

Copper (Q4, 2014 – Q1, 2015)

Insight: Could a rebound be just around the corner?

In the last bulletin we considered how low prices could go. As it turned out, to a five year low of \$2.44.

While prices have rebounded this quarter, downward pressure remains as speculation of a further deceleration of the Chinese economy continues to negatively impact market sentiment.

And rightly so. China consumes approximately 45 percent of the world's copper so there is no surprise that the market will react to any positive or negative data impacting Chinese demand.

But perhaps too much focus is being placed on the demand situation and not enough on supply. After all, there have been concerns of excess supply in the past which have not materialized.

The industry is prone to supply disruptions which can change market dynamics quickly. In fact, nearly all of the major miners have already announced production cuts resulting from supply disruptions.

Miners operating in Chile, where a third of the world's copper is sourced, have cut output forecasts due to both water availability issues from an ongoing drought and severe floods which halted production and in some cases precipitated mine closures.

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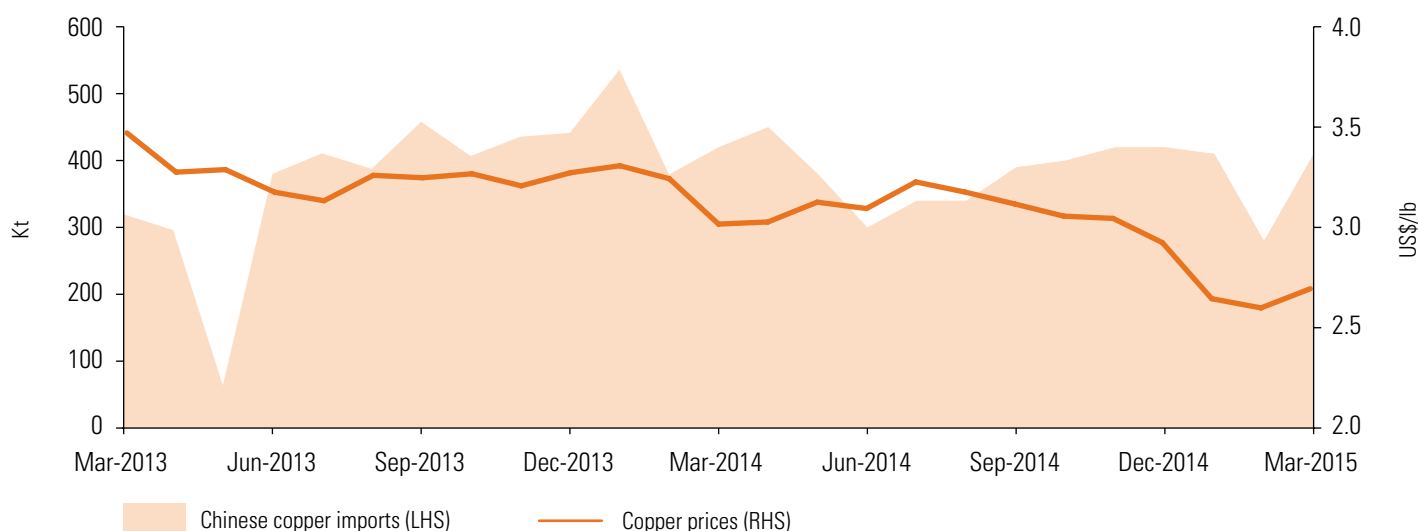
Maritza Araneda
KPMG in Chile

Labor contract disputes and union negotiations are not uncommon in the industry and can just as easily cause further supply disruptions. As can startup delays on new expansion projects which are expected to drive the global production surge over the medium term.

New stimulus measures in China can also further aid in the recovery of industrial activity. The Chinese government recently announced a reduction to their reserve requirement ratio. This reduced the amount of money banks must set aside as reserves, in a bid to spur more lending. More policy loosening could be forthcoming.

If we combine the possibility of further Chinese stimulus measures with supply disruptions then perhaps the market will recover much sooner than 2017 – when demand is expected to once again outstrip supply.

Figure 1: China copper imports and LME copper prices, March 2013–14



Sources: "Import & Export commodities by industry," China Custom Statistics, HKTDC Research, <http://china-trade-research.hktdc.com/business-news/article/Fast-Facts/China-Customs-Statistics/ff/en/1/1X000000/1X09N9NM.htm>, accessed April 2015; IMF Primary Commodity Prices, International Monetary Fund, <http://www.imf.org/external/np/res/commmod/index.aspx>, accessed April 2015; "China Imports and Exports of Copper and Aluminum in March 2015," Shanghai Metals Market, 13 April 2015, accessed April 2015; KPMG Analysis

Price outlook¹

Copper prices for London Metal Exchange, grade A cathodes witnessed a decline of about 13 percent over 2014. Copper prices, which were at US\$3.3/lb in January 2014, dipped to about US\$2.9/lb by December 2014, averaging US\$3.1/lb for 2014 – declined by 9 percent y-o-y. The drop in prices was primarily driven by the surplus in market, as inventories started to build up in China over 2014 – which is one of the key producers and consumers of copper. The financial sector reforms in China – excluded the use of copper as security for loans – thus, increasing the availability of copper and reducing its demand. In addition to this, the release of stocks by warehouses also accounted for higher supply.²

In January 2015, copper prices dipped to the lowest since August 2002 on the Bloomberg Commodity Index and accordingly, it was considered the worst-performing non-energy raw material. At an overall level, copper prices dropped to a five year low, reaching the lowest since August 2009. Since energy and transportation costs account for 25 percent of total copper production costs, with the lower oil price environment, the production

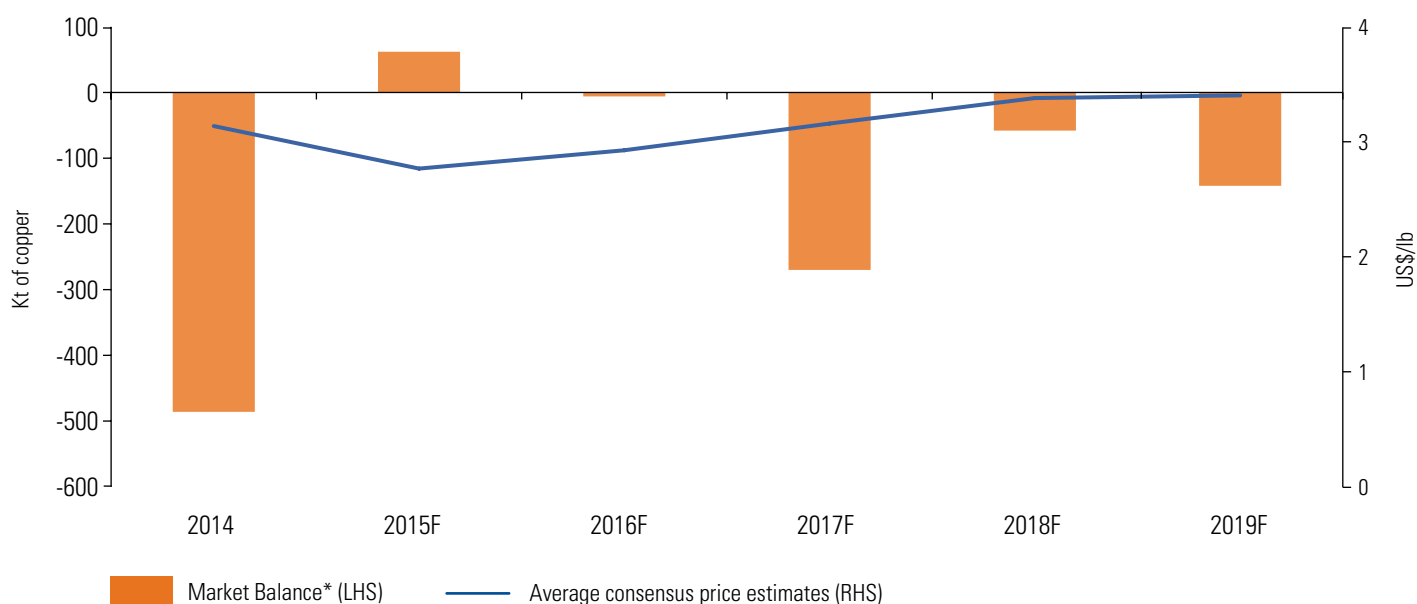
costs of copper have further reduced, leading to increased supply.³

Further, the strong dollar environment has been considered as one of the main factors for reduced copper prices, as it becomes unfavorable for foreign investors.

The reported inventory build accelerated in Q1, 2015 and increased by 212,000 tons in the first two months of 2015. This resulted in further downward pressure on prices, dropping about 10 percent in the first month of 2015. The copper prices regained some momentum as it increased from US\$2.6/lb in January 2015 to US\$2.7/lb in March 2015. However, the copper prices are expected to remain low in 2015, due to the expected surplus and increased stock availability.⁴

However, 2014 prices are expected to recover as, the additional capacities and stocks are expected to be consumed by emerging nations. Eventually, copper prices are expected to gradually increase beyond 2017, as the oversupply situation improves, and the market becomes deficient in the long term.⁵

Figure 2: Market balance and prices of refined copper, 2014–19F



Source: BMO Capital Markets, Global Mining Research, Copper, 08 April 2015; Morgan Stanley, Metals & Mining – 2Q15 - Quarterly Global Price Deck Changes, 24 March 2015; RBC Capital Markets – RBC Metals and Mining – Favoring base metals amidst cuts in commodity price deck, 08 March 2015; UBS Research – European Mining Sector – Are Rio & BHP still Buys at spot prices? 15 January 2015; RBC Capital Markets, Metal Prospects – Copper Market Outlook – Second Quarter 2015, 15 April 2015; via Thomson Research/ Investext, accessed April 2015; Resources and Energy Quarterly, Bureau of Resources & Energy Economics (BREE), Australian Government, March quarter 2015, accessed April 2015; KPMG Analysis

*Market balance represents the difference between the supply and demand for refined copper. A positive market balance indicates that the supply is more than the demand, whereas a negative market balance indicates demand exceeding supply.

¹ BMO Capital Markets, Global Mining Research, Copper, 08 April 2015; Morgan Stanley, Metals & Mining – 2Q15 - Quarterly Global Price Deck Changes, 24 March 2015; RBC Capital Markets – RBC Metals and Mining – Favoring base metals amidst cuts in commodity price deck, 08 March 2015; UBS Research – European Mining Sector – Are Rio & BHP still Buys at spot prices? 15 January 2015; RBC Capital Markets, Metal Prospects – Copper Market Outlook – Second Quarter 2015, 15 April 2015; via Thomson Research/ Investext, accessed April 2015; Resources and Energy Quarterly, Bureau of Resources & Energy Economics (BREE), Australian Government, March quarter 2015, accessed April 2015

² Resources and Energy Quarterly, Bureau of Resources & Energy Economics (BREE), Australian Government, March quarter 2015, accessed April 2015; IMF Primary Commodity Prices, International Monetary Fund, <http://www.imf.org/external/np/res/commmod/index.aspx>, accessed April 2015

³ "5 reasons copper prices are falling," Business Standard, 14 January 2014, accessed April 2015

⁴ BMO Capital Markets, Global Mining Research, Copper, 08 April 2015; Morgan Stanley, Metals & Mining – 2Q15 - Quarterly Global Price Deck Changes, 24 March 2015; RBC Capital Markets, Metal Prospects – Copper Market Outlook – Second Quarter 2015, 15 April 2015; via Thomson Research/ Investext, accessed April 2015; Resources and Energy Quarterly, Bureau of Resources & Energy Economics (BREE), Australian Government, March quarter 2015, accessed April 2015

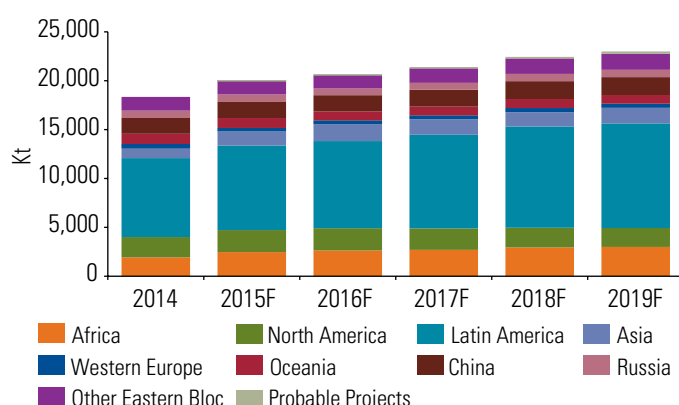
⁵ Resources and Energy Quarterly, Bureau of Resources & Energy Economics (BREE), Australian Government, March quarter 2015, accessed April 2015

Supply and demand⁶

Supply

Mined copper production

Figure 3: Global production of mined copper, 2014–19F



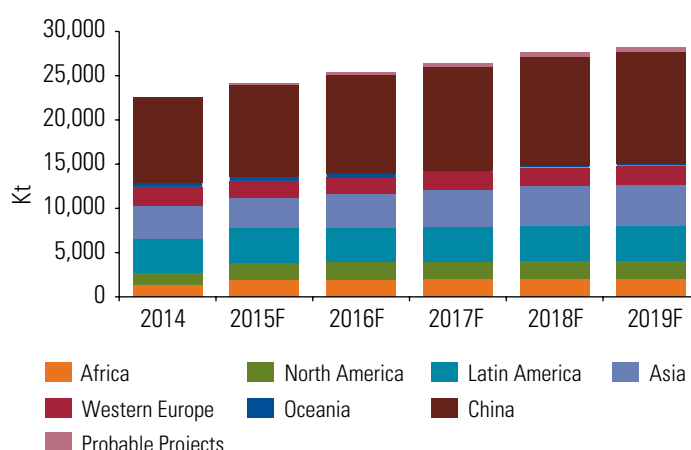
Source: RBC Capital Markets, Metal Prospects – Copper Market Outlook – Second Quarter 2015, 15 April 2015; via Thomson Research/ Investext, accessed April 2015; KPMG analysis

- Mined copper production has increased by about 2 percent, to reach 18.3 million tons (Mt) in 2014 from 18 Mt in 2013. This was primarily attributed to increased supply from most of the key producing regions.⁷
- North American production increased by about 9 percent, reaching about 2 Mt in 2014, from 1.9 Mt in 2013, due to increased production from Morenci mine in the US. Latin America production remained stable with a marginal increase of 0.4 percent in 2014, as Chile's copper production from Escondida, the world's largest mine, witnessed a decline due to labor unrest in September 2014. However, copper mine production from Latin America is expected to grow at a CAGR of 6 percent over 2014–19, to reach 10.7 Mt in 2019.⁸
- Africa's production witnessed an increase of 5 percent in 2014, reaching 1.9 Mt in 2014 from 1.8 Mt in 2013. According to the Bureau of Resources and Energy Economics (BREE), this was driven by robust copper production, as a result of 42 percent increase at the Kansanshi mine of Zambia and 14 percent increase from Mutoshi mine located in Democratic Republic of Congo. In addition to this, the Oyu Tolgoi mine based in Mongolia recorded a 75 percent increase in production, within two years from its start in 2013.⁹

- However, increased production was offset by the drop in Asian production, which declined by 12 percent – due to decreased production from Indonesia owing to restrictions on copper exports from the country. However, this ban has been lifted as mining companies decided to establish processing capacity, which will likely increase supply in the near term.¹⁰
- Copper mine production is projected to increase at a CAGR of 5 percent over 2014–20, reaching 22.9 Mt in 2019 – the increased production has primarily been driven by Latin America and Africa. In addition to this, the growth will be supported by additional capacities backed by the completion of new mines globally. However, with the intermittent labor unrest and strikes in Latin America – which is a key producer region – production might be disrupted in the near term over H2 2015.¹¹
- As tracked by the Shanghai Futures Exchange, Chinese inventories reached their peak in January 2015, highest since June 2013. Decrease in oil and copper prices, backed by weakening Chinese demand, have contributed to the oversupply situation, which has continued in Q1, 2015.¹²

Refined copper production

Figure 4: Global production of refined copper, 2014–19F



Source: RBC Capital Markets, Metal Prospects – Copper Market Outlook – Second Quarter 2015, 15 April 2015; via Thomson Research/ Investext, accessed April 2015; KPMG analysis

⁶ Resources and Energy Quarterly; Bureau of Resources & Energy Economics (BREE), Australian Government, March quarter 2015, accessed April 2015; KPMG Analysis; RBC Capital Markets, Metal Prospects – Copper Market Outlook – Second Quarter 2015, 15 April 2015; via Thomson Research/ Investext, accessed April 2015

⁷ Resource and Energy Quarterly; Bureau of Resources & Energy Economics (BREE), Australian Government, March quarter 2015, accessed April 2015; "Copper: Downward trend likely to continue", Economic Times, 8 April 2015, accessed April 2015

⁸ Resource and Energy Quarterly; Bureau of Resources & Energy Economics (BREE), Australian Government, March quarter 2015, accessed April 2015; "Copper: Downward trend likely to continue", Economic Times, 8 April 2015, accessed April 2015

⁹ Resources and Energy Quarterly; Bureau of Resources & Energy Economics (BREE), Australian Government, March quarter 2015, accessed April 2015; RBC Capital Markets, Metal Prospects – Copper Market Outlook – Second Quarter 2015, 15 April 2015; via Thomson Research/ Investext, accessed April 2015

¹⁰ Resources and Energy Quarterly; Bureau of Resources & Energy Economics (BREE), Australian Government, March quarter 2015, accessed April 2015

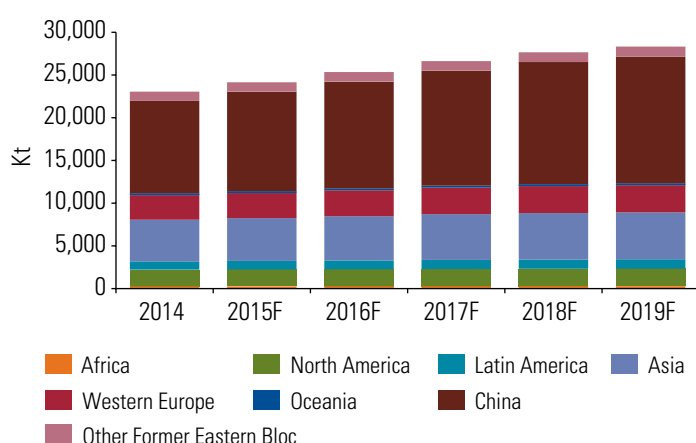
¹¹ Resources and Energy Quarterly; Bureau of Resources & Energy Economics (BREE), Australian Government, March quarter 2015, accessed April 2015; RBC Capital Markets, Metal Prospects – Copper Market Outlook – Second Quarter 2015, 15 April 2015; via Thomson Research/ Investext, accessed April 2015

¹² "Copper Near Five-Year Low Defies Forecasts for Better Economy", Bloomberg, 12 January 2015, accessed April 2015

- Global refined production witnessed increased growth of 7 percent to reach 22.5 Mt in 2014, from 21 Mt in 2013. This was mainly due to increased production from several projects – including emerging producers Zambia and Democratic Republic of Congo (DRC) – which have immense supply potential. However, increasing political threats and poor infrastructure developments in these regions are the major constraints, for continued investment by major mining companies, over the medium term. Globally, Zambia and DRC account for only about 7 percent of the total supply in 2014.¹³
- In 2015, the African and North American regions are expected to witness growth of about 44 percent and 35 percent, respectively, as compared with 2013 growth, driven by increased production capacities. However, production disruptions in Africa and continued unavailability of scrap might negatively impact the production in the near term (late 2015).¹⁴
- Over 2014–19, the global refinery production is expected to grow at a CAGR of 5 percent, to reach 28.1 Mt in 2019. The supply growth can be attributed to refinery developments over the period – such as the Changzhou refinery located in China, which is expected to start production in 2016, with an annual capacity of about 150,000 tons. Expansion projects of the existing refineries – such as the Camacari refinery located in Brazil, the Sar Chesmeh refinery based in Iran and the Kanasanshi smelter in Zambia – are expected to result in increased global output of refined copper.¹⁵
- Global refined copper consumption witnessed an increase of about 6 percent – from about 22 Mt in 2013 to 23 Mt in 2014. China accounted for the highest share of 47 percent of global consumption, to reach about 11 Mt in 2014 – a 9 percent increase as compared with the 2013 value. This was driven by high infrastructure spending and growing demand for copper products. Copper consumption in the rest of the world, except China, grew by about 1.3 percent.¹⁶
- Further, copper demand growth is expected to become sluggish, due to weakening demand from the Chinese market. China copper consumption is expected to remain flat because of sluggish growth in the real estate market and infrastructural developments in the next few years. Global copper consumption is expected to grow by about 5 percent, reaching about 24 Mt in 2015. In the long term, demand growth is likely to remain flat at about 5 percent for both 2016 and 2017. Over 2018 and 2019, it is likely to face pressures from scarcity in copper mine supply and, therefore, it is expected to grow by about 4 percent and 2 percent, respectively.¹⁷
- The US, which is the second-largest consumer of copper globally, witnessed a drop in consumption by about 1 percent in 2014, primarily due to a decrease in orders of consumer durable goods, over 2014. In 2015, demand growth is expected to remain sluggish and increase marginally by about 1 percent. In the long term, no major recovery in demand growth is expected by the country.¹⁸
- In Q1, 2015 (February), China's scrap imports have dropped to their lowest level since 2011. According to China's customs data, imports declined about 18 percent as compared to January 2015, to reach 760,000 tons in February.¹⁹
- Further, it is projected that copper consumption will increase for the other key regions such as Africa, South East Asia and Latin America over the medium term, primarily driven by the infrastructural developments in emerging nations. Also, low operational costs might lead to higher investments for manufacturing copper intensive products.²⁰

Refined copper consumption

Figure 5: Global consumption of refined copper, 2014–19F



Source: RBC Capital Markets, Metal Prospects – Copper Market Outlook – Second Quarter 2015, 15 April 2015; via Thomson Research/ Investtext, accessed April 2015; KPMG analysis

¹³ RBC Capital Markets, Metal Prospects – Copper Market Outlook – Second Quarter 2015, 15 April 2015; via Thomson Research/Investtext, accessed April 2015; Resources and Energy Quarterly; Bureau of Resources & Energy Economics (BREE), Australian Government, March quarter 2015, accessed April 2015

¹⁴ RBC Capital Markets, Metal Prospects – Copper Market Outlook – Second Quarter 2015, 15 April 2015; via Thomson Research/Investtext, accessed April 2015

¹⁵ Resources and Energy Quarterly; Bureau of Resources & Energy Economics (BREE), Australian Government, March quarter 2015, accessed April 2015

¹⁶ RBC Capital Markets, Metal Prospects – Copper Market Outlook – Second Quarter 2015, 15 April 2015; via Thomson Research/Investtext, accessed April 2015; Resources and Energy Quarterly; Bureau of Resources & Energy Economics (BREE), Australian Government, March quarter 2015, accessed April 2015

¹⁷ RBC Capital Markets, Metal Prospects – Copper Market Outlook – Second Quarter 2015, 15 April 2015; via Thomson Research/Investtext, accessed April 2015; "ICSG Copper Market Outlook Sees Supply/Demand Reversal in 2015", Daily FX, 06 November 2014

¹⁸ "Copper Retreats Amid Signs of Slowing US., China Demand Growth", Bloomberg, 25 March 2015, accessed April 2015; Resources and Energy Quarterly; Bureau of Resources & Energy Economics (BREE), Australian Government, March quarter 2015, accessed April 2015; "

¹⁹ "Copper fate hinges on Chinese demand", Financial Times, 10 March 2015, accessed April 2015; "China's Scrap Copper Imports Seen Lingering Near 10-Year Low", Bloomberg, 9 March 2015, accessed April 2015

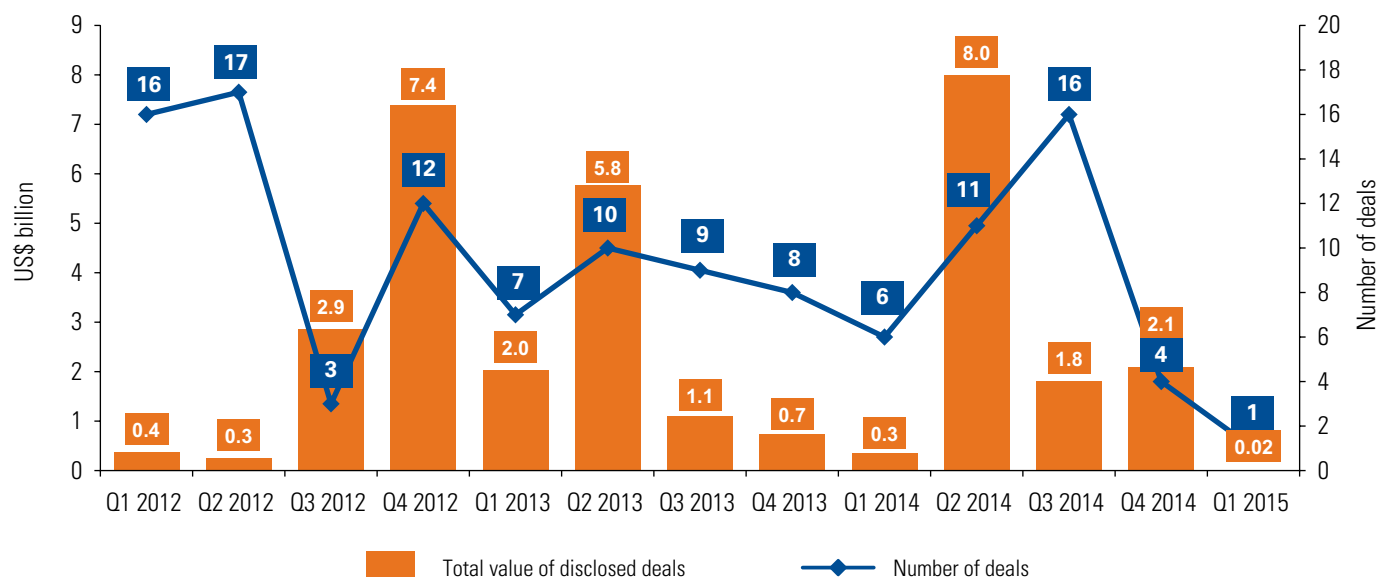
²⁰ Resources and Energy Quarterly; Bureau of Resources & Energy Economics (BREE), Australian Government, March quarter 2015, accessed April 2015

Key developments

Ownership changes²¹

The total value of announced deals in the copper industry increased 17 percent q-o-q in Q4, 2014 and declined by about 99 percent in Q1, 2015, to reach US\$2.0 billion and US\$0.02 billion during Q4, 2014 and Q1, 2015, respectively. The number of deals in Q4, 2014 fell to three as compared to 16 in Q3, 2014. It further declined to one during Q1, 2015.

Figure 1: Value of announced deals in the copper industry



Source: Mergermarket database accessed April 2015; KPMG analysis

Table 1: Copper deals in Q4, 2014 & Q1, 2015

Date announced	Target	Target nation	Acquirer	Acquirer nation	Status	Value of transaction (US\$ million)	Stake (%)
27-Mar-2015	Revett Mining Company	US	Hecla Mining Company	US	Announced	19.8	100
21-Nov-2014	Northern Copper Industrial Co	China	Zhongtiaoshan Non-ferrous Metals Group Co Ltd	China	Announced	219	45
03-Nov-2014	Duluth Metals Limited	Canada	Antofagasta Plc	UK	Completed	77.8	100*
28-Oct-2015	Mutiny Gold Limited	Australia	Doray Minerals Limited	Australia	Announced	34	100
06-Oct-2014	Compania Contractual Minera Candelaria; Compania Contractual Minera Ojos del Salado	Chile	Lundin Mining Corporation	Canada	Completed	1800	Compania Contractual Minera Candelaria (80 percent stake); Compania Contractual Minera Ojos del Salado (80 percent Stake)

Source: Mergermarket database accessed April 2015; KPMG analysis

*Prior to the acquisition Antofagasta held a 10.4 percent stake in Duluth; Antofagasta (40 percent) and Duluth (60 percent) are currently joint venture partners in Twin Metals Minnesota LLC, and the acquisition of Duluth by Antofagasta consolidates Antofagasta's ownership in TMM to 100 percent

²¹ Mergermarket database, accessed April 2015

Regulatory updates

Table 2: List of recent regulations in Copper industry

Country	Regulation	Description
US ²²	New Mexico court supported regulations for groundwater pollution at copper mining sites	<ul style="list-style-type: none"> Regulations, collectively known as the Copper mine rule, do not permit groundwater pollution at copper operating mining sites. According to appellants, the copper mine rule does not highlight any upper limit, degree or depth of the pollution, that needs to be followed.
Democratic Republic of Congo (DRC) ²³	DRC government proposed new mining codes	<ul style="list-style-type: none"> According to the Chamber of Mines department, the new code will aim at gaining more income from the mining companies. Therefore, the ministry also plans to raise taxes and royalties, to compete with the neighboring country Zambia, and become the largest copper producer, globally.
Myanmar ²⁴	Amnesty International (NGO) claimed that the Myanmar copper mining industry is very poorly regulated	<ul style="list-style-type: none"> According to the NGO, copper mining operations in Myanmar have forced large-scale evacuations from the location due to aggressive pollution, ruining livelihoods and exposing people to health hazards. The NGO has asked for investigations from Canada and China to identify the illegal operations and maintain international standards of mining in the country.
Brazil ²⁵	Anti-dumping duties has been set for refined copper tubes from China and Mexico	<ul style="list-style-type: none"> The Brazilian government has anti-dumping tariffs on import of refined copper tubes from China and Mexico. The duties will be effective for five years and apply to round copper tubes.
Chile ^{26/27}	Tax and labor reforms introduced by Chilean President Michelle Bachelet in the country	<ul style="list-style-type: none"> Tax reform bills introduced in 2014, increased the corporate tax rate from 20 percent to 25 percent, over a five year period 2014–15. This is expected to further reduce investments in the mining sector. Labour reforms are expected to increase labor costs and give more power to the labor unions of Chile. As Chile is the world's largest producer of copper, the reform might lead to decrease in market competitiveness due to low productivity.

²² "Mexico court upholds 'Copper Mine Rule'", 13 April 2015, via Factiva, accessed April 2015

²³ "New DRC mining code 'could set industry back ten years' – Chamber of Mines", 26 March 2015, via Factiva, accessed April 2015

²⁴ "Amnesty International slams abusive, poorly regulated Myanmar mining industry", 18 March 2015, via Factiva, accessed April 2015

²⁵ "Brazil sets anti-dumping duties for refined copper tube from China, Mexico", 05 March 2015, via Factiva, accessed April 2015

²⁶ Chile: Limits to growth", FinancialTimes, 1 July 2014, accessed May 2015

²⁷ Antofagasta sounds warning on Chile copper industry", FinancialTimes, 14 April 2015, accessed May 2015

Cross-section of global copper projects

Table 3: Cross-section of key copper projects as per 2013 production

Project	Country/Region	Operators/Owners	Commodities	Start year	Stage	2013 Copper production (Ktpa)
Chuquicamata Copper/Molybdenum Mine	Antofagasta, Chile	Codelco	Copper, molybdenum, gold, silver	1910	Operating	339
Collahuasi Copper/Molybdenum Mine	Antofagasta, Chile	Compania Minera Dona Ines de Collahuasi SCMM	Copper, molybdenum, silver	1999	Operating	445
El Teniente Copper operation	Libertador Bernardo Ohiggins, Chile	Codelco	Copper, molybdenum, gold, silver	1904	Operating	417 (updated figure available on other source)
Escondida Copper operation	Antofagasta, Chile	BHP Billiton Ltd	Copper, gold, silver	1990	Operating	1,200* (for the year ended 30 June 2014)
Los Bronces Copper/Molybdenum Mine	Santiago, Chile	Anglo American plc	Copper, molybdenum	2002	Operating	404* (2014 production)
Los Pelambres Copper/Molybdenum Mine	Coquimbo, Chile	Antofagasta plc	Copper, molybdenum, gold, silver	2000	Operating	391* (2014 production)
Radomiro Tomic Copper Mine	Antofagasta, Chile	Codelco	Copper, molybdenum	1998	Operating	380

*The above table includes the key copper projects, by 2013 annual production. However, for some of the projects we have provided the updated production numbers for 2014, available through company websites.

The list is not exhaustive and contains only a limited number of projects.

Source: Company data

Table 4: Cross-section of other Copper projects

Project	Country/ Region	Operators/Owners	Commodities	Start year	Stage	Initial capex excluding sustaining capex (US\$ million)
Aktogay Copper deposit	Shyghys, Kazakhstan	Kazakhmys PLC	Copper, gold, silver	2016	Construction	2,300
Andina Copper operation	Valparaiso, Chile	Codelco	Copper, molybdenum concentrates	1970	Operating	6,800 ²⁸
Antapaccay Copper/ gold mine	Cuzco, Peru	Glencore plc	Copper, gold, silver	2012	Operating	1,470
Bozshakol Copper/ silver mine	Pavlodar, Kazakhstan	Kazakhmys PLC	Copper, molybdenum, gold, silver	2015	Construction	2,300
Caspiche Gold/ Copper Project	Atacama, Chile	Exeter Resource Corporation	Copper, gold, silver	N/A	Preliminary Economic Assessment completed	387 ²⁹
Cobre Panama Copper/ Gold/Molybdenum	Penonome, Panama	First Quantum Minerals Ltd.	Copper, molybdenum, gold, silver	2017	Construction	6,425
Frieda River Copper/ Gold Project	Sanduan, Papua New Guinea	Glencore	Copper, gold, silver	N/A	Feasibility Study	1,500–1,800 ³⁰
Golpu Copper/ Gold Deposit	Morobe, Papua New Guinea	Harmony Gold Mining Company Limited	Copper, molybdenum, gold, silver	2019	Feasibility study	4,845
KSM Gold/ Copper Project	British Columbia, Canada	Seabridge Gold	Copper, molybdenum, gold, silver	N/A	Pre-feasibility/ Scoping	5,256
Las Bambas Copper/ molybdenum/gold mine	Apurimac, Peru	MMG Ltd.	Copper, molybdenum, gold, silver	2015	Construction	5,200 ³¹
Los Azules Copper deposit	San Juan, Argentina	McEwen Mining Inc.	Copper, gold, silver	N/A	Preliminary Economic Assessment completed	3,920
Oyu Tolgoi Copper/ Gold Operation	Omnogovi, Mongolia	Turquoise Hill Resources Ltd.	Copper, molybdenum, gold	2013	Operating	6,600
Resolution Copper/ Molybdenum Deposit	Arizona, US	Rio Tinto Limited	Copper, molybdenum	Mid-2020	Pre-feasibility/ Scoping	More than 6,000
Toromocho Copper mine	Junin, Peru	Chinalco Mining Corporation International	Copper, molybdenum, silver	2013	Operating	3,500

The capex mentioned in the table above includes only the initial capex for a project and excludes sustaining capex, contingency amount (if any) etc. The list is not exhaustive and contains only a limited number of projects.

Source: Company data

²⁸ Capex for phase II operations scheduled to start in 2021

²⁹ Total capex of US\$1,967 for a combined 60,000 tons per day open pit, heap leach oxide gold operation

³⁰ Development capital estimate as per a new feasibility study for a mid-sized development expected to be complete by mid-2015

³¹ Initial capital cost of US\$4.2 billion as per a feasibility study in 2010. Company raised the estimate to \$5.2 billion because of permitting delays, infrastructure costs and costs associated with relocating communities



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