onset of difficulties; in return, employees are willing to accept temporarily lower pay but stay employed during difficult times. So assisting businesses also helps their employees and creditors.

To help businesses, the MoF waived employer social contributions for up to 5 months, and cut VAT by 2/3 for small businesses. The PBOC set aside RMB 800bn of relending and rediscounting facilities to support bank lending at subsidized interest rates. Obtaining credit is still more difficult for small businesses, but at least some were able to tap into "supply chain finance" if they have business links with large companies. Thanks to these measures (and perhaps also through moral suasion), most businesses stayed in operation, and unemployment rate did not rise much either. Some highly leveraged conglomerates did run into trouble, notably the Founder Group and HNA Group, and were swiftly taken over by the government to prevent disorderly unwinding of liabilities.

4. Financial markets: what drives asset prices?

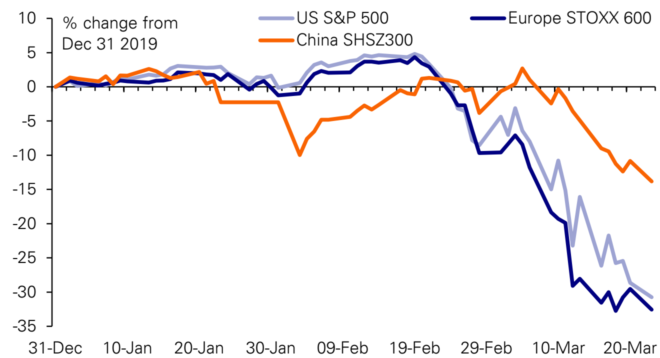
Perhaps the most astonishing aspect of the Chinese economy during the Covid-19 outbreak is how its financial markets largely remained calm. Our financial conditions index, based on 14 monetary and financial variables, eased quite a lot in February and March (Figure 11). This suggests that credit conditions have generally improved and interest rates have moved lower over. The stock market was also resilient during the outbreak: the SHSZ300 index saw only about 10% decline from its peak from late Jan to early Feb, and largely bounced back by end Feb. It started falling again in March, likely driven by the global outbreak, but still outperformed most other markets (Figure 12).

Figure 11: China's financial conditions eased in February and March



Source : Deutsche Bank Research

Figure 12: China's stock market dropped 15% since Covid-19 outbreak



Source : Deutsche Bank Research, Haver analytics

Government intervention is not likely the main reason of the financial market resilience. The government provided some liquidity support, but did not intervene directly in the markets. The PBOC injected sufficient liquidity through open market operations; the CBRC briefly extended the time required for stock trading accounts to cover margin calls. These measures are nothing comparable to what the government's direct intervention during the 2015 stock market crash.

The main source of market confidence, we think, is from the epi curve. People were initially in panic when confirmed cases were doubling every 2-3 days. Fortunately, markets were closed during the worst period of virus spread, thanks to the CNY holidays. It gave people time to cool down and understand what was happening. By the time market reopened on Feb 3, virus spread has already slowed. Daily new cases soon peaked on Feb 4 outside Hubei, and Feb 5-6 in Hubei. This gave the market confidence that the government's containment strategy, which likely helped stock market stabilize after a short sell-off period.

It might have also helped that China's stock and bond markets are not highly leveraged. Most institutional investors---mutual funds, insurance companies, banks---do not operate with high leverage. The government's financial deleveraging campaign in recent years, especially the new asset management regulations, further reduced excessive risk-taking by financial institutions. Moreover, the stock market crash in 2015-16 de-leveraged individual investors---total margin account borrowing was only RMB 1trn today compared to the peak of RMB 2.3trn in 2015 ---and reduced the risk of stampede among margin accounts.

5. Outlook: facing an unprecedented drop in external demand

Although the Covid-19 outbreak in China has been contained, economic activities are still far from fully recovered. The pace of recovery has been slower than we had hoped, and it appears the momentum might be slowing lately. Daily coal consumption by major power plants has only recovered to about 80% of normal levels, and has almost stopped increasing since mid-March. Property sales was only at about 60% of normal levels in the 3rd week of March, and car sales was at about 50% in the 2nd week of March. At this recovery pace, we now expect a 10%-15% q/q (not annualized) decline of economic output in Q1, down from our earlier forecast of -9% q/q.

Looking forward, an unprecedented external demand shock will be the main near-term challenge. Our global economists now think GDP in the US and Europe could fall by as much as 15-30% under the lockdown to contain the global pandemic (report here). The impact of such a devastating demand shock will likely be further amplified along the supply chain; upstream orders could be cut much more than the drop in downstream demand. During the 2008-09 global financial crisis, US and Europe GDP dropped by no more than 5%, but China's exports dropped -18% in real terms (-23% in USD) in the worst quarter of Q2 2009. It is not implausible to assume the drop in exports will be larger in the next few months. Anecdotally, export-oriented industries are already seeing large external order cuts. Many factories that have just recently put their employees to work are planning to cut their production again.

Further downside risk comes from a possible second round of Covid-19 outbreak in China. Mainland China is reporting about 30-70 imported cases each day among international arrivals. So far these arrivals have not led to an increase in local transmission in the mainland, thanks to quarantine measures applied. But local transmission cases have increased in Hong Kong in recent days, which prompted the government to take more stringent social distancing measures, including a ban of alcohol sales in pubs and restaurants. The more difficult challenge for China and the world would be if the coronavirus subsides in the summer, but comes back again in the fall or winter of 2020. If Covid-19 outbreaks are to become like seasonal flus, the best hope of containing it would have to come from medications or vaccines. Scientists around the globe are racing against time right now.

Such a growth outlook will require much stronger and coordinated policy responses from the Chinese government. In the near term, policy responses should focus on mitigating the impact of external demand shock by boosting domestic demand and providing financial assistance to export-oriented industries. Households that will likely lose income and run into financial difficulties should be entitled to social benefits, relief on debt service burdens, or even an lump-sum cash transfer from the government. It will be difficult for small businesses to get credit support no matter how hard the government pushes the banking system. The more effective way is perhaps to hand out consumption coupons that directly supports the demand for their goods and services.

Appendix 1

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