

22 August 2019

Where is Chinese industrial metals demand heading

Given the protracted trade tensions and concerns about global growth, the industrial metals market seems to be overwhelmed by increasing macro risks and slowdown in demand growth.



Weaker global PMIs are pointing to slowing industrial activity, which in turn is weighing on industrial metal prices. Concerns and uncertainty over a global slowdown is reflected in the copper-gold ratio, which has touched the lowest level since 2016 (Figures 1 and 2). Copper, representing a broader industrial basket, has priced in further demand risks, whereas gold is benefiting from the growing desire for safe-haven assets.

The diverging moves of copper and gold have broader repercussions for the rest of the commodities complex, as pessimism in industrial metals markets tends to be self-fulfilling, and sometimes constructive supply dynamics just can't do very much.

ING Prices Forecasts

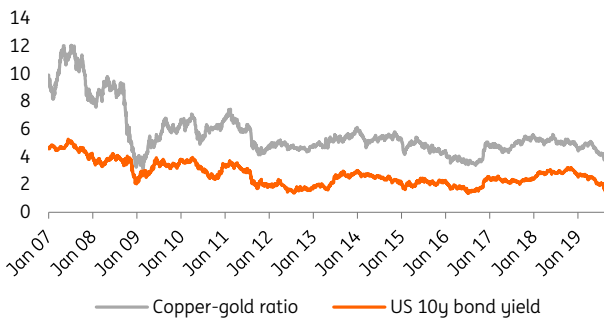
	3Q19	4Q19	1Q20	2Q20	3Q20	4Q20	FY2019	FY2020
Industrial								
LME Cu (US\$/t)	5,900	5,940	6,000	6,100	6,250	6,250	6,047	6,150
LME Al (US\$/t)	1,820	1,880	1,900	1,950	2,000	2,000	1,851	1,963
LME Ni (US\$/t)	14,180	14,000	13,500	13,400	14,500	14,500	13,237	13,975
LME Zn (US\$/t)	2,300	2,230	2,180	2,010	2,000	2,000	2,465	2,048
LME Pb (US\$/t)	1,980	2,000	2,020	1,900	1,950	1,980	1,980	1,963
Bulks								
Iron ore (US\$/t)	90	80	75	70	70	60	86	69
Precious								
Gold (US\$/oz)	1,450	1,500	1,490	1,410	1,400	1,400	1,391	1,425
Silver (US\$/oz)	17.3	18.3	18.9	17.8	17.7	17.7	16.5	18.0

Source: ING

Wenyu Yao

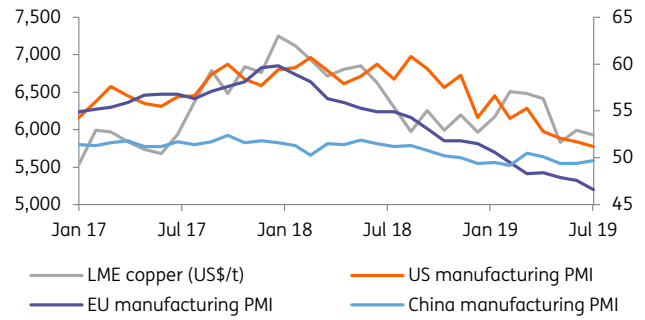
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Fig 1 Copper to gold ratio vs US 10yr Treasury yield



Source: ING, Bloomberg

Fig 2 Copper prices and PMIs



Source: ING, Bloomberg

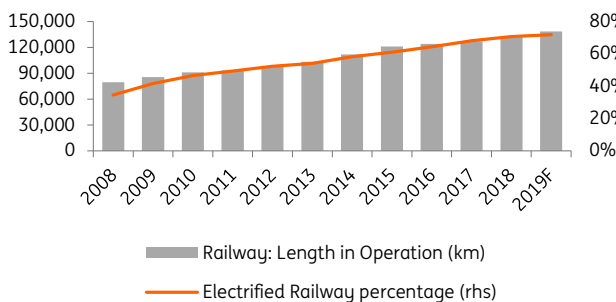
The recent price action in copper market is a testament to that as demand concerns outweigh constructive supply pictures. Our trade team believes that ‘trade tensions will escalate over the next couple of months, which will add to economic headwinds and result in weaker growth’.

Given the significance of Chinese industrial metals demand relative to global demand, along with the fact that it has been a key driver of growth in the past, we take a look at Chinese metals demand (see appendix on page 7).

1) Infrastructure investment will be key

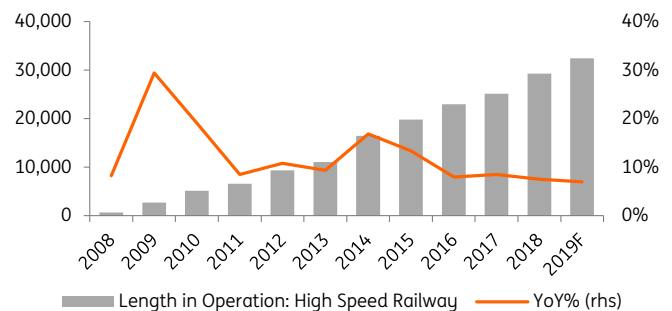
We believe the key driving force for industrial metals demand this year is likely to come from infrastructure investment, as China heavily invests in railway and metro lines. We see particular upside potential for copper and zinc, from the continuous growth in high-speed trains and railway electrification - an area that has seen strong growth over the last decade. The nation’s railway electrification rate (relative to total length of railway in operation) hit 71% last year (Figure 3), compared to just 35% in 2008. However, this is only offsetting slower growth in other areas such as car production.

Fig 3 China railway length in operation (km)



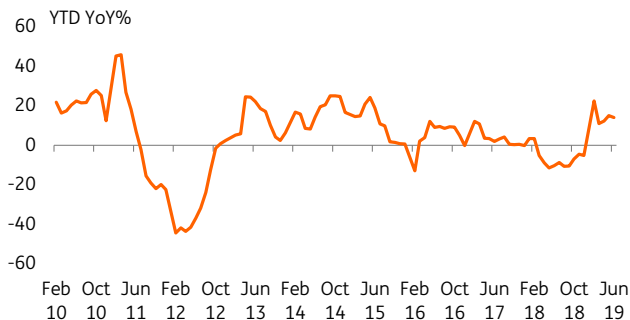
Source: ING, CEIC

Fig 4 China high speed railway length in operation (km)



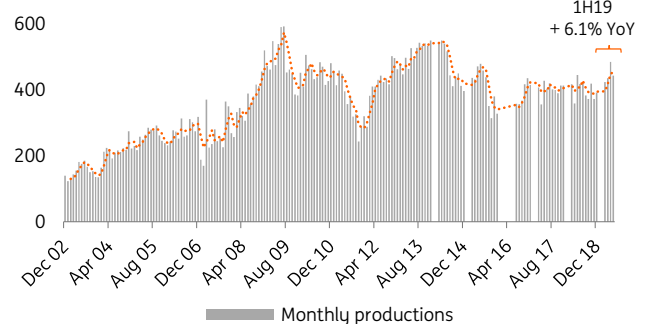
Source: ING CEIC

Fig 5 China FAI in railway constructions



Source: ING, CEIC

Fig 6 China steel productions for railway use



Source: ING, CISA

Infrastructure investment remains the key driver for metals demand. Strong investment in railway and metro lines is supporting metals demand from the growing electrification of railways and development of high-speed trains (Figure 4).

Strong development in railway electrification has been driving the usage of zinc higher (such as galvanised steel used in poles to hold contact networks), copper as well as steel in contact networks and other facilities to power trains. Another driving force has been the construction of metro lines, where investment growth has held up well, and this has supported demand for aluminium and nickel in stainless steel.

Our Chinese economist [expects that infrastructure stimulus will double from two trillion to four trillion yuan](#), helping to fill the gap of lost exports and related supply chain disruptions from the trade war. This ties in with China Railway Corporations' target for 2019, as it plans to put a total of 6,800km of new track into service - 45% higher than 2018. This can also be seen in the total fix assets investment in the railway sector, which grew by 14.1% YoY in H1, according to the National Statistics Bureau (Figure 5).

Meanwhile, indicators from the steel sector also suggest that railway steel demand has been holding up well. Production and sales of steel for railway use has risen by 6% and 5% respectively during H1, according to the China Iron and Steel Association (CISA) Figure 6.

We also see higher copper usage intensity from the railway sector. This is because within the total planned new railway tracks for 2019, around half are high-speed trains, where copper usage intensity is relatively high due to mechanical performance requirements.

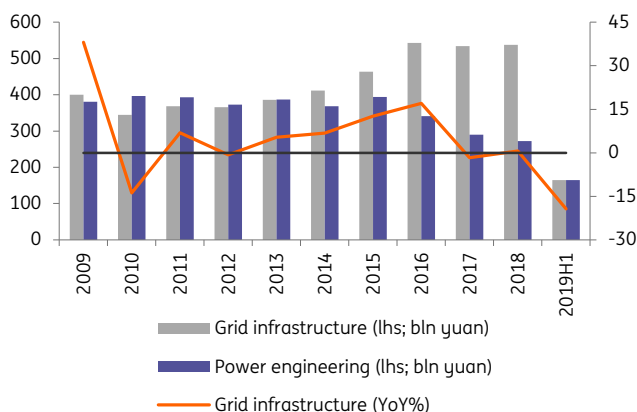
2) Power sector largely depends on seasonality

The power investment sector has been disappointing so far, with total power grid investment declining by 19% YoY in H1. However it is still too early to give up hope, with the potential for already approved ultra-high voltage (UHV) transmission line projects gaining pace over the remainder of the year

The decline in power grid investment over the first half of the year has weighed on copper demand prospects in particular. However, it is still too early to jump to any conclusions. The main reason that we're not too bearish is the seasonality we have seen in grid spending in the past, which shows that most of the spending occurs over the second half of the year.

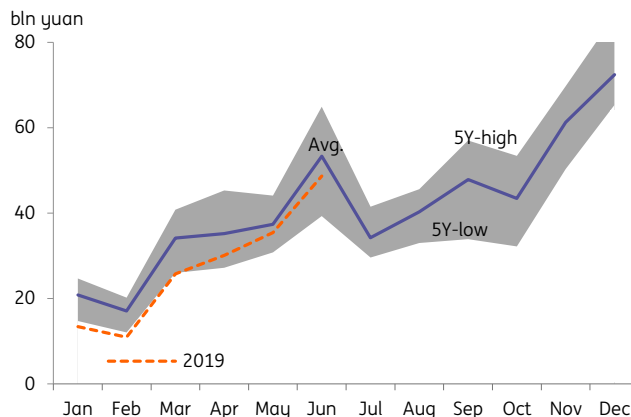
We expect power grid investment to pick up later in the year, although we think demand intensity from the same amount of investment will not be similar to the past. This is mainly due to the focus turning from transmission to distribution and rural network upgrades in recent years. There is high competition from aluminium alloy in terms of under 110kv overhead lines in the rural network. Despite this, copper might benefit from its uses in other components, such as switchgears and busbars, as well as increasing the extent of electrification in rural areas.

Fig 7 Growth looked slower (so far) in the copper-intensive grid infrastructure investment...



Source: ING, China Electricity Council

Fig 8 Will the pattern repeat itself where we could see higher investment towards Q4?



Source: ING, China Electricity Council

A prolonged construction cycle is deterring later stage metals demand. New housing starts are holding up well but completions remain stubbornly in the negative territory. We don't expect substantial improvements in completions this year.

For copper and aluminium, we still see an upside in demand from the power sector. The market has been expecting higher spending from UHV projects, as authorities revealed plans to erect 12 UHV lines at the end of last year. However up until now, there has been little development, we believe these projects have been delayed, rather than cancelled.

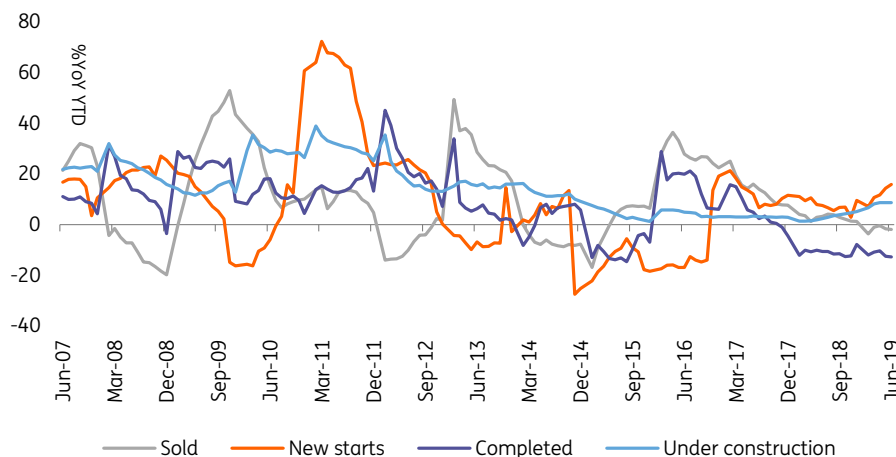
3) Prolonged property completions

Figures in the property sector suggest the cycle from new starts to completions has been prolonged, which doesn't bode well for later-stage metal consumption, such as copper and aluminium.

Property completion is at a juncture. A historical pattern that new starts lead to completions in around 20-24 months does not seem to be repeating itself but we simply do not have better forecasts in this area. New housing starts have been holding up well, with double digit growth - a good sign for steel demand. However, completions have been declining since November 2017, and the most recent figures show a decline of 12.7% YoY in H1.

A dilemma is that property sales fell by 1.8% YoY in the first half of the year, continuing to stretch property developers' cash flows, which relies on bringing floor space under construction to completion. The message from the Chinese Politburo on the property sector was clear-real estate policy should not be eased for cyclical purposes. Therefore, we don't hold a constructive view towards property completions this year, and the risks may point to the downside if new starts slow.

Fig 9 House constructions and sales by floor space



Source: ING, NBS

4) Vehicle sales leads zinc into trouble

Slowing Chinese car production and sales have weighed on metals demand growth in general, but there is room for some metals to find support, due to different usage in the sector.

Having said that, [we are expecting a rebound in Chinese car sales](#) in the near term, even though the overall picture still doesn't look overly optimistic. Data from the Chinese Association of Automobile Manufacturers (CAAM) shows that total car sales during the first seven months of 2019 fell by 11%, but the decline narrowed in July.

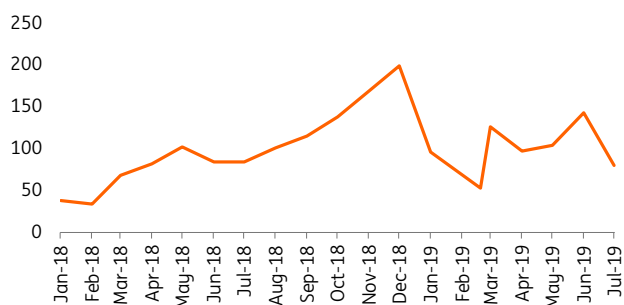
The car market is of most concern in terms of metals demand. Zinc seems to be struggling the most, as others may able to find some support within the broader vehicles industry.

A closer look at the vehicles market including electric cars, motorbikes as well as e-bikes (electronic bikes), shows there are some differences. So far the impact from a slump in the car market has been felt mostly by zinc relative to other industrial metals, because there are some nuances at play. We are also considering vehicle-surrounded exports market.

Nevertheless, there is a silver lining in the strong growth from the new energy market in China.

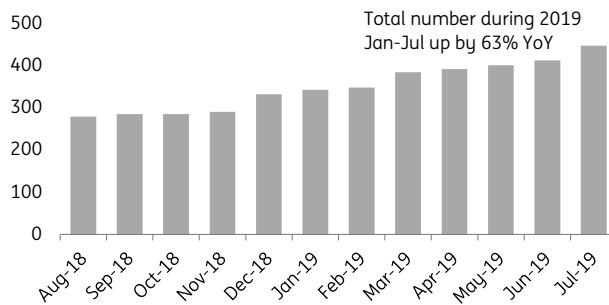
Although admittedly new energy vehicles only make up around 5% of total Chinese new car sales, we think electric vehicles will continue to provide a 'raft' to copper as a means of offsetting weaker growth from traditional internal combustion engine vehicles. Production and sales of new energy vehicles during the first seven months of 2019 grew by 39% and 41% YoY respectively. The prospect of charging infrastructure is also supportive for copper. We also noticed other niche areas, which look quite promising, and worth watching closely such as electric bus exports, which grew six folds year on year in 1H19. According to Copper Development Association (CDA), these buses contain between 196 pounds (hybrid electric) to 814 pounds (battery electric) of copper (89kg-369kg).

Fig 10 China monthly total NEV sales (1,000 units)



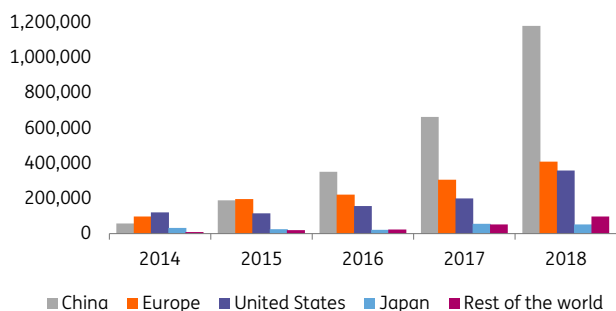
Source: ING, CAAM

Fig 11 Publically accessible electric vehicles chargers (1,000 units)



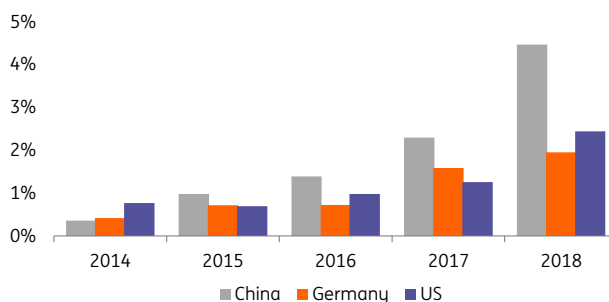
Source: ING, EVCIPA

Fig 12 Global annual plug-in electric car sales (unit)



Source: ING, EV-volumes

Fig 13 Electric vehicles market share (BEV and PHEV)



Source: ING, Bloomberg

Aluminium also stands to benefit from the growth in electric vehicles. The usage of primary aluminium-intensive, extrusions and rolled products is forecasted to be significantly higher than seen in internal combustion engine vehicles today. The new vehicle sector is a spotlight for aluminium demand growth, but is still at a small base. The main driver of growth is still from the general need for vehicles lightweight in traditional cars as well as including aluminium van trailers and tankers for liquid transportations. The industry is still forecasting more than 15% demand growth of automotive body sheet (ABS) for 2019 and further higher in 2020.

However, strong electric vehicles growth also makes us slightly bearish towards the incremental growth for lead demand as it faces a substitution challenge from lithium ion batteries. But we are not overly bearish to lead demand in the overall vehicle market.

The growing China car fleet implies the need for lead acid battery (LAB) replacements will still hold up. Meanwhile, the market appears to have overestimated the negative impacts on LAB demand from China's new national standard in regulating the electronic bikes sector, which came into effect in April this year. Given that it takes time to gauge the impact, we simply can't price it in just yet.

So far, zinc seems to be struggling more than its peers in this sector. This is through most of the zinc's primary uses including galvanised products, die-casting alloys and brass as well as zinc oxide goes to the types. China's total zinc galvanised plates production have slumped by 4% YoY during 1H19, in the meantime, the productions of the plates specifically for car use have fallen more significantly by 30% YoY.

In the meantime, almost 40% of Chinese zinc oxide (representing around 12% of Chinese zinc demand) goes to the production of rubber products such as tyres, which have been still struggling to grow for over a year and fell by 9% YoY during H1.

Bottom line

Our takeaway is that the outlook for the demand of industrial metals is really a mixed bag.

Some sectors are certainly a concern, some we are hopeful about while others continue to be resilient and lead demand growth. Our base case is that metals demand will find support from Chinese fiscal stimulus measures but only moderately. However, there is still plenty of uncertainty, and this will depend largely on how trade talks between China and the US progress, along with prospects for global growth.

Appendix

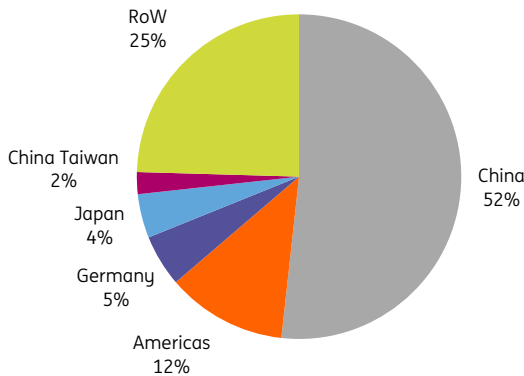
Copper

Fig 14 China copper demand growth by sector (%)

	Share %	2018	2019F	2020F
Building construction	25	3	1	2
Plumbing & other		2	1	4
Power & electrical		1	1	2
Infrastructure	30	4	2	2
Power grid		2	1	1
Railway & electrification		6	5	6
Automotive	13	0	1	1
Consumer durables	20	7	2	1
Industrial	12	7	3	3

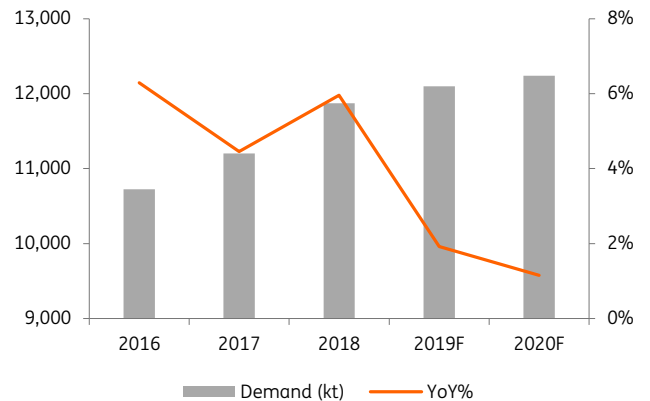
Source: ING, Antaika

Fig 15 World copper usage by major regions



Source: ING, ICSG

Fig 16 China annual copper demand



Source: ING, Antaika

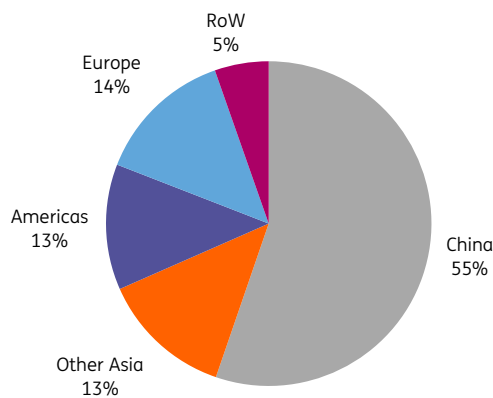
Aluminium

Fig 17 China Aluminium demand growth by sector (%)

	Share %	2018	2019F	2020F
Construction	30	1	-2	1
Transportation	23	3	3	2
Exports	12	9	6	5
Power grid & electrical	10	2	1	1
Machinery & equipment	8	4	2	2
Packaging & consumer durables	15	6	2	2
Other	2	2	1	1

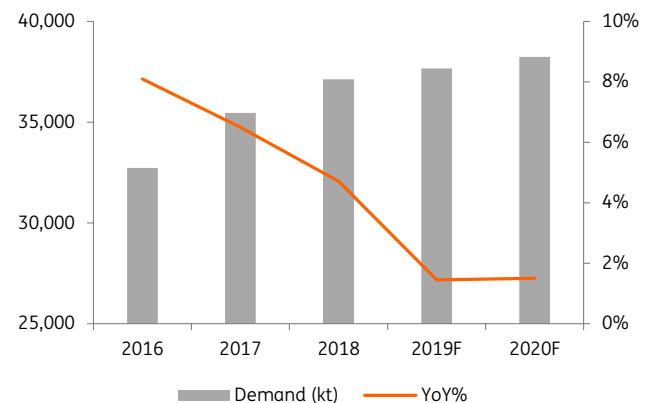
Source: ING, Antaika

Fig 18 World aluminium usage by major regions



Source: ING, IAI

Fig 19 China annual aluminium demand



Source: ING, Antaika

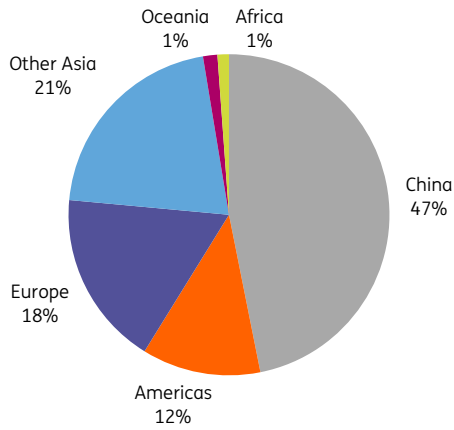
Zinc

Fig 20 China Zinc demand growth by sector (%)

	Share %	2018	2019F	2020F
Construction	29	-3	1	1
Infrastructure	21	-2	2	2
Consumer goods	23	2	1	1
Transportation	22	1	1	2
Machinery and others	4	3	1	1

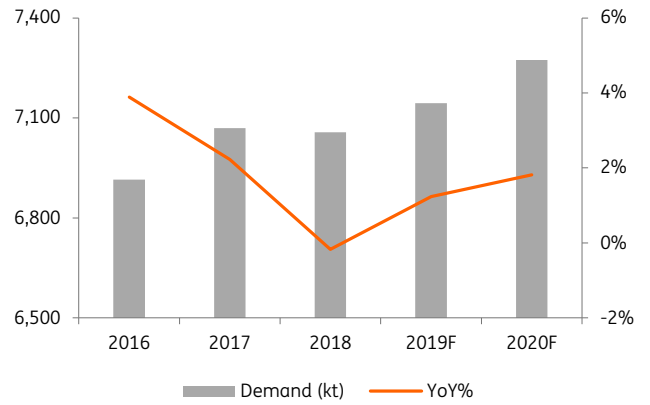
Source: ING, Antaika

Fig 21 World zinc usage by major regions



Source: ING, ILZSG

Fig 22 China annual zinc demand



Source: Oneness Information

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