

Has Dr Copper gone on sabbatical?

by NAB Group Economics

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Key Points:

- In uncertain times, people look to Dr Copper for clues of the underlying economic development. However, Dr Copper seems to be as undecided as the financial market in recent years and could sometimes give conflicting hypotheses. It seems to be on a sabbatical to conduct further research on what drives itself.
- 2016 is shaping up to be a crucial year for copper producers and copper markets. Its biggest consumer, China, is going through a period of slower economic growth, with structural transitions under way and a depreciating currency. The end of China's unprecedented growth rates of infrastructure investment, which pushed up metals demand and prices when it started, is now putting downward pressure on commodity prices, including copper. Copper price is now down over 50% since its peak in 2011, while the Chinese economy has been pushing ahead with slower, yet still impressive growth rates. The price falls have certainly been driven by the demand slowdown, but maybe more so by the supply glut and market sentiment in our view.
- One complicating factor is the scale and direction of some large carry trades which use metals (including copper) as collateral to take advantage of China's domestic to foreign interest rate differential (see Page 3). There is a significant amount of copper tied up in these financing deals, with some estimates putting it at as much as ten per cent of total global copper demand. With the narrowing of the interest differential and a depreciating yuan, these trades are now starting to reverse, potentially releasing significant supply into the market, putting downward pressure on copper prices.
- On the supply side, producers responded to the previous high levels of demand and prices with increased exploration efforts and new mine constructions. The International Copper Study Group estimates global mined supply increased by 2.6% p.a. between 2009 and 2015, compared to 1.7% between 2001 and 2008. Last year's large price declines have prompted some negative supply responses, although the cuts have not been enough to fully offset the new capacity. Existing producers have also managed to cut costs to remain in operation and maintain market share. Looking ahead, more than 4.5 million tonnes of copper mine capacity is scheduled to be added by 2020, the timing of which could be important for copper prices.
- Overall, our view on China and its metals demand are not as downbeat with a lot of the downside already priced in. The risks could be more from the supply side and overall market sentiment. As a result, we forecast a largely balanced market for 2016 and 2017 and still depressed price levels, with downside risks remaining around new mine supply growth outstripping demand while the China outlook will remain closely watched.

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Underlying demand

- With China accounting for around 45% of total world copper demand (with most of that being underlying demand), any developments in its economy is keenly watched by copper observers and producers.
- China's policy makers met at the National People's Congress in early March, announcing an economic growth target range of 6.5-7%, which was slightly reduced from last year's "around 7.0%". Our forecast for growth is unchanged at 6.7% in 2016 and 6.5% in 2017, although we consider the risks to be weighted to the downside.
- China's industrial production slowed across January and February – down to 5.4% yoy (compared with 5.9% in December 2014). This rate of growth was below expectations and the slowest rate of growth since the same period in 2009. Key heavy industrial sectors remained weak – with cement production down 8.2% yoy – reflecting weakness in the construction sector, while the motor vehicle sector recorded growth of 5.3% yoy. Electricity generation was marginally stronger – up 0.3% yoy.
- Fixed asset investment accelerated slightly, on the back of stronger investment in real estate, which rose 1.7% yoy (3mma) in February, up from -3.3% in December. New residential construction starts were strong in the beginning of 2016, but it is too early to know if this is a trend that can be sustained. The copper intensity of Chinese construction may also be increasing due to greater needs for electrification and energy efficiency. Investment grew strongly in water conservation and environmental management (27% yoy across January-February) and public utilities (19% yoy). However, the increasing use of cheaper, lighter aluminium alloy is reducing the demand for copper in the electricity sector.
- In the short term, seasonal demand is expected to tick up in Q2. Domestic excess stock should be sufficient to satisfy demand and it is possible that China may even increase its exports. Current exports are at minimal levels and should not cause much impact. In the medium term, while we do not expect any meaningful improvement in activity due to China's growth prospects, a hard landing is also not expected.
- In the meantime, copper demand by other countries outside China is unlikely to step up in a meaningful way, with steady forecasts for the US, Germany and Japan while demand by emerging economies including India are yet to reach a significant scale.

Chart 1: China's industrial production has continued to trend lower, with electricity output largely unchanged

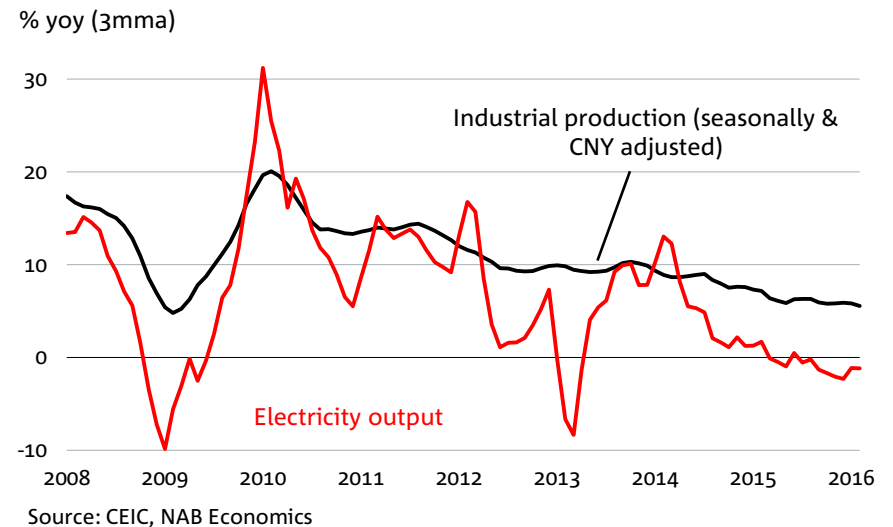
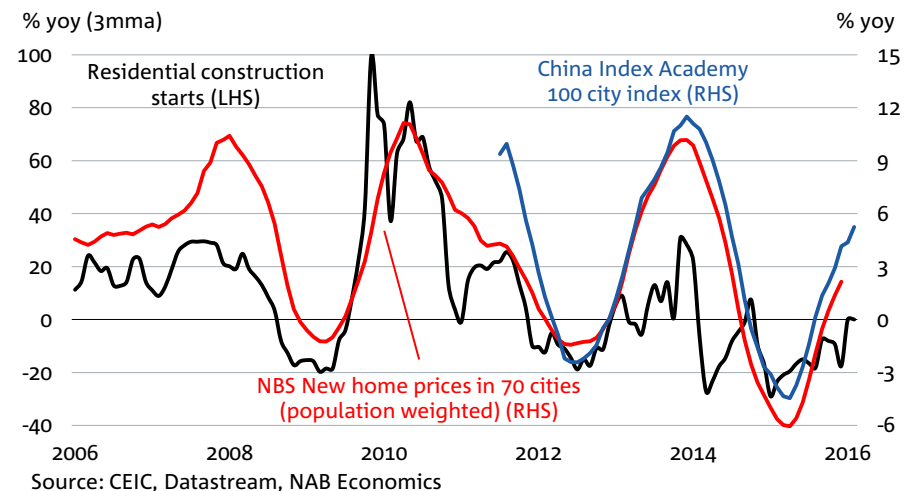


Chart 2: Residential construction activity was stronger in January-February,



Copper carry trade

- China has had a significant positive domestic to foreign interest rate differential. However due to its capital control, arbitrageurs can not take advantage of this differential easily. As a result, they turn to the use of commodities with high value to density ratio as collateral to borrow offshore and then invest in higher-yielding Chinese assets, in the so-called commodity carry trades or financing deals. Copper, along with gold, nickel, aluminium and some high-tech goods, is one popular form of collateral.
- However, the domestic to foreign interest rate differential in China has been narrowing as the central bank cuts interest rates in response to a slowing economy. This has made some previously large and profitable carry trades using metals as collateral less profitable. The estimated metal stock tied up in these carry trades are large, and once released into the market, is having a substantial impact on supply and putting downward pressure on prices.
- China currently accounts for around 45% of global copper demand, but a significant portion of Chinese bonded stock is being used in carry trades. It is unclear what percentage that is, but some estimate it could be up to 10% of global demand. In theory, copper and cement usage should be highly correlated in construction, however copper use rose 117% since 2006 while cement only 11%. Even after considering extra copper usage in electricity grid upgrades, there is still a lot of copper usage unaccounted for by underlying demand.
- The Bank of International Settlements estimates total commodity carry trades may be between USD \$1 and \$2 trillion, with tens of millions of metric tonnes of iron ore, aluminium and copper tied up. According to media reports, some Chinese executives estimate that as much as 70% of China's refined copper imports were used to obtain financing rather than for consumption. The result is these large copper carry trades can distort the true underlying demand and tie up significant inventories.
- As the carry trades unravel, significant supply has been released into the market, satisfying Chinese domestic demand first and causing imports to fall. As Chinese bonded stocks fall, inventories at LME warehouses are likely to rise, putting downward pressure on prices, as evidenced in 2013 and to a lesser extent 2015.

Chart 3: Narrowing interest rate differential limit scope for copper carry trades

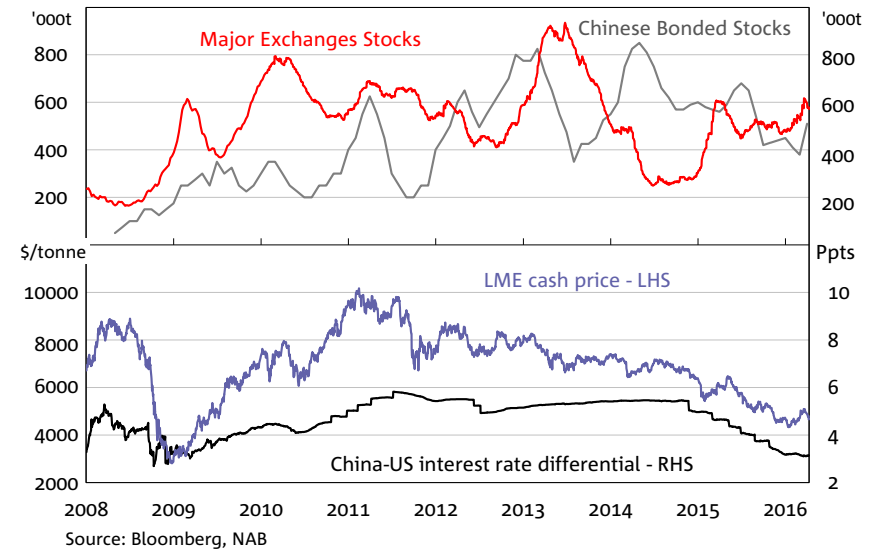
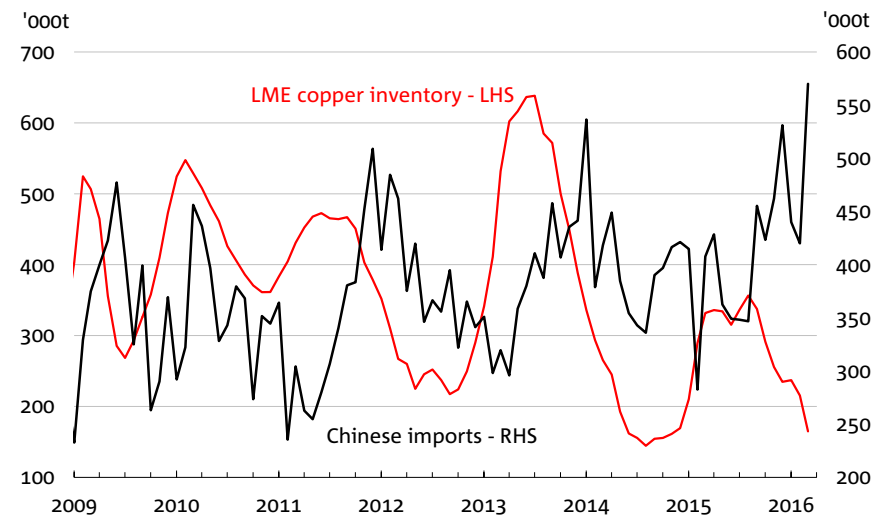


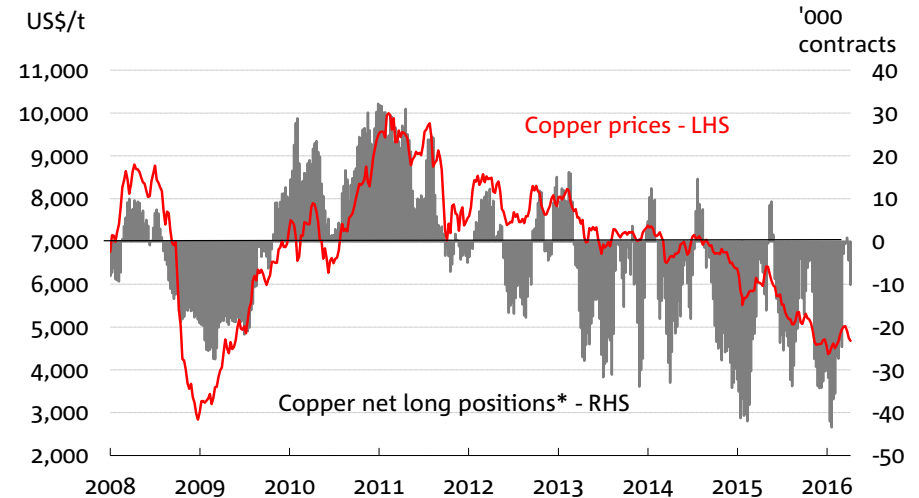
Chart 4: Chinese imports tend to be negatively correlated with LME inventory



Copper carry trades (continued) and investor positioning

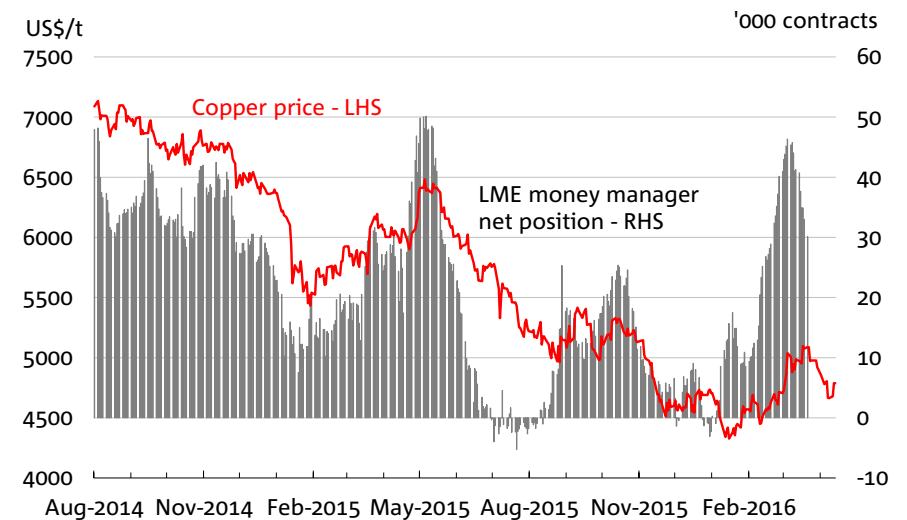
- More recently, the declines of China's interest rate differential have stabilised somewhat, possibly as the expected Fed rate hikes have been pushed back and earlier indications of multiple hikes became less likely. This can help to explain why Chinese bonded stocks have risen again, along with higher imports as seasonal restocking began post the January- February holiday season (Chart 4 on previous page). LME copper inventory also declined as stocks are drawn down.
- These movements are not entirely surprising given that seasonal demand tends to rise in the second quarter. In the very near term, they should provide some support to prices. China's GDP release on 15 April will be keenly watched for any clues on its economic growth and underlying demand.
- Investor positioning could also provide some indication to price movements and market sentiment. At the US COMEX, investor positioning has been negative however that has become less bearish, possibly a seasonal reaction.
- At the larger exchange at the LME, net money manager position has been more bullish, but has turned less so. As a percentage of total open interest, it is now sitting around 6.1%, slightly above the average since 2014. LME inventory levels have been on the decline but as China's seasonal restocking finishes, could well rise again. The change in net long positions could be an indication of that happening.
- At the World Copper Conference held in Chile early April, the mood was reported to be downbeat, with no significant supply cut agreements being made. A survey of 16 traders, analysts and producers showed only four out of the 16 thought that copper prices have bottomed out.

Chart 5: Copper net long positions on the COMEX



* Combined futures and derivatives net long positions for non-commercial traders on the COMEX
Sources: CFTC, Bloomberg, Datastream

Chart 6: Money manager copper net positions on the LME



Sources: Bloomberg, NAB

Supply

- Last year's significant price declines have prompted many announced production cuts and project delays, however new evidence has emerged that these cuts have not fully carried through or were not large enough to provide long-term support for copper prices.
- In late 2015, we estimated the joint production cuts announced by ten Chinese smelters would reduce world refined supply by approximately 1.5 per cent in 2016. However, recent evidence suggests some producers have deviated from the plan. A few smelting and refining expansions and restarts have been announced during March.
- World mined supply is also forecast to increase. In 2015, Glencore cut Zambian production by 455,500 tonnes, but this will be reopened by the end of 2017. Freeport also expects its output to grow by 27% in 2016, despite earlier announcements of production cuts. Other competitors including BHP and Rio Tinto have not joined in the production cuts, holding onto their market share.
- Overall we see producers benefiting from lower energy costs and having shifted down their cost curves enough to stay in operation. New mine capacity is still being added, especially with lower cost mines in Latin America.
- Bloomberg Intelligence estimates that expected supply was little changed from August 2015, with a 24% increase projected through 2020 as existing mines expand and new projects come online (Table 1). At the World Copper Conference held in Chile early April, no further production cuts were committed to.
- To induce any sizeable supply response, copper prices might need to decline further. The scheduled new mine supply poses downside risks for prices should new mine supply growth outstrips demand growth.

Table 1: Global copper mine output forecast

Bloomberg Intelligence	2015	2016E	2017E	2018E	2019E	2020E
Global Copper Mine Supply	19.138	19.823	20.017	21.352	21.844	22.596
+ New Copper Mine Supply	0.719	1.053	0.894	1.125	0.855	1.123
+ New Chinese Copper Mine Supply (Disruption Factor)	0.037	0.104	0.000	0.000	0.000	0.000
- Disruption allowance	1%	1%	1%	1%	1%	1%
- Mine Closures	-0.230	-0.238	-0.240	-0.256	-0.262	-0.271
BI Global Copper Mine Supply	-0.243	-0.461	0.450	-0.107	-0.109	-0.113
Percentage Increase/Decrease	18.665	19.124	20.227	20.989	21.473	22.212
	0.95%	2.46%	5.77%	3.77%	2.30%	3.44%

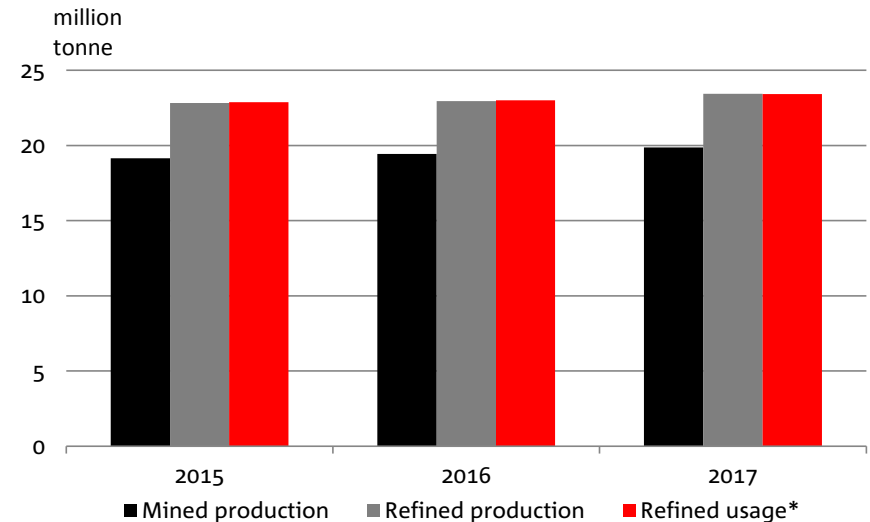
Source: Bloomberg Intelligence



Outlook

- Overall, we forecast a balanced market for 2016 and 2017 and have identified three key themes, namely the underlying Chinese demand, copper carry trade and supply response (new mined capacity and potential supply cuts or disruptions). Our view on China is that it will avoid a hard landing, with the downside risks largely priced in. However any policy development and the country's debt position will be closely monitored. The unwinding of the copper carry trades will release excess supply into the market however the speed and timing of which are important. While the US Fed is in wait-and-see mode before the next rate hike, the carry trade reversals are likely to be more gradual. The supply side presents another risk to copper prices, mostly on the downside, as existing suppliers have shifted down their cost curves to maintain production while new mined capacity is being added. The timing of the new supply will be important however mine disruptions have also been an ongoing theme in copper markets.
- The latest ICSG forecasts also show a largely balanced market for both 2016 and 2017. This is based on downward revisions to both production and usage since their previous October forecast, as a result of both a weaker global economic outlook and price-related supply responses. The ICSG forecasts world refined copper production to grow by only 0.5% in 2016, down from the 1.6% growth in 2015. Anticipated declines in secondary and SX-EW production are expected to offset the increase in primary refined production. Apparent demand in 2016 is forecast to remain flat, before picking up in 2017.
- In the near-term, a few positives will provide short-term support to copper prices. They include Q2 seasonal demand in China, stabilisation of its interest rate differential and overall improvement in financial and commodity market sentiment. Coming towards Q3, the expected Fed rate hike in July will impact market volatility and sentiment and therefore we expect some pullback in copper prices.

Chart 7: International Copper Study Group market forecasts



Note: Refined usage is on China apparent usage basis

- The medium term outlook is more uncertain though, with the economic transition under way in China at a time when new mined capacity is coming online. The continuing urbanisation and consumerisation of the Chinese economy might increase its copper intensity, while slowing infrastructure construction will be a negative. The timing of the new copper projects and potential disruptions will continue to have big implication for supply and prices.

NAB Forecasts - Quarterly Average Terms

US\$/tonne	Spot	Actual	Forecasts						
	14/04/16	Mar-16	Jun-16	Sep-16	Dec-16	Mar-17	Jun-17	Sep-17	Dec-17
Copper	4848	4679	4890	4790	4890	4940	4990	5040	5090

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