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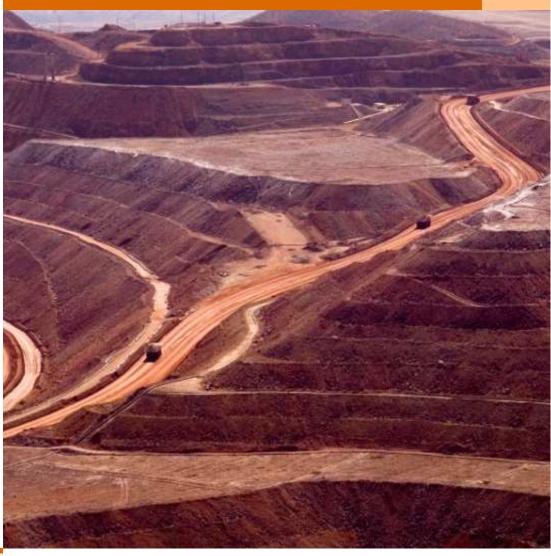
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Copper Bulls and bears in the same paddock

August 2014



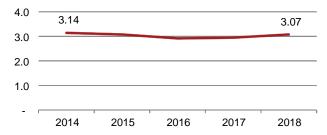


Copper

Where do you sit on the bull vs bear spectrum?

Relatively low prices and expectations of a surplus market have created uncertainty over the short term viability of copper projects globally. Projects continue to be delayed and forecast prices over the next five years are broadly flat.

Copper price: LME cash forecast (US\$/lb)



Source: CRU Copper Market Outlook, April 2014

Any lack of growth investment today will have serious implications for future supply. Some investors are already looking ahead and viewing a potential supply deficit as a reason to invest in copper now.

Let's take a look at some of the key drivers that are likely to differentiate the copper **bulls** from the **bears**.

Perspectives

"A combination of the complexity of investment, the retrenchment of growth capital, and declining grades means that we're probably entering a period of constrained supply. For me, it's just a very simple equation that translates into a period of sustained rising prices"

Mick Davis, X2 miningmz.com, 31 July 2013

"It used to be that you could bring on a large [copper] project [...] in five years. Now it is 10."

Sam Walsh - CEO, Rio Tinto New York Times, 2 April 2014

"We have been very open in saying that the development of the [A\$3bn Carrapateena] project is beyond our current capacity to prudently fund on a sole basis. We are open to all options [including] placing the project [...] on care and maintenance [...] until we find the right outcome"

Neil Hamilton – Chairman, OZ Minerals The Australian, 28 May 2014



Lower prices have reduced **returns** and placed pressure on marginal mines. Uncertainty over demand from China continues to influence investment decisions with China currently representing c.40% of global demand.

Sinking ore grades and increasing

costs (particularly labour and

energy) are placing pressure on

smaller, marginal mines.

Available deposits in the

traditional mining provinces

are decreasing in number, size, ore

grade and proximity to existing

infrastructure. There are fewer

opportunities for high returns in

these regions.

Strategic

investing?

Continued industrialisation and *urbanisation of the emerging* markets is not expected to slow. Buyers in these regions may look to invest directly in the sector as a way of managing costs and securing long term **supply**.

Supply security

Project quality, access to market

Medium

Patient

The Chinese Government required the sell down of Las Bambas as a condition of the merger between Glencore and Xstrata due to concerns of the combined group's potential control over copper supply.

2013.

Glencore has also agreed to supply a minimum volume of copper concentrate to China for a period of eight years.

Mega projects, mega blow outs?

Recent years have seen a number of large resource projects exceed their original project cost budgets by significant margins – recent examples include:

Bullish: China leading the charge

• MMG-led consortium acquired Glencore's *Las*

Bambas project in Peru in April 2014

large copper transactions:

Chinese buyers have put forward winning bids on recent

• China Molybdenum acquired Rio Tinto's 80% share

in the *Northparkes* project in Australia in July

- Rio Tinto's Oyu Tolgoi copper mine: US\$2bn (c.30%) cost overrun on its first-stage-expansion
- Glencore's Koniambo nickel project: US\$1bn (c.15%) cost overrun
- Chevron's Gorgon LNG project: c.US\$17bn (40%) cost overrun.

With more than six large-scale (>US\$2bn) greenfield copper projects in the near term development pipeline, it will be interesting to see how the miners manage project and operating costs and the impact these projects will have on the shape of the copper cost curve.

Bearish: Project deferrals

When cash flow is tight, growth capital to develop or expand mines is often deferred. Many significant copper projects (both greenfield and expansion) have been delayed or deferred (Oyu Tolgoi, Cobre Panama) or scaled back (Frieda River), fuelling expectations of a supply deficit in the medium term (forecast to bite hardest in 2020).

Or: Is the tide starting to turn?

BHP Billiton has recently announced tentative steps to reinvigorate plans to expand production at its Olympic Dam mine and the sector has seen an inflow of investment capital into major projects from China.

rationale

Why are you

Project characteristics

> What sort of project are you targeting?

Larger scale, higher grade projects with easier access to markets will have the greatest chance of development and sustained profitability relative to

peers, particularly in challenging or uncertain market conditions.

Geographic focus

Where are you prepared to invest?

Many of the quality copper deposits are located in **emerging** markets (Latin America, Asia and *Africa*). Despite the inherent challenges of investing and operating in these regions, these projects are typically located at the lower end of the cost curve, offering

higher returns to investors.

horizon When do you expect to

A widening supply gap is expected to be more evident from c.2020. This is expected to boost prices and support the development of new projects in the **medium term** and beyond.

generate returns?

Access to capital

How flexible is your capital base?

Projects funded by **patient** capital are more likely to benefit from the medium to longer term improvement forecast for the sector.

Short term

Returns focused

Oversupply of finished copper is forecast to continue for the next few years. As a result, prices are forecast to remain broadly flat from 2014 levels over the same period. Challenging markets will continue to delay projects in the **short term**.

Investment

To protect against risks in the current market, financiers are imposing more **restrictive** terms (for example, higher equity interests) which can adversely impact the feasibility of more marginal projects.