

# Global Metals Report

China Merchants Futures (Hong Kong)  
Hong Kong Commodities Research

## Aluminium price meltdown

- Oversupply persists as China ramps up production
- More aluminium for autos encouraging but with headwinds
- Aluminium price would trend lower as China cuts costs

### Aluminium prices have crumbled this year

At yesterday's close of US\$1,446/tonne, aluminium has fallen by c.30%YoY and c.20%YTD. Furthermore, aluminium prices have dropped below US\$1,500/tonne, levels not seen since 2009 in the aftermath of the 2008 Financial Crisis. Oversupply remains dire with China continuing to add production capacity, expect to hit 32.7mn tonnes by the end of 2015 and 34.7mn tonnes by 2017. China's backing of state-owned aluminium enterprises keeps production high despite an estimated 90% of China's aluminium smelter sector operating at a loss. Hence, China, while still being a net importer of primary aluminium (2015E net imports: 102,666tonnes, -40%YoY), will continue to be a giant contributor of aluminium alloy exports (2015E net exports: 457,975tonnes, -6%YoY).

### Automakers shifting to aluminium for new vehicles

The automobile industry roughly makes up about 25% of global aluminium demand. North American automakers are expected to increase their aluminium use from 327pounds/vehicle in 2009 to 550pounds /vehicle in 2025, hence doubling aluminium's percent of vehicle curb weight from 8% to 16%. However, headwinds include declining global production growth for both passenger and commercial vehicles, falling for the third consecutive year. Hence, we see the global aluminium market continually oversupplied by at least 600,000tonnes during 2015-2016.

### Aluminium price could trend lower as China cuts costs

Most Chinese aluminium smelters are currently running at a cash cost of US\$1,560-2,000/tonne, with some in Xinjiang operating at about US\$1,315/tonne. However, costs could head lower if 1) the current VAT is reduced or eliminated, 2) rebates on aluminium product exports are increased, and 3) RMB were devalued. Overall, we see limited price upside potential for the metal.

### Price Update

Front Contract		Close	Change		High	Low	Range	
			(US\$)	(%)			(US\$)	(%)
LME Aluminum	(US\$/tonne)	1,446.00	10.50	0.73%	1,447.00	1,444.00	3.00	0.21%
LME Copper	(US\$/tonne)	4,608.00	118.00	2.63%	4,608.00	4,510.00	98.00	2.13%
LME Lead	(US\$/tonne)	1,607.00	32.00	2.03%	1,607.00	1,595.00	12.00	0.75%
LME Nickel	(US\$/tonne)	8,770.00	470.00	5.66%	8,770.00	8,400.00	370.00	4.22%
LME Tin	(US\$/tonne)	14,425.00	70.00	0.49%	14,425.00	14,200.00	225.00	1.56%
LME Zinc	(US\$/tonne)	1,580.50	34.50	2.23%	1,580.50	1,566.00	14.50	0.92%
Dollar Index (Spot)		99.5270	-0.2760	-0.28%	99.7850	99.4660	0.32	0.32%

Source: Reuters, CMF (HK)

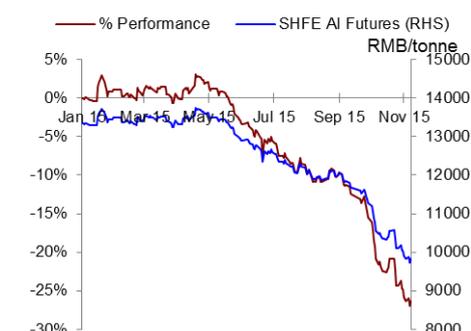
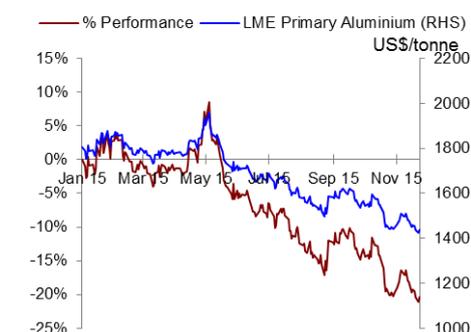
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### Price Performance



Source: Bloomberg, CMF(HK)

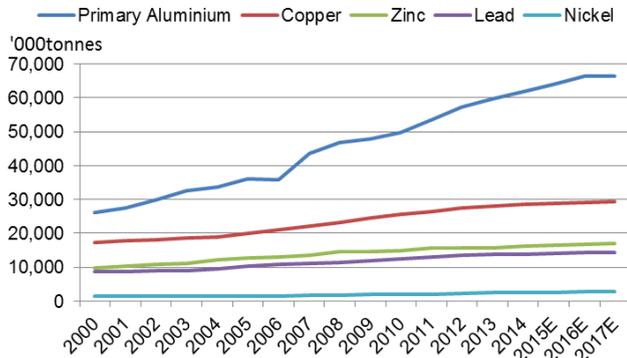
Absolute return (%)	1m	6m	12m
LME Aluminum	(1.6)	(17.0)	(30.5)
SHFE Al Futures	(6.9)	(27.2)	N/A

### Related Research

1. Global Energy Report – “The rising tide of oil ahead” – Aug 7, 2015
2. Global Precious Metals Report – “Gold regaining some luster” - Sep 4, 2015
3. Global Energy Report – “Opportunity from divergent demand” - Oct 14, 2015

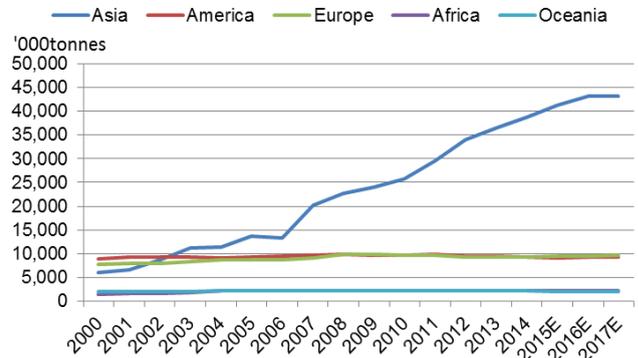
**Focus charts**

**Figure 1: Production capacity of base metals**



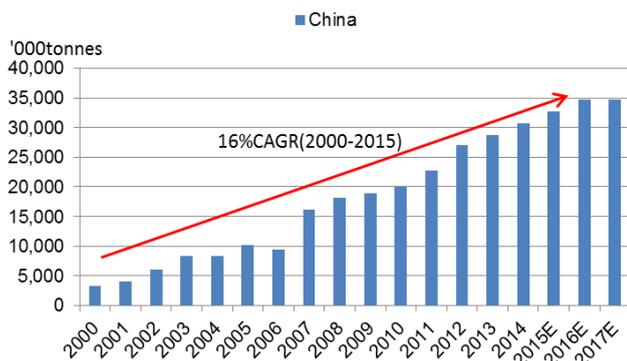
Source: Reuters, CMF (HK)

**Figure 2: Aluminum production capacity by region**



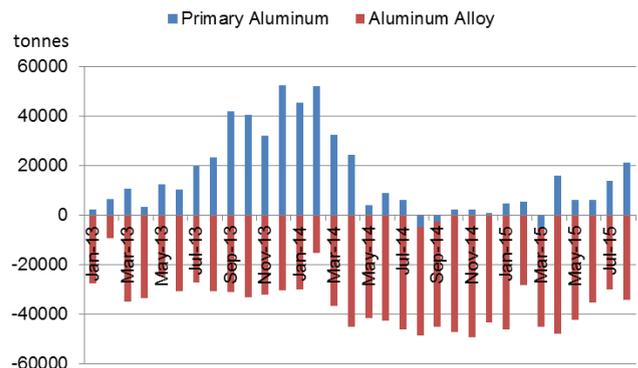
Source: Reuters, CMF (HK)

**Figure 3: China aluminum production capacity**



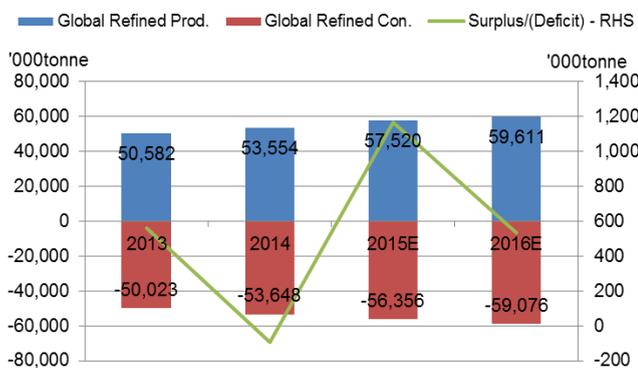
Source: Reuters, CMF (HK)

**Figure 4: China aluminum net imports**



Source: Reuters, CMF (HK)

**Figure 5: Aluminum supply/demand balance**



Source: Reuters, CMF (HK)

**Figure 6: Aluminum price 2008-YTD**

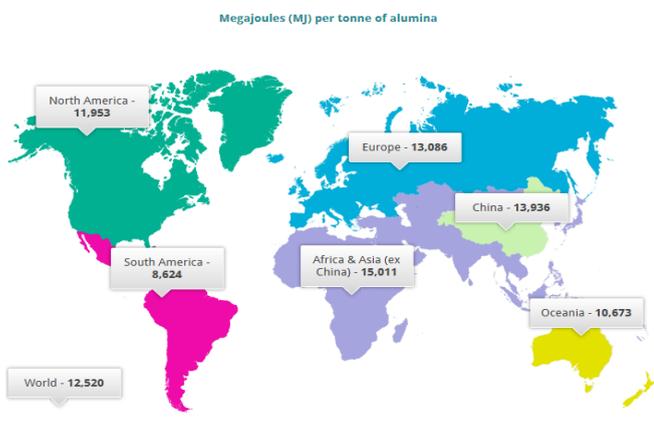


Source: Bloomberg, CMF (HK)

## China – The Aluminium King

- Aluminium prices have crumbled this year. At yesterday's close of US\$1,446/tonne, the metal has fallen by 30.3%YoY and 20.0%YTD. Furthermore, aluminium prices have dropped below US\$1,500/tonne, levels not seen since 2009 in the aftermath of the 2008 Financial Crisis. Although the YTD price decline has not been as severe as other metals like copper, nickel, tin and zinc, which all have fallen by more than 20%YTD, we believe that there is still significant downside to aluminium's price given a severe global supply glut that has been induced by a surge in Chinese aluminium production capacity.
- Since the new millennium, China has dramatically increased its aluminium smelting capacity, which has grown at a c.17%CAGR(2000-2015). At the current trajectory, the country's total smelting capacity will reach 32.7mn tonnes by the end of 2015, equivalent to 51% of global smelting capacity and greater than the world's total global capacity back in 2003. It also marks a ten-fold increase in production capacity for the nation, while other regions only show an average 18% increase in capacity during the same period. Furthermore, China's aluminium capacity ramp up is set to continue until at least 2017, with 2million tonnes of capacity expected to come online over the next 2yrs reaching 34.7mn tonnes.
- The economics of Chinese aluminium production are different from that of western nations given that state-owned enterprises (SOE) control and operate large segments of the domestic market. We believe that this is the primary reason that Chinese aluminium producers are able to continue to increase output despite adverse market conditions as their SOE stature not only allows Chinese aluminium smelters and refiners access to cheaper capital, but also gives them backstops from the possibility of bankruptcies that a private firm would face given current cost pressures amidst a declining price environment.
- Take for example, Chalco (Aluminium Corporation of China Limited), one of the nation's largest aluminium enterprises comprising 4.4% and 10.4% of China's aluminium smelting and refining capacities, respectively. The company is effectively owned by China's Stated-owned Assets Supervision and Administrative Commission of the State Council (SASAC) and has posted net losses for 2 out of the last 5 financial years as aluminium prices gyrated along a downward slope. Yet, it's gearing (as measured by Total Debt/Equity) has exploded to over 300%.
- This is in stark contrast to U.S. based Alcoa, who has been profitable for 4-out-of-5 past years (2013 loss mainly due to impairment losses) with stable gearing under 60%. Yet, it is Alcoa that has to take measures to curtail uncompetitive operations, announcing that it will cut aluminium smelting capacity by 500,000tonnes and alumina refining capacity by 1.2million tonnes from its U.S. operations by suspending its Intalco, Wenatchee and the Massena West smelter starting this quarter.
- From a pure economic standpoint, Chinese production of aluminium is comparatively more expensive than those produced in most other parts of the world. According to World Aluminium, in 2014 China required 13,936megajoules of energy in order to refine one tonne of alumina. Refiners in North America and Europe require 6-14% less energy than their Chinese counterparts. Hence, it is widely believed that around 90% of China's huge aluminium smelter sector is operating at a loss.
- However, with the backing of the central government, Chinese aluminium enterprises show little to no idling of production and will likely expand its predatory pricing strategy to capture larger markets abroad. We see China, while still being a net importer of primary aluminium (2015E net imports: 102,666tonnes, -40%YoY), will continue to be a much larger contributor of aluminium alloy exports (2015E net exports: 457,975tonnes, -6%YoY).

Figure 7: Global alumina refining energy intensity



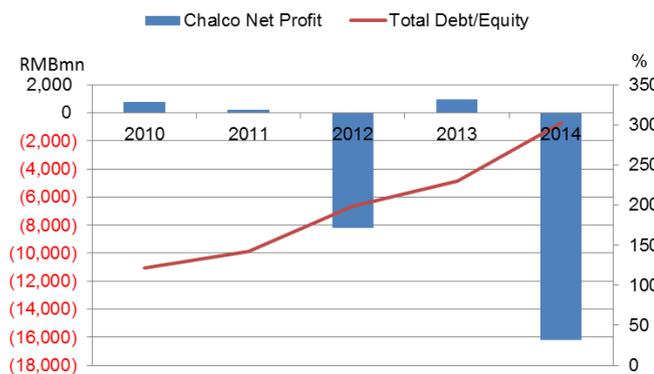
Source: World Aluminum

Figure 8: China aluminum production profit profile



Source: Bloomberg, CMF (HK)

Figure 9: Chalco net profit & gearing



Source: Chalco, CMF (HK)

Figure 10: Alcoa net profit & gearing



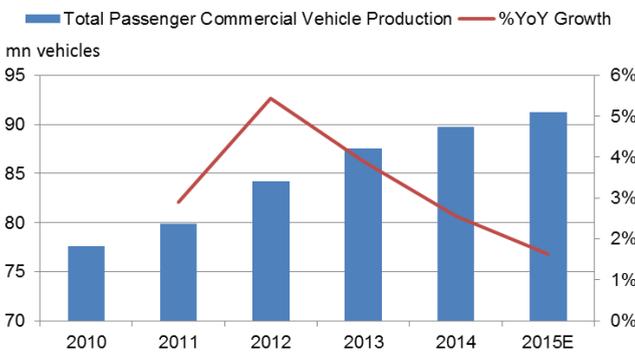
Source: Alcoa, CMF (HK)

## Automobiles' increase use of aluminium an industry bright spot but with headwinds

- The automobile industry roughly makes up about 25% of global demand for aluminium. Hopes that automakers accelerating their shift to aluminium from other materials for new car and light trucks construction will boost aluminium demand is an optimistic proposition. North American automakers are expected to increase their use of aluminium from 327pounds in 2009 to 550pounds in 2025, hence doubling aluminium's percent of vehicle curb weight from 8% to 16%. This would result in demand for aluminium sheets (for light vehicle body and parts) to increase from 200mn pounds (lb) in 2012 to nearly 4bn lb by 2025 (i.e. from 100,000kg to 2mn tonne) according to Ducker Worldwide.
- However, there are headwinds that might dampen the impact of increased vehicle aluminium use. First, global production growth of both passenger and commercial vehicles are falling for the third consecutive year after reaching a peak in 2012. Despite over 91.2mn vehicles expected to roll-off the assembly line this year, 2015 incremental growth is only c.1mn vehicles versus 2014, the smallest since the 2009.

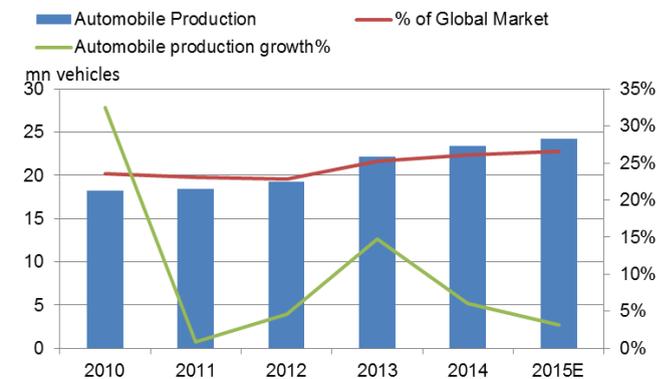
- Likewise, China has not been able to escape the growth slowdown (which started since 2013) with only 24.2mn vehicles expected to be built this year up just 2%YoY. Yet, China remains a key market for passenger and commercial vehicles accounting for 27% of total new vehicles sales world-wide. More important, is that China makes-up around 75% of global incremental automobile production growth during 2015. Hence, any slowdown in China's economy will have negative ramifications to the global automobile industry.
- Finally, the increase in aluminium demand of 1.9mn tonnes by 2020 is still behind the curve compared to the increase in global aluminium production, which has grown annually at an average of +2million tonnes over the past three years. Hence, we believe that the global aluminium market will continue to be oversupplied by at least 600,000tonnes during 2015-2016.

Figure 11: Global automobile production



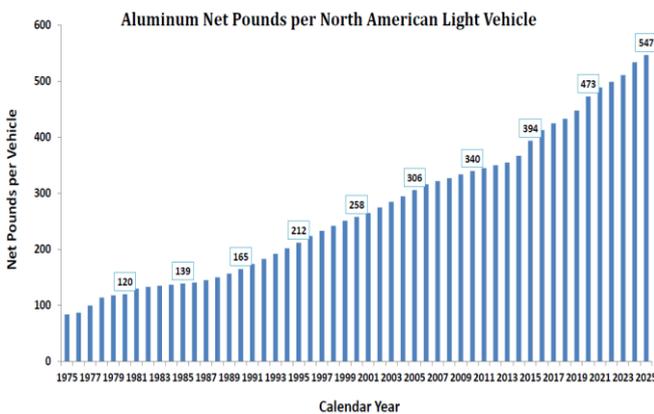
Source: Bloomberg, CEIC, CMF (HK)

Figure 12: China automobile overview



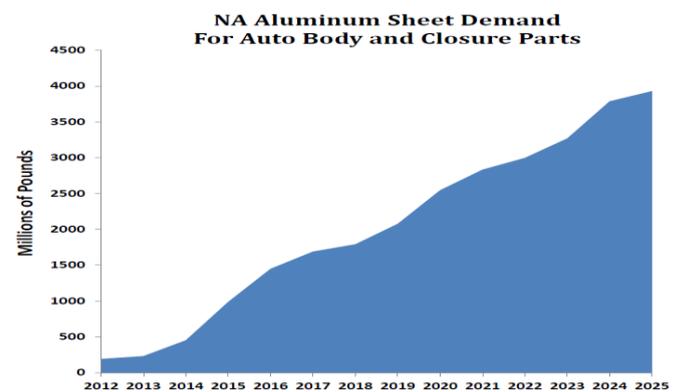
Source: Bloomberg, CEIC, CMF (HK)

Figure 13: North American aluminum use per vehicle



Source: Ducker Worldwide

Figure 14: China automobile overview



Source: Ducker Worldwide

## Aluminium price could trend lower as China cuts costs

- Most Chinese aluminium smelters are currently running at a cash cost of RMB10,000-13,000/tonne (US\$1,560-2000/tonne), with some in Xinjiang even operating at about RMB8,400/tonne (US\$1,315/tonne), according to market sources. Hence, we believe that the initial price floor for the light metal is c.US\$1,300/tonne. This would translate into a further 10% price decline from current levels before the entire Chinese aluminium industry begins to experience broad-range losses.
- However, current cash costs would head lower if 1) the current VAT (value-added tax) of 17% for aluminium is reduced or eliminated, 2) China increased rebates on aluminium product exports to encourage oversea sales of the metal, and 3) the country's currency was devalued relative to the U.S. dollar. Under these conditions we could see another down-leg for aluminium prices to levels below US\$1,300/tonne threshold (to levels not seen since Feb 2009 low of US\$1,279/tonne for 3M LME Aluminium). This would prolong the price slump until production destruction is seen from non-Chinese producers.
- Overall we see limited upside potential for the metal as weak fundamentals combined with continual production increase and substantial exports from China will lead to a ninth year of surpluses.

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