

## **PMI Quarterly on China Manufacturing**

#### China Federation of Logistics & Purchasing

China Federation of Logistics & Purchasing (CFLP) is the logistics and purchasing industry association approved by the State Council. CFLP's mission is to push forward the development of the logistics industry and procurement businesses of both government and enterprises, as well as the circulation of factors of production in China. The government authorizes the CFLP to produce industry statistics and set industry CFLP standards. is also China's representative in the Asian-Pacific Logistics Federation (APLF) and the International Federation of Purchasing and Supply Management (IFPSM).

#### **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.

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# PMI indicates resumption of industrial production and economic activity

- Output returns to expansion in March.
- New export orders index stays in contractionary zone despite recent rebound.
- Backlogs of orders continue to drop.
- Stocks of finished goods and major inputs drop at slower pace.
- Manufacturers increase their purchases of production inputs.
- Prices of production inputs go down.
- Ex-factory prices index continues to drop.
- Imports index continues to fall.
- Manufacturing employment rises in March after contraction in February.
- Suppliers' delivery slows.
- Purchasing managers become more optimistic in March.

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#### 1. PMI indicates resumption of industrial production and economic activity

Due to factory shutdown and production disruptions caused by the outbreak of the coronavirus disease 2019 (COVID-19), China's manufacturing PMI plunged from 50.0 in January to a record low of 35.7 in February. The PMI then rebounded to 52.0 in March, rising above the critical 50-mark. The latest index reading shows that industrial production and economic activity have resumed amid the containment of the COVID-19 in China. (See exhibit 1)

The PMI of 'large enterprises' plummeted from 50.4 in January to 36.3 in February, before rebounding to 52.6 in March. The PMI of 'medium enterprises' dropped from 50.1 in January to 35.5 in February and then rose to 51.5 in March. Meanwhile, after plunging from 48.6 in January to 34.1 in February, the PMI of 'small enterprises' picked up to 50.9 in March. These index readings indicate that all types of enterprises were deeply impacted by the COVID-19 outbreak in February but showed signs of stabilization lately. (See exhibit 2)

The headline PMI rose above the neutral level of 50 in March after falling to an all-time low of 35.7 in February, indicating that the manufacturing sector has stabilized recently after significant contraction in February. The output index dropped from 51.3 in January to 27.8 in February, before rebounding strongly to 54.1 in March, indicating output growth in March after production cut in February. There has been an improvement in both domestic demand and export demand lately: The new orders index returned to the expansionary zone in March, while the new export orders index picked up from 28.7 in February to 46.4 in March, indicating a slower decline in new export orders.

Prices of industrial products continued to decline: The ex-factory prices index stayed below the watershed level of 50 in the quarter and fell to 43.8 in March. The drop in product prices was partly attributed to the recent decrease in the prices of materials: The input prices index went down from 53.8 in January to 45.5 in March.

Looking ahead, the Chinese economy is under heavy downward pressure amid the COVID-19 global pandemic and the resulting global economic recession. We expect that the central government is likely to introduce more policies to stabilize economic growth. A meeting of the Political Bureau of the Communist Party of China Central Committee was held on 17 April. According to a statement released after the meeting, China will step up macroeconomic policies to offset the impact of the COVID-19 outbreak. The meeting stressed the necessity of making proactive fiscal policy more effective, with steps to raise the budget deficit ratio, issue special sovereign bonds and increase the scale of local government bonds. The prudent monetary policy must be more flexible and accommodating to maintain adequate liquidity and guide the lending





interest rates to fall, with the use of tools such as re-lending and cuts in reserve requirement ratios and interest rates. We believe that these policies will help alleviate the downward pressure on the Chinese economy.

With the successful containment of the COVID-19, China's economic activity has rapidly resumed. Moreover, with the positive impact of China's stimulus measures starting to unfold, China's economic growth is set to rebound in the near term. However, as the COVID-19 global pandemic has dented the global trade and economy badly, the economic recovery of China is likely to be constrained. Overall, we predict that the headline PMI will fluctuate within 49 to 51 and the real GDP growth will be around 3.5% yoy in 2Q20. Challenges facing Chinese manufacturers include weak external demand caused by the COVID-19 pandemic, ongoing trade frictions between China and the US, strong government's determination to tackle the pollution problem, and intense competition in the international market. Overall, we expect that the industrial production (VAIO) growth will rebound to around 5.0% yoy in 2Q20.

Exhibit 3 shows the contributions of the sub-indices to the change in the headline PMI. The rise in the headline PMI in March was due largely to the increase in the output index (which weighs 25% in the computation of the headline PMI) and the new orders index (which weighs 30%). Among the 12 sub-indices (i.e. excluding the suppliers' delivery time index), the indices of new export orders, backlogs of orders, stocks of finished goods, imports, ex-factory prices and stocks of major inputs stayed in the contractionary zone over the past three months. (See exhibit 4)

China's manufacturing PMI has so far done a satisfactory job in predicting economic growth. Exhibit 5 plots the quarterly real GDP yoy growth rates versus the monthly PMIs since April 2015. It could be seen that the PMI demonstrates a fairly good track record of forecasting the growth trend of the economy at least over the next few months. Based on this chart we project that the real GDP growth will be around 3.5% in 2Q20.

Exhibit 1: Headline PMI, April 2018 to March 2020

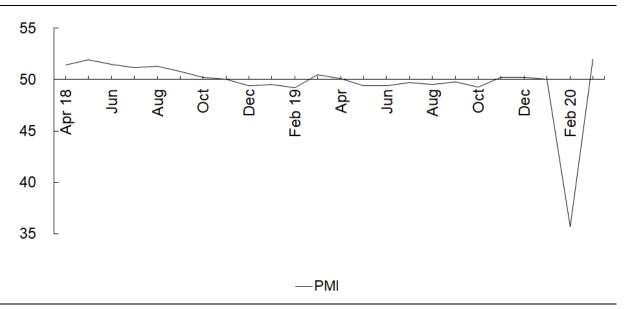
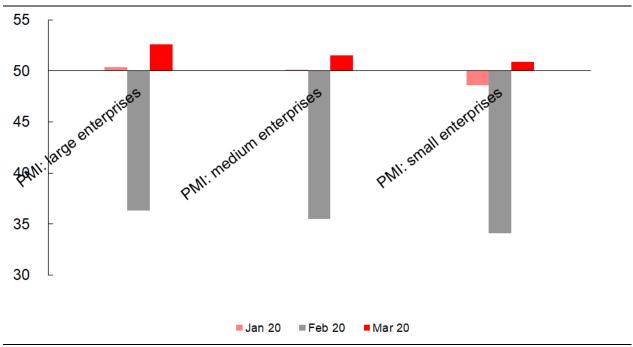
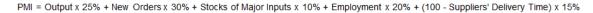


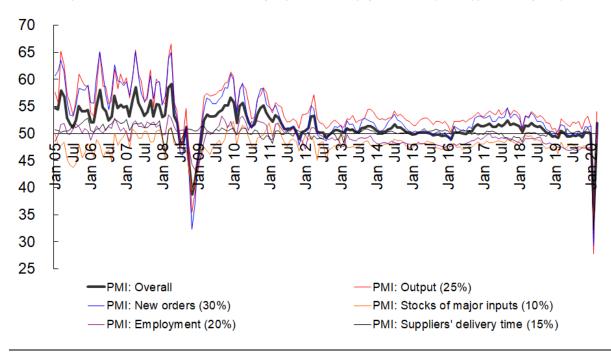
Exhibit 2: PMIs of large enterprises, medium enterprises and small enterprises, January to March 2020





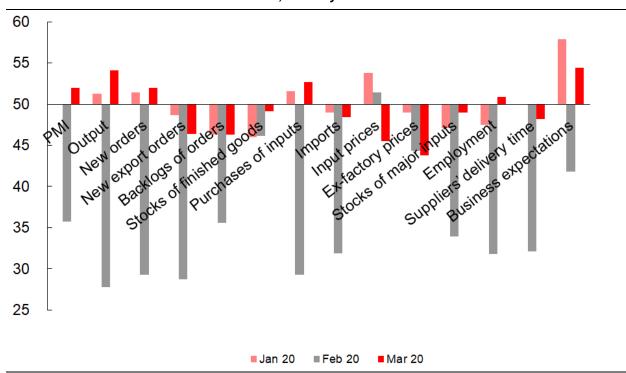
#### Exhibit 3: Headline PMI and sub-indices, January 2005 to March 2020





Source: China Federation of Logistics & Purchasing, China National Bureau of Statistics

Exhibit 4: Headline PMI and all sub-indices, January to March 2020







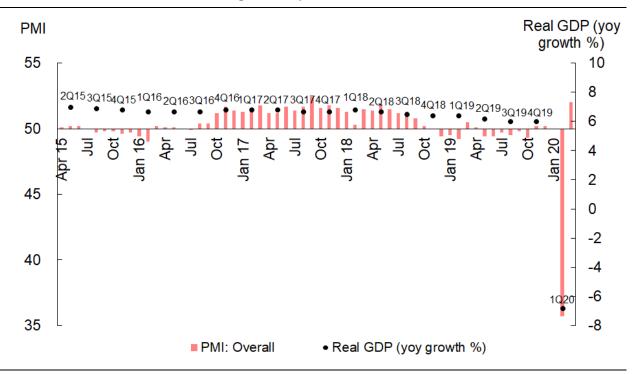


Exhibit 5: Headline PMI and real GDP growth, April 2015 to March 2020

#### 2. Output returns to expansion in March

Amid nationwide factory shutdown due to the COVID-19 outbreak in China, the output index plunged from 51.3 in January to a record-low of 27.8 in February, indicating significant production contraction in the month. Then, the output index rebounded to 54.1 in March, returning to the expansionary zone as the disease was brought under control. (See exhibit 6)

Exhibit 7 shows that the output growth in March was mainly fuelled by new orders growth instead of restocking activities, as the stocks of finished goods index has stayed in the contractionary zone for 84 consecutive months. However, output may grow strongly later when manufacturers finally run out of their inventory or regain confidence to restock.

Exhibit 6: Output index, April 2018 to March 2020

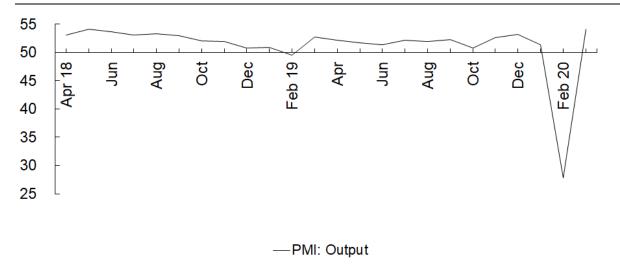
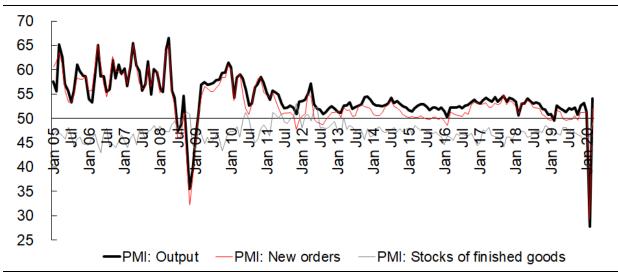


Exhibit 7: Output, new orders and stocks of finished goods, January 2005 to March 2020



Source: China Federation of Logistics & Purchasing, China National Bureau of Statistics

Exhibit 8 demonstrates the correlation (with some lags) between the output index and the year-on-year growth of value-added of industrial output (VAIO). Looking ahead, we expect that the VAIO growth will rebound to around 5.0% yoy in 2Q20, as most manufacturers have resumed production. Moreover, the government's stimulus measures are likely to partly offset the negative impact of the global economic slowdown on China's industrial activities. Challenges facing Chinese manufacturers include weak external demand caused by the COVID-19 pandemic, ongoing trade frictions between China and the US, strong government's determination to tackle pollution problem, and intense competition in the international market.





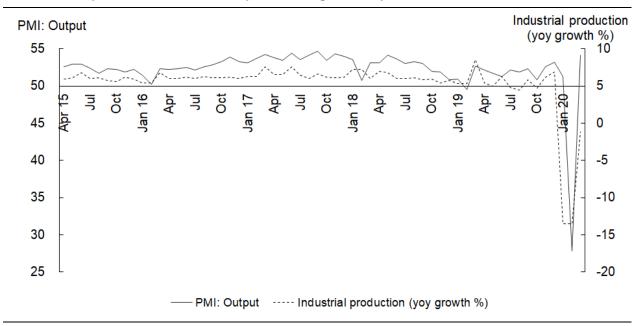


Exhibit 8: Output index and industrial production growth, April 2015 to March 2020

#### 3. New export orders index stays in contractionary zone despite recent rebound

The new orders index plummeted from 51.4 in January to an all-time low of 29.3 in February, and then jumped to 52.0 in March. This implies a recent improvement in new orders after the overall demand collapsed in February.

Meanwhile, the new export orders dropped from 48.7 in January to a record low of 28.7 in February, and then rebounded to 46.4 in March, staying in the contractionary zone. The latest figure indicates that new export orders have decreased at a slower pace lately. Now that the COVID-19 outbreak has become a global pandemic and is pushing the global economy into a recession, industry players have become pessimistic. In our view, new export orders will continue to decline in the coming months. (See exhibit 9)

Exhibit 9: New orders index and new export orders index, January 2005 to March 2020

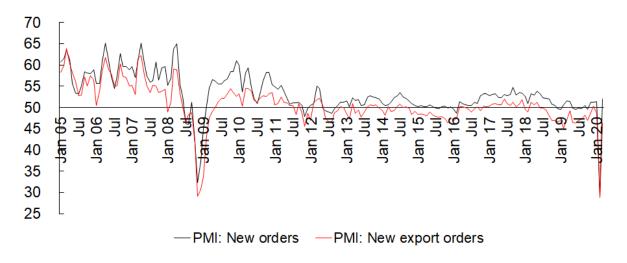
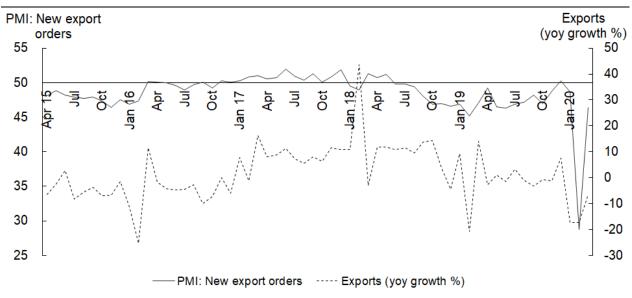


Exhibit 10: New export orders index and export growth, April 2015 to March 2020



Source: China Federation of Logistics & Purchasing, China National Bureau of Statistics, China Customs

Exhibit 10 plots the new export orders index against the year-on-year growth rates of China's exports. The correlation between the two indices is fairly high. As the new export orders index has continued to stay in the contractionary zone, we are pessimistic about the near-term prospects of China's exports. Meanwhile, from exhibit 11 we can see that the new export orders index has been strongly correlated to the external economies, especially the developed economies. The OECD composite leading indicator<sup>1</sup> dropped at the fastest pace on record to a 10-year low in

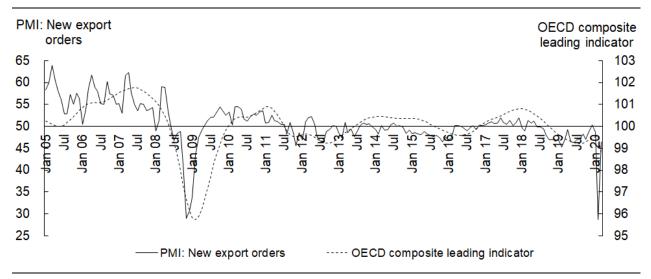
<sup>1</sup> The OECD composite leading indicator, compiled by the Organization for Economic Cooperation and Development, is designed to provide early signals of turning points (peaks and troughs) between expansions and slowdowns of economic activity, and covers Australia, Austria, Belgium, Canada, Czech Republic, Denmark, Finland, France, Germany, Greece, Hungary, Ireland, Italy, Japan, Korea, Luxembourg, Mexico,





March, suggesting the possibility of a deep global recession amid the COVID-19 global pandemic. All in all, we forecast that China's exports will record double-digit negative year-on-year growth in 2Q20.

Exhibit 11: New export orders index and OECD composite leading indicator, January 2005 to March 2020



Source: China Federation of Logistics & Purchasing, China National Bureau of Statistics, Organization for Economic Cooperation and Development

#### 4. Backlogs of orders continue to drop

The backlogs of orders index fell markedly from 46.3 in January to 35.6 in February, before picking up to 46.3 in March. The index has been in the contractionary zone since April 2012, indicating that backlogs of orders have continued to drop. (See exhibit 12)

Looking ahead, we expect the index to stay low in the coming months, as indicated by the apparently very high correlation between the sub-index and the headline PMI, and the recent weakness in the headline PMI in the near term. (See exhibit 13)

Exhibit 12: Backlogs of orders index, April 2018 to March 2020

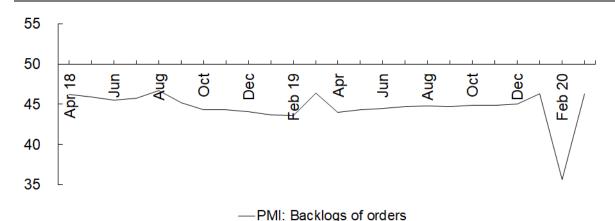
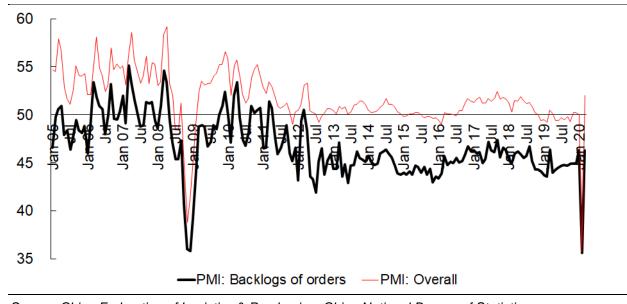


Exhibit 13: Backlogs of orders index and headline PMI, January 2005 to March 2020



Source: China Federation of Logistics & Purchasing, China National Bureau of Statistics

#### 5. Stocks of finished goods and major inputs drop at slower pace

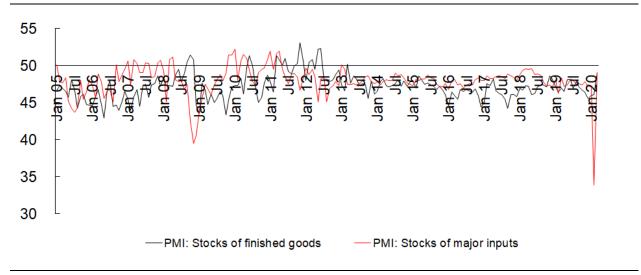
The stocks of finished goods index went up from 46.0 in January to 46.1 in February and 49.1 in March. The latest figures indicate that the stocks of finished goods held by manufacturers have decreased at a slower pace in recent months.

Meanwhile, after dropping from 47.1 in January to 33.9 in February, the stocks of major inputs index picked up to 49.0 in March. The latest reading indicates a slower decline in the stocks of major inputs lately. (Exhibit 14)





Exhibit 14: Stocks of finished goods index and stocks of major inputs index, January 2005 to March 2020



#### 6. Manufacturers increase their purchases of production inputs

The purchases of inputs index plunged from 51.6 in January to a record low of 29.3 in February, and then rebounded to 52.7 in March. The latest figure indicates that manufacturers have increased their purchases of production inputs recently. (Exhibit 15)

A number of factors affect the purchasing activities of manufacturers, among which the amount of new orders received by manufacturers has been the most important factor. Exhibit 16 plots the purchases of inputs index against the new orders index. The correlation between the two sub-indices is very strong. This is intuitively easy to explain – as manufacturers usually need to purchase extra inputs to cope with new orders. We expect to see a continuous increase in purchases if the rise in new orders persists. The purchasing activities also reflect business confidence. Exhibit 17 shows the association between the purchases of inputs index and the business expectations index. Finally, exhibit 18 shows that input prices, as well as the expected trend of input prices, are also important considerations when making purchasing decisions.

Exhibit 15: Purchases of inputs index, April 2018 to March 2020

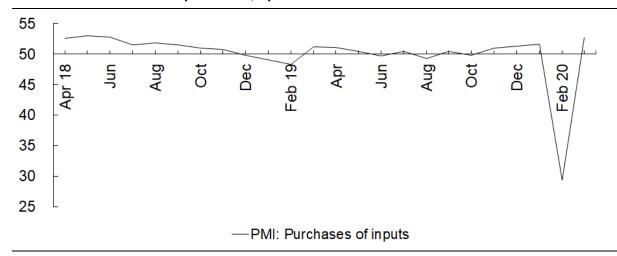


Exhibit 16: Purchases of inputs and new orders, January 2005 to March 2020

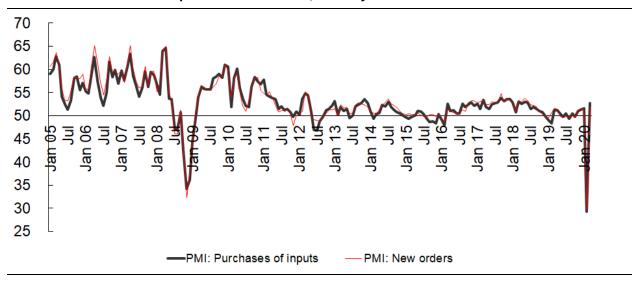




Exhibit 17: Purchases of inputs and business expectations, January 2016 to March 2020

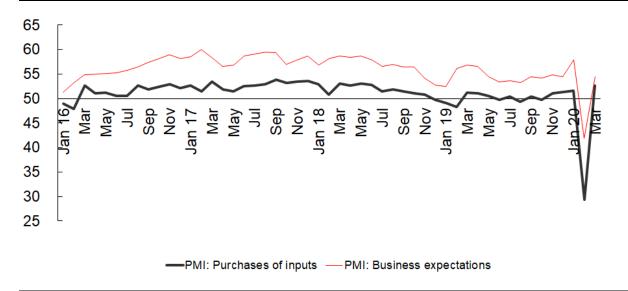
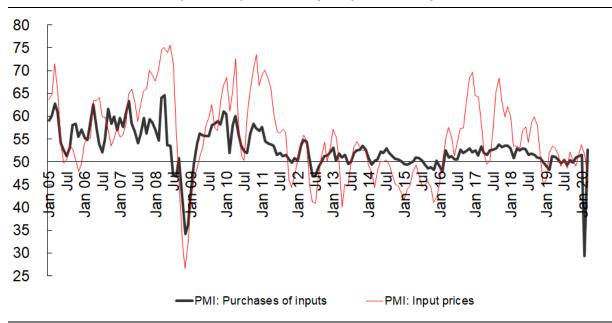


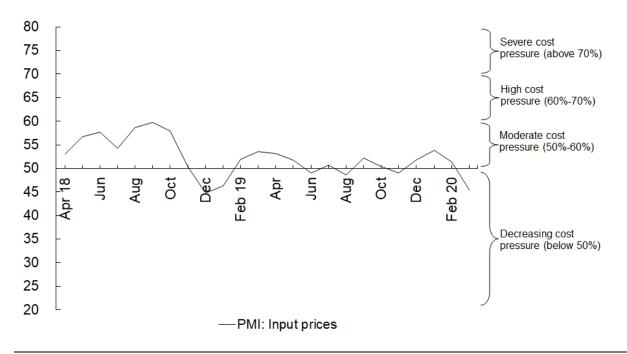
Exhibit 18: Purchases of inputs and prices of major inputs, January 2005 to March 2020



#### 7. Prices of production inputs go down

The input prices index fell from 53.8 in January to 51.4 in February and further to 45.5 in March. The index dropped below the critical 50-mark in March, indicating a decline in the prices of production inputs recently. This would reduce the cost pressure on Chinese manufacturers. (Exhibit 19)

Exhibit 19: Input prices index, April 2018 to March 2020



Source: China Federation of Logistics & Purchasing, China National Bureau of Statistics

Exhibit 20 shows that the input prices index is useful as a leading indicator of upstream prices. To show the association between the input prices index and 'midstream' prices, we plot the input prices index against the year-on-year growth of the producer price index (PPI)<sup>2</sup> in exhibit 21. Going forward, we expect that the month-on-month growth rates for both the purchaser price index and the PPI will stay negative in the near term, and the year-on-year growth rates for both the purchaser price index and the PPI will go down further in 2Q20. Meanwhile, we forecast that the year-on-year CPI growth will ease in the coming months. Finally, to see the extent to which input costs of Chinese manufacturers are affected by global commodity prices, exhibit 22 puts together the input prices index and the Thomson Reuters/ CoreCommodity CRB index.<sup>3</sup>

<sup>3</sup> The Thomson Reuters/ CoreCommodity CRB Index, which comprises 19 commodities such as crude oil, aluminum, corn, cotton, gold, natural gas, soybeans, etc, has served as one of the most recognized measures of global commodities markets.





<sup>2</sup> The producer price index of industrial goods (PPI), compiled by China National Bureau of Statistics, measures the prices of industrial products when they are sold for the first time after production.

Exhibit 20: Input prices index and purchaser price index of industrial products, January 2005 to March 2020

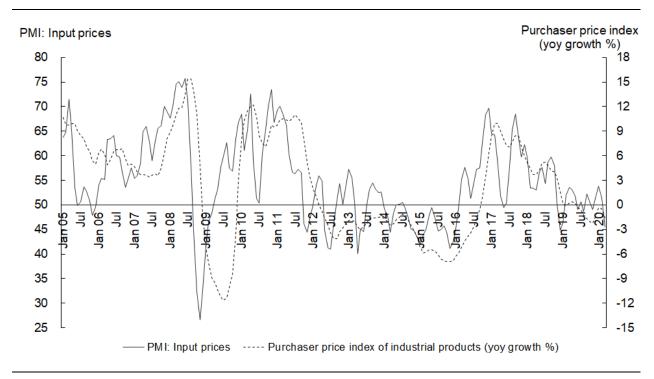


Exhibit 21: Input prices index and producer price index, January 2005 to March 2020 PMI: Input prices PPI (yoy growth %) 80 12 75 10 70 8 65 6 60 4 55 2 0 50 Jan 09 Jan 18 **Jan 17** 3 크 1 1 3 -2 45 an -4 40 35 -6 30 -8 25 -10 PMI: Input prices ----- Producer price index of industrial products (yoy growth %)





Exhibit 22: Input prices index and Thomson Reuters/ CoreCommodity CRB Index, January 2015 to March 2020

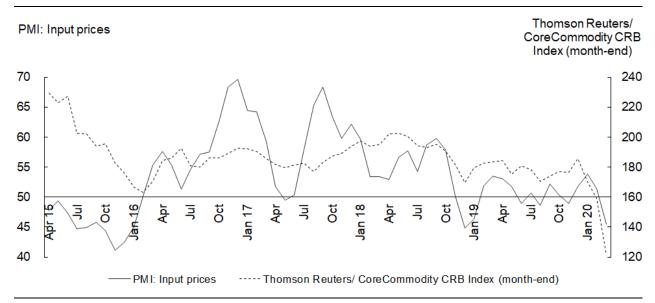
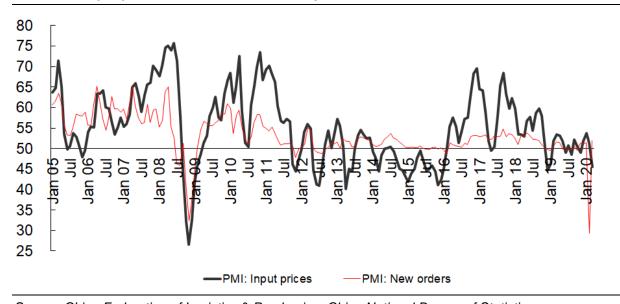


Exhibit 23 tries to give a convenient way of assessing and analyzing the profitability of Chinese manufacturers. Since new orders represent source of new revenue and input prices represent production cost, if the former rises faster than the latter, profitability tends to improve, and vice versa. New orders experienced a sharp drop in February while input prices have just started to fall lately, and this may imply deterioration in manufacturers' profit margins in the near future.

Exhibit 23: Input prices and new orders, January 2005 to March 2020







#### 8. Ex-factory prices index continues to drop

The ex-factory prices index dropped from 49.0 in January to 44.3 in February and further to 43.8 in March. The index has stayed below the critical 50-mark for 11 consecutive months, indicating that Chinese manufacturers have been reducing the ex-factory prices of their finished products amid challenging sales environment.<sup>4</sup> (Exhibit 24)

56
54
52
50
48
48
46
44
42
—PMI: Ex-factory prices

Exhibit 24: Ex-factory prices index, April 2018 to March 2020

Source: China Federation of Logistics & Purchasing, China National Bureau of Statistics

#### 9. Imports index continues to fall

The imports index plummeted from 49.0 in January to an all-time low of 31.9 in February, before rebounding to 48.4 in March. The latest index reading indicates a slower decline in the domestic demand for imported raw materials and parts used in manufacturing. (Exhibit 25)

 $<sup>4\,</sup>$  The ex-factory prices index has been published since January 2017.





Exhibit 25: Imports index, April 2018 to March 2020

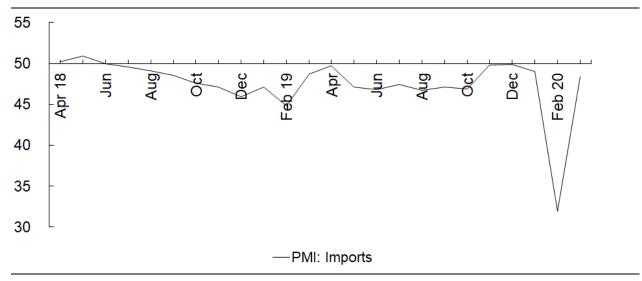


Exhibit 26 shows that the imports index is highly correlated (with some lags) to the year-on-year growth rate in imports. We expect import growth to stay negative year-on-year in 2Q20. Exhibit 27 illustrates the strong association between the imports index and the purchases of inputs index – as Chinese manufacturers purchase a large amount of production inputs and parts from overseas. Besides, China is a major importer of oil, iron ore and other raw materials. To see how heavily China's imports of inputs are affected by world commodity prices, we plot the imports index against the Thomson Reuters/ CoreCommodity CRB index. It is found that the imports index has been positively related to global commodity prices. (Exhibit 28)

Exhibit 26: Imports index and import growth, April 2015 to March 2020

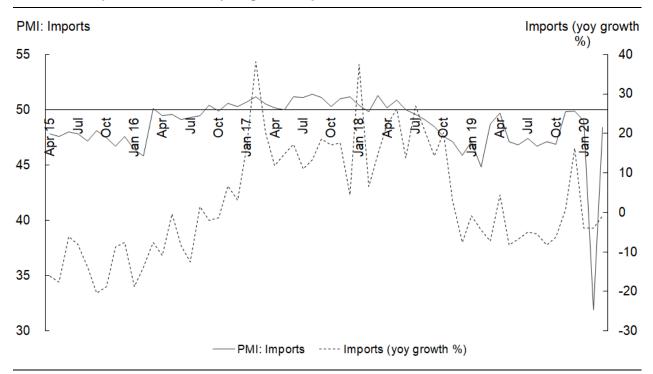


Exhibit 27: Imports and purchases of inputs, January 2005 to March 2020

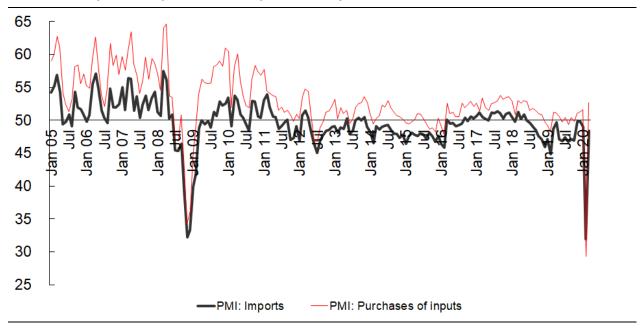
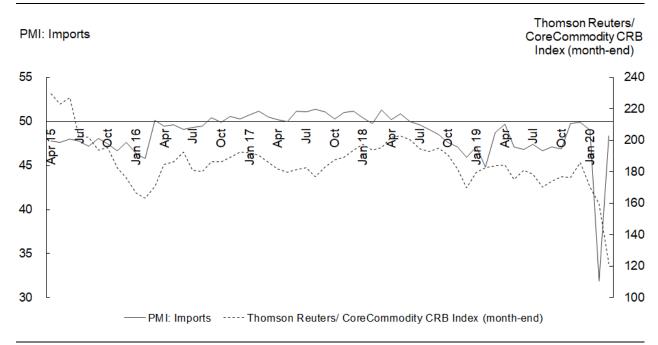






Exhibit 28: Imports index and Thomson Reuters/ CoreCommodity CRB Index, April 2015 to March 2020



#### 10. Manufacturing employment rises in March after contraction in February

The employment index plunged from 49.0 in January to a record low of 31.9 in February, and then rebounded to 50.9 in March. These figures show a slight increase in manufacturing employment in March after significant contraction in February. (Exhibit 29)

Exhibit 29: Employment index, April 2018 to March 2020

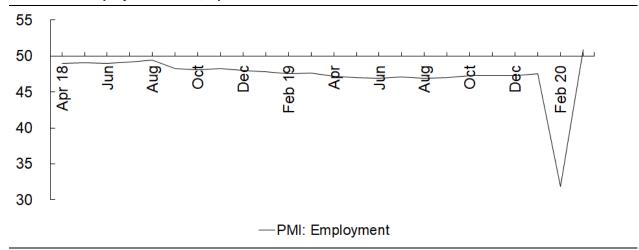
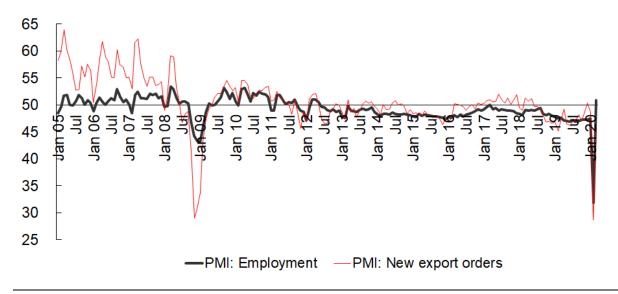






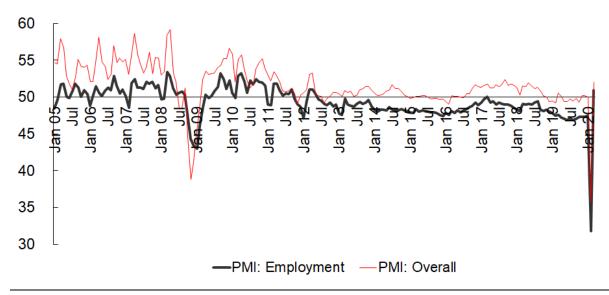
Exhibit 30 proves that the employment in China's manufacturing sector has relied heavily on the export sector. Exhibit 31 and 32 give our readers some ideas about the extent to which the employment situation improves or deteriorates with the manufacturing sector and the overall economy.

Exhibit 30: Employment and new export orders, January 2005 to March 2020



Source: China Federation of Logistics & Purchasing, China National Bureau of Statistics

Exhibit 31: Employment index and headline PMI, January 2005 to March 2020







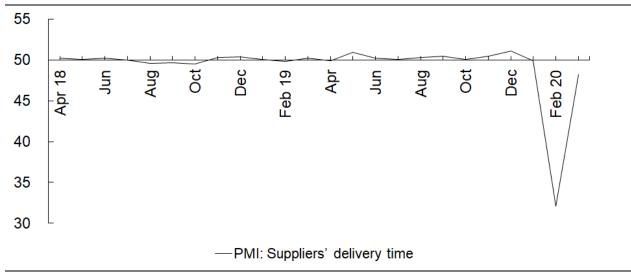
Real GDP (yoy PMI: Employment growth %) 55 8 2Q15 3Q15 4Q15 4Q16 1Q17 6 2Q18 3Q18 50 2 45 0 40 -2 35 30 —PMI: Employment • Real GDP (yoy growth %)

Exhibit 32: Employment index and real GDP growth, January 2015 to March 2020

#### 11. Suppliers' delivery slows

The suppliers' delivery time index went down from 49.9 in January to 32.1 in February, and then picked up to 48.2 in March. The index readings in the past few months were below the critical 50-mark, indicating that suppliers' delivery has slowed recently. It is noteworthy that the sharp drop in the index in February was due largely to the logistic disruptions caused by the COVID-19 outbreak in China, and the index rebounded strongly in March as logistics and transportation gradually returned to normal in the month. (Exhibit 33)

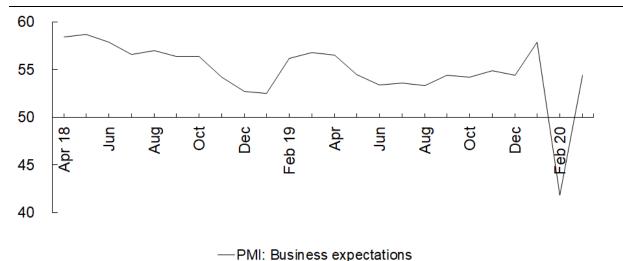
Exhibit 33: Suppliers' delivery time index, April 2018 to March 2020



#### 12. Purchasing managers become more optimistic in March

The business expectations index dropped from 57.9 in January to 41.8 in February, before rising to 54.4 in March. The latest index reading indicates that purchasing managers have become more optimistic recently after displaying deep pessimism in February, as the COVID-19 outbreak in China has been brought under control since late February.<sup>5</sup> (See exhibit 34)

Exhibit 34: Business expectations index, April 2018 to March 2020



<sup>5</sup> Since January 2017, a new method of seasonal adjustment to the business expectations index has been adopted; and accordingly, the historical readings of the index have been revised.





#### **About China Manufacturing PMI:**

China Manufacturing Purchasing Managers' Index (PMI) provides an early indication each month of economic activities in the Chinese manufacturing sector. It is jointly published by China Federation of Logistics & Purchasing (CFLP) and the National Bureau of Statistics (NBS). Fung Business Intelligence is responsible for drafting and disseminating the English PMI report.

Every month questionnaires are sent to 3,000 manufacturing enterprises all over China. The data presented herein is compiled from the enterprises' responses about their purchasing activities and supply situations. CFLP makes no representation regarding the data collection procedures, nor does it disclose any data of individual enterprises. The PMI should be compared to other economic data sources when used in decision-making.

3,000 manufacturing enterprises in 31 industries from Eastern, Northeastern, Central and Western China are surveyed. The sampling of the enterprises involves the use of Probability Proportional to Size Sampling (PPS), which means the selection of enterprises surveyed is largely based on each industry's contribution to GDP, and the representation of each geographical region.

There are 13 sub-indicators in the survey: Output, New Orders, New Export Orders, Backlogs of Orders, Stocks of Finished Goods, Purchases of Inputs, Imports, Input Prices, Stocks of Major Inputs, Ex-factory Prices, Employment, Suppliers' Delivery Time and Business Expectations. An index reading above 50 indicates an overall positive change in a sub-indicator; below 50, an overall negative change.

The PMI is a composite index based on the seasonally adjusted indices for five of the sub-indicators with varying weights: New Orders—30%; Output—25%; Employment—20%; Suppliers' Delivery Time—15%; and Stocks of Major Inputs—10%. A PMI reading above 50 indicates an overall expansion in the manufacturing sector; below 50, an overall contraction.

Currently there are more than twenty countries and regions conducting the PMI survey and compilation, based on an internationally standardized methodology.



#### **About the Organisations:**

#### **China Federation of Logistics & Purchasing**

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#### **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 has over 34,000 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.

Listed entities of the Group include Li & Fung Limited (SEHK: 00494), Global Brands Group Holding Limited (SEHK: 00787) and Convenience Retail Asia Limited (SEHK: 00831), as well as an investment in Trinity Limited (SEHK: 00891). Privately-held entities include Branded Lifestyle Holdings Limited, Fung Kids (Holdings) Limited and Suhyang Networks and investments in LH Pegasus and Toys"R"Us Asia.

For more information, please visit www.funggroup.com.











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