Global copper market outlook – emerging from Covid-19

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Copper prices pick-up after Q1 slump; funds trim net short positions

LME 3M copper price, $/t

US CFTC managed money + other reportables, ’000 lots

DATA : CRU, LME.
Stocks increased in Q1 but destocking underway in Q2

Cumulative growth/decline in bonded, LME, SHFE & Comex stocks by selected years, '000t

Chinese cathode import premiums, $/t

DATA: CRU, LME.
Demand hit hard by Covid-19 but China recovery stronger than expected

Refined copper consumption, China vs Rest of World, quarterly y/y % change

DATA: CRU.
Significant downgrade to global consumption

Global refined copper consumption, ‘000t

2019:
- Global copper demand was weak in 2019 (-0.7%)…
- …due to the slowdown in global trade & manufacturing…
- …main impact felt in developed world (-4.5%)

2020:
- Covid-19 downgrade copper consumption in 2020 (-4.0%)
- Global refined copper consumption expected to be 1.4 Mt lower in 2020 than we forecast pre-Covid-19…
- …and 0.8 Mt lower in 2024

2021:
- Global recovery in demand expected in 2021 (+4.4%)…
- …but no bounce back to previous forecast levels
- World copper demand has transitioned onto a lower path

DATA: CRU.
www.crugroup.com
All major consuming regions to experience a downturn in 2020

European refined copper consumption, % change

North American refined copper consumption*, % change

Indian refined copper consumption, % change

ASEAN and NE Asian refined copper consumption, % change

DATA: CRU, industry sources. NOTE: (1) Including USA, Canada and Mexico
Disruptions keep increasing in Latin America

Cumulative impact of announced Covid-19 disruptions and price-related cutbacks, '000 t

Announced and potential mine disruptions due to Covid-19, '000 t Cu

DATA: CRU, Company announcements.

www.crugroup.com
Further price-related cutbacks less likely as Chinese demand recovers

Covid-19 mine disruption and price-related cutbacks, '000 t

2020 Covid-19 disruptions
- Current disruptions, 434
- Potential disruptions, 125
- Productivity H2, 150

2020 cutbacks
- Announced cutback, 159
- Potential cutbacks, 41

2020 CRU Cash Costs net of by-product credits $/t Cu

- 90th percentile = $5,115 /t
- 75th percentile = $3,819 /t

Cumulative copper production, '000 tonnes

DATA: CRU, Company announcements.

www.crugroup.com
Capex reduced due to disruptions, exchange rates and weak market

Capital expenditure guidance for 2020, $ bn

Committed projects 2020-2024; '000 t capacity

DATA : CRU, industry sources.

www.crugroup.com
Prices consistently below $6,000 /t could impact project development

LME 3M copper price, project approval*; $/t

- OT $6061
- El Teniente NML $7160
- Toromocho $6940
- Quellaveco $6290
- Los Pelambres $6175
- Carrapateena $6336
- OB2 $6278
- Spence $6496
- Mina Justa $5864
- Mirador $4702
- OT u/g $4794
- Yulong $6099

The 2011 – 2016 downturn saw very few major copper projects approved and a sharp decline in sector investment, including exploration and M&A.

DATA: CRU, Company announcements. Note: *Company board approval.
What’s happened to copper projects?

Committed project supply forecast, Mt
- Brownfield
- Greenfield
- Share of total production
  - Brownfield: 12%
  - Greenfield: 6%

Uncommitted project supply forecast, Mt
- Probable
- Possible
- Speculative
- Share of total production
  - Brownfield: 9%
  - Greenfield: 3%

Impact of 3-6 month delay to committed projects, ’000t
- Brownfield (-3M)
- Greenfield (-6M)
- Share of total production
  - Probable: -47
  - Possible: -251
  - Speculative: -232

Impact of 6-24 month delay on forecast, ’000t
- Probable (-6M)
- Possible (-12M)
- Speculative (-24M)
- Share of total production
  - Probable: -111
  - Possible: -231
  - Speculative: -241

Committed copper projects with capacity of >50,000t/y; ’000t of capacity
- brownfield
- greenfield
- share of total production

Probable & Possible copper projects with capacity of >150,000t/y; ’000t of capacity
- Probable
- Possible
- Speculative
- Incentive Price (2019 c/lb)
Mine production growth slowing over the medium-term

Mine production growth y-on-y; %

Cumulative new mine production from 2019; '000 t

DATA: CRU, industry sources.
Excess smelter capacity to keep concentrates market tight

Copper concentrates balance; ‘000 t

Annual benchmark TC/RC and forecast; $/t and ¢/lb

DATA : CRU

www.crugroup.com
Smelter projects will be under increased scrutiny

<table>
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<tr>
<th>Smelter projects (capacity &gt;= 100,000 t/y); ‘000 t capacity</th>
<th>Potential blister production growth y-on-y; %</th>
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<tr>
<td>Tsumeb 2020</td>
<td>3.2%</td>
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<td>Chifeng Jinjian ph 1 2021</td>
<td>1.5%</td>
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<td>Wuxin Copper Exp. 2021</td>
<td>-2.0%</td>
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<td>Zijin Copper Exp.</td>
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<td>Gresik 2024</td>
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Committed           Probable          Possible

DATA: CRU, industry sources.
Market plunged into surplus; modest cutbacks have been implemented

Refined copper market balance, ‘000t

DATA: CRU.

www.crugroup.com
Prices weighed by surplus outlook

$/t LME 3M price

Current forecast vs. January 2020

Data: CRU.
Key conclusions:

- Global refined copper demand is set to decline by 4.0% in 2020; the steepest downturn since the 1980s
- Chinese demand recovering more rapidly than expected; easing of government lockdowns in RoW improved sentiment
- Covid-19-related mine disruptions keep increasing but significantly lower than impact on demand. Further price-related cutbacks less likely as Chinese demand recovers, supporting copper prices
- Mine project development affected by disruptions, capex reductions, weak market and uncertainty
- Concentrates market to remain tight despite slowdown in smelter project development
- Refined copper market balances are forecast to show persistent surpluses in the short to medium term
- Due to the expected oversupply, the copper price will hover around $5,300 /t in 2020/21… capped by the 90th percentile of the net of by-products cash cost curve; the equilibrium price in a surplus market
- In 2022/24, the anchor for prices will shift towards the 90th percentile of the all-in-sustaining capital costs (AISC) curve… resulting in a price of $6,600 /t in 2024, which is less than is required to incentivise new mine capacity