

Read-through of SMM Monthly PMI

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Read-through of SMM Monthly PMI

SMM May PMI fell from April, indicating a slower demand growth

The SMM composite purchasing managers' index (PMI) in May was 51.71, down 4.26 from April, in line with our expectations of a strong demand season in 2Q but demand growth to slow down in May and June. China's official PMI released by the NBS in May gained 0.5 from April to 51.9. Through our correlation analysis, the SMM composite PMI is 6-7 months ahead of the official PMI, and the correlation coefficient between SMM PMI (deferred by 6-7 months) and NBS PMI is 0.85.

Auto and shipbuilding performed well in May

Auto: SMM is optimistic on auto sector in 2018 due to low inventories and a low base of output and sales. The SMM auto PMI stood at 55.65 in May, down slightly by 0.61 from April and up 144% year-on-year. This is supported by China's output and sales volume of vehicles released by China Association of Automobile Manufacturers (CAAM), which was up 11.47% and 12.27% respectively year-on-year in April. **Shipbuilding:** The demand from shipbuilding improved. The SMM shipbuilding PMI in May rose 0.53 from April and 31% year-on-year to 56.01. According to MIIT, new orders at shipyards in January-April rose 171% year-on-year.

SMM expects real estate and infrastructure to weaken further

This, together with tighter restrictions on financing, will limit consumption of metals. The SMM construction PMI (including real estate and infrastructure) dropped 9.47% year-on-year to 51.75 in May, as investments slowed. NBS data showed that investments in January-April in property and infrastructure grew at a slower pace, in line with the SMM construction PMI.

Growth in machinery and home appliance to decelerate on the construction cycle

SMM expects that a slower property market will slow down the growth rate of machinery and home appliance. The SMM machinery PMI in May was 51.25, up 39% year-on-year, but slower than a growth rate of 50% in May 2017. The SMM PMI for home appliances in May grew at the same pace of 103% as May 2017 to 54.11.

Supplies to weigh on prices due to a slower demand in May and June

Funding will be tight at the end of 2Q as demand slows down in May and June. SMM expect supplies of metals to increase in May and output of copper, lead, zinc, and steel to grow by 17%, 6%, 6% and 7% respectively in May year-on-year. Prices of metals that have high inventories are likely to be pressured.

Please refer to *SMM Monthly Base Metal Output Forecast and SMM Metals Macro Report*.

Readthrough of SMM May PMI: demand slows down

PMI had risen for 3 consecutive months, May demand slows down as expected

The SMM composite purchasing managers' index (PMI) in May was 51.71, down 4.26 from April, in line with our expectations of a strong demand season in 2Q but demand growth to slow down in May and June. The strong demand season for construction and machinery has ended according to SMM channel checks with downstream players. The construction PMI and machinery PMI fell 3.84 and 2.71 respectively from April. The auto PMI decreased slightly by 0.61, while the shipbuilding PMI rose slightly by 0.53, indicating a stable demand. May is the peak sales season for home appliance, with the home appliance PMI grew 4.14 from April.

SMM expects demand to continue slowing down in June, and maintain our positive view on auto and shipbuilding.

Chart 1: SMM Composite PMI

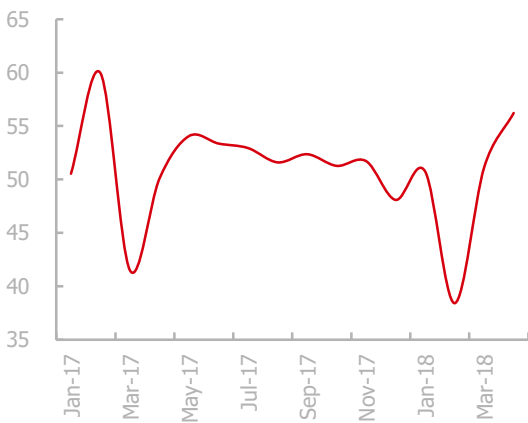
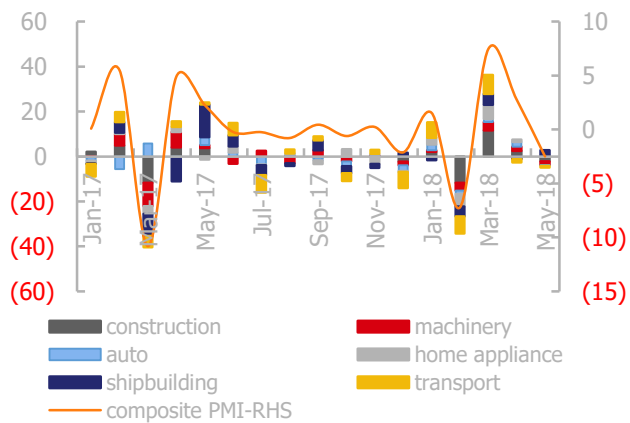


Chart 2: SMM Composite PMI breakdown



SMM composite PMI leads NBS PMI by 6-7 months

A correlation analysis shows that the SMM composite SMM leads NBS PMI by 6-7 months, as the latter is based on finished products while SMM conducts the survey when downstream producers start purchasing raw materials. The correlation coefficient between SMM PMI (deferred by 6-7 months) and NBS PMI is 0.85, a significant positive correlation.

Chart 3: Growth rates of SMM composite PMI, NBS PMI

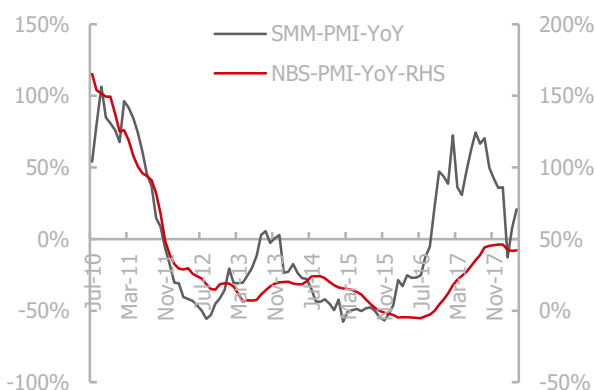
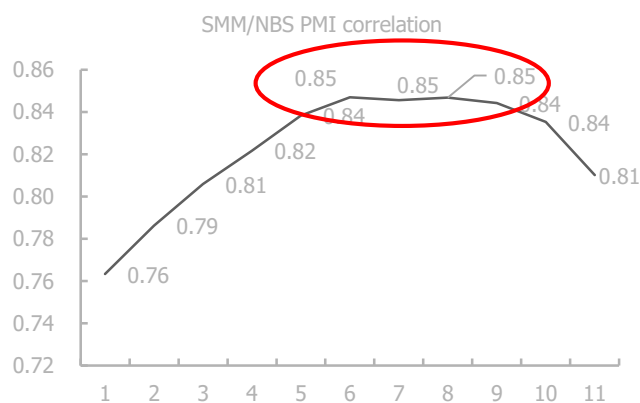


Chart 4: SMM composite PMI six-seven months before NBS PMI



Inventories of finished products likely to grow in the short term

The SMM production index stood at 53.49 in May, down 14.84 from April and 21.5% year-on-year. The index leads inventories of finished products at industrial enterprises by 8-9 months, according to our correlation analysis. The correlation coefficient between the two is 0.9 (defer SMM production index by 8-9 months), a significant positive correlation. During August 2015 - June 2016, higher sales lowered inventories across producers. Manufacturers stockpiled actively in July 2016 -April 2017. Currently, firms are stockpiling at a slower rate and this will grow inventories of finished products at industrial enterprises in the short term.

Chart 5: SMM Composite PMI

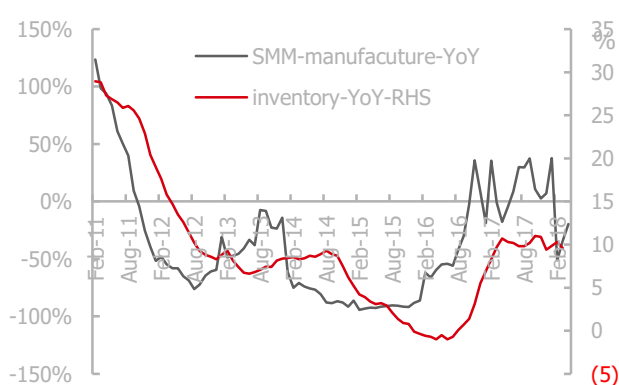


Chart 6: SMM Composite PMI breakdown

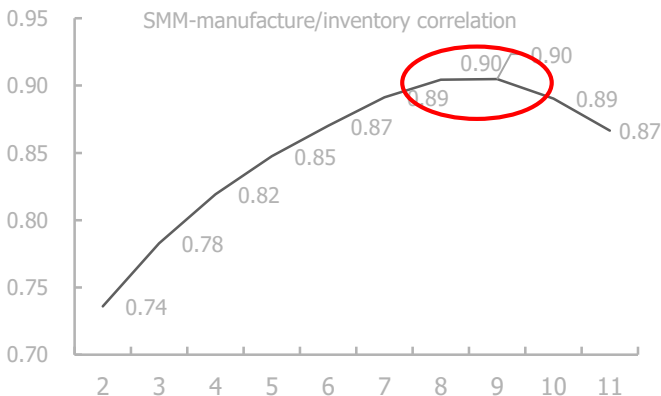
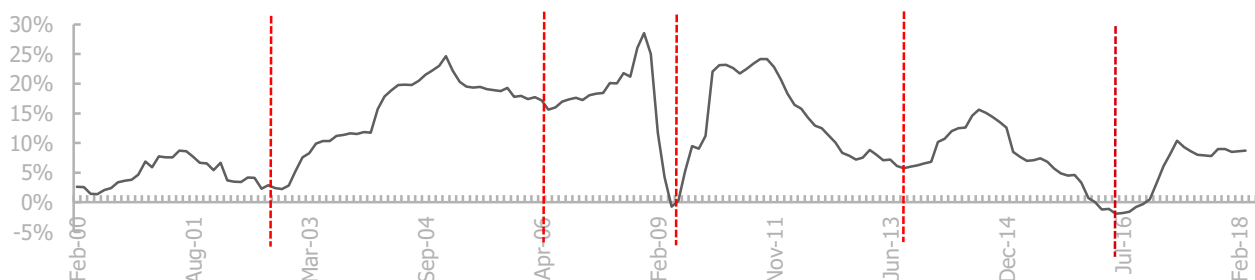


Chart 7: Inventories of finished products at industrial enterprises year-on-year (Inventory cycle in China)



Currently, prices are driven by demand

The correlation coefficients between SMM PMI and the monthly average prices of copper, aluminium and rebar stay at 0.88, 0.82 and 0.92, respectively, after 2012. Metal prices are mainly driven by demand following a slower economic growth in China after 2012. SMM expects metal prices to be pressured as the demand growth slows down.

Chart 8: SMM PMI vs monthly average price or rebar

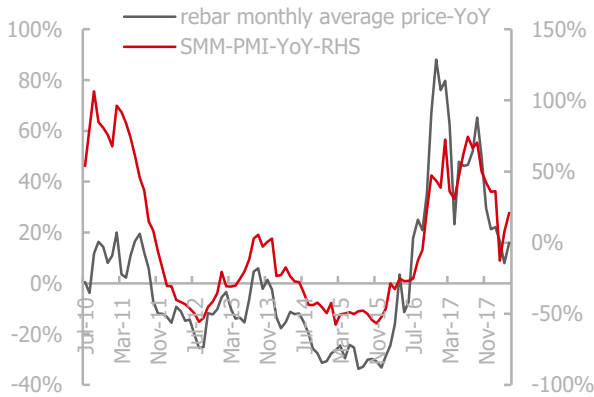


Chart 9: Correlation coefficient of SMM PMI/ rebar price

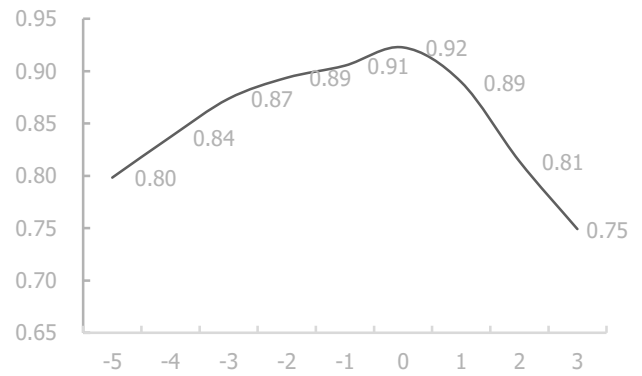


Chart 10: SMM PMI vs monthly average price or copper

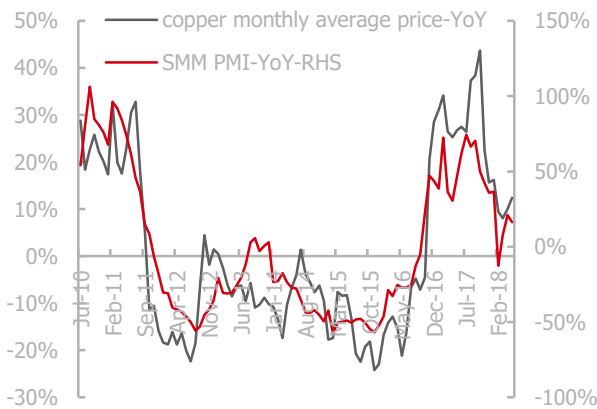


Chart 11: Correlation coefficient of SMM PMI/copper price

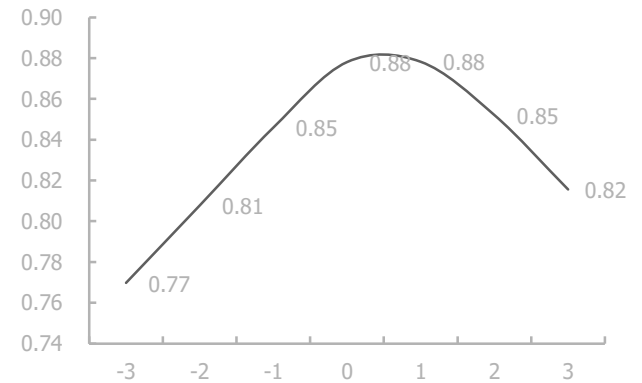


Chart 12: SMM PMI vs monthly average price or copper

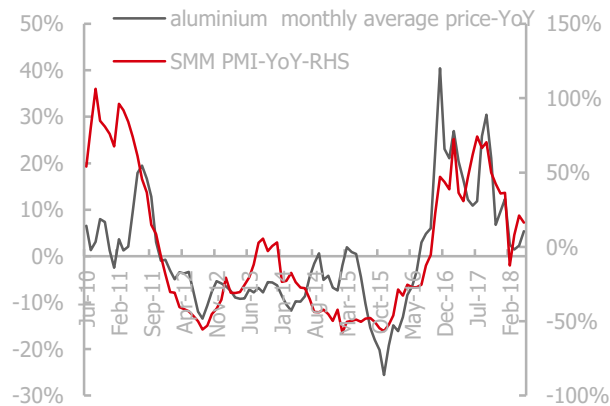
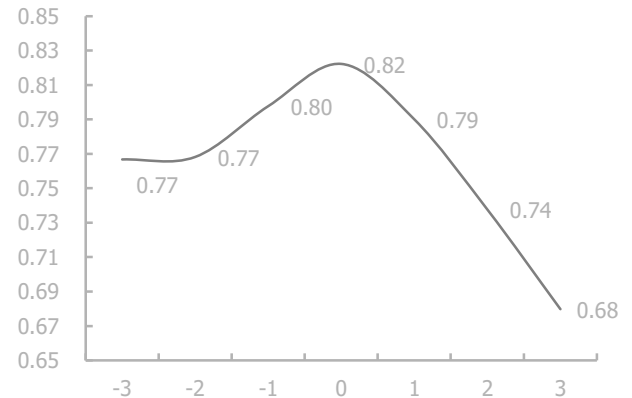


Chart 13: Correlation coefficient of SMM PMI/copper price



Analysis by sector

Investment growth in the property market slows down

The SMM construction PMI was 51.75 in May, down 9.47% year-on-year, indicating a slower growth of investment in real estate. China's investment of real estate development in January-April slowed to 10.3% year-on-year, according to NBS, in line with the trend of the SMM construction PMI. Land purchase fees mostly drove investment growth. The slower growth of newly-started floor space suggests that funds were mostly used for land purchases, and this is a standard move by property developers to increase land purchases for a higher market share when growth in the industry loses momentum. But this does not augur well for metal consumption. Property developers will face cash flow issues in the mid to long term as sales slow and financing costs climb. Overall investment growth in the property market is likely to decline.

The SMM construction PMI leads cumulative land areas purchased by 4-5 months, and the correlation coefficient between the two is 0.88 (defer SMM construction index by 4-5 months) is 0.88. As Land areas purchased fell 2.1% in April and SMM construction PMI declined 9.47% year-on-year in May, the growth of land area purchased is likely to continue slowing down.

Chart 14: SMM PMI vs monthly average price of copper

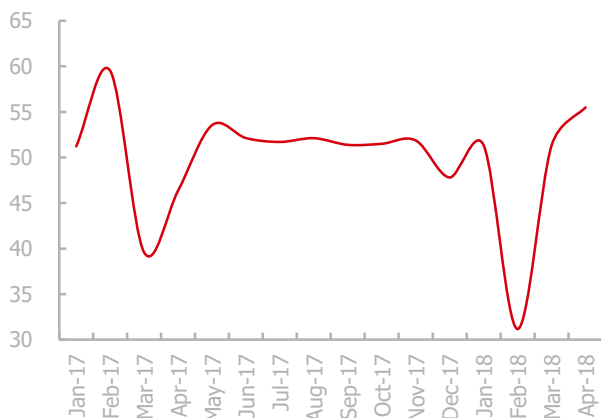


Chart 15: Correlation coefficient of SMM PMI/copper price

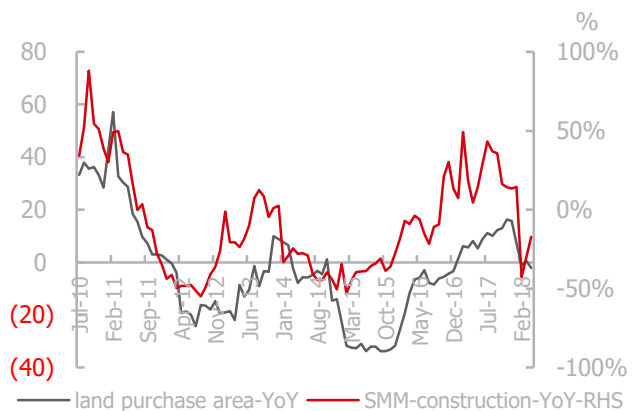


Chart 16: Sales vs. floor space completed year-on-year

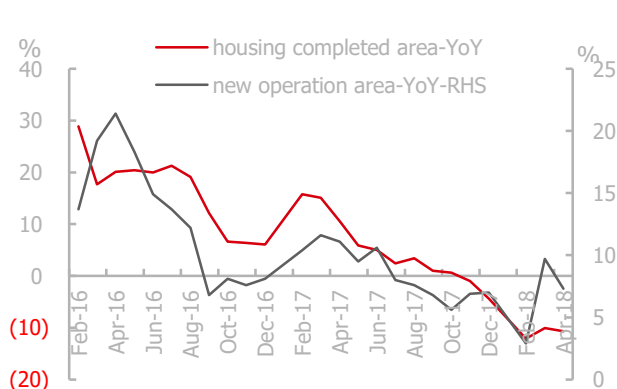
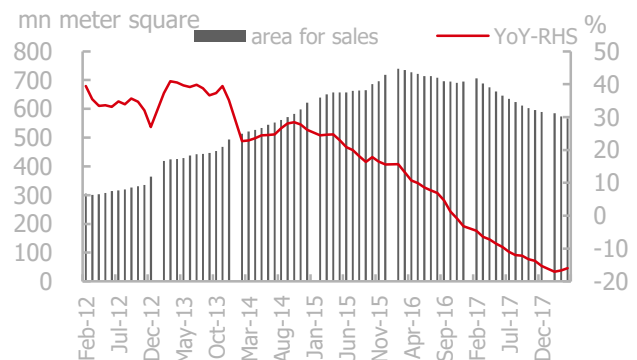


Chart 17: Residential housing for sale and year-on-year change



Source: NBS, SMM

Investment in infrastructure declined

The fixed-assets investment in January-April grew 7% year-on-year, down 0.5 percentage point from January-March. Year-on-year growth of fixed-assets investment in infrastructure projects (excl. electric power and heat power) stood at 12.4% in January-April, down 0.6 percentage point from January-March. China's fixed-assets investment and infrastructure investment are likely to extend their declines given tighter controls over the local government's debts, rising costs for financing, and deleveraging.

Chart 18: Sales vs. floor space completed year-on-year

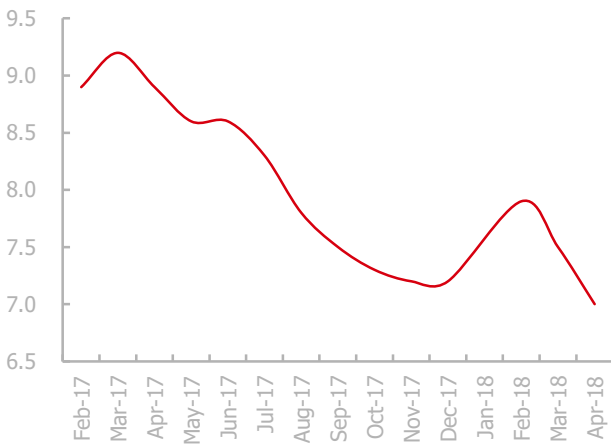
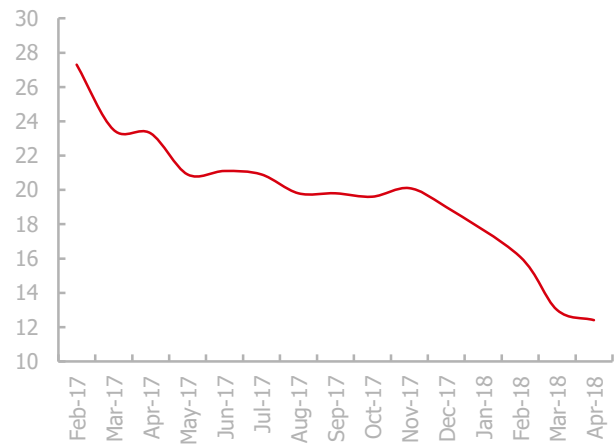


Chart 19: Residential housing for sale and year-on-year change



Source: NBS, SMM

Growth in machinery continued, but likely to abate as construction slows down

The SMM machinery PMI was 51.25 in May, down 2.71 from April, and year-on-year growth slowed to 39%. SMM expects that growth of machinery will continue to decline as the construction sector slows down.

Chart 20: SMM PMI for machinery

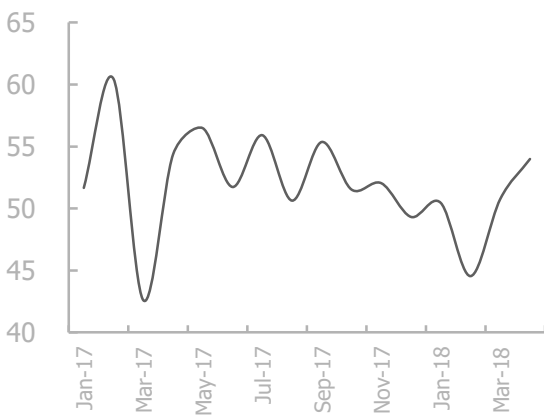
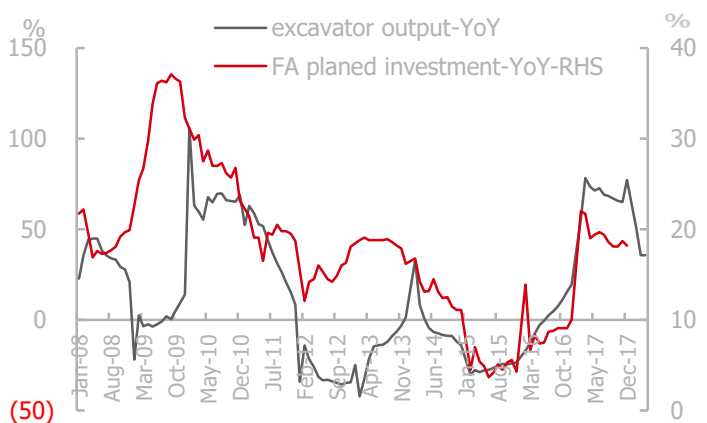


Chart 21: excavator output lags behind of construction investment



Source: NBS, SMM

Low inventories and a low base boosted sales and production of autos

The SMM auto PMI was 55.65 in May, down slightly by 0.61 from April, but year-on-year growth accelerated to 124%. This is supported by China's output and sales volume of vehicles released by China Association of Automobile Manufacturers (CAAM), which was up 11.47% and 12.27% respectively year-on-year in April. The auto sector is going through a new round of inventory cycle in 2018 after previous rounds during 2014-2015 and 2016-2017, based on vehicle inventory alert index released by the China Automobile Dealers Association. A lower purchase tax that drove the early release of demand in 2016 accounted for slower growth of automobile production and sales in 2017. However, demand and restocking will rebound in 2018, boosting demand for metals.

Chart 22: SMM PMI for auto

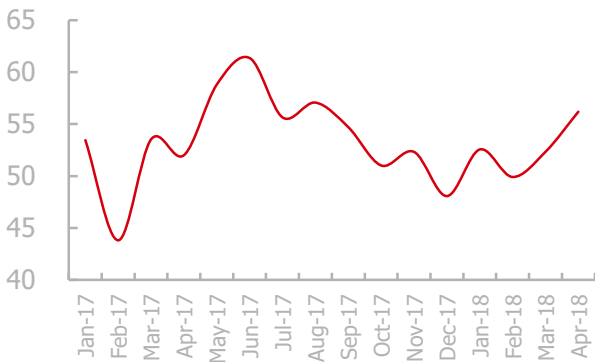
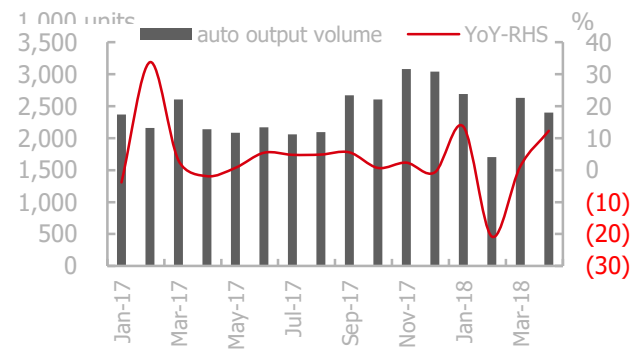


Chart 23: Automobile output and year-on-year growth



Source: China Association of Automobile Manufacture, SMM

Shipbuilding industry expanded

The SMM PMI for shipbuilding in May was 56.01, up 0.53 from April and year-on-year growth reversed from -21% a year ago to 31%. The industry grew significantly as the 8-10 year Juglar cycle set in. New orders in January – April surged 171% year-on-year to 18.02 million dead weight tonnage (DWT), according to MIIT. This bolstered demand for medium plates and widened the price spread between the medium plates and HRC to 150-200 yuan/mt in May.

Chart 24: SMM PMI for shipbuilding

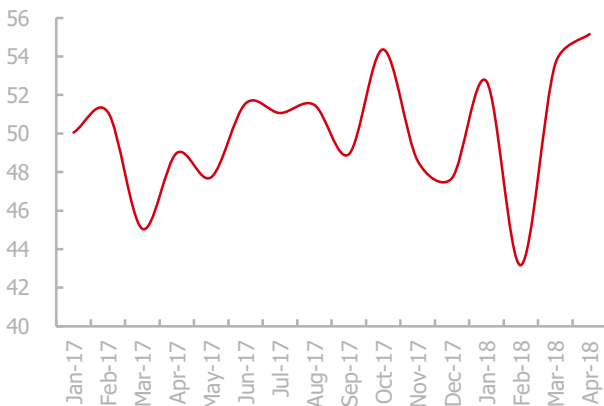
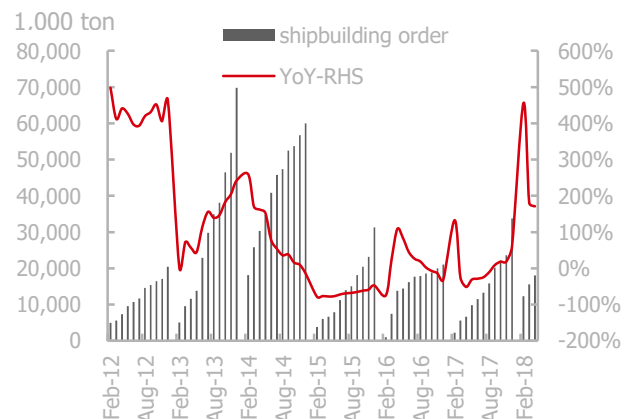


Chart 25: New orders and year-on-year growth



Source: MIIT, SMM

High inventories and a high base weighed on the home appliance sector

The SMM PMI for home appliances was 54.11 in May, up 4.14 from April, and year-on-year growth stayed flat at 103%. China's output and sale volume of air-conditioners was 16.84 and 17.19 million units, respectively, in April, according to ChinaIOL, and the year-on-year growth narrowed to 16.9% and 17.5% due to a higher base April 2017. Inventories of air-conditioners in December 2017 and March 2018 grew 44.3% and 33.1%, respectively, from the start of the year, according to NBS. SMM expects the growth of home appliance sector will continue to decline, due to high inventories, a high base, and a slowdown in construction sector.

Chart 26: SMM PMI for home appliances

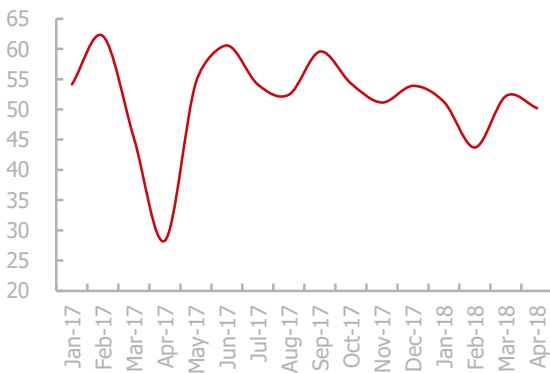
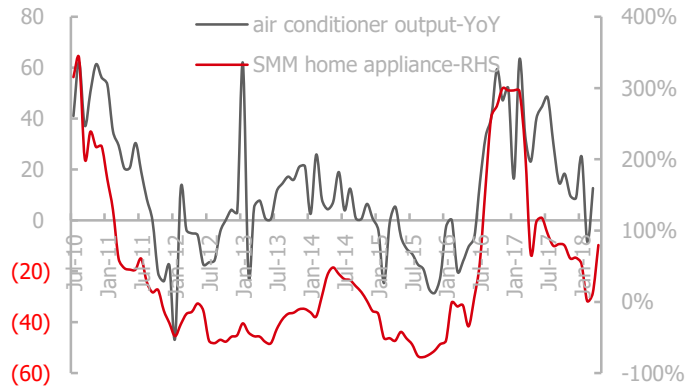


Chart 27: SMM home appliances PMI and output of air-conditioners



Source: Industrial Online, SMM

Appendix: Methodology

Year-on-year growth rate of PMI

Calculating the year-on-year growth of the PMI: The PMI reflects monthly changes in economic conditions, so SMM calculates the year-on-year growth of PMI from monthly changes. The table and formula below shows how SMM calculates the year-on-year growth of PMI in May.

$$PMI_{yoy} = \frac{51.7 * 51.4 * 51.7 * 52.4 * 51.6 * 51.8 * 51.6 * 51.3 * 50.3 * 51.5 * 51.4 * 51.9}{50^{12}} - 1$$

Table 1: NBS Manufacturing PMI

Month	Jun-17	Jul-17	Aug-17	Sep-17	Oct-17	Nov-17	Dec-17	Jan-18	Feb-18	Mar-18	Apr-18	May-18
PMI	51.70	51.40	51.70	52.40	51.60	51.80	51.60	51.30	50.30	51.50	51.40	51.90

Source: NBS, SMM

Table 2: SMM PMI by Sector

Sector	May	April	MoM (percentage point)	May 17	YoY(%)	
					May 18 vs. May 17	May 17 vs. May 16
Construction	51.75	55.58	(3.84)	52.90	-9%	15%
Machinery	51.25	53.96	(2.71)	56.40	39%	90%
Auto	55.65	56.26	(0.61)	58.22	144%	156%
Home appliance	56.01	55.48	0.53	46.94	31%	-21%
Shipbuilding	54.11	49.97	4.14	53.13	103%	100%
Transport	50.57	51.82	(1.26)	53.69	23%	136%
Composite	51.71	55.97	(4.26)	53.78	16%	47%

Source: SMM

Chart 28: Year-on-year growth of SMM construction PMI

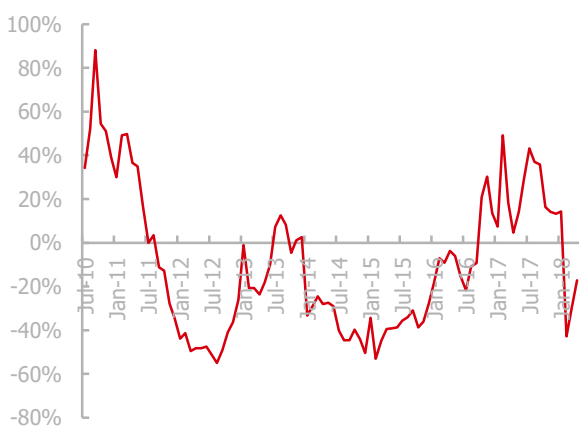


Chart 29: Year-on-year growth of SMM machinery PMI

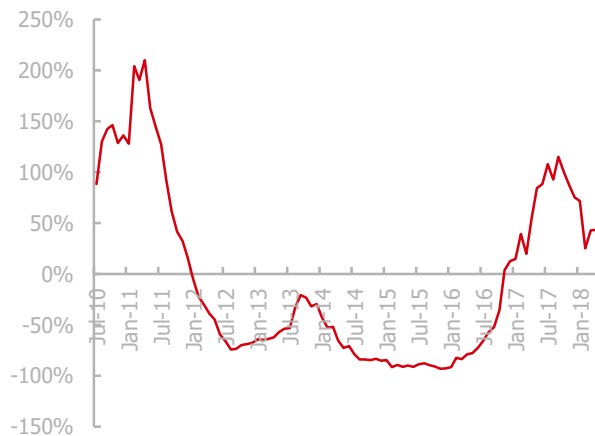


Chart 30: Year-on-year growth of SMM auto PMI

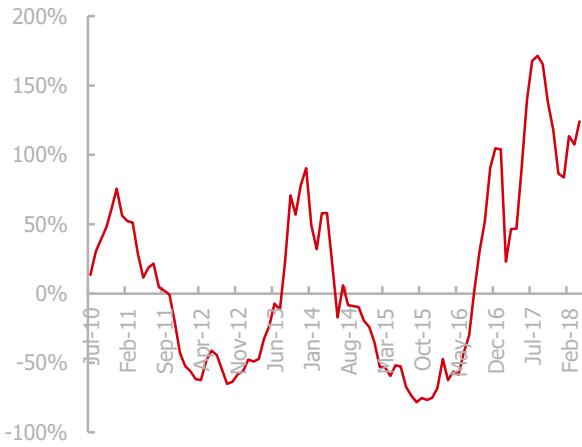


Chart 31: Year-on-year growth of SMM home appliances PMI

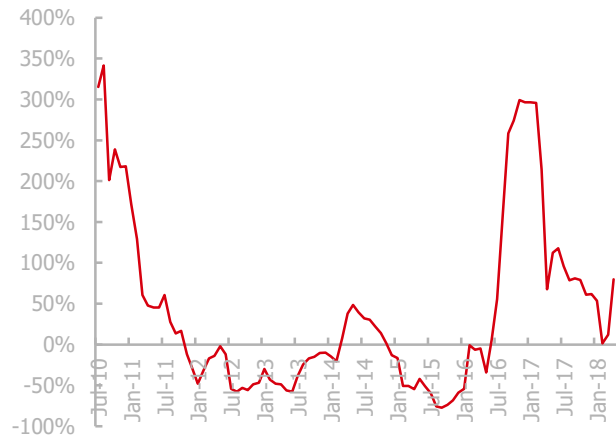


Chart 32: Year-on-year growth of SMM shipbuilding PMI

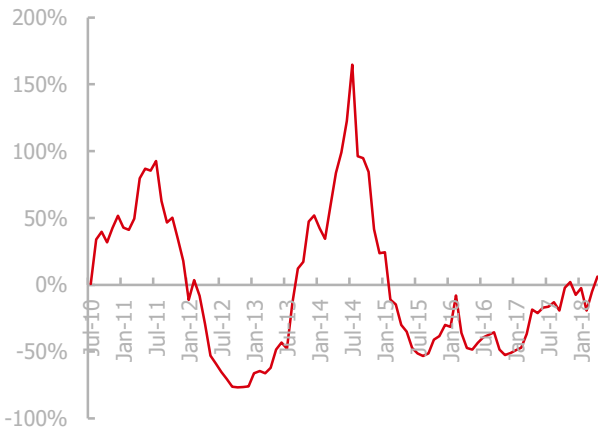
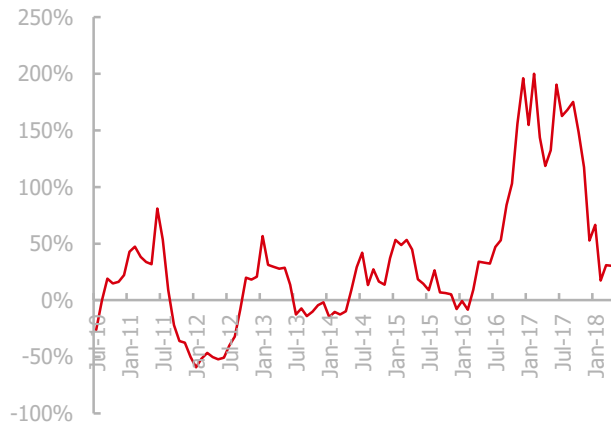


Chart 33: Year-on-year growth of SMM transportation PMI



Related Research

1. SMM Metals Strategy Monthly Report (Issue 1, May 3, 2018)
2. SMM Monthly Base Metal Output Forecast (Issue 1, May 8, 2018)
3. SMM Metal Strategy Monthly Report (Issue 1, June 5, 2018)
4. Demand of Cobalt and Nickel to Benefit from China's EV Subsidy Policy in 2018
5. 2018 Annual Copper TC Set at US\$82.25/ton; SMM Bullish on 2018 Copper Prices
6. China's Supply-Side Reform Continues to Reduce Capacity
7. China's Elimination on Excess Capacity in Steel Continue to Act Positively
8. Spot Copper Concentrate TCs Fall Further in Q2, in Line with SMM Expectation
9. Base Metals Diverge on Rising Supply and Delayed Demand Pickup
10. Aluminium and Nickel Return to Fundamentals with Sanctions on Rusal in Flux



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