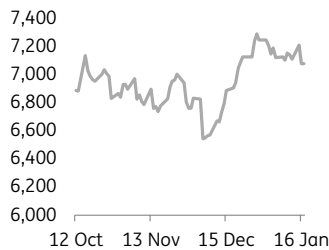


17 January 2018

Metals

LME Copper (16/01/18)
US\$7,078/t

LME Copper (US\$/t)



Source for all data: Bloomberg

Industrial metals

Copper bulls pricing mine disruptions too early

2018 Copper outlook

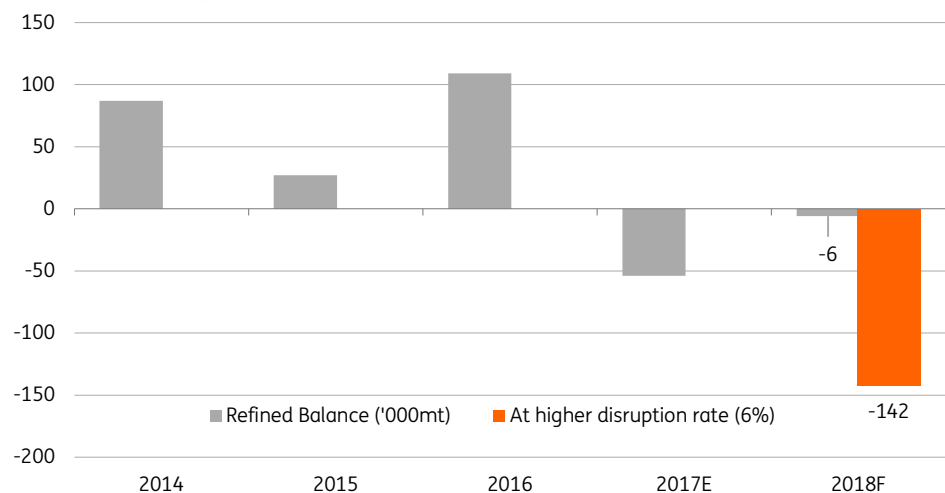
ING forecasts copper to average US\$6,800/t in 2018, up 9.7% on 2017 but nonetheless involving a decline from spot levels which may have run ahead of the fundamentals. The supply-demand picture looks balanced this year unless one expects a second consecutive year of extremely high disruptions. With the market seemingly already pricing this in, the risk it seems is to the downside.

The road to US\$7,000: Most of the significant price levels breached since the US election have seemed to coincide with SHFE traders seizing technical signals. But for all fingers pointed at speculators the higher price environment has made fundamental sense because of the need for an incentive price that can avoid huge supply gaps post 2020.

This said, prices have now comfortably exceeded the trigger to restart investment decisions. Miners are once again showcasing their project pipeline with approvals and fundraisings starting to take off. We see the US\$6,600-6,700 level as a good floor to sustain investments with a longer term push above US\$7,000 only as significant deficits take hold.

The balance: The copper market will be balanced this year unless one assumes a second year of very high disruptions. Whilst the number of labour negotiations at mines will be above norms we argue it remains prudent to stick to historically tested disruption rates until proven otherwise (5%, c.1MT). We expect each early resolution to labour negotiations to pressure prices lower as chances of a significant deficit are reduced.

ING Copper Supply-Demand Estimates (kt)



Source: ICSG, WBMS, Company Reports, ING Estimates

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
Copper	7,000	6,700	6,800	6,700	6,500	6,700	6,800	6,800	6,700	7,200	7,500	7,000

Source: Bloomberg, ING estimates

Mine supply to return to growth in 2018

Last year's 2.7% drop in mine supply made the prospect of depleting copper supply only too real a possibility. We estimate that the copper concentrate market suffered a 145kt deficit last year as a result largely of strikes at Escondida and Grasberg. Mine supply will however return to growth next year as we expect the rebound of these two mammoth operations to provide over a quarter of the assumed net growth (pre-disruption).

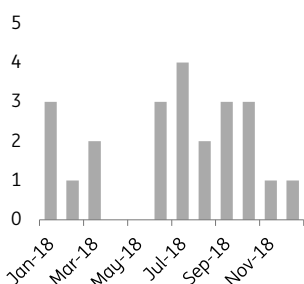
Given the combination of rebounds post disruptions, higher grade sequencing and the ramp up of a few new operations (such as Cobre Panama, Toquepala expansion, and Katanga) we expect the copper concentrate market to be balanced in 2018. This is on the assumption of the historical disruption allowance to mine supply (5%, c.1MT). Each more aggressive 1% costs an extra 200kt of mine supply and would create a concentrate deficit that is likely to reduce smelter utilization considerably. We don't think such an event is actually as probable as recent sentiment seems to suggest.

Fig 1 Biggest mine supply changes (kt, YoY)

2017E Biggest increase		2017E Biggest decrease		2018F Biggest increase		2018F Biggest decrease	
Las Bambas	110	Escondida	-109	Escondida	207	Collahuasi	-62
Aktogay	70	Batu Hijau	-77	KOV/Katanga	150	El Teniente	-56
Sentinel	63	Oyu Tolgoi	-56	Grasberg	100	Batu Hijau	-50
Bozshakol	55	Chino	-42	Cobre Panama	100	Candelaria	-32
Other Norilsk	38	Alumbra	-40	Toquepala	50	Antamina	-30
Spence	34	Morenci	-35	Chino	42	Morenci	-25
Toromocho	33	Antamina	-31	Chita	38	Alumbra	-20

Source: Company data, ING estimates

2018 Copper mine unresolved labour contracts by month of expiry (mostly in H2)



Source: Metal Bulletin, ING Research

Negotiations outstanding by Company

Codelco	13
BHP	5
Lumina	3
Freeport	1

Source: Metal Bulletin

Strike Risks: how likely is a repeat of 2017 extremes?

2017 was an extremely high year for strikes and resulting copper mine supply disruption. According to ICSG data mine supply utilization averaged 81% last year. Utilization has only ever been as low once in the over 20 years of data. Chiefly responsible was the 44 day strike at the Escondida mine which was Chile's longest strike in at least a decade. According to Metal Bulletin some 23 unresolved labour contracts remain up for renewal in 2018, which is way above the norms. But how safe is it to assume that resulting disruptions will so hugely exceed the historically tried and tested 5%?

We would point out several considerations that suggest prudence remains on the side of being conservative. The massive 2017 disruption to supply was caused by the duration and not the number of strikes. Many strikes are actually short enough to be resolved before even impacting production, such as at Teck's Quadra Blanca in December. Looking at the major Escondida contract due for renewal in June we would question the appetite for either workers or mining companies to withstand another lengthy strike. When we further take into account that many of the labour contracts involve the same mining companies (13 of the 23 are with Codelco, 5 with BHP) the desire to avoid multiple, lengthy industrial action is also intensified.

Higher prices are certainly likely to embolden workers expectations but so would we argue will be the miners incentive to avoid production losses. With most contract negotiations actually due for the second half it is very likely we will see more early resolutions announced as has already happened for 10 of the originally 33 earmarked negotiations (including Ventanas, Centinela and Casa Matriz). As news flow sees potential future disruptions dissipate and the physical indicators (flat premiums, wide contango etc) do not reflect any refined market tightness, the risk we argue remains on the downside. The copper bulls appear to be pricing in mine disruptions too early.

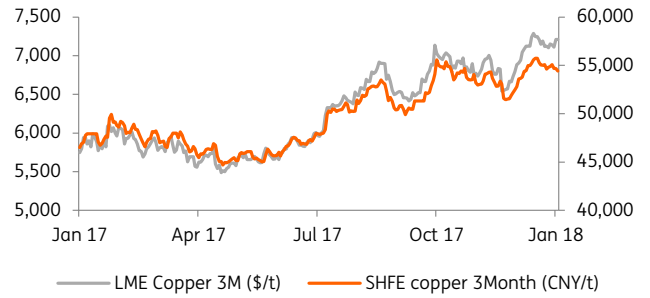
Charts

Fig 2 LME index



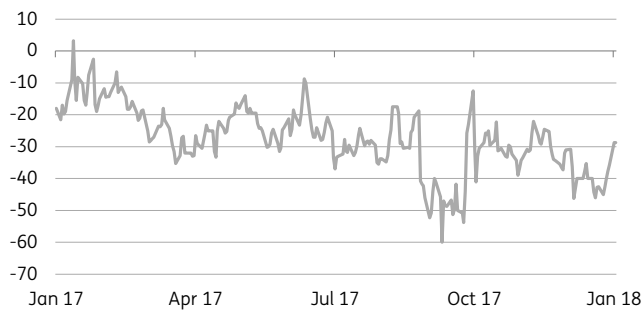
Source: Bloomberg

Fig 3 Copper prices



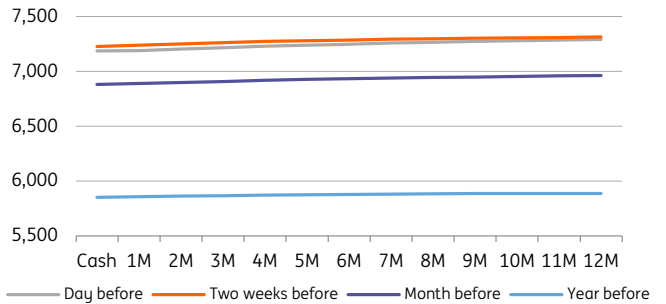
Source: Bloomberg

Fig 4 LME copper cash-3M price spread (US\$/t)



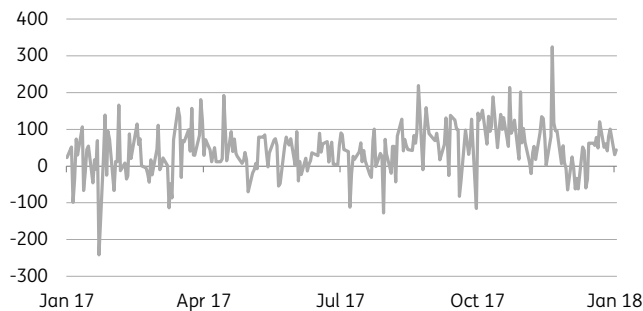
Source: Bloomberg

Fig 5 1Yr forward curve: LME Copper (US\$/t)



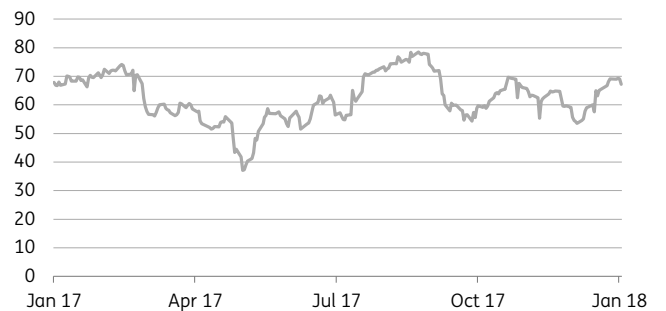
Source: Bloomberg

Fig 6 SHFE-LME spread: Copper (US\$/t)



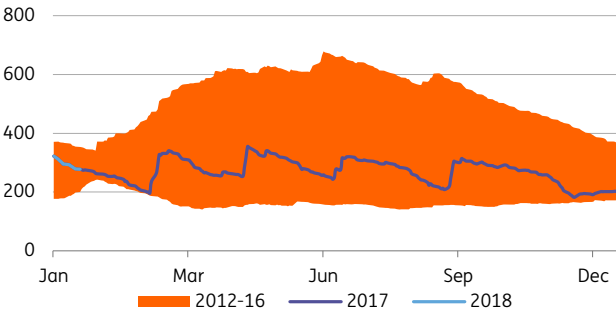
Source: Bloomberg

Fig 7 LME Cu net managed money (000 lots)



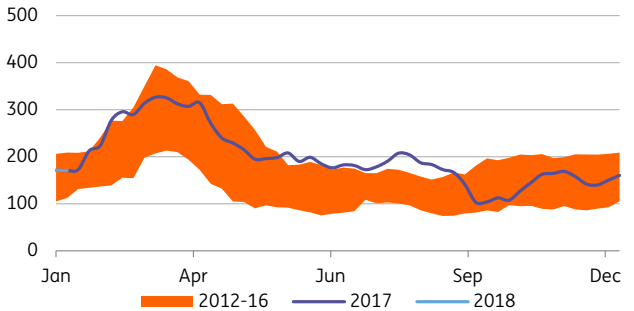
Source: Bloomberg

Fig 8 LME copper stocks (000t)



Source: Bloomberg

Fig 9 SHFE copper stocks (000t)



Source: Bloomberg