

12 February 2018
Industrial metals

LME Aluminium (09/02/18)
US\$2,123/t

LME aluminium



Source for all data: Bloomberg

Industrial metals

For once, it's not all about China

2018 Aluminium outlook

Location is everything when it comes to aluminium. A stubborn Chinese surplus depresses local prices while an ex-China deficit has driven LME prices to highs not seen since 2011. Regional premiums are also on the rise as trade barriers loom. In the short term, we expect pressure from high Chinese semi exports, but further out we see the potential for the two worlds to diverge: A more isolated surplus in China compared to a tight LME market with a thirst for ingot. For once, it's not just all about China.

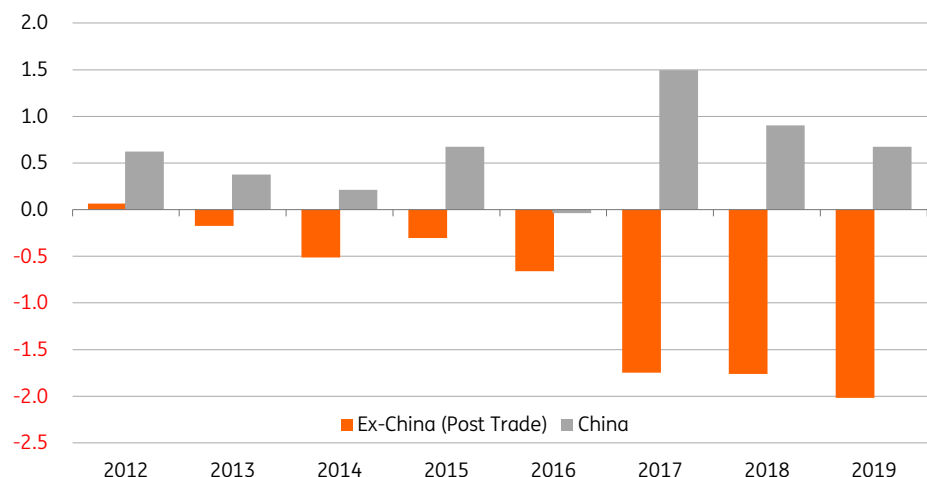
Chinese Semi's: The SHFE-LME arb is the most supportive for Chinese exports since 2011 and the high January number (+14% YoY) will be the norm for some time. We expect aluminium prices could come down to \$2,000 near-term as long fund money retreats from signs that the Chinese surplus is spilling out into the LME domain. But weakness will be temporary and consumers should look to hedge on these dips.

Ex-China Deficit: Central to our view is the observation that the ex-China market is in a growing deficit and while we do expect this to be even larger than the Chinese surplus it is the ex-china balance that matters most for the LME price.

LME Tightness: The LME is thirsty for ingot. Backwardations are increasingly common at the front of the curve. This will drive prices higher after the funds retreat. LME stocks are dwarfed by those off-warrant which creates a structural imbalance between borrowers and lenders. Higher premiums and low warehouse incentives compound the situation

China isolation: The fake semi-trade has collapsed significantly and trade barriers threaten to displace markets for genuine semi exports. The Chinese surplus will be less able to alleviate the ex-China tightness. For once, it's not all about China.

China and ex-China aluminium balances set to diverge (MT):



Source: Company Reports, IAI, WBMS, UN Comtrade, ITC, Bloomberg, Antaike, ING research

Hamza Khan
Head of Commodities Strategy
Amsterdam +31 20 563 8958
hamza.khan@ingbank.com

Warren Patterson
Commodities Strategist
Amsterdam +31 20 563 8921
warren.patterson@ing.nl

Oliver Nugent
Commodities Strategist
Amsterdam +31 20 563 8892
oliver.nugent@ing.nl

Price forecasts (US\$/t)

	2018				2019				2020			
	1QF	2QF	3QF	4QF	1QF	2QF	3QF	4QF	1QF	2QF	3QF	4QF
Aluminium	2,200	2,050	2,150	2,250	2,250	2,150	2,300	2,300	2,200	2,100	2,000	2,000

Source: Bloomberg, ING estimates

Near-term headwinds

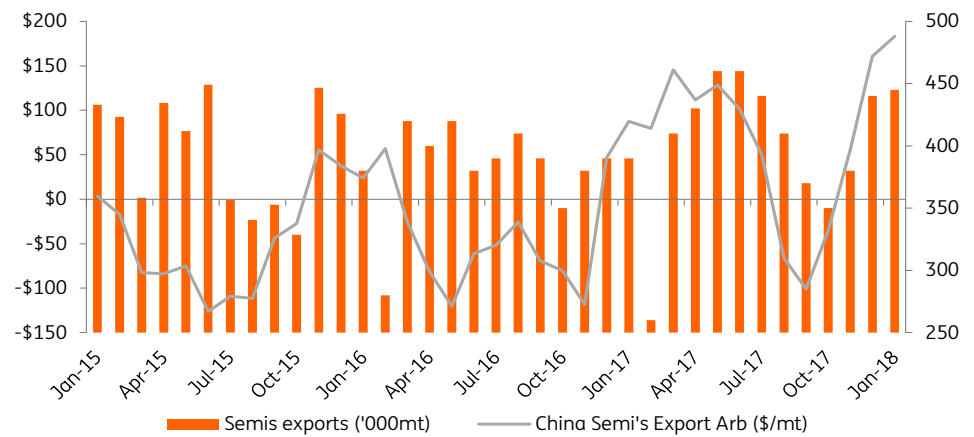
In December, a broad wave of commodities fund allocation pushed LME Aluminium to highs not seen since 2011 and above \$2,200. The latest risk-off decline has spurred liquidation across the complex, but aluminium could prove more vulnerable in coming months as Chinese trade data shows the surplus spilling out onto the LME's domain. Any weakness will be temporary however and is an opportunity for consumers to hedge.

Chinese aluminium exports to remain strong for some time

The differential between Shanghai and LME is the most supportive for exports of semi's since 2011. January semi's exports were up 14% year-on-year and with our 2018 expectations of a 1MT Chinese surplus and 1.7MT RoW deficit we expect the arb to remain supportive for some time. Exports will likely stay high in the coming months especially to the US given the high premiums and ahead of potential trade tariff's.

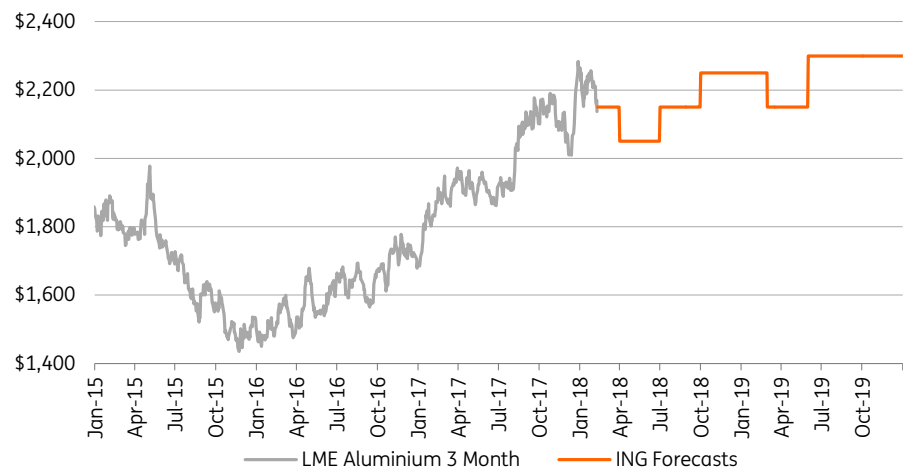
The LME Aluminium price breached \$2,200 in December as macro funds broadly allocated to the most liquid commodities on themes of inflation and global growth. Money manager longs rose 13% in the last two weeks of December, a similar surge for copper. Even since early Jan profit taking and liquidation was starting to occur which has accelerated amid the equity market sell-off. We expect more liquidation in the coming months amid bearish Chinese trade data and project prices to trend down to \$2,000/mt in Q2. After this, we are bullish and recommend consumers hedge at these dips.

Fig 1 China Aluminium semi exports and arbitrage(000mt, \$/mt)



Source: Bloomberg, ING research

Fig 2 LME Aluminium price and ING forecasts (US\$/t)



Source: Bloomberg, ING research

The bull case: Ex-China deficit

The LME Aluminium price is settled by the willingness of participants to make or take delivery of **primary** metal in an LME warehouse, ex-China. Chinese primary aluminium, however, is largely walled off behind a 15% export tax. A widening gap between ex-Chinese smelting capacity and growing demand creates deficits that now far surpass the so-called ‘fake semis’. The shortage of primary metal will drive LME prices higher.

Restarts will fall short of ex-China demand

While Chinese smelting production has grown almost 50% in the last four years, smelting in the rest of the world is up only 6% which has majorly lagged a 21% increase in demand, putting the ex-china market firmly into deficit.

Since 2015 the ex-China shortage exceeded 1MT but was softened by the fake semi’s flow. Last year it grew to 1.9Mt (pre-trade) and was a still very sizeable 1.75MT after the fake semi’s of primary metal that made its way out of China, bypassing the export tax

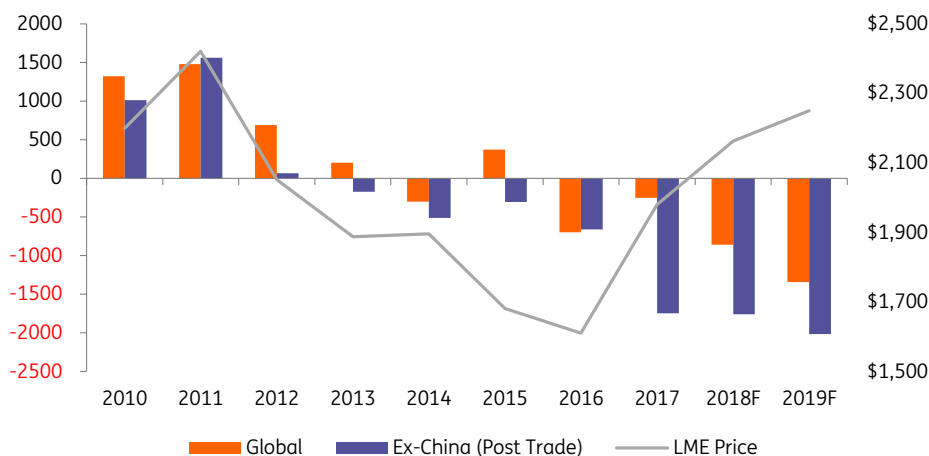
We expect at least another two years of high shortages given just 1Mtpa of supply will be added each of the next two years (Fig 4). Analysts will always disagree on precise numbers but this RoW deficit is universally agreed. We include a generous assumption of restarts in our base case and still find a 1Mt (pre-trade) shortage if demand was flat. At GDP expectations of 3.3% and 4.2% demand growth for ex-China in 2018/19 the ROW deficit is 1.9MT/2.2MT pre-trade and 1.7Mt/2Mt assuming the same fake semi flow.

In fact as China’s aggressive supply reform (capacity swaps, winter cuts, illegal capacity cuts), now slows its capacity growth, the ex-China deficit could even outweigh the Chinese glut. But location is key. A mild 250kt global deficit last year pales against the effect of the 1.7Mt ex-China inventory drawdown that drove LME prices up 34%

The growing depth of ex-China deficits far surpasses what is possibly alleviated by exports of fake semi’s. We believe these ‘fake’ flows are on the decline. Looking at extrusions and sheet trade flows to the usual suspects we estimate that in 2017 fake semi’s exports dropped by 60% to their lowest since 2010 (Fig 4/5). Given high trade tensions authorities are likely to make it increasingly difficult for repeats of the well-publicised big tonnage flows that went into Vietnam, Mexico etc. in previous years.

Given this, any projected stock draws will be far more significantly in the ex-China, LME domain, taking from both on warrant and off-warrant stockpiles. The effect will be to intensify the existing tightness within the LME system which will see western prices continue outperforming Shanghai.

Fig 3 Global and Ex-China Aluminium Balance(kt)



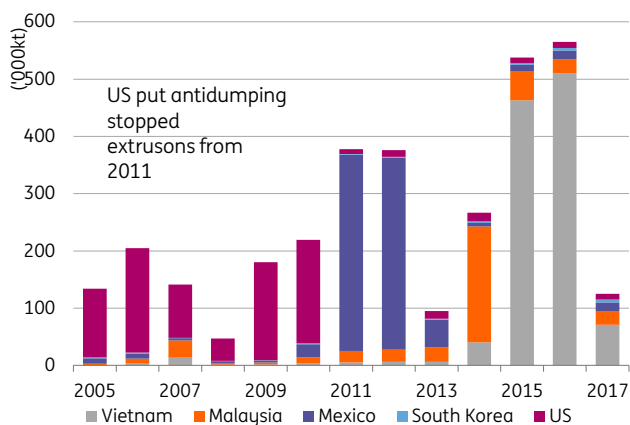
Source: Company Reports, IAI, WBMS, UN Comstat, LME, Antaike, ING Research

Fig 4 Main ex-China aluminium smelter changes (kt)

Country	Smelter	Capacity	2017	2018	2019	2017-19 change
USA	Warrick	160	0	80	160	160
USA	Hawesville	252	95	130	240	145
USA	Mt Holly	230	110	150	225	115
USA	New madrid	264	0	25	100	100
USA	Wenatchee	184	0	0	100	100
USA	Masena West	130	130	130	130	0
USA	Ferndale	279	200	200	200	0
Netherlands	Damco/Aldel	150	20	70	80	60
Norway	Karmoy	75	192	257	265	73
Canada	Beancor	413	438	238	438	0
Russia	Boguchanskoye	298	150	180	250	100
Oman	Sohar	400	253	320	380	127
Saudi Arabia	Ras Al Khair	750	780	825	825	45
UAE	EMAL/DUBAL	2500	2520	2550	2550	30
UAE	Emal	1300	1355	1360	1360	5
UAE	Dubal	1200	1050	1090	1090	40
Bahrain	Alba (+line 6)	1500	974	1000	1150	176
India	Jharsuguda	500	423	510	510	87
India	Jharsuguda 2	1250	547	830	900	353
India	Korba 1 & 2	570	548	575	570	22
India	Angul	580	400	460	460	60
India	Aditya	360	360	360	360	0
Iran	Jajarm	36	0	20	35	35
Egypt	Nag Hammadi	330	300	320	320	20
Australia	Portland	358	128	270	270	142
Australia	Boyne Island	580	508	500	500	-8
Venezuela	Venalum/Alcasa	440	150	90	90	-60
Iceland	Grundartangi	320	325	320	320	-5
Tajikistan	Tursunzade	150	104	140	140	36
Indonesia	Inalum	250	210	260	260	50
Malaysia	Samalaju	640	640	640	640	0
Nigeria	Alscon	30	0	10	25	25
Total Change				990	1018	

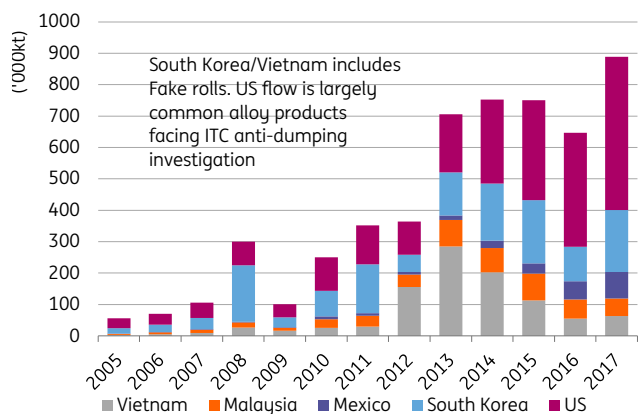
Source: Company Reports, ING Research

Fig 5 Extrusions exports to usual suspects drop in 2017



Source: ITC, ING Research

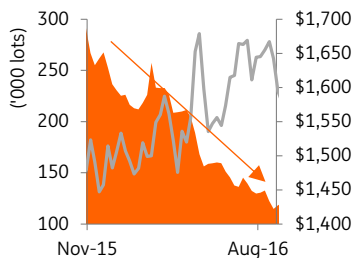
Fig 6 Flat products exports (PSS)



Source: ITC, ING Research

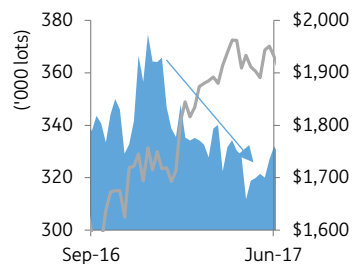
LME Backwardations and Premiums face off

Rally Part 1: Money Manager shorts squeezed



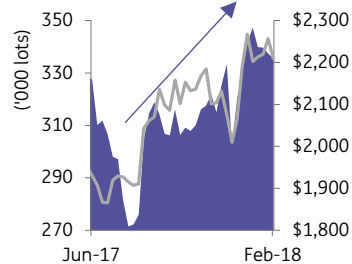
Source: LME CoT, ING Research

Rally Part 2: Merchants Liquidate



Source: LME CoT, ING Research

Rally Part 3: Fund longs take over



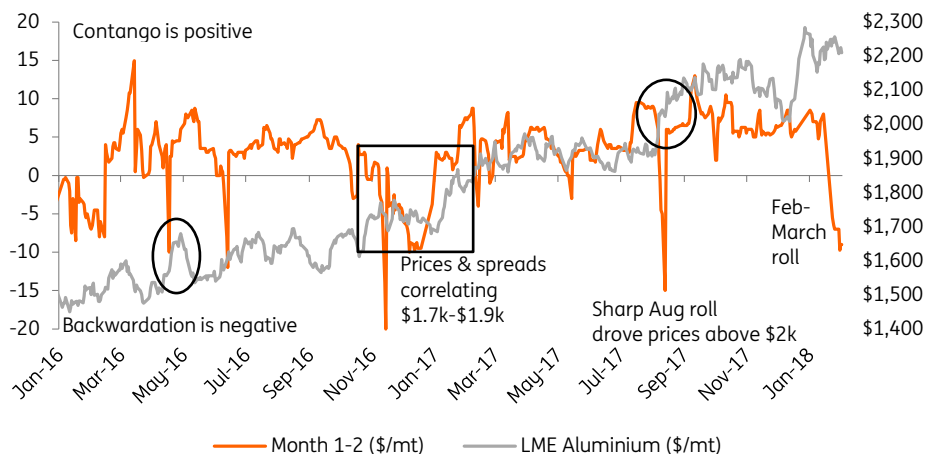
Source: LME CoT, ING Research

The LME is thirsty for ingot, as evidenced by frequently sharp backwardations in the monthly rolls. December's long money inflows were a rare sight in a market that has mostly been driven by short covering since it bottomed in Nov 2015. If fund buying stops it will be backwardations and short covering that drives the market upward once more.

We identify three sections to the aluminium rally. From Nov 2015 to August 2016 prices rose 12% but open interest also fell 13% as money manager shorts were squeezed out by over half. Through to H1 2017, short covering drove prices up a further 19% but it was now the producer/merchants shorts down 11% and a flatter overall open interest as trend following funds added longs which partly offset the decline. Only since H2 2018 has fund long allocation been the key driver and open interest is up with prices.

LME Aluminium doesn't trade like the other metals. The sheer masses of inventory hedged/financed globally sees calendar spread trading dominate. Spreads dictate the cost to roll a position (i.e. keep inventory financed) and while convention is to focus on Cash- 3M most LME positions are on the monthly (3rd Wednesday) prompts. Focusing on these front-month spreads we see regular spasms to sharp backwardations near expiry. Around these times open interest dips as the shorts flee pay the cost to roll. The key price barriers of \$1,500, \$1,800 and \$2,000 were all breached in this way.

Fig 7 Sharp backwardations at the front of the LME curve support prices:



Source: LME, ING Research

The LME tightness is the structural result of the huge financed inventory that dwarfs on warrant stocks by around 5x (ex-China). The price of a spread is the balance between borrowers (rolling a short) and lenders (sell the nearby date to the borrower in return a further date). Stock financiers are borrowers. They need to roll short hedge forward come the monthly expiry. A natural lender would be a holder of exchange stock outside of a long-term hedge ("free-floating") because this covers the exposure of the near term sell. Given less free-floating stock, when a mass of stock financing rolls the high demand to buy out the nearby short far outpaces the natural lenders. The deep backwardations are formed until lenders are incentivised or the shorts squeezed out.

Conventionally backwardations incentivise deliveries which in turn generate lending but high premiums make this tougher. A stock financier not wanting to pay the cost to roll will weigh the premium he can earn in the spot market against any incentives paid by LME warehouses. Since the LME curbed queues, incentives are down. We hear only \$50/mt compared to a US premium at \$280/mt and the CME curve expects higher.

Backwardations must therefore pull increasingly hard to offer a time premium that can both compete and more severely push stock financiers to liquidate. As shorts are forced

out this supports LME prices. In an ex-China primary metal deficit attracting delivered units is set to get tougher still. Until this tightness ends LME price will generally trend up.

Rethinking the China Connection

LME Aluminium's connection with the Chinese market is unlike any other metal. In its surplus, China is a minimal importer so does not pull on LME deliverable material. On the contrary, frequent LME backwardations demonstrate a pull on stock in the other direction, but the 15% export tax is keeping most primary metal out the equation.

China's market balance only fundamentally connects with the LME through the non-primary semi-fabricated exports that earn a 13% rebate. The most direct means is the fake semi's (minimally fabricated extrusions/sheet that to be recast into ingot). As discussed these flows have arguably already peaked some years ago, and we expect trade tensions to render any significant growth especially tough.

The challenge to fill the RoW deficit, therefore, depends on genuine semi-fabricated exports that can displace demand and free up ingot to be delivered on to the LME. Given lengthy supply chains, financing and offtakes we don't think displacing primary has an immediate impact as is often assumed. But also the required hefty 20% increase in the 4.8MT export figure is very unlikely considering mounting trade protectionism that will close off customer markets.

The US, India, Australia and Europe are all either investigating or have already imposed restrictions on Chinese products. The US made up 15% of Chinese exports last year and the 232/ITC investigations looks set to at the least render Chinese foils and common alloys uncompetitive. These alloys themselves itself made the majority of last years near 0.5Mt of the Chinese-US flat rolled trade and + 170kt of foils (10% of all Chinese semi's exports). Europe is the largest buyer of China's aluminium where an investigation on extrusions (160kt) alongside a beefed up methodology that can quicker prove dumping poses further risks.

Add in the Indian ban on Foils (100kt), Australia already acting on extrusions (45kt) and you get to sizeable numbers (1Mt+) which will take time to find new markets let alone to grow exports so significantly. During this time the LME price will be rallying on the said tightness.

Fig 8 Highlighted Chinese aluminium exports at risk (kt)

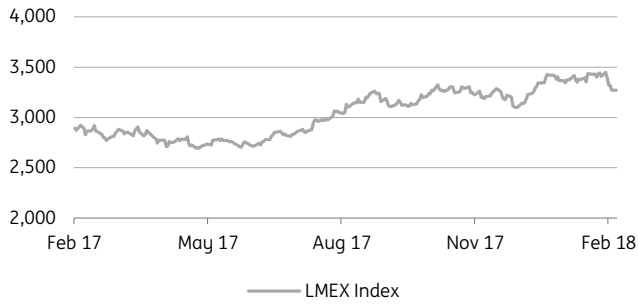
	Chinese 2017 exports (kt)
India (Foils)	100
Australia (Extrusions)	45
US (PSS +Foils)	670
US (all aluminium articles)	1000
European (Extrusions)	160
Total	1000-1330

Source: Trademap

The key takeaway is the impact of the Chinese surplus on the rest of the primary world balance is neither 1:1 nor immediate. Semi's exports can only ease LME tightness by re-routing displaced primary. We doubt the scale that this can grow in the face of rising protectionism and would further reinforce how lagged the relationship could be. Chinese exports would need to find new downstream customers to the extent it knocks along the supply chain to hit upstream orders of ingot. This needs to accumulate sufficiently to depress spot premiums enough to justify LME deliveries. All the while we are expecting prices to grind higher through 2018 and 2019 on tight spreads and robust fundamentals in the LME's domain offshore from the Chinese surplus.

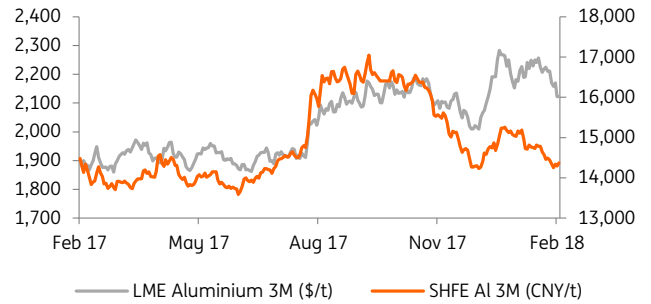
Charts

Fig 9 LME index



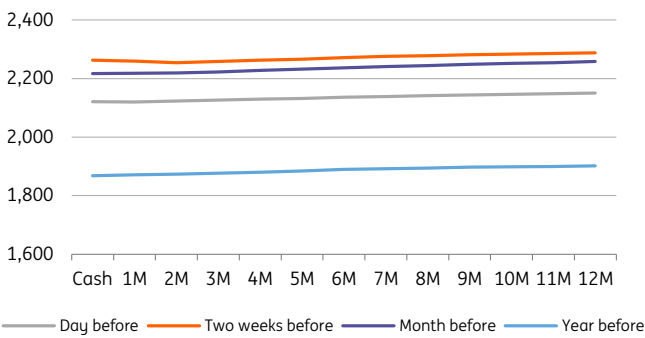
Source: Bloomberg

Fig 10 Aluminium prices



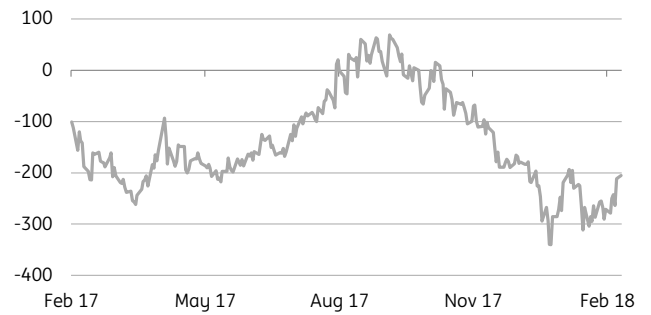
Source: Bloomberg

Fig 11 1Yr forward curve: LME Aluminium (US\$/t)



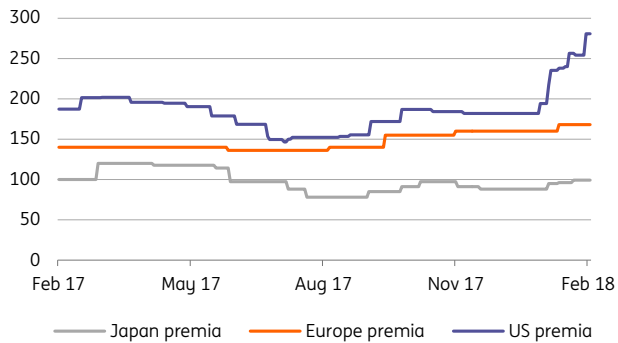
Source: Bloomberg

Fig 12 SHFE-LME arbitrage: Aluminium (US\$/t)



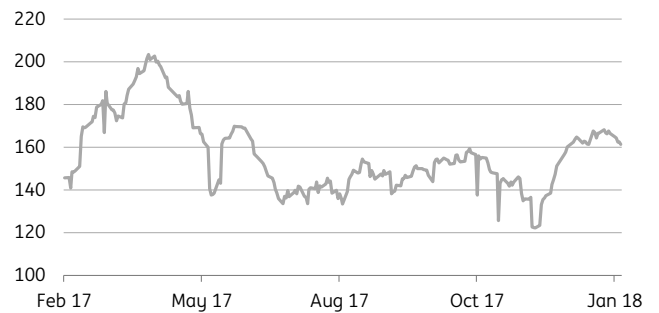
Source: Bloomberg

Fig 13 Physical premia: Aluminium (US\$/t)



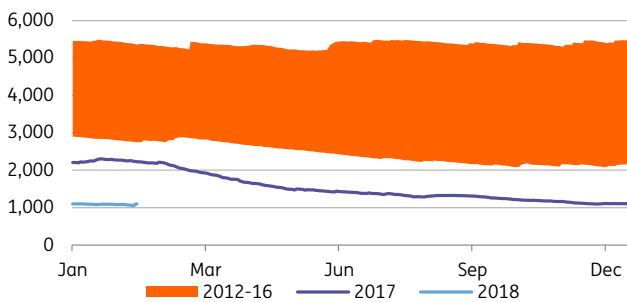
Source: Bloomberg

Fig 14 CFTC Managed Money net: LME Al (000 lots)



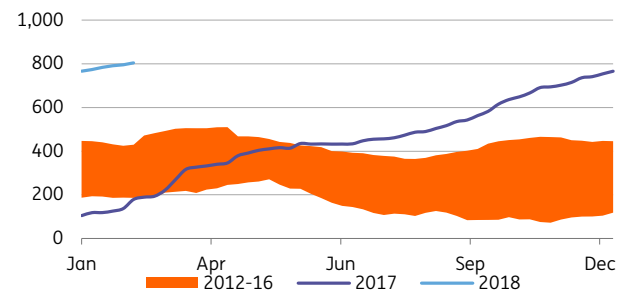
Source: Bloomberg

Fig 15 LME aluminium stocks (000t)



Source: Bloomberg

Fig 16 SHFE aluminium stocks (000t)



Source: Bloomberg

Disclaimer

This publication has been prepared by the Economic and Financial Analysis Division of ING Bank NV ("ING") solely for information purposes without regard to any particular user's investment objectives, financial situation, or means. ING forms part of ING Group (being for this purpose ING Group NV and its subsidiary and affiliated companies). The information in the publication is not an investment recommendation and it is not investment, legal or tax advice or an offer or solicitation to purchase or sell any financial instrument. Reasonable care has been taken to ensure that this publication is not untrue or misleading when published, but ING does not represent that it is accurate or complete. ING does not accept any liability for any direct, indirect or consequential loss arising from any use of this publication. Unless otherwise stated, any views, forecasts, or estimates are solely those of the author(s), as of the date of the publication and are subject to change without notice.

The distribution of this publication may be restricted by law or regulation in different jurisdictions and persons into whose possession this publication comes should inform themselves about, and observe, such restrictions.

Copyright and database rights protection exists in this report and it may not be reproduced, distributed or published by any person for any purpose without the prior express consent of ING. All rights are reserved. The producing legal entity ING Bank NV is authorised by the Dutch Central Bank and supervised by the European Central Bank (ECB), the Dutch Central Bank (DNB) and the Dutch Authority for the Financial Markets (AFM). ING Bank NV is incorporated in the Netherlands (Trade Register no. 33031431 Amsterdam). In the United Kingdom this information is approved and/or communicated by ING Bank NV, London Branch. ING Bank NV, London Branch is subject to limited regulation by the Financial Conduct Authority (FCA). ING Bank NV, London branch is registered in England (Registration number BR000341) at 8-10 Moorgate, London EC2 6DA.

For US Investors: Any person wishing to discuss this report or effect transactions in any security discussed herein should contact ING Financial Markets LLC, which is a member of the NYSE, FINRA and SIPC and part of ING, and which has accepted responsibility for the distribution of this report in the United States under applicable requirements.