PMI Quarterly on China Manufacturing

China Federation of Logistics & Purchasing

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PMI indicates relatively stable expansion of manufacturing sector and economy

- Output expands at a stable pace.
- New export orders index indicates improving export demand.
- Backlogs of orders index falls slightly in December.
- Stocks of major inputs decrease at a faster pace.
- Growth in purchasing activities accelerates modestly.
- Input prices rise sharply.
- Manufacturers continue to raise ex-factory prices of their products.
- Imports index trends upward.
- Employment index drops at a slow pace.
- Suppliers' delivery continues to slow.
- Confidence among purchasing managers strengthens.

IN THIS ISSUE:

1. PMI indicates relatively stable expansion of manufacturing sector and economy

China's manufacturing PMI rose from 51.6 in October to 51.8 in November, before edging down to 51.6 in December. The index readings in recent months show that the manufacturing sector and the economy in China have expanded at a relatively stable pace lately. (See exhibit 1)

It is noteworthy to recognize the discrepancy by size of enterprises. The PMI of 'large enterprises' stayed high within the range of 52.9 to 53.1 in the past three months, indicating a relatively rapid expansion of 'large enterprises'. Meanwhile, the PMI of 'medium enterprises' went up from 49.8 in October to 50.5 in November, before moderating to 50.4 in December. The index stayed above the critical 50-mark in the past two months, showing that 'medium enterprises' have been expanding. In contrast, the PMI of 'small enterprises' dropped from 49.8 in November to 48.7 in December, the lowest level in nine months, indicating that the situations facing 'small enterprises' have been worsening. (See exhibit 2)

The small fluctuation of the headline PMI in the past three months points to a stabilizing economy. Production activities have expanded at a relatively fast pace in recent months, as indicated by the strong output index throughout October to December. This was supported by the relatively stable growth in overall new orders. The new orders index stayed within a narrow range of 52.9 to 53.6 throughout October to December. However, the input prices index registered 63.4, 59.8 and 62.2 in October, November and December respectively, well above 50, implying intensified cost pressure on Chinese manufacturers. Meanwhile, the ex-factory prices index fluctuated within the range of 53.8 to 55.2 during October to December, showing that manufacturers passed through the higher costs to customers by raising the ex-factory prices of their products.

The Chinese policy makers have reiterated the importance of maintaining economic stability. We predict that China's monetary policy will stay neutral, and loans and 'total social financing' will continue to grow at a reasonable pace this year. Moreover, the central government will continue with its active fiscal policy; it will ensure its funding support to important areas and projects, but will reduce its expenditures in general. Meanwhile, the central government will strengthen its efforts to curb major risks, cut poverty and tackle pollution.

Going ahead, China's economy is set to maintain stable growth in the coming quarter. We predict that the headline PMI will stay high at between 51.5 and 52.5 in 1Q18. We also forecast that the real GDP growth will be 6.8% in 1Q18. Challenges facing Chinese manufacturers, however, include stronger government's efforts to enforce environmental regulations, a marked increase in

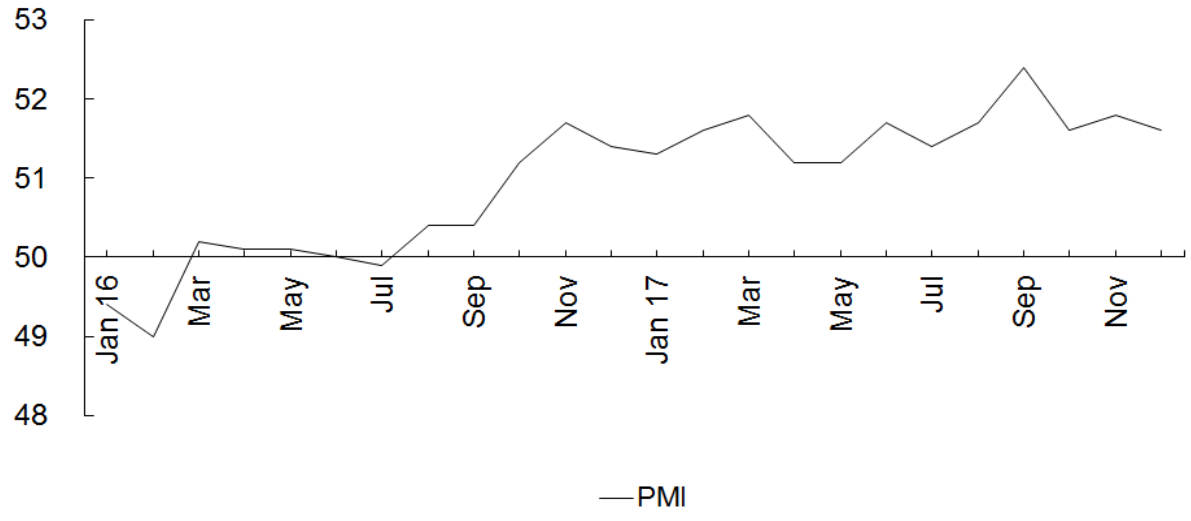
prices of materials, the greater uncertainty in the US trade policies under the Trump administration, intense competition in the international market, and the weak demand for luxury products. Overall, we expect that the industrial production (VAIO) growth will be around 6.0-6.5% yoy in 1Q18.

Exhibit 3 shows that the fall in the headline PMI in December was largely due to the drop in the output index (which weighs 25% in the computation of the headline PMI), the new orders index (weighs 30%) and the employment index (weighs 20%). In December, 7 of the 13 sub-indices were lower than their respective levels in the previous month. (See exhibit 4)

Among the 13 sub-indices, 8 stayed in the expansionary zone over the past three months (i.e. output, new orders, new export orders, purchases of inputs, imports, input prices, ex-factory prices and business expectations). Meanwhile, the indices of backlogs of orders, stocks of finished goods, stocks of major inputs and employment remained in the contractionary zone over the same period.

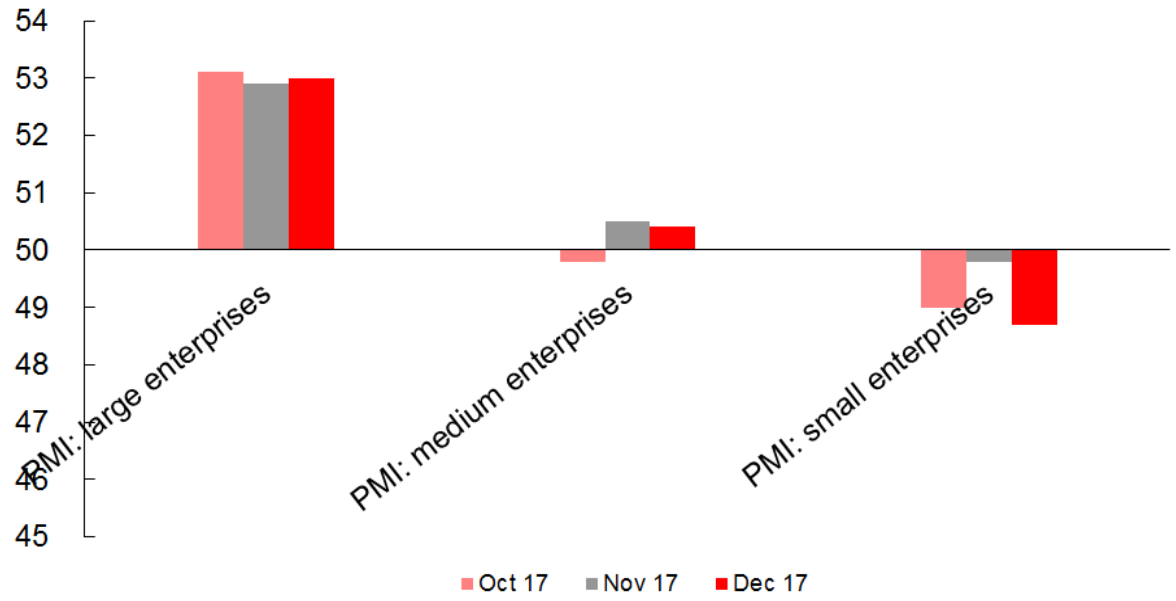
China's manufacturing PMI has so far done a satisfactory job in predicting economic growth. Exhibit 5 plots the quarterly real GDP yoy growth rates versus the monthly PMIs since its inception. It could be seen that the PMI demonstrates a fairly good track record of forecasting the growth trend of the economy at least over the next few months. Based on this chart we project that the real GDP growth will be 6.8% yoy in 1Q18.

Exhibit 1: Headline PMI, January 2016 to December 2017



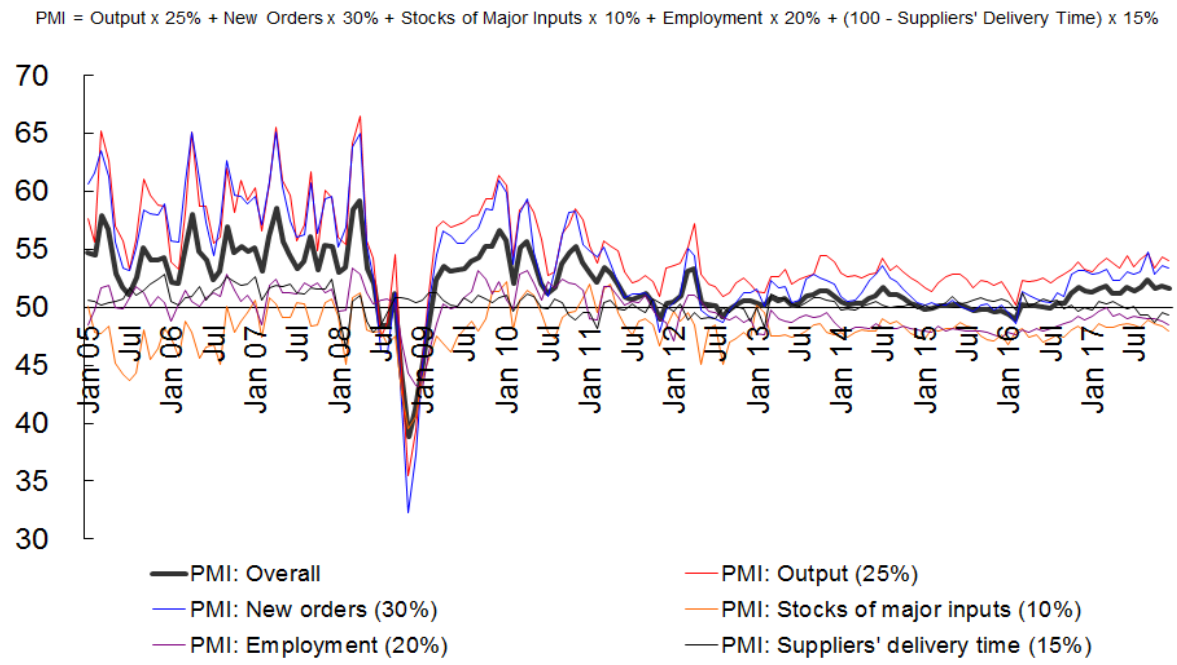
Source: China Federation of Logistics & Purchasing, China National Bureau of Statistics

Exhibit 2: PMIs of large enterprises, medium enterprises and small enterprises, October to December 2017



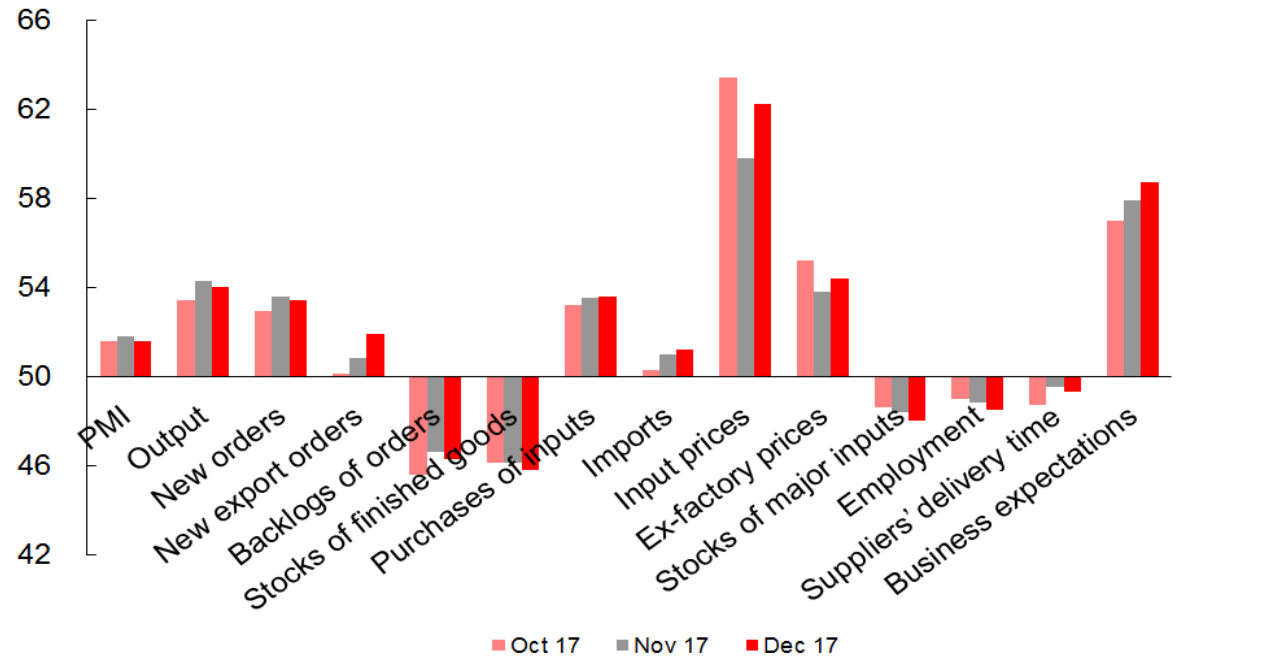
Source: China Federation of Logistics & Purchasing, China National Bureau of Statistics

Exhibit 3: Headline PMI and sub-indices, January 2005 to December 2017



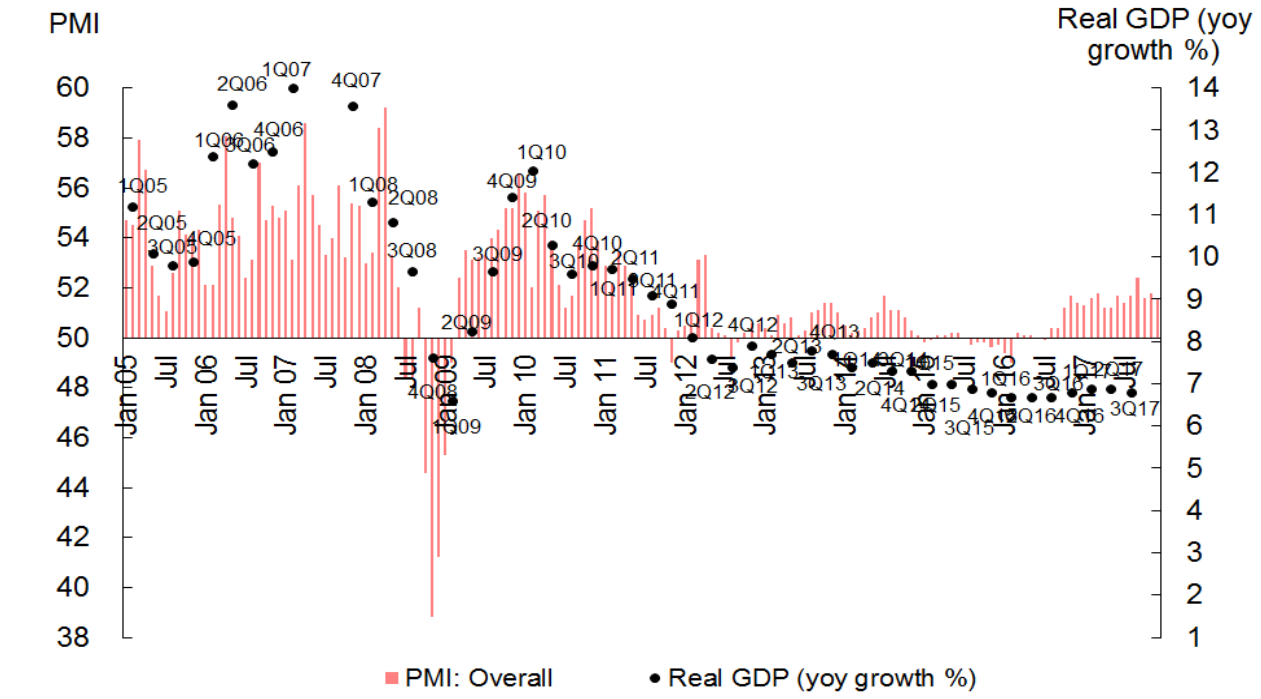
Source: China Federation of Logistics & Purchasing, China National Bureau of Statistics

Exhibit 4: Headline PMI and all sub-indices, October to December 2017



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

Exhibit 5: Headline PMI and real GDP growth, January 2005 to December 2017



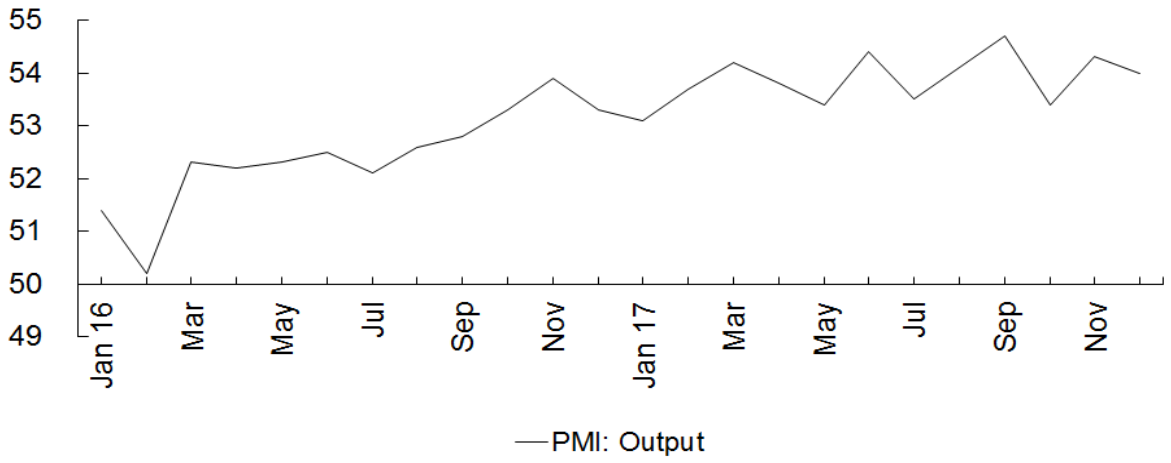
Source: China Federation of Logistics & Purchasing, China National Bureau of Statistics

2. Output expands at a stable pace

The output index fluctuated within the narrow range of 53.4 to 54.3 throughout October to December, indicating that production activities have expanded at a relatively stable pace in recent months. (See exhibit 6)

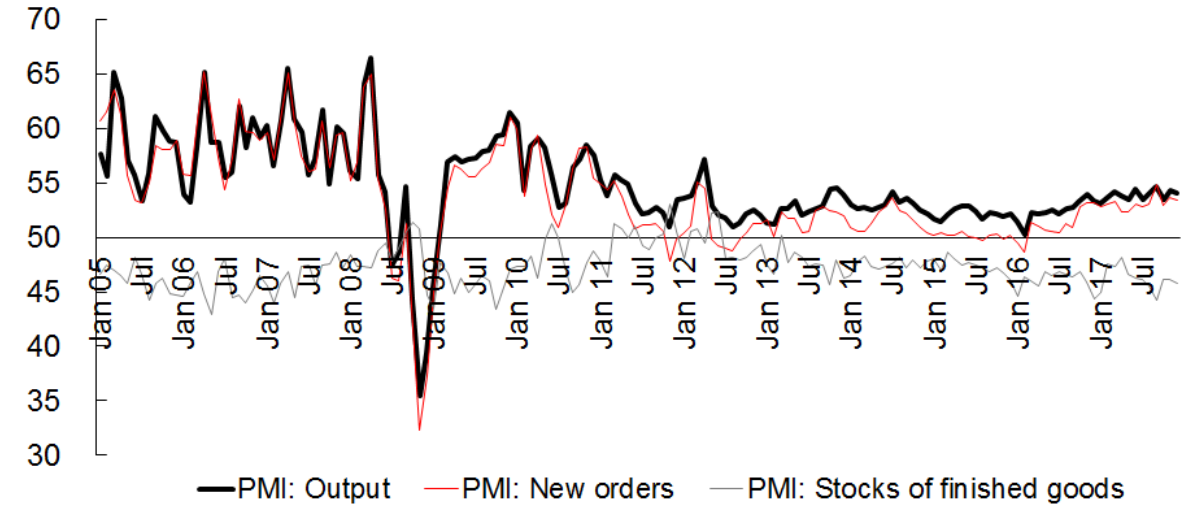
Exhibit 7 shows that the output growth was mainly fuelled by new orders growth instead of restocking activities, as the stocks of finished goods index has stayed in the contractionary zone for fifty seven consecutive months. However, output may grow strongly later when manufacturers have finally run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

Exhibit 6: Output index, January 2016 to December 2017



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

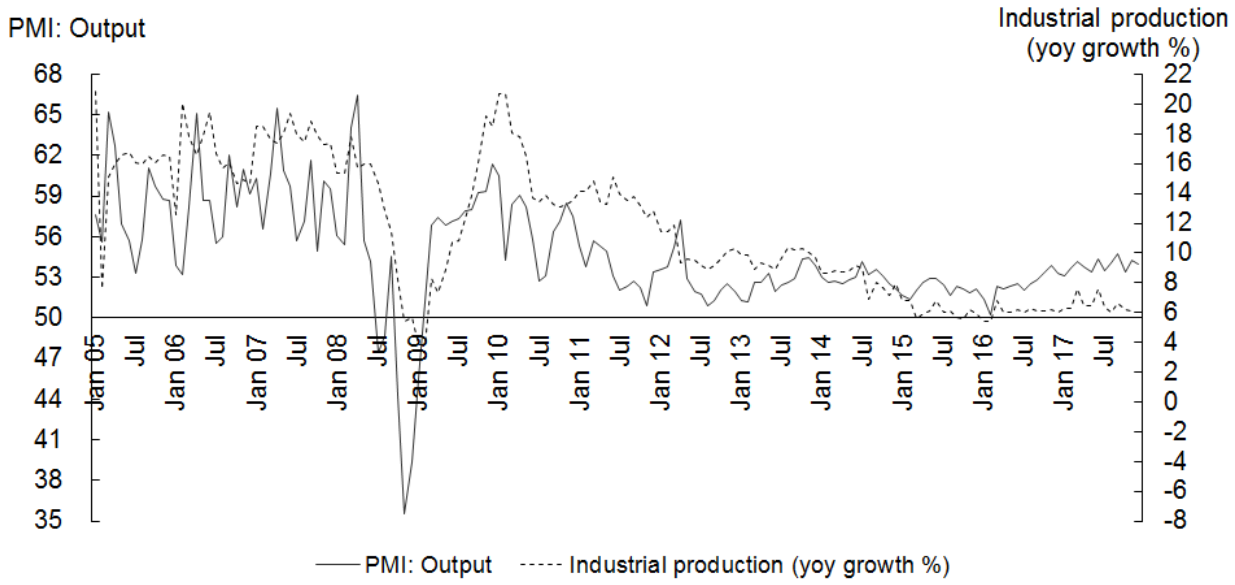
Exhibit 7: Output, new orders and stocks of finished goods, January 2005 to December 2017



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 be around 6.0-6.5% yoy in 1Q18. In the coming months, industrial activities will be supported by the relatively stable demand. Challenges facing Chinese manufacturers, however, include stronger government's efforts to enforce environmental regulations, a marked increase in prices of materials, the greater uncertainty in the US trade policies under the Trump administration, intense competition in the international market, and the weak demand for luxury products.

Exhibit 8: Output index and industrial production growth, January 2005 to December 2017

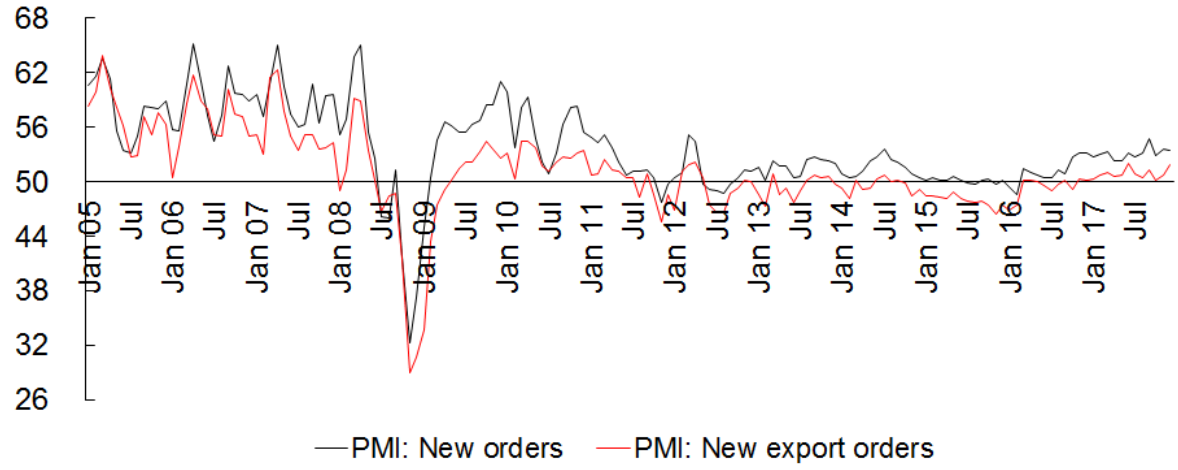


Source: China Federation of Logistics & Purchasing, China National Bureau of Statistics

3. New export orders index indicates improving export demand

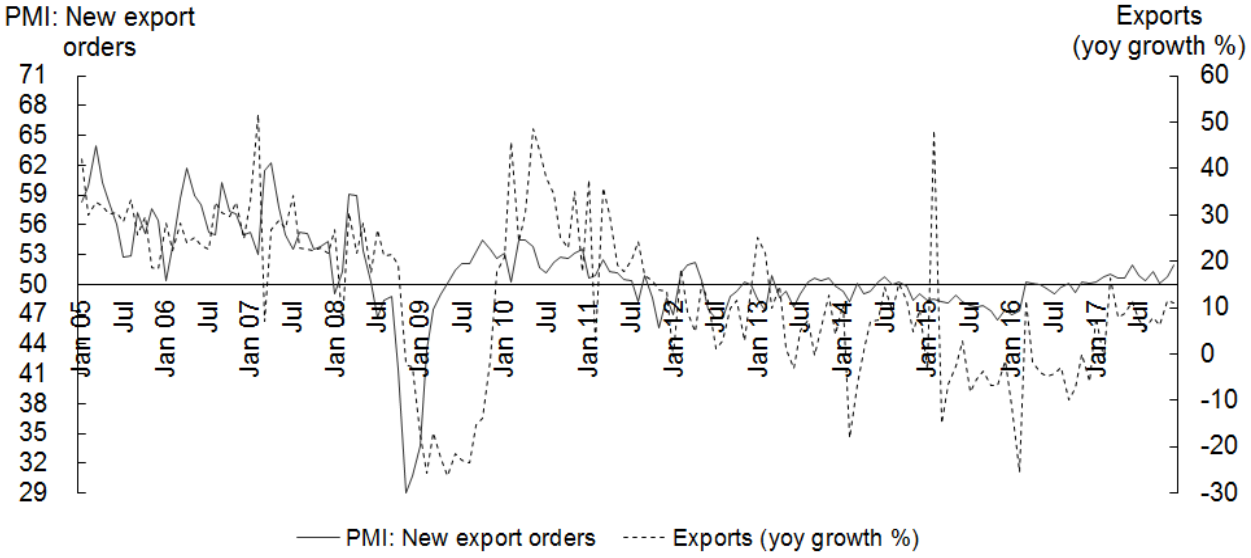
The new orders index stayed within a range of 52.9 to 53.6 throughout October to December, showing the relatively stable growth in overall new orders. Meanwhile, the new export orders index improved from 50.1 in October to 50.8 in November. The index went up further to 51.9 in December, the highest level since July 2017, indicating that the export demand has improved recently. (See exhibit 9)

Exhibit 9: New orders index and new export orders index, January 2005 to December 2017



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

Exhibit 10: New export orders index and export growth, January 2005 to December 2017



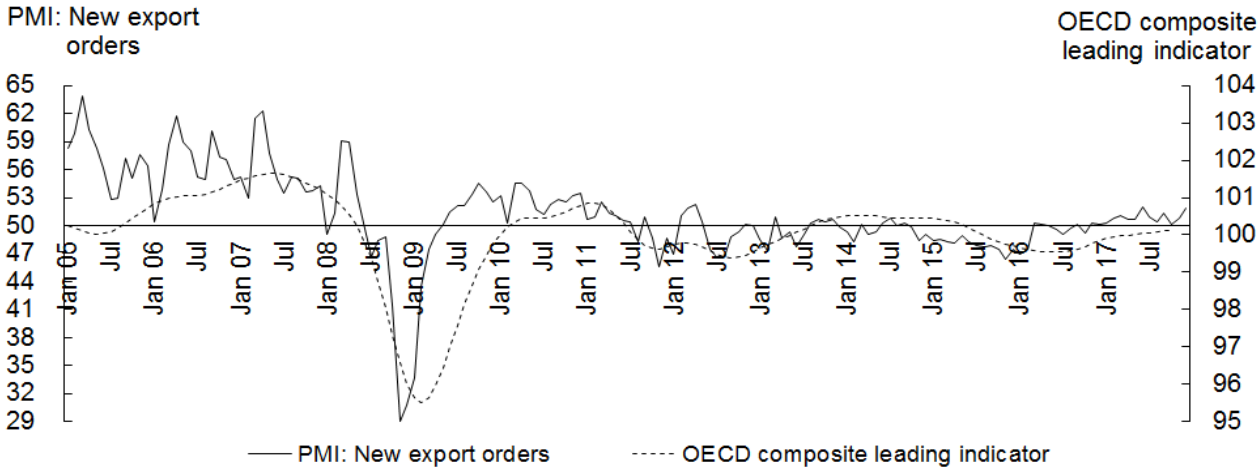
Source: China Federation of Logistics & Purchasing, China National Bureau of Statistics, China Customs

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 rise in recent months, we have been optimistic about the near-term prospects of China's exports. Moreover, 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[1] has been on an upward trend since July 2016, suggesting a

1 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,

continuous improvement in the global economy. All in all, we forecast that China's exports will show high single-digit year-on-year growth in 1Q18.

Exhibit 11: New export orders index and OECD composite leading indicator, January 2005 to December 2017



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

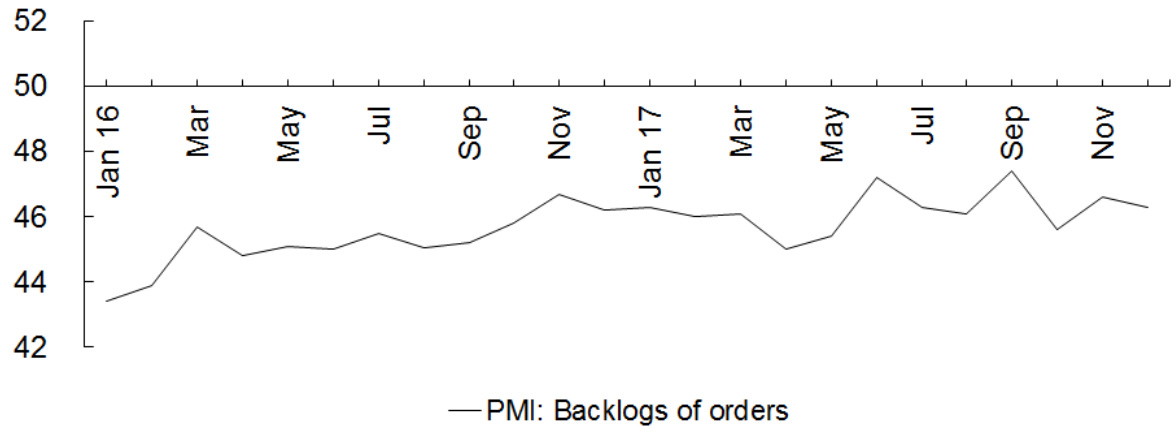
4. Backlogs of orders index falls slightly in December

The backlogs of orders index advanced from 45.6 in October to 46.6 in November, and then fell slightly to 46.3 in December. 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 go down slightly in the near term, as indicated by the apparently very high correlation between the sub-index and the headline PMI, and the recent moderation in the headline PMI. (See exhibit 13)

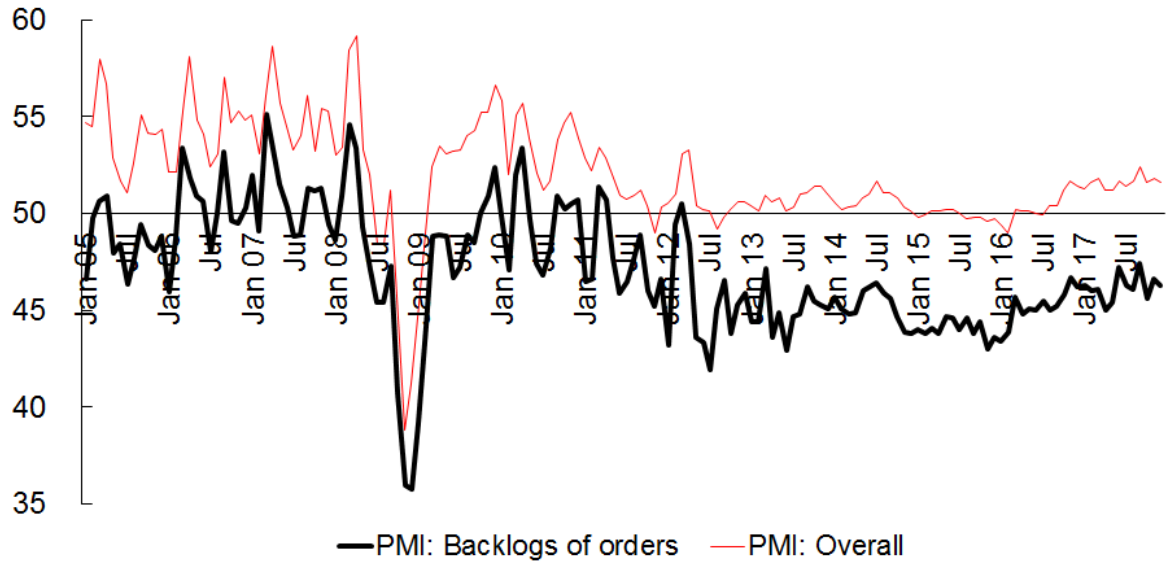
Netherlands, New Zealand, Norway, Poland, Portugal, Slovak Republic, Spain, Sweden, Switzerland, Turkey, United Kingdom and United States.

Exhibit 12: Backlogs of orders index, January 2016 to December 2017



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

Exhibit 13: Backlogs of orders index and headline PMI, January 2005 to December 2017



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

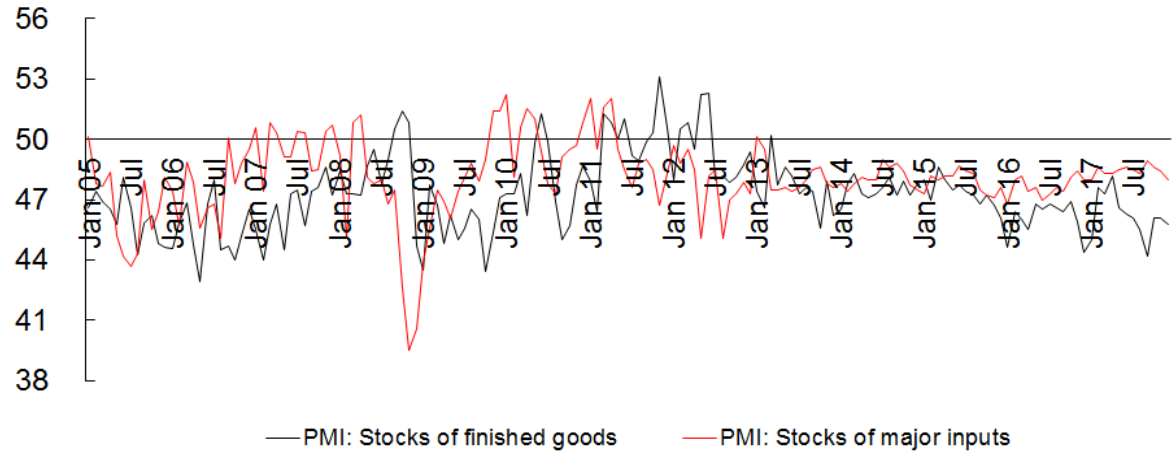
5. Stocks of major inputs decrease at a faster pace

The stocks of finished goods index was 46.1 in October and November, and then dropped slightly to 45.8 in December. The index stayed in the contractionary zone in the past three months, indicating that the stocks of finished goods held by manufacturers continued to fall during the period.

The stocks of major inputs index dropped from 48.6 in October to 48.4 in November, and further

to 48.0 in December. (Exhibit 14) The downtrend in recent months indicates that the stocks of major inputs have decreased at a faster pace.

Exhibit 14: Stocks of finished goods index and stocks of major inputs index, January 2005 to December 2017



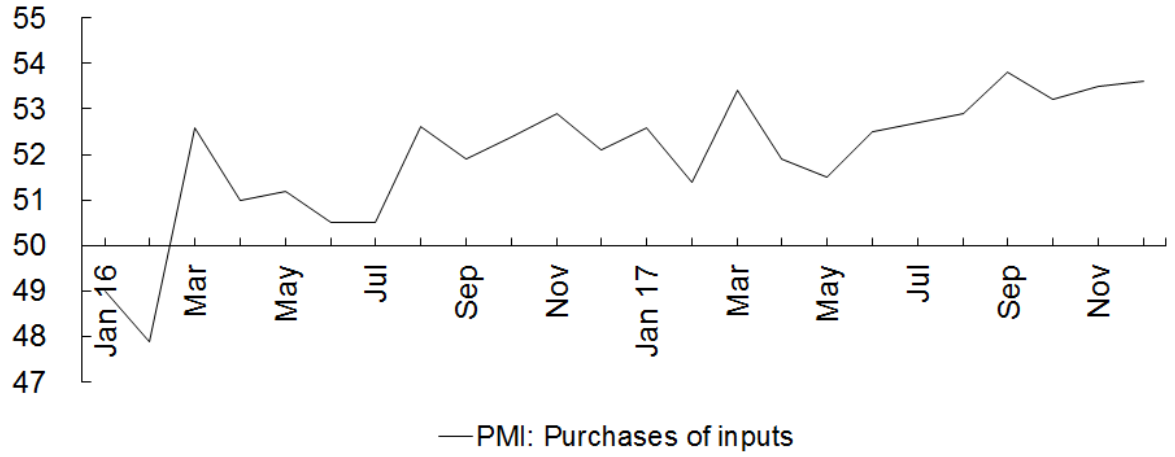
Source: China Federation of Logistics & Purchasing, China National Bureau of Statistics

6. Growth in purchasing activities accelerates modestly

The purchases of inputs index rose from 53.2 in October to 53.5 in November, and further to 53.6 in December, indicating a modest acceleration in the growth in purchasing activities. (Exhibit 15)

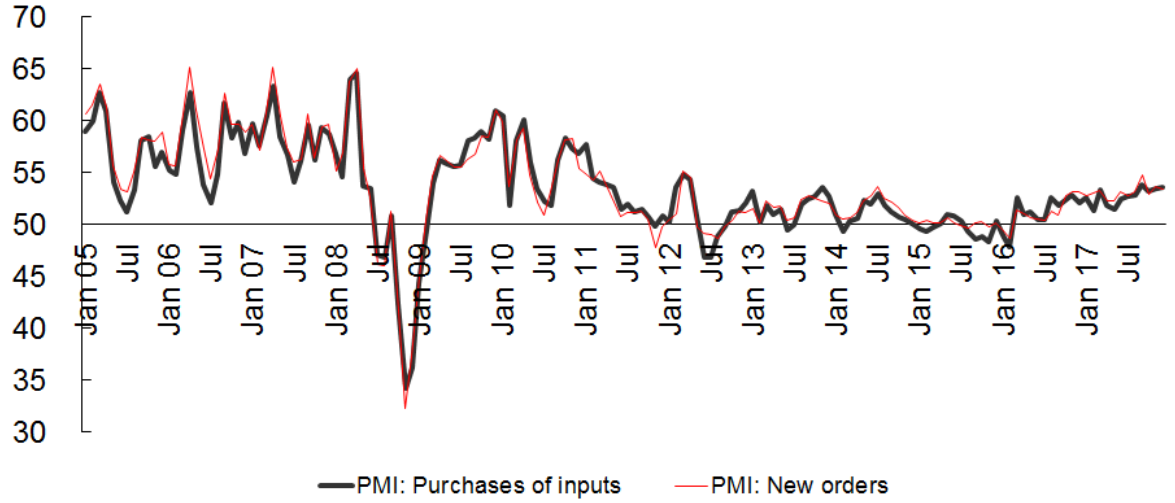
A number of factors affect the purchasing activities of manufacturers, among which the amount of new orders received by manufacturers has been the most important factor. Exhibit 16 plots the purchases of inputs index against the new orders index. The correlation between the two sub-indices is very strong. 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. Credit conditions could be another factor. 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, January 2016 to December 2017



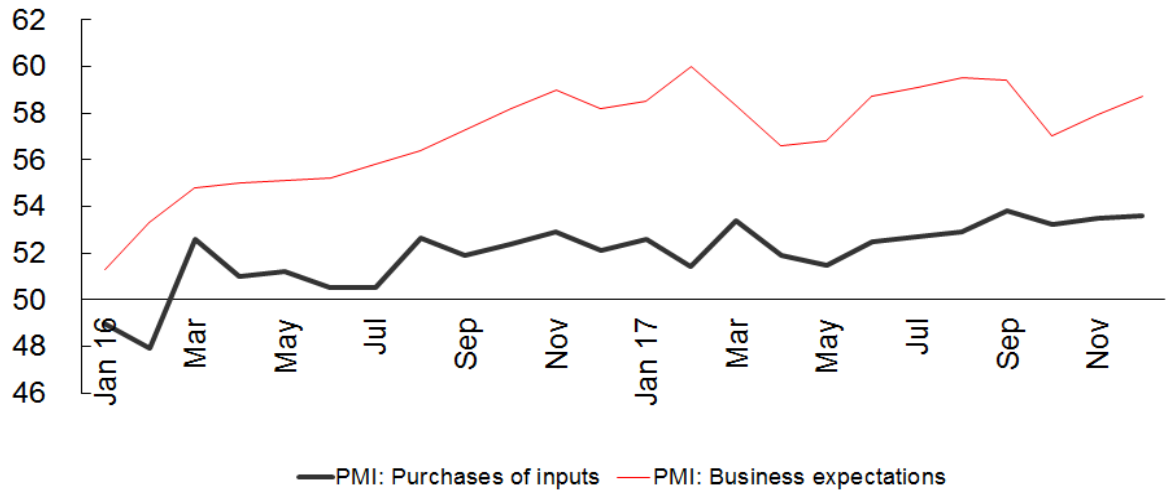
Source: China Federation of Logistics & Purchasing, China National Bureau of Statistics

Exhibit 16: Purchases of inputs and new orders, January 2005 to December 2017



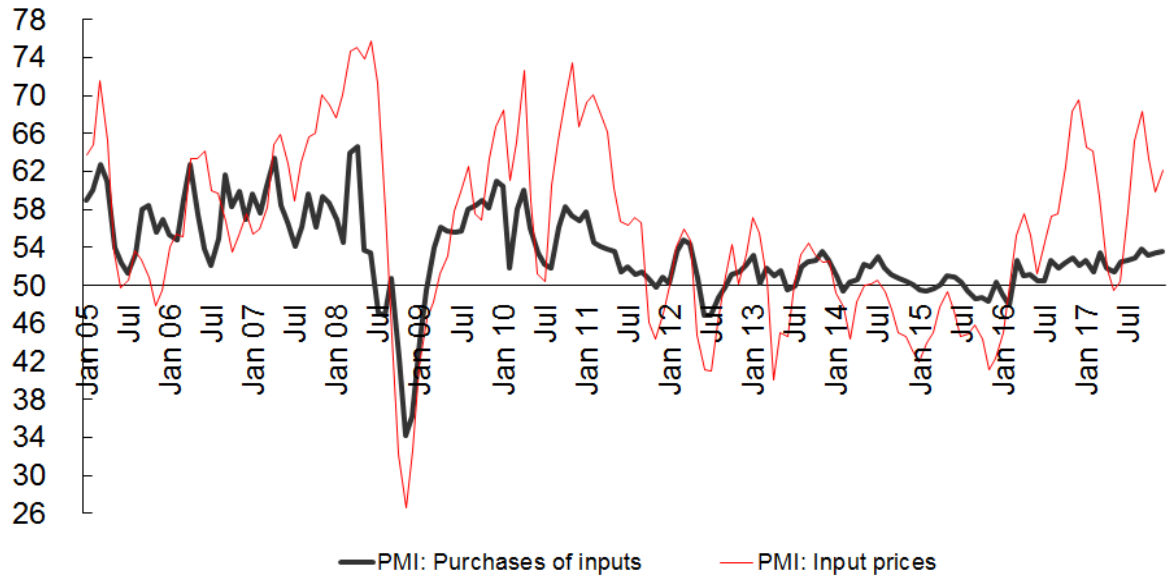
Source: China Federation of Logistics & Purchasing, China National Bureau of Statistics

Exhibit 17: Purchases of inputs and business expectations, January 2016 to December 2017



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

Exhibit 18: Purchases of inputs and prices of major inputs, January 2005 to December 2017

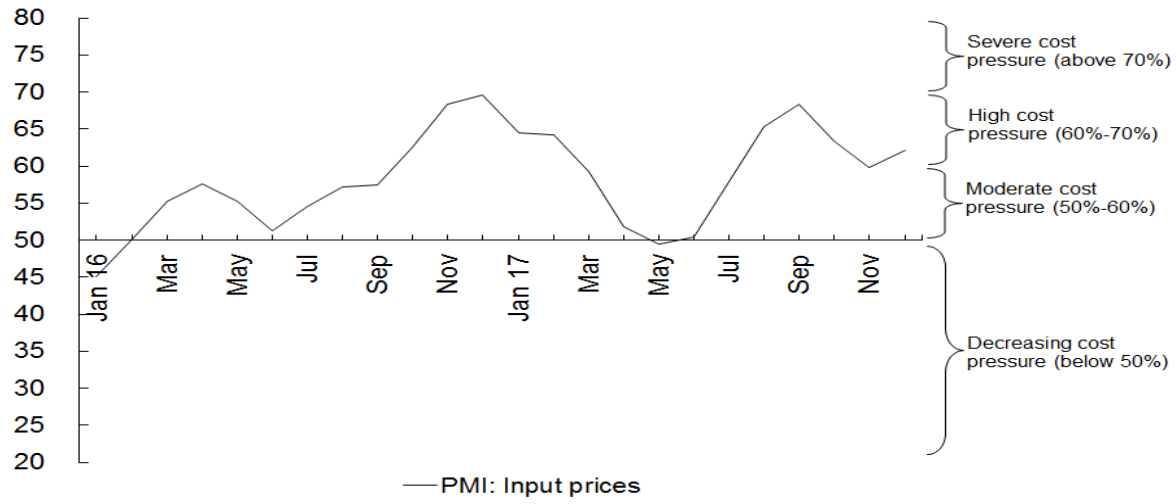


Source: China Federation of Logistics & Purchasing, China National Bureau of Statistics

7. Input prices rise sharply

After moderating from 63.4 in October to 59.8 in November, the input prices index rebounded to 62.2 in December, well above the critical 50-mark. The December reading indicates a sharp rise in the prices of production inputs in the month. (Exhibit 19)

Exhibit 19: Input prices index, January 2016 to December 2017



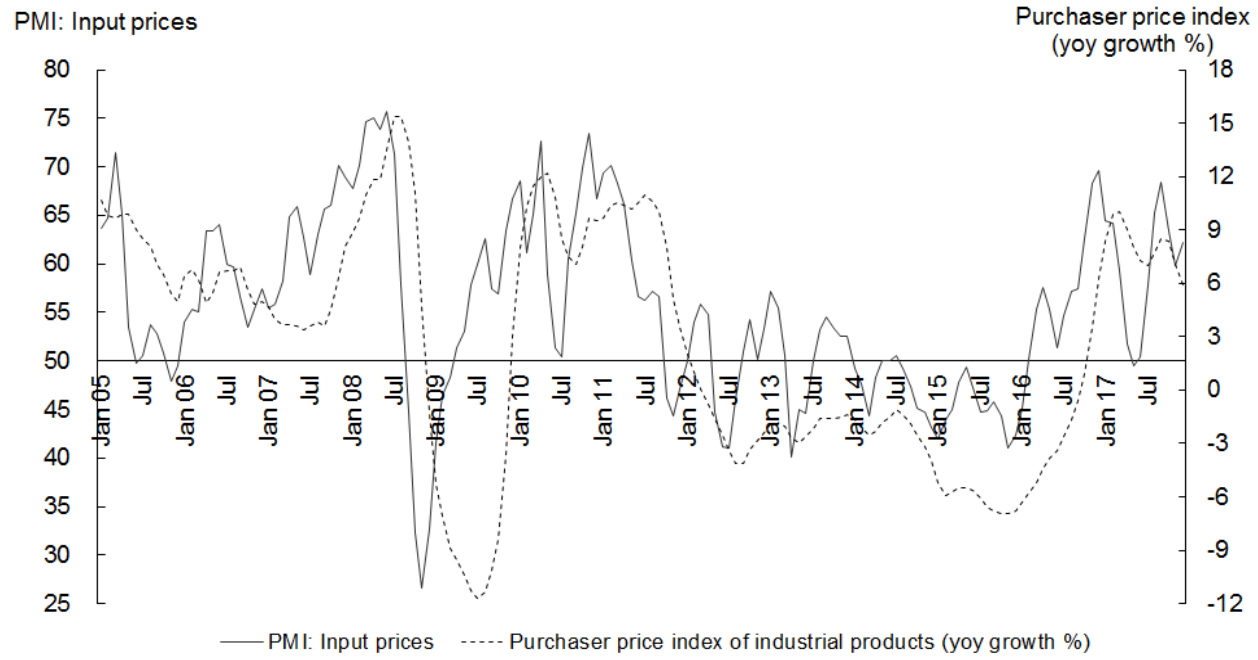
Source: China Federation of Logistics & Purchasing, China National Bureau of Statistics

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)[2] in exhibit 21. Going forward, we expect that the year-on-year growth rates for the producer price index (PPI) and purchaser price index will stay high in near future. Meanwhile, we forecast that the year-on-year CPI growth will fall a bit in January, due to a high comparison base in January 2017, before going up in February and March. 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.[3]

2 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.

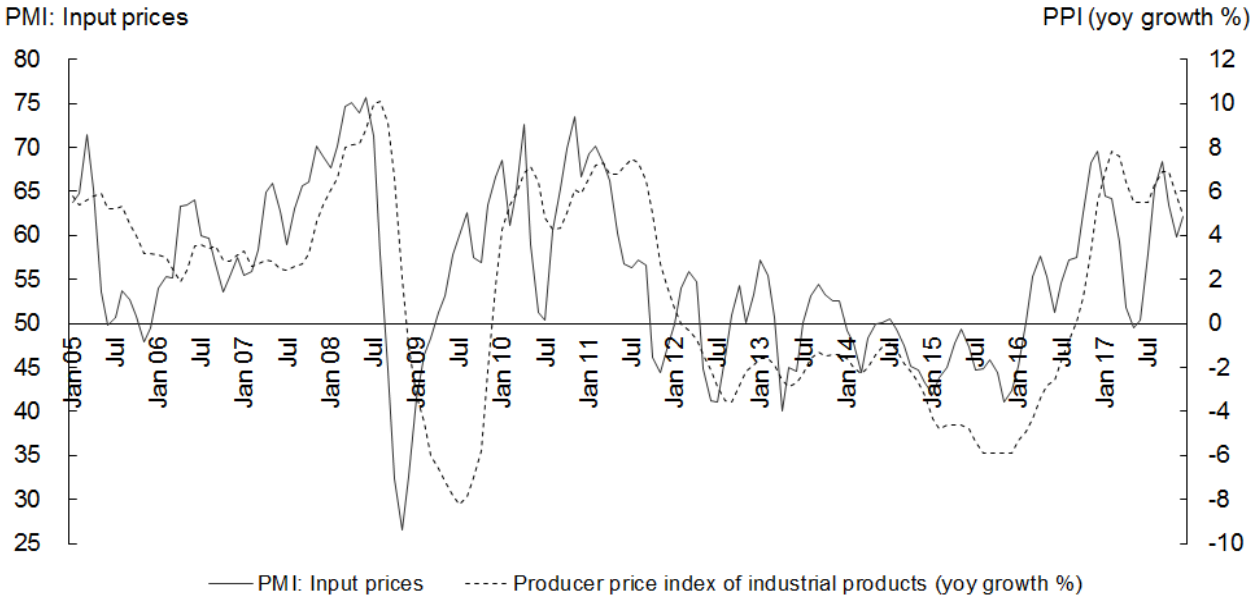
3 The Thomson Reuters/ CoreCommodity CRB Index, which comprises 19 commodities such as crude oil, aluminum, corn, cotton, gold, natural gas, soybeans, etc, has served as one of the most recognized measures of global commodities markets.

Exhibit 20: Input prices index and purchaser price index of industrial products, January 2005 to December 2017



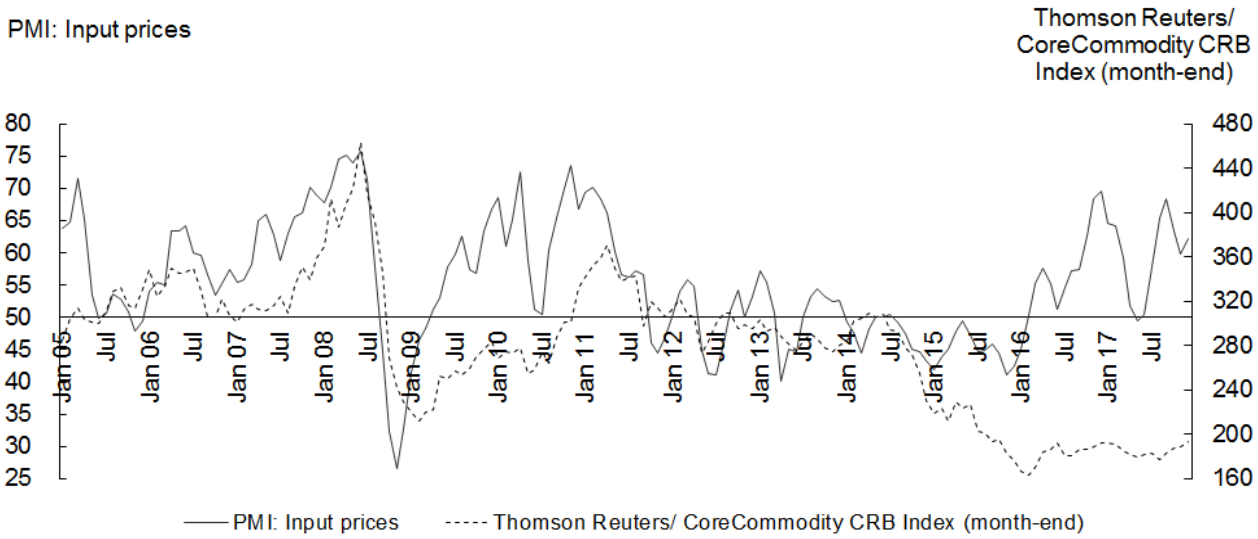
Source: China Federation of Logistics & Purchasing, China National Bureau of Statistics

Exhibit 21: Input prices index and producer price index, January 2005 to December 2017



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

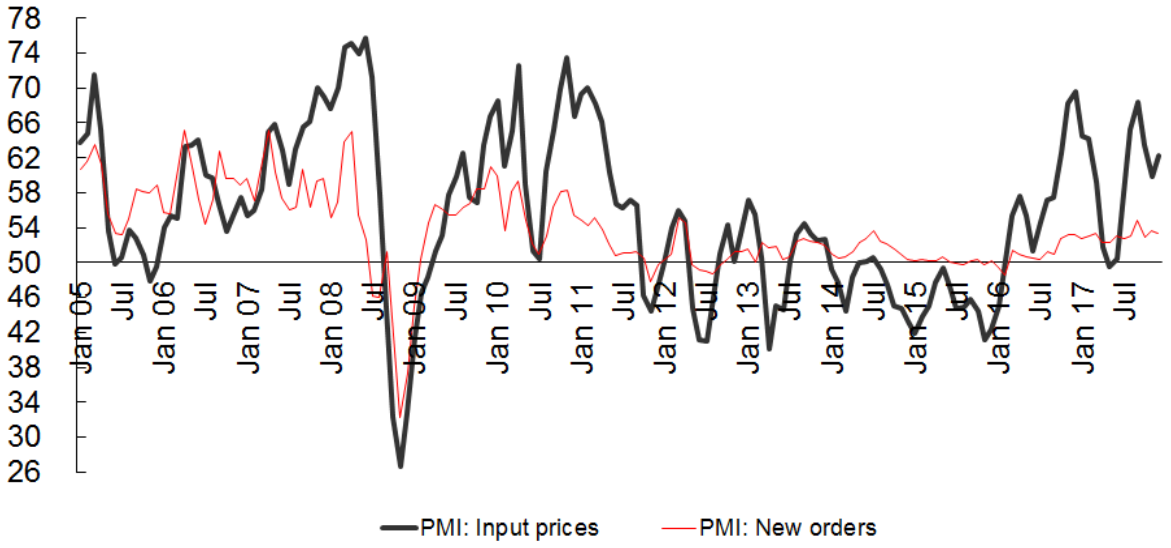
Exhibit 22: Input prices index and Thomson Reuters/ CoreCommodity CRB Index, January 2005 to December 2017



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

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. In recent months, input prices have risen faster than new orders. This may imply a decrease in manufacturers' profit margins in the near future.

Exhibit 23: Input prices and new orders, January 2005 to December 2017

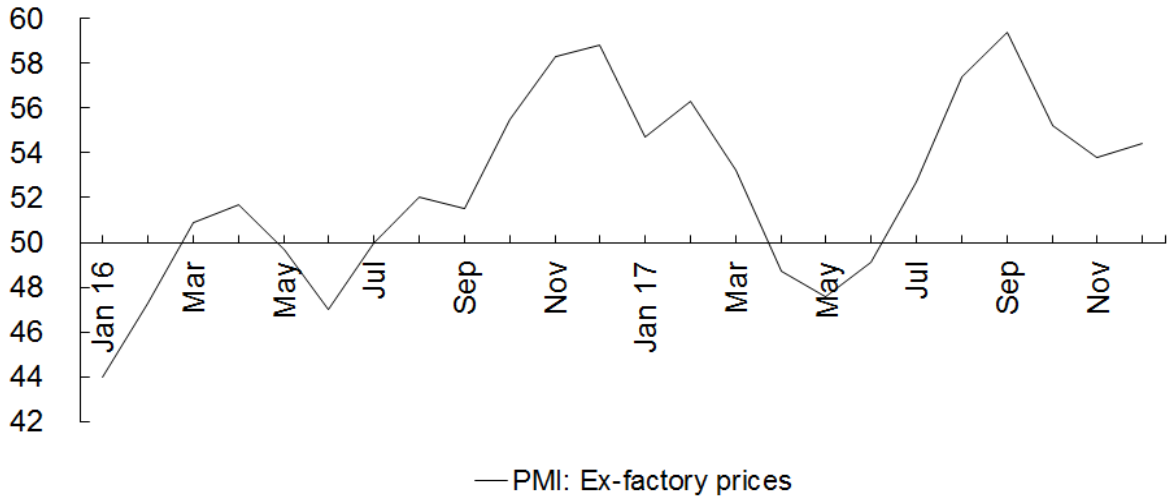


Source: China Federation of Logistics & Purchasing, China National Bureau of Statistics

8. Manufacturers continue to raise ex-factory prices of their products

The ex-factory prices index fell from 55.2 in October to 53.8 in November, but then rebounded to 54.4 in December. The index remained above the critical 50-mark in the past three months, indicating that manufacturers continued to raise the ex-factory prices of their products during the period.[4] (Exhibit 24)

Exhibit 24: Ex-factory prices index, January 2016 to December 2017



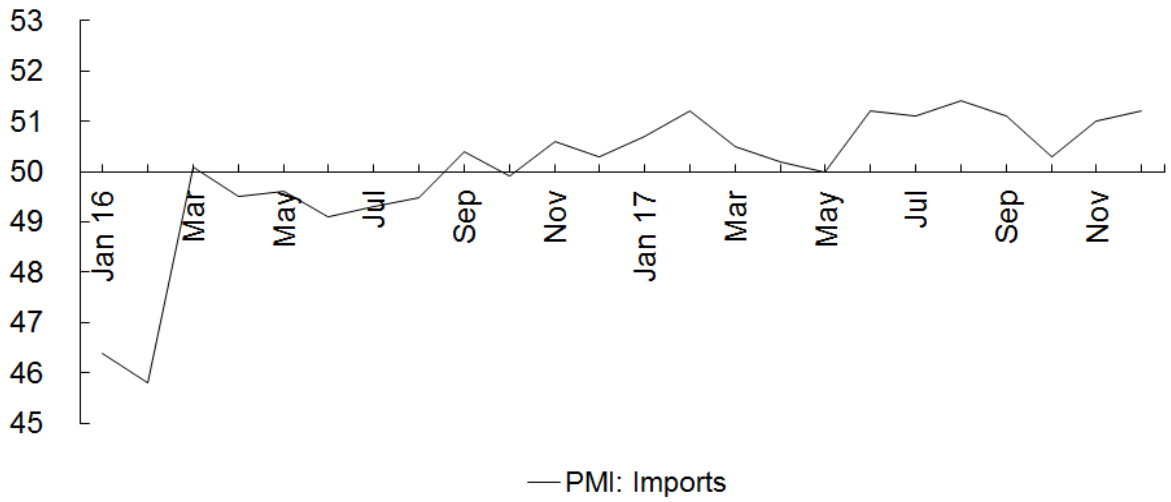
Source: China Federation of Logistics & Purchasing, China National Bureau of Statistics

9. Imports index trends upward

The imports index went up from 50.3 in October to 51.0 in November, before reaching 51.2 in December. The recent index readings indicate an increase in the imports of raw materials and parts used in manufacturing. (Exhibit 25)

4 The ex-factory prices index has been published since January 2017.

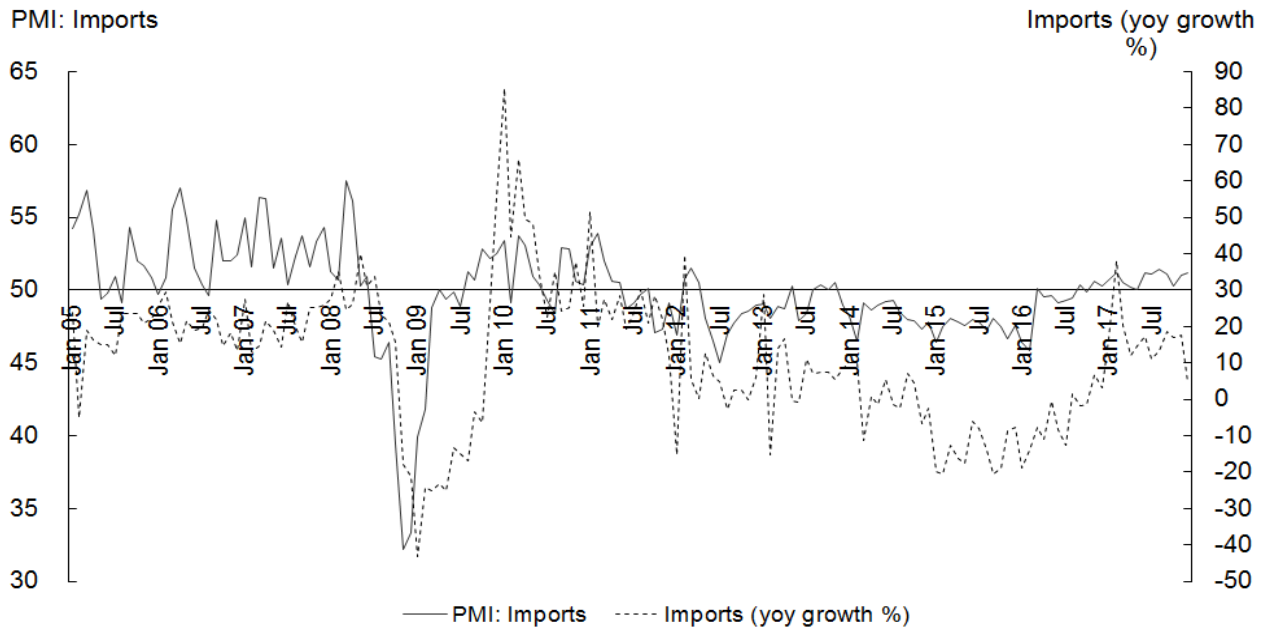
Exhibit 25: Imports index, January 2016 to December 2017



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

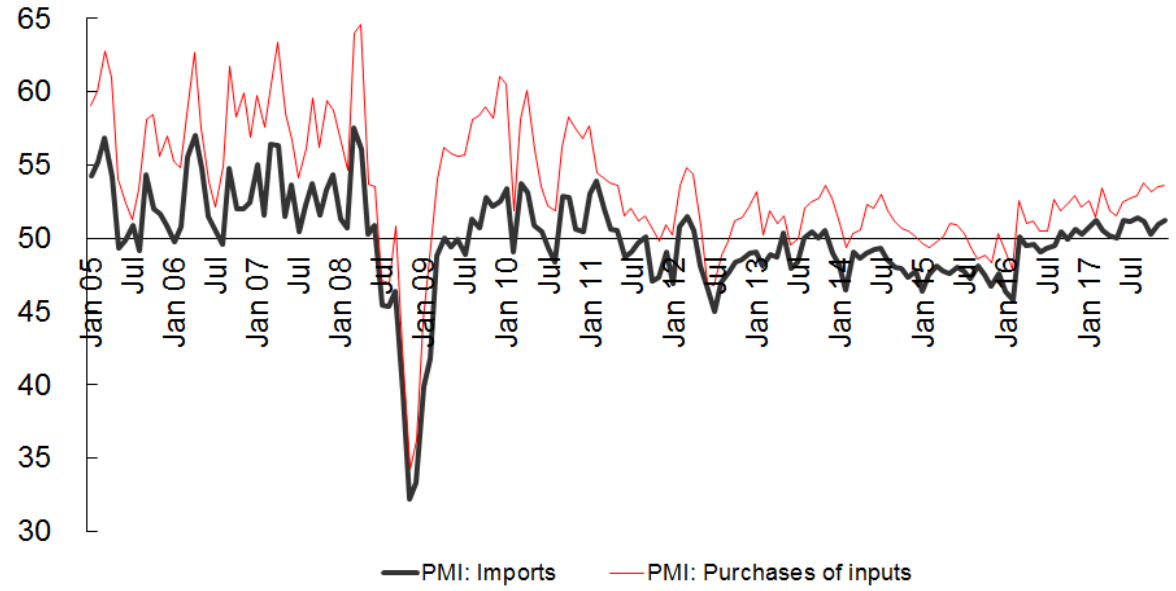
Exhibit 26 shows that the imports index is highly correlated (with some lags) to the year-on-year growth rate in imports. We expect import growth to moderate in 1Q18, due largely to the higher comparison base in 1Q17. Exhibit 27 illustrates the strong association between the imports index and the purchases 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, January 2005 to December 2017



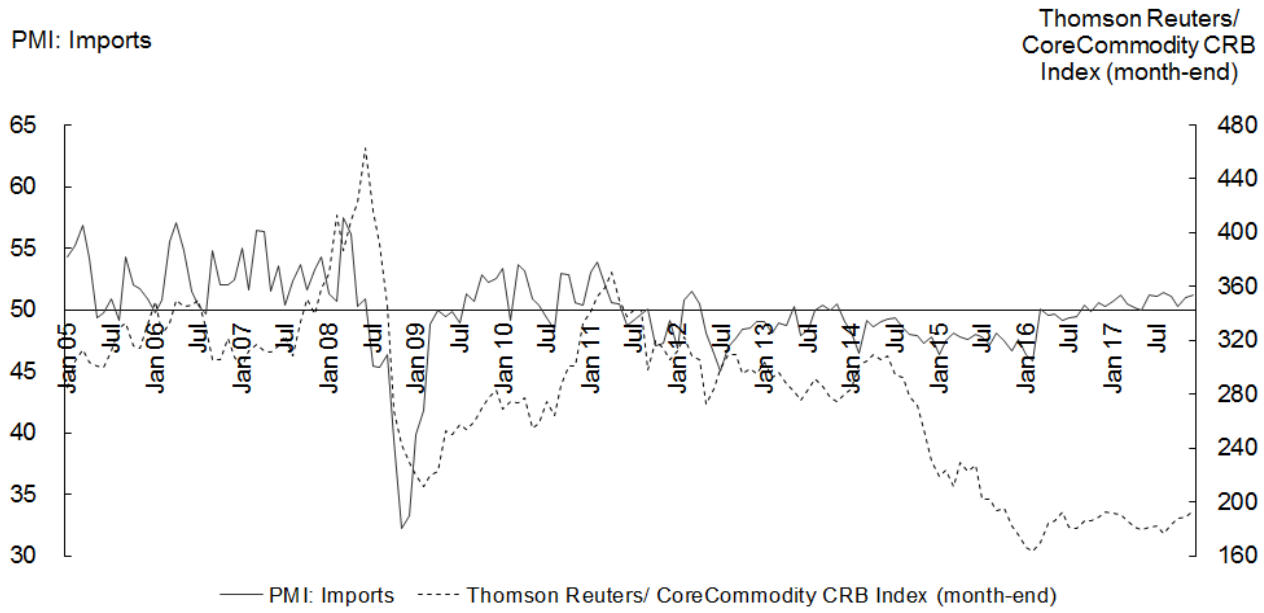
Source: China Federation of Logistics & Purchasing, China National Bureau of Statistics, China Customs

Exhibit 27: Imports and purchases of inputs, January 2005 to December 2017



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

Exhibit 28: Imports index and Thomson Reuters/ CoreCommodity CRB Index, January 2005 to December 2017

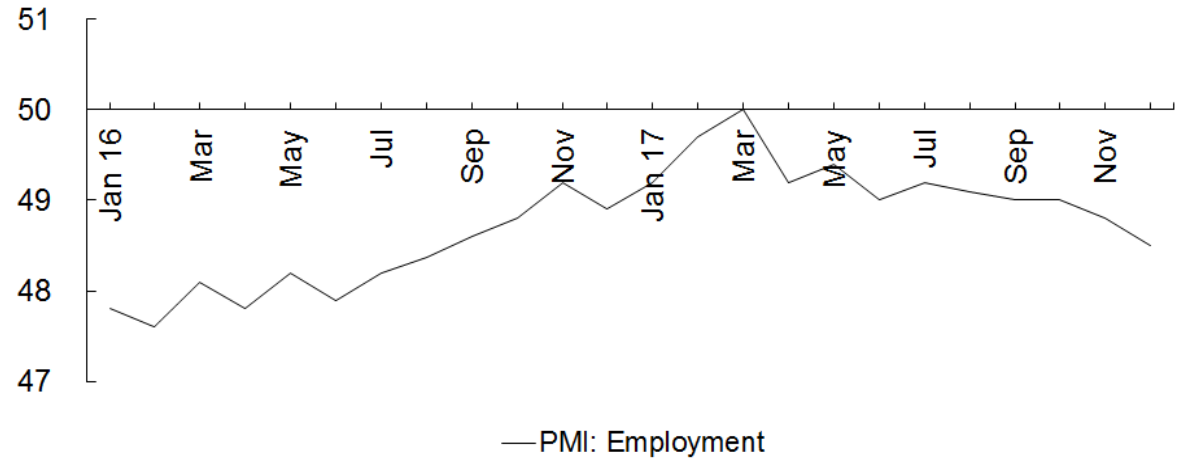


Source: China Federation of Logistics & Purchasing, China National Bureau of Statistics, Thomson Reuters

10. Employment index drops at a slow pace

The employment index fell slightly from 49.0 in October to 48.8 in November, and then dropped to 48.5 in December. (Exhibit 29) The index has been slightly below 50 since April 2017, indicating a modest decline in manufacturing employment in the past nine months.

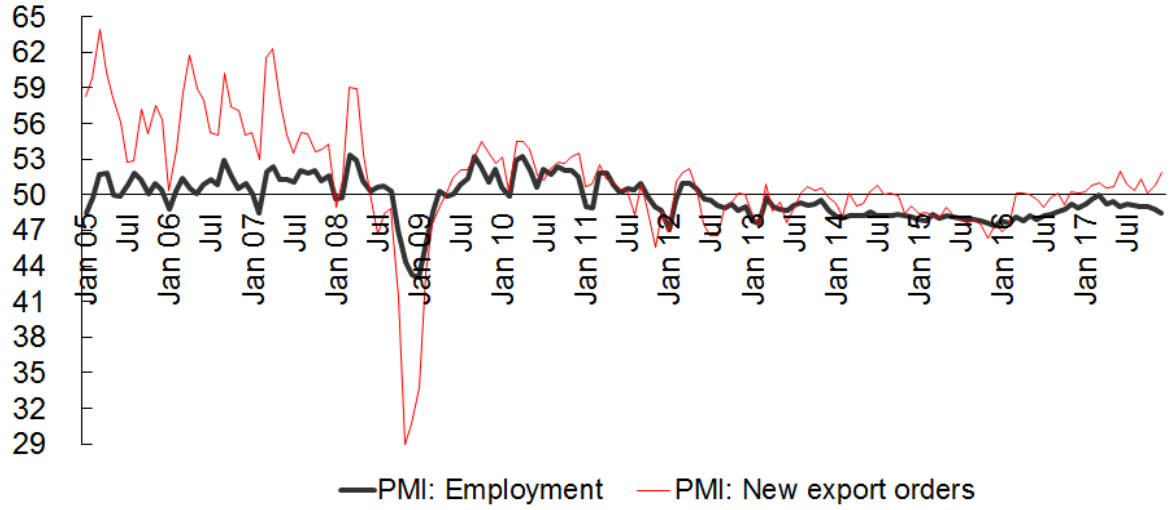
Exhibit 29: Employment index, January 2016 to December 2017



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

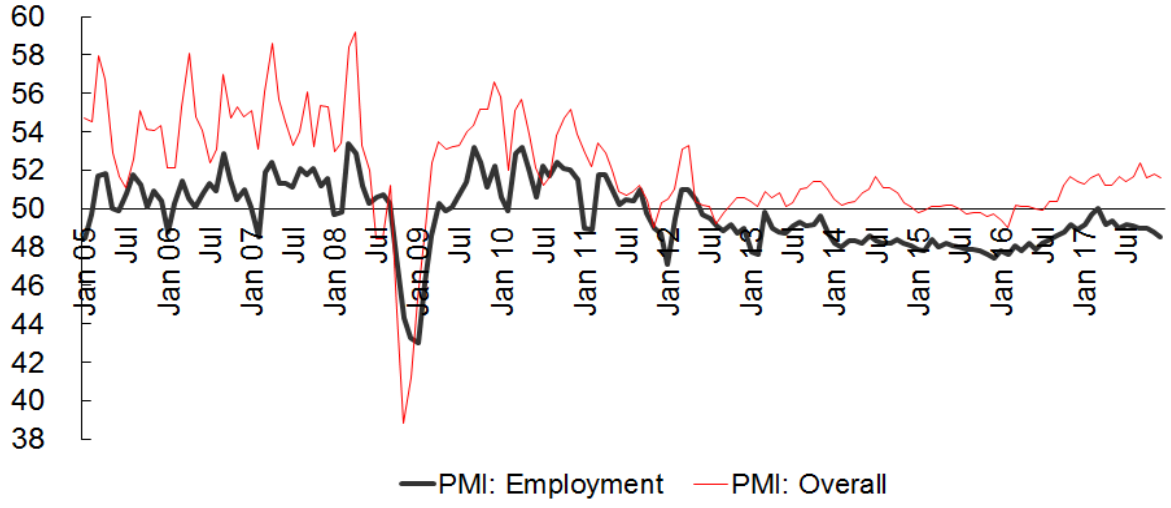
Exhibit 30 proves that the employment in China's manufacturing sector has relied heavily on the export sector. Exhibit 31 and 32 give our readers some ideas about the extent to which the employment situation improves or deteriorates with the manufacturing sector and the overall economy.

Exhibit 30: Employment and new export orders, January 2005 to December 2017



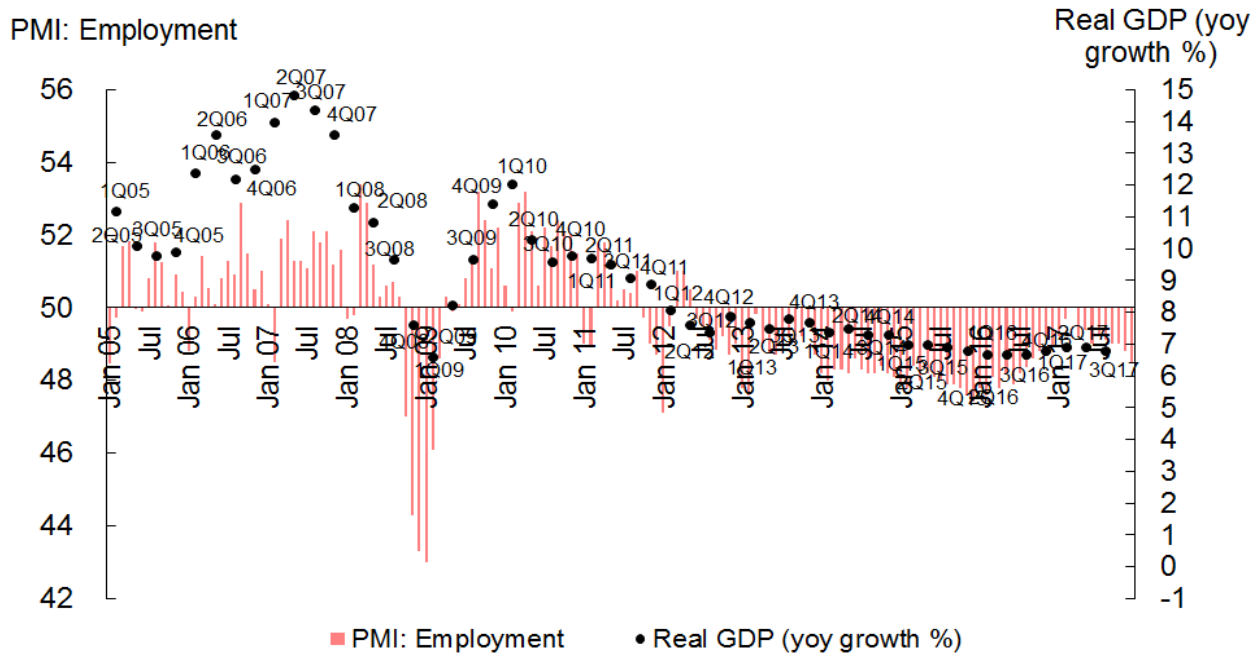
Source: China Federation of Logistics & Purchasing, China National Bureau of Statistics

Exhibit 31: Employment index and headline PMI, January 2005 to December 2017



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

Exhibit 32: Employment index and real GDP growth, January 2005 to December 2017

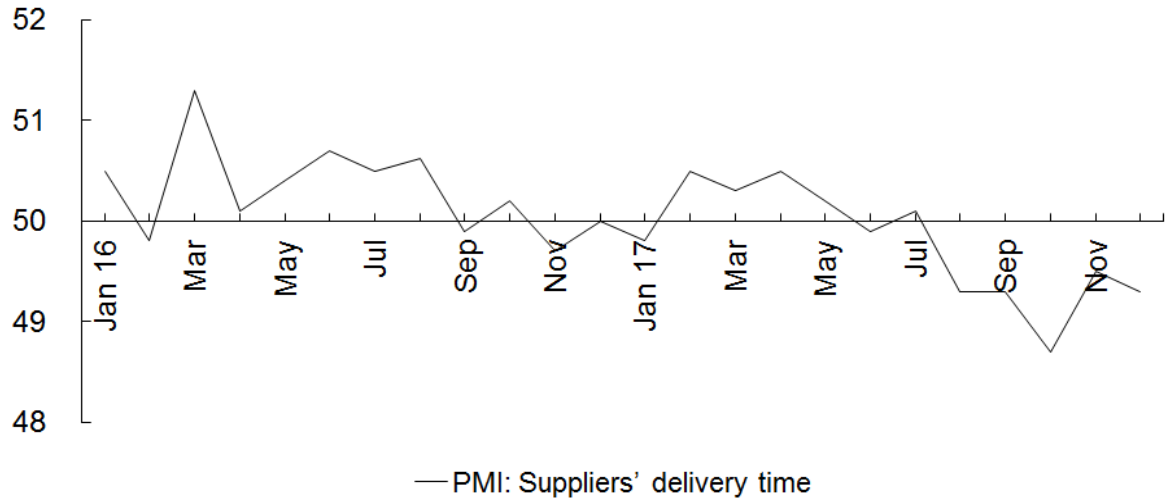


Source: China Federation of Logistics & Purchasing, China National Bureau of Statistics

11. Suppliers' delivery continues to slow

After advancing from 48.7 in October to 49.5 in November, the suppliers' delivery time index fell to 49.3 in December. The index has been below 50 for five consecutive months, indicating that suppliers' delivery has continued to slow recently. (Exhibit 33)

Exhibit 33: Suppliers' delivery time index, January 2016 to December 2017

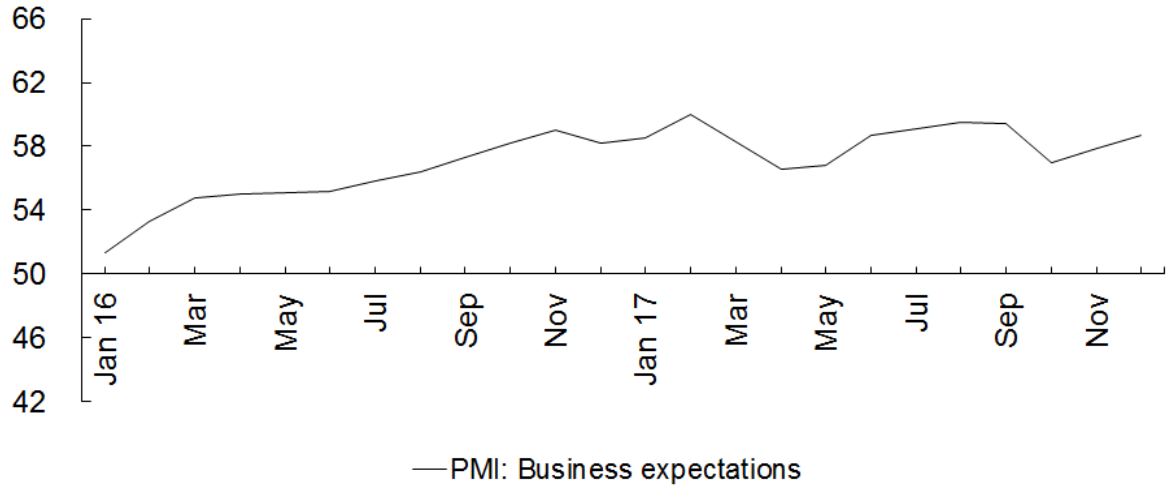


Source: China Federation of Logistics & Purchasing, China National Bureau of Statistics

12. Confidence among purchasing managers strengthens

After going up from 57.0 in October to 57.9 in November, the business expectations index rose further to 58.7 in December, showing that the confidence among purchasing managers in China has strengthened lately.[5] (See exhibit 34)

Exhibit 34: Business expectations index, January 2016 to December 2017



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

5 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

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 the 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 standards. CFLP 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 market data on global sourcing, supply chains, distribution, retail and technology.

Headquartered in Hong Kong, it leverages unique relationships and information networks to track and report on these issues with a particular focus on business trends and developments in China and other Asian countries. Fung Business Intelligence makes its data, impartial analysis and specialist knowledge available to businesses, scholars and governments around the world 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 consultancy 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

The Fung Group is a privately held multinational group of companies headquartered in Hong Kong whose core businesses are trading, logistics, distribution and retailing. The Fung Group employs over 39,900 people across 40 economies worldwide, generating total revenue of over US$22.5 billion in 2016. Fung Holdings (1937) Limited, a privately held business entity headquartered in Hong Kong, is the major shareholder of the Fung group of companies.

Please visit www.funggroup.com for more about the Fung Group.