



Weaker demand counter-balances production cuts

Copper Market Outlook

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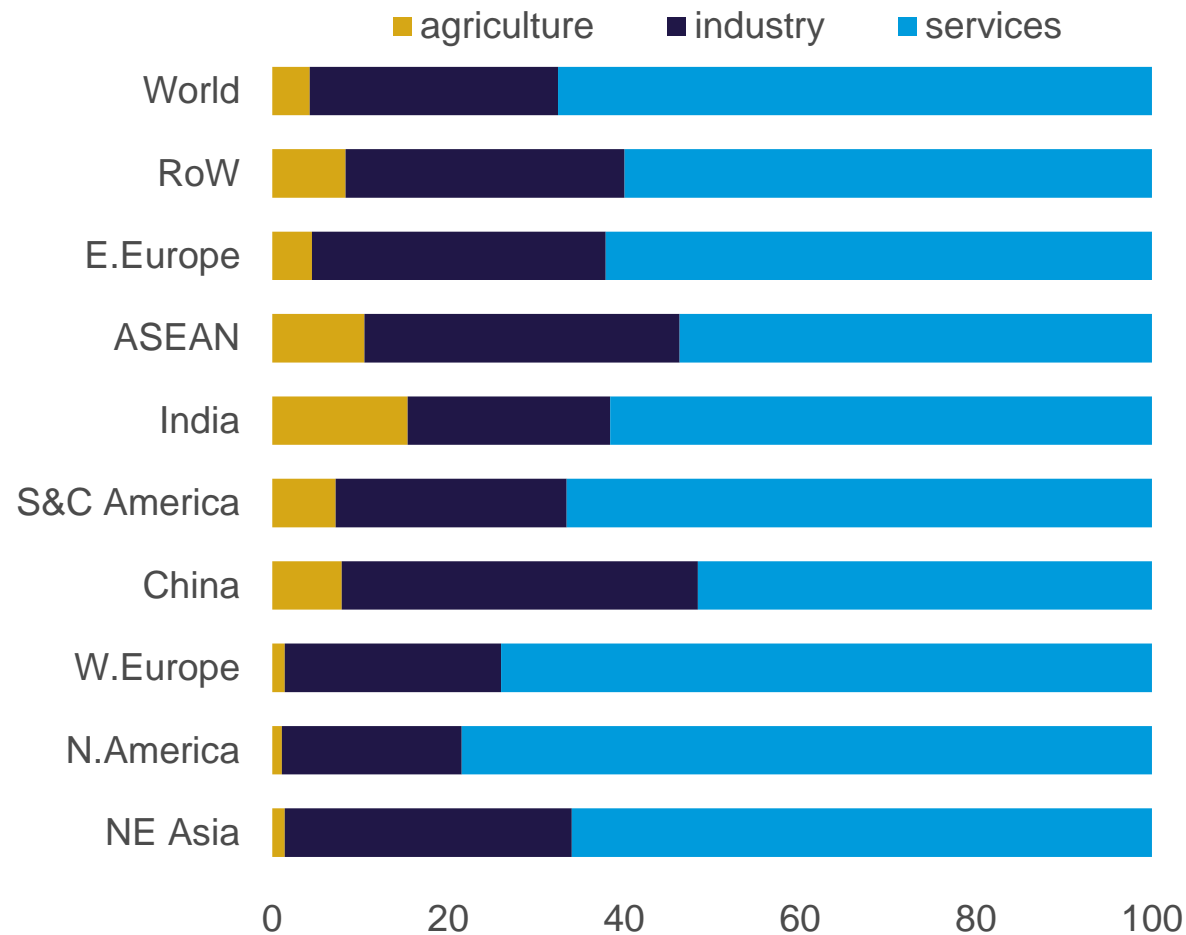
Copper price forecast

Peru copper mining

Metals intensive macroeconomic drivers facing headwinds

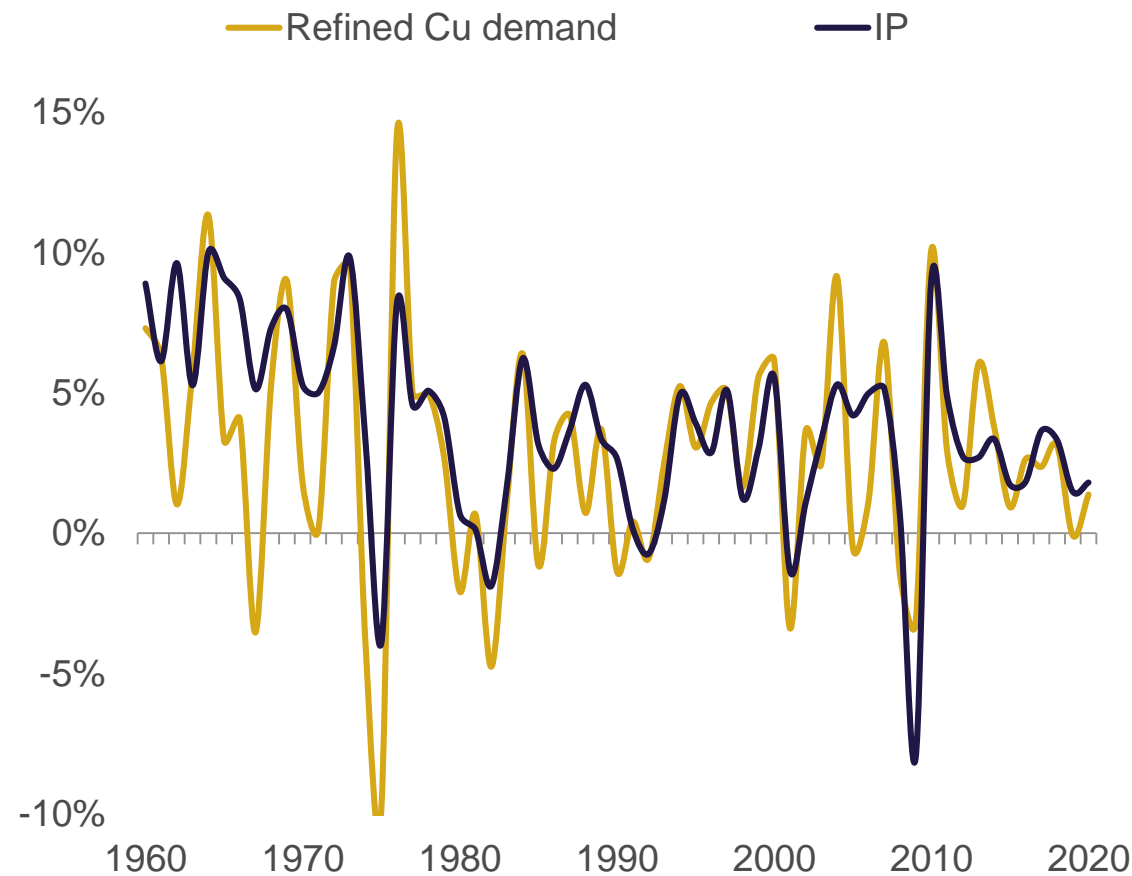
Industry less than 30% of GDP

GDP composition by sector, %



Copper vs. IP

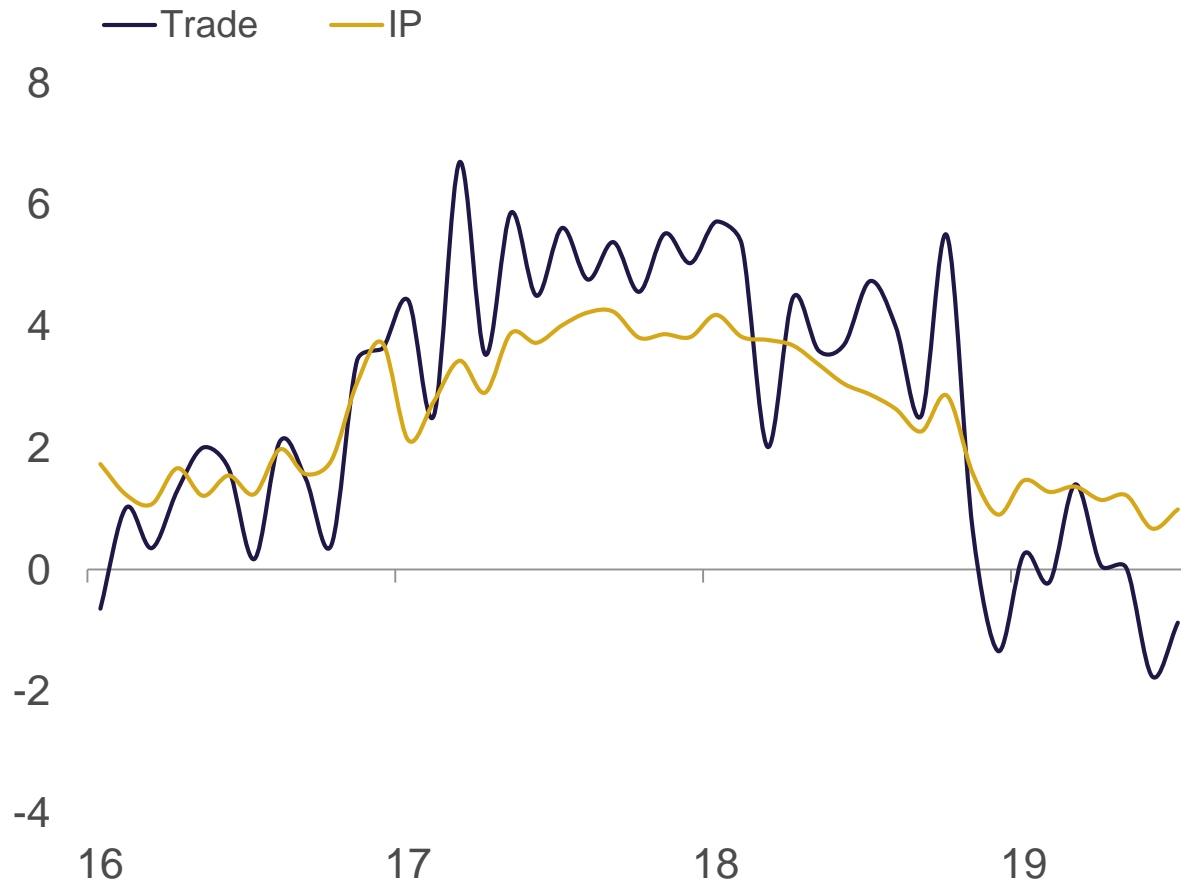
World economic activity, y/y % change



Global trade sees sharp slow down, hitting copper uptake

Slowdown in global trade and industrial activity

y/y % change

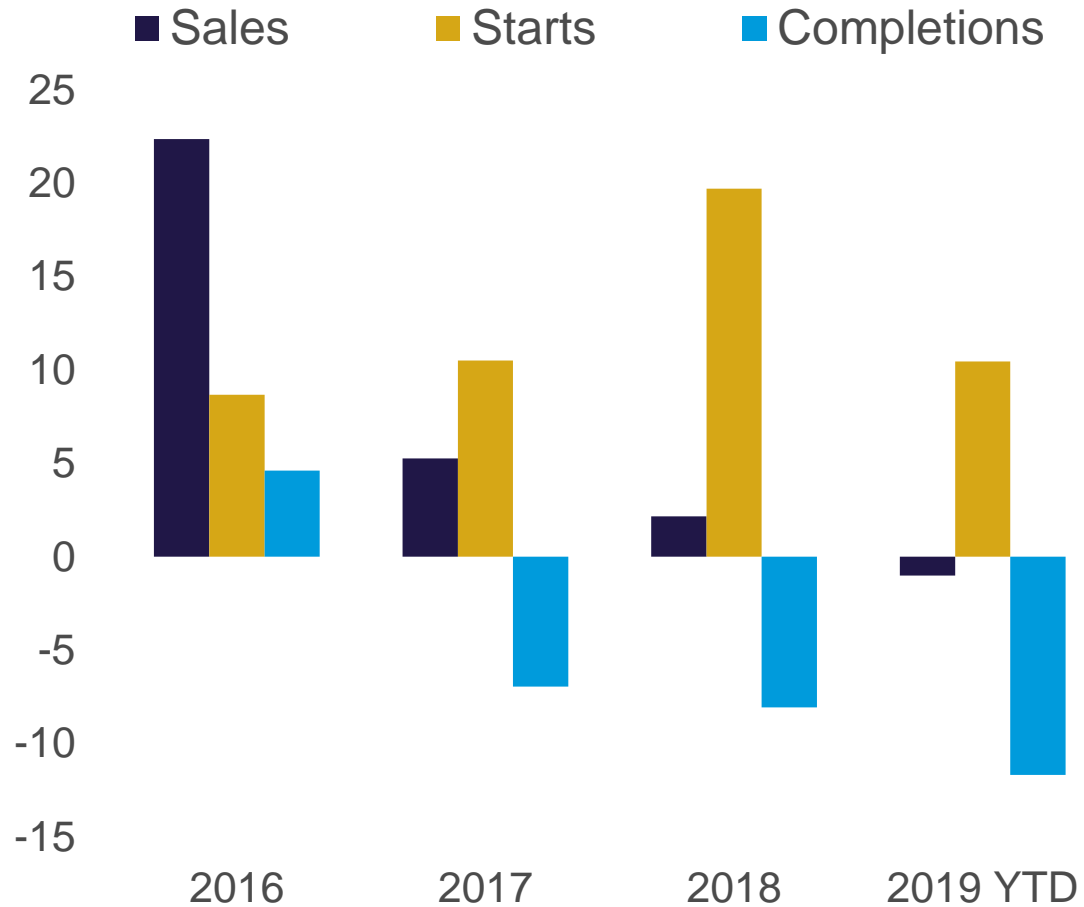


Percentage of Chinese total copper demand exported as, semi, finished or final product



China: Domestic demand sees headwinds

Completions data remains weak in H1
Residential real estate floor space, y/y% ch.



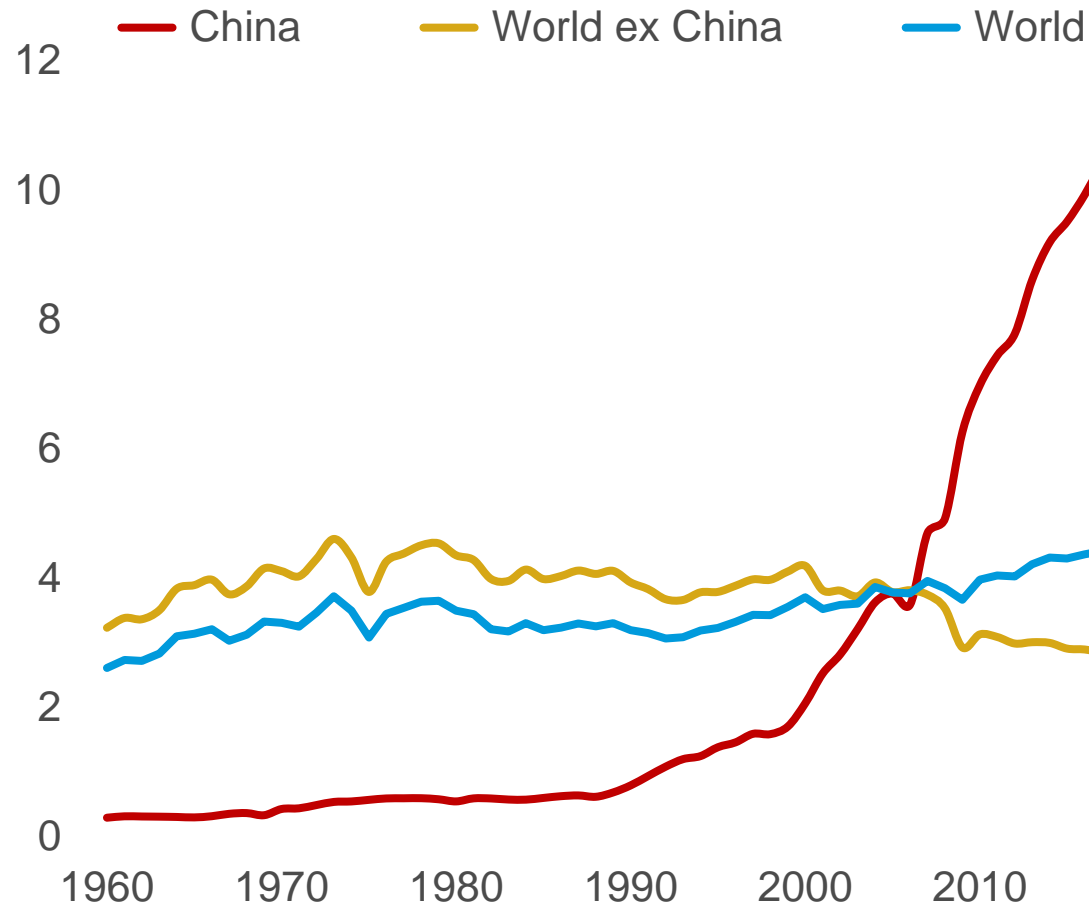
Grid investment to recover in Q4 2019?
Electricity grid investment, ytd and y/y % change



Demand falls outside of China

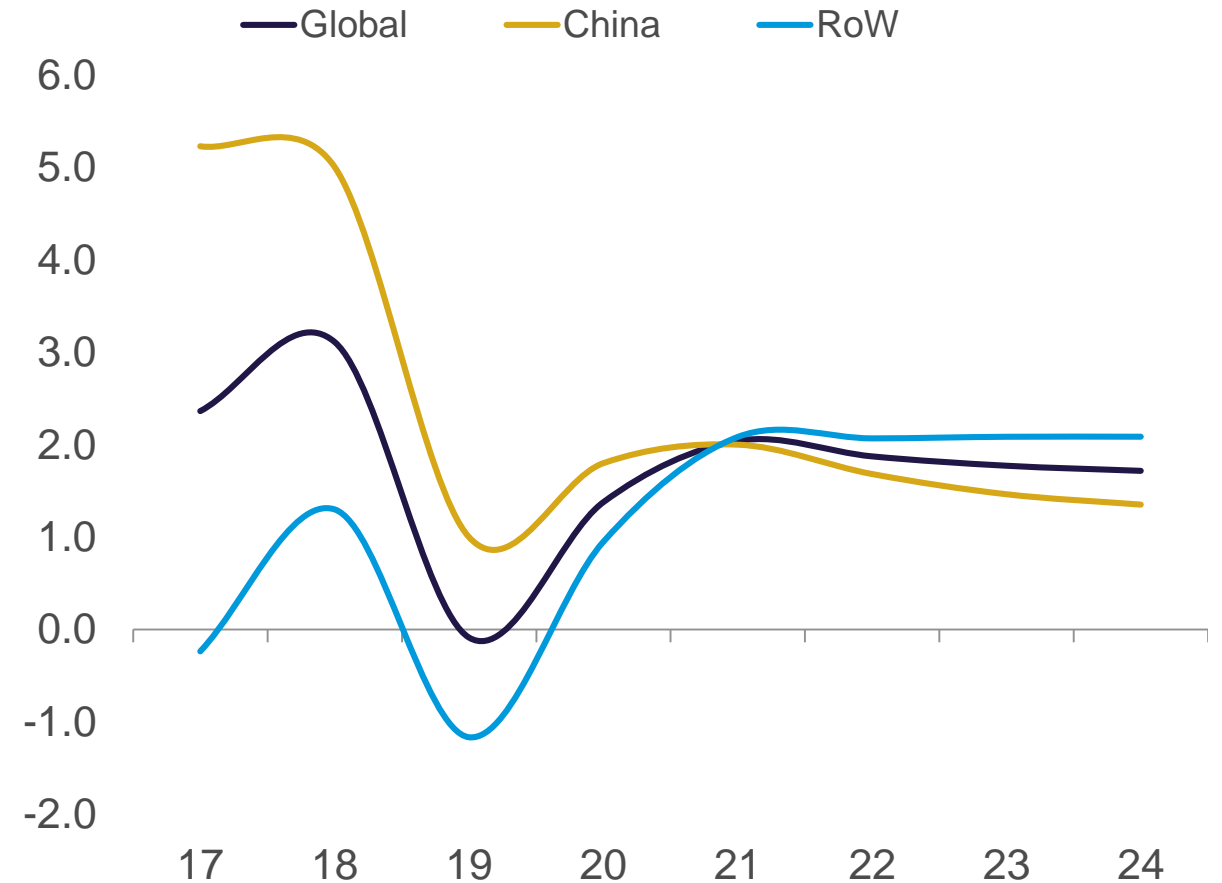
Demand outside of China has plateaued

Kg/capita refined copper demand (working age population)



Recovery likely delayed until 2021

Global refined copper consumption, y-o-y % ch.



2019 marked by disruptions in South America & Africa

Disruptions to mine production in 2019

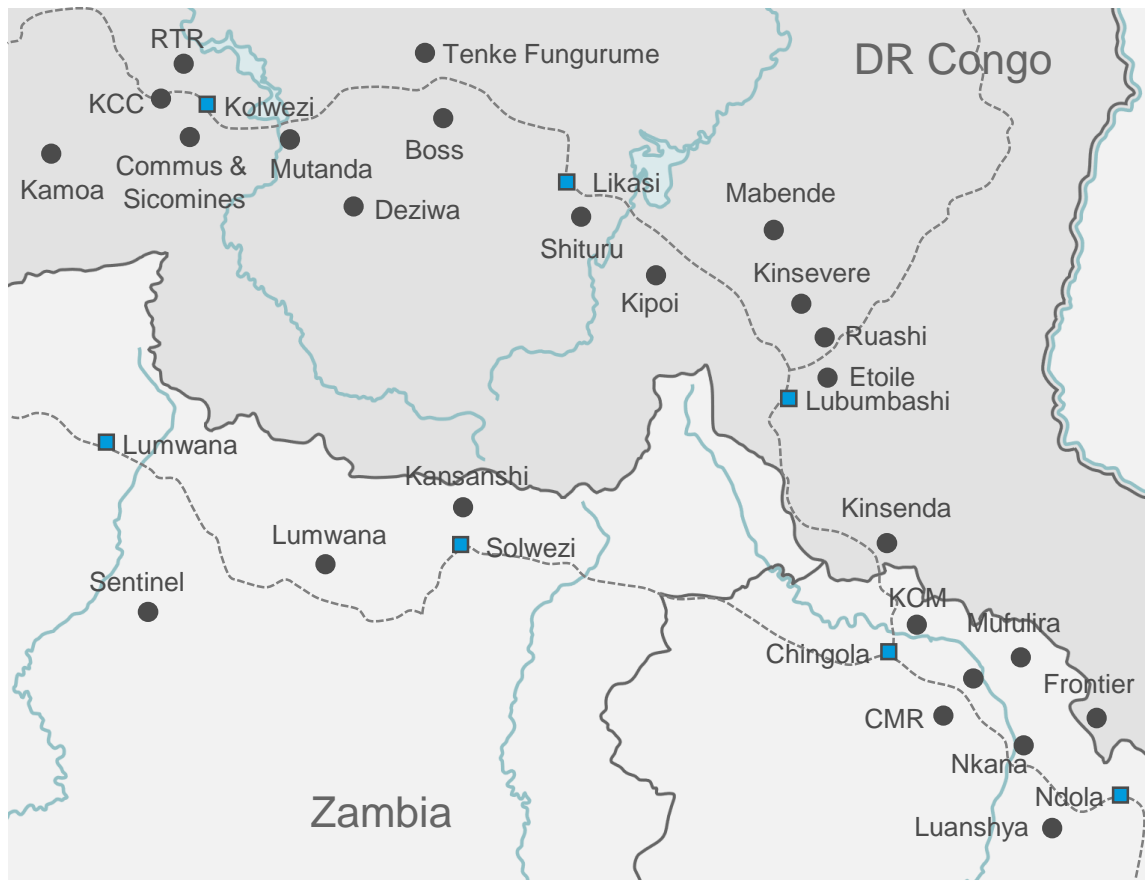


Matarani port blockade impacts shipments



Tough times for producers in the African Copperbelt

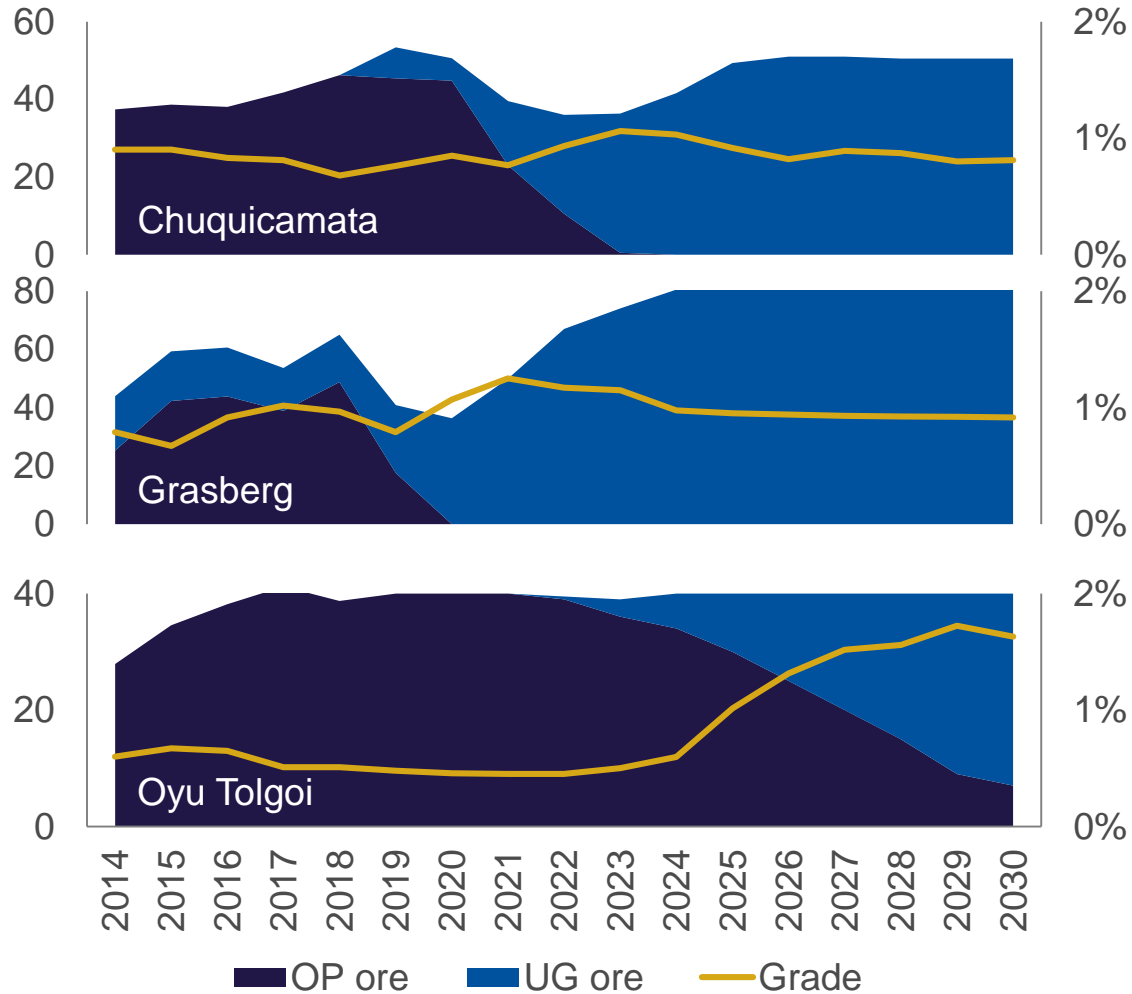
Main operations in the African Copperbelt



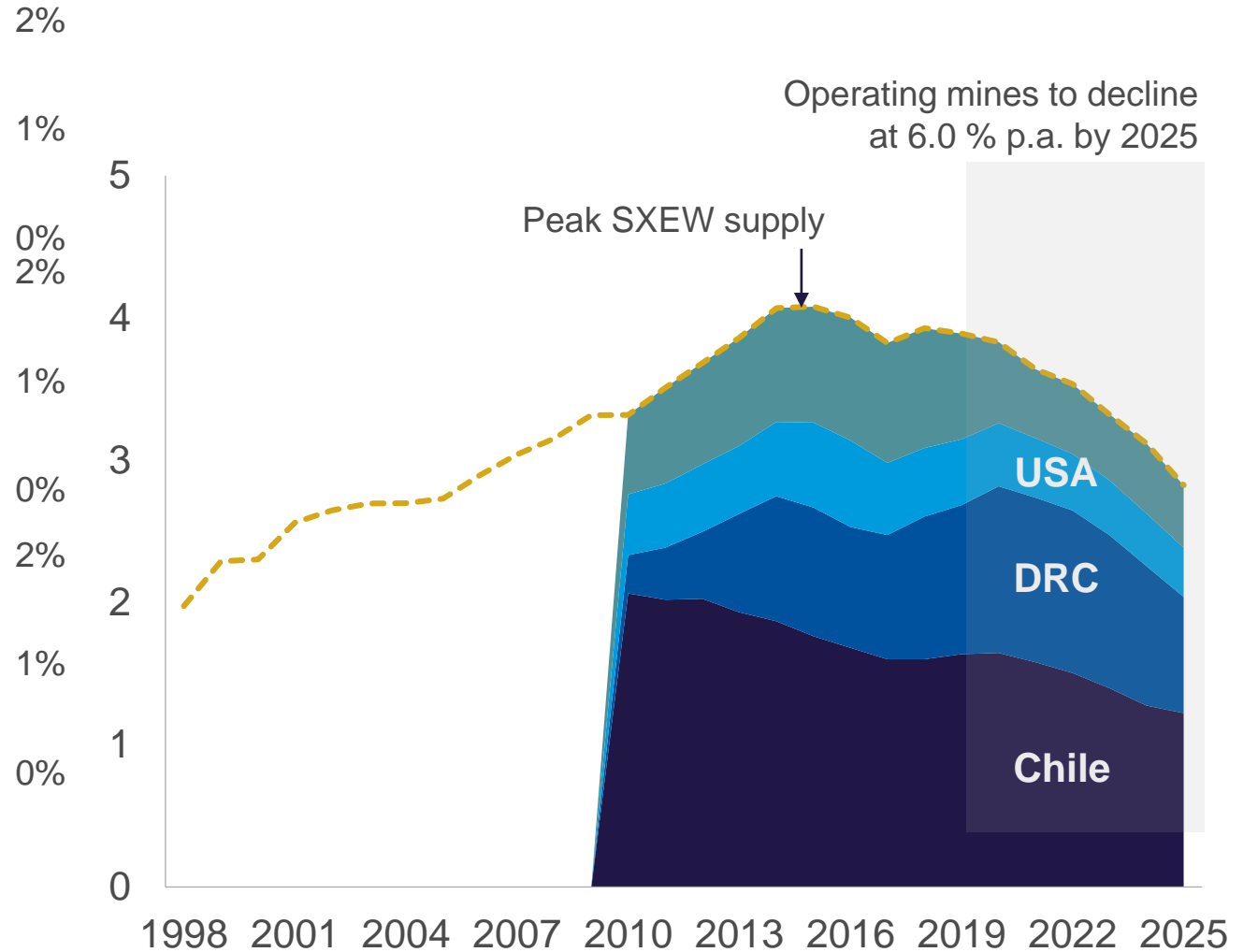
- Copperbelt facing effects of lower copper and cobalt prices, changes to mining codes and deteriorating infrastructure, which is affecting costs and output.
- 5% import duty on concentrates into Zambia has been the most disruptive of recent policy changes.
- All this has impacted our forecast, with 2019 mine, smelter and refined output down.
 - Mufulira: smelter suspended for H2
 - KCM: Zambia Government liquidating asset
 - Boss: Went into C&M in Q1 2019. FS on project
 - Chambishi RLE entered C&M in Q1 2019 (import duties and Boss)
 - Kamoto: Ramping up to 300kt/y Cu. Cobalt line suspended
 - Mutanda: Production guidance halved & removed from forecast. FS on sulphides project

Risks to mine supply: block caves & SXEW production

Mine throughput and head grades; Mt ore, % Cu

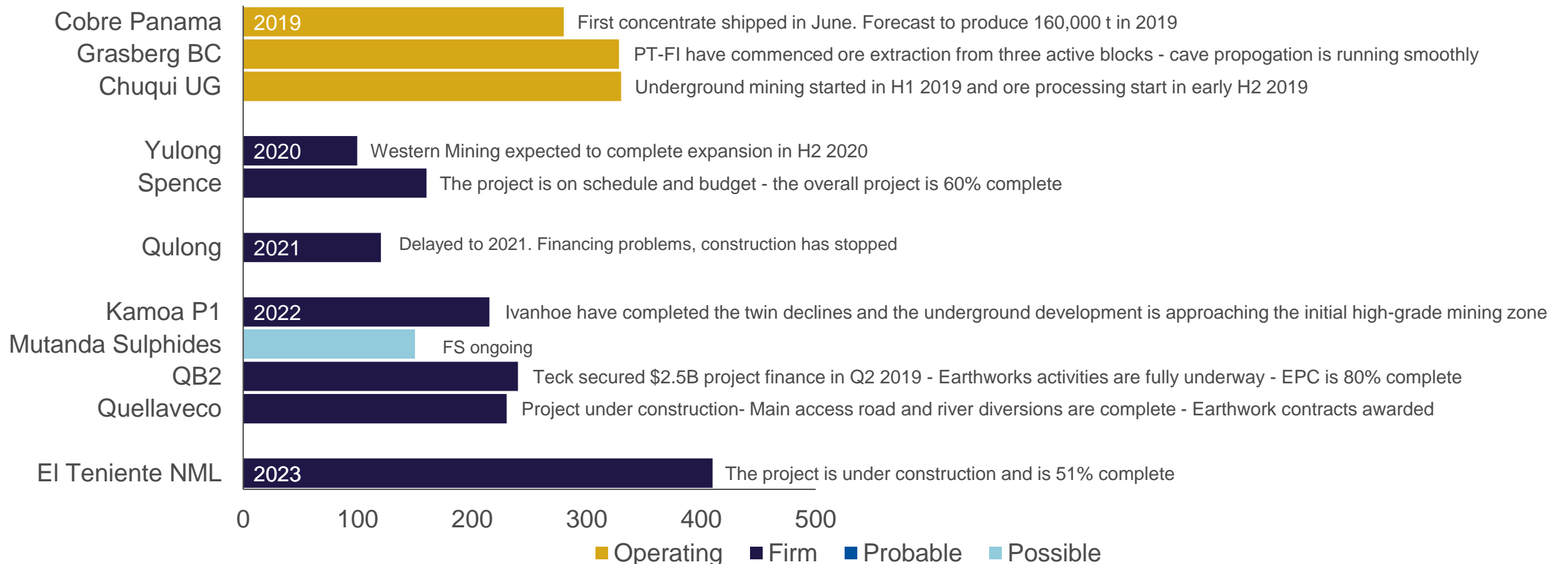


Global SXEW production, Mt copper cathode



Projects continue to progress

Tier 1 projects (capacity \geq 100,000 t/y) by status & start date 2019-2023, with LOM production capacity; '000 t



Key projects delayed / downgraded:

Oyu Tolgoi Phase 2

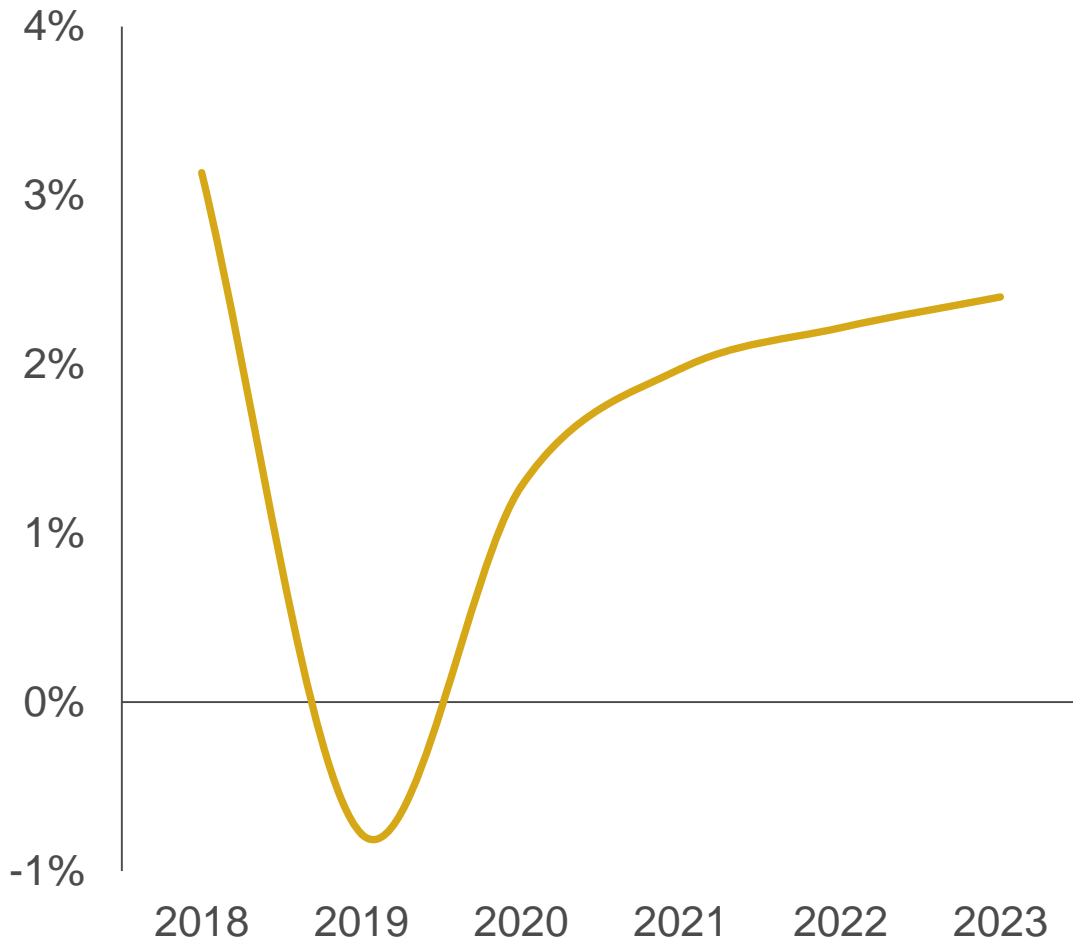
Tia Maria

Olympic Dam Brownfield Expansion

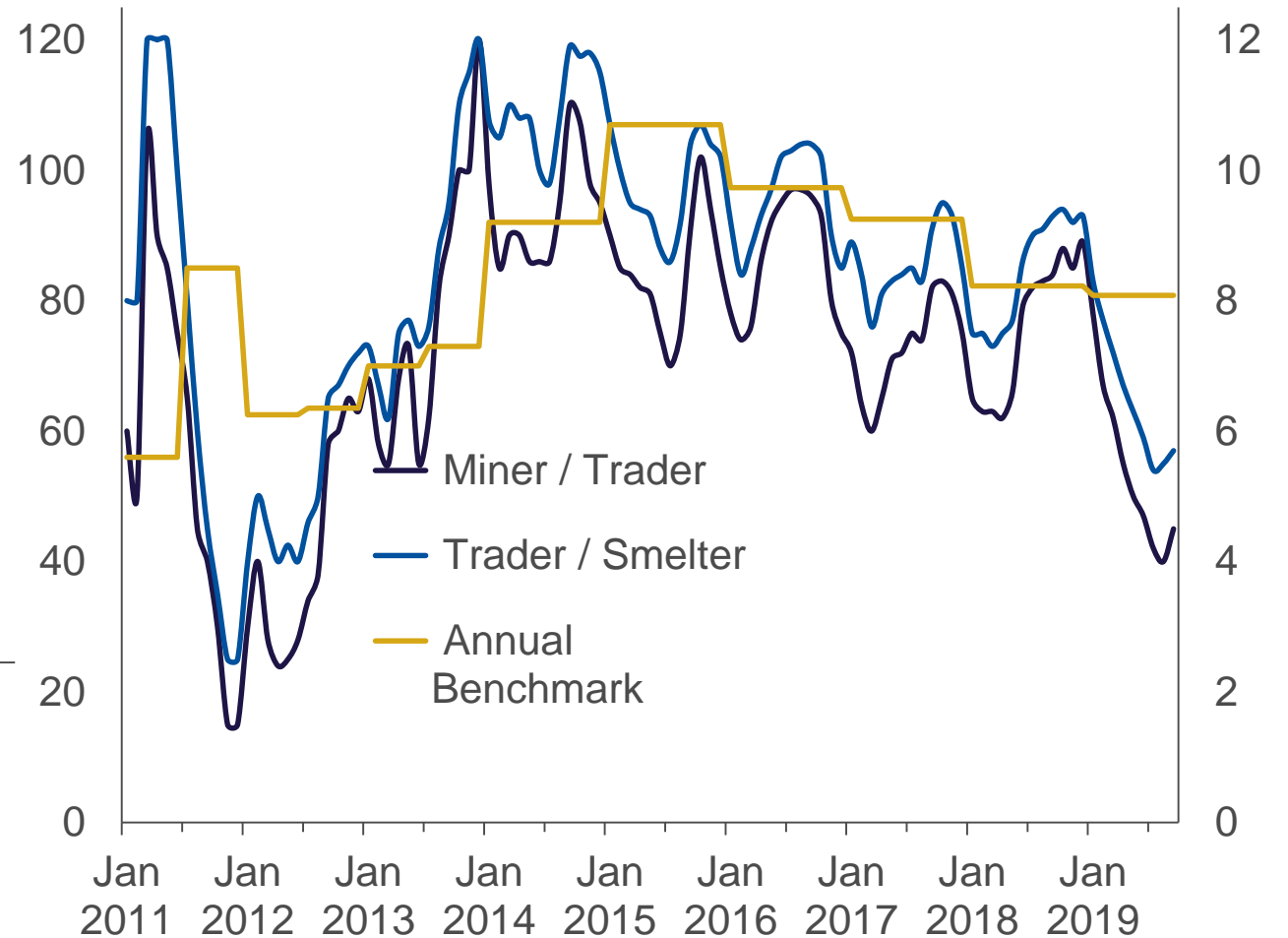
Rosemont Ranch

Refined copper market well supplied but concentrates market tightens

Copper mine production y-o-y growth; %



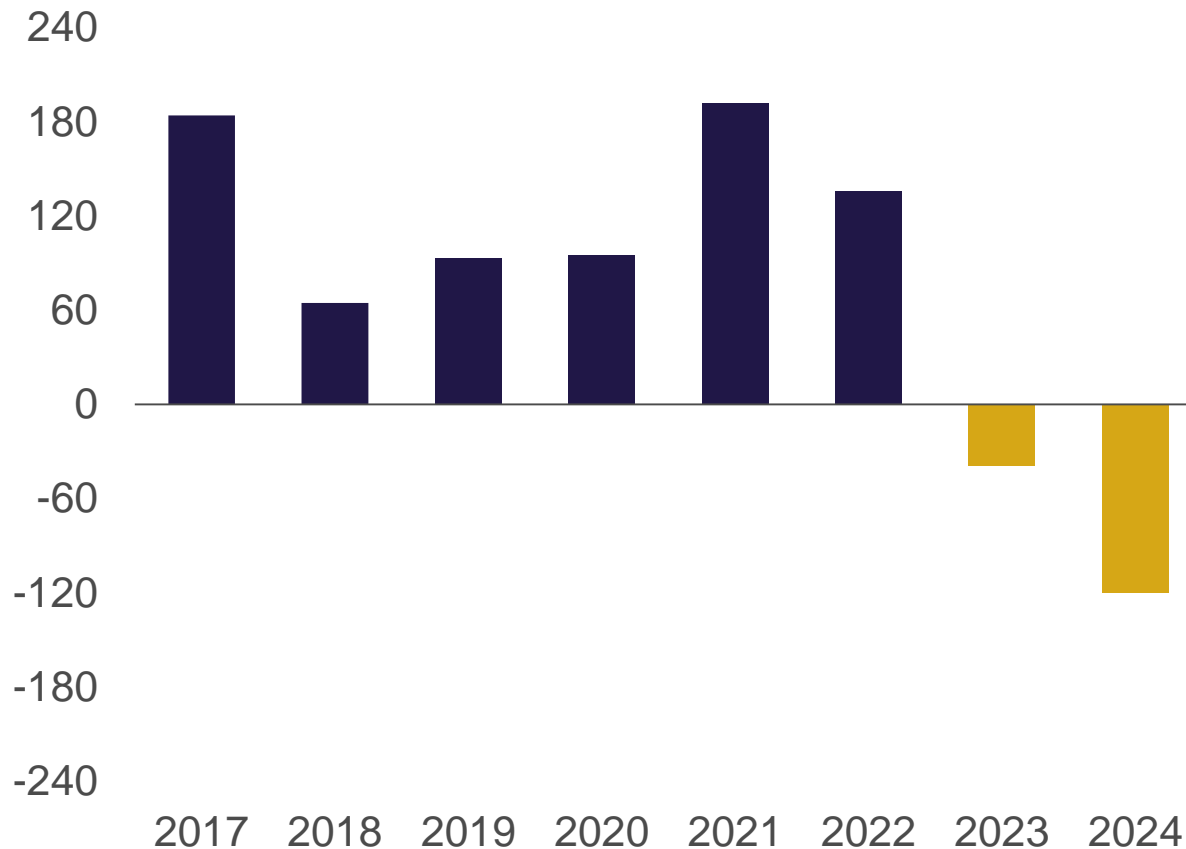
Spot TC/RCs; TC (LHS) & RC (RHS); \$/t, ¢/lb



Copper market balanced in the mid term

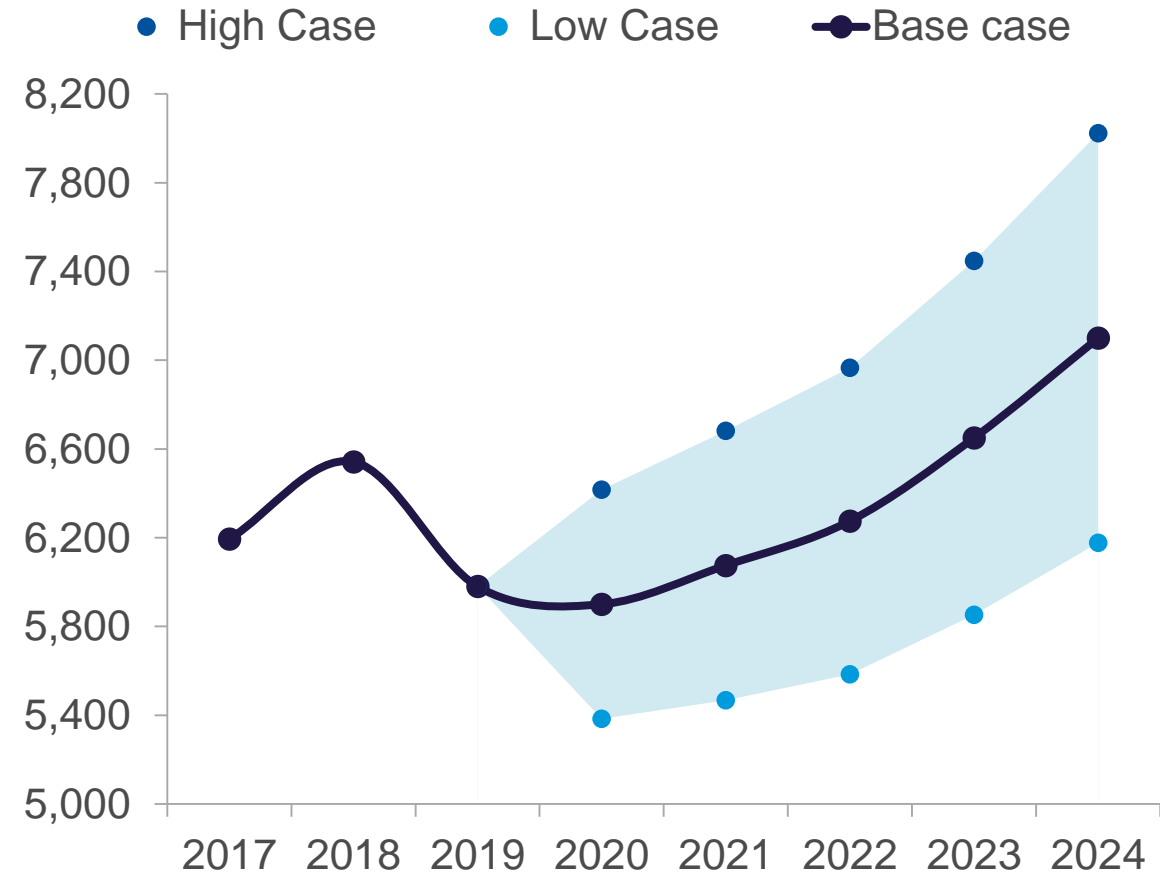
Market deficit emerges only after 2023

'000 t



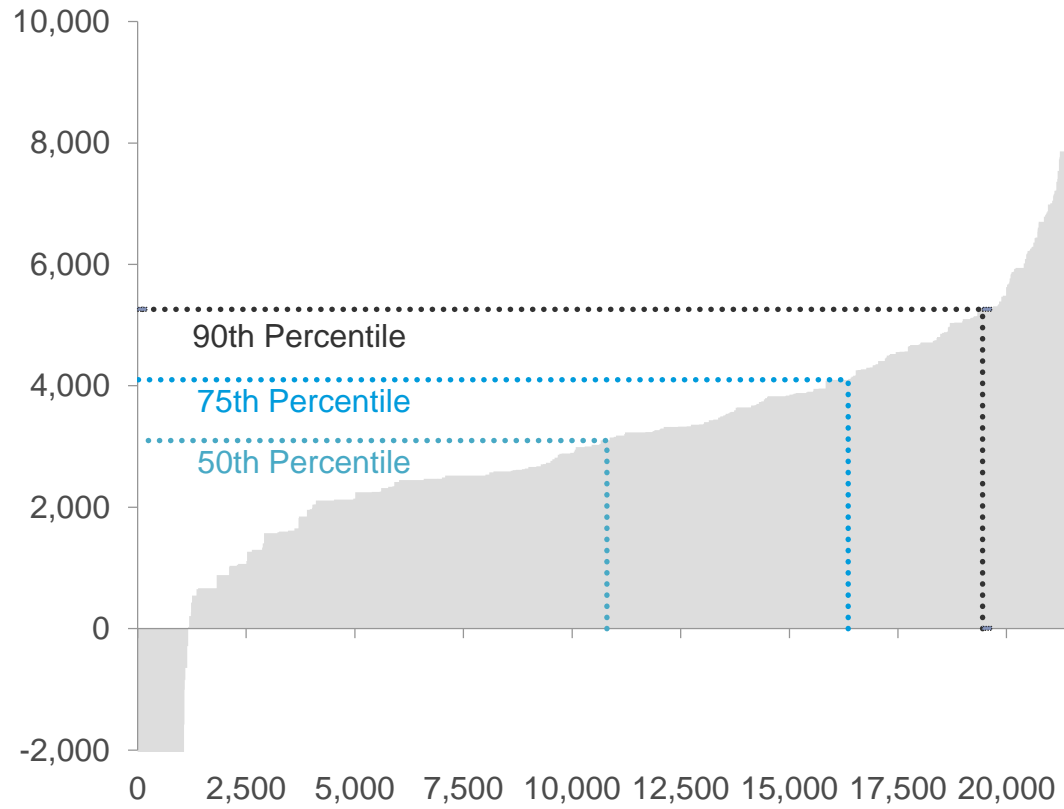
LME Price to remain under pressure in 2020

\$/t LME 3 M price



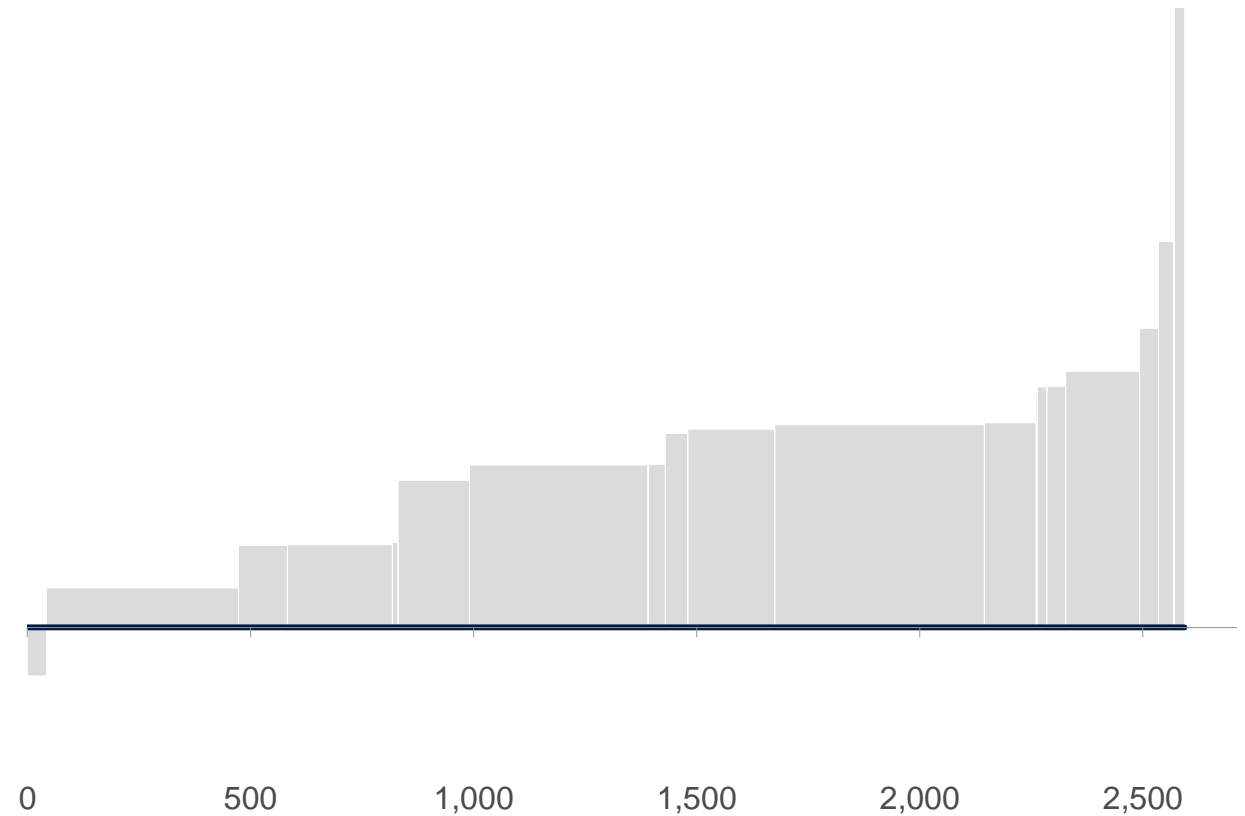
Copper mining remains profitable

2019 CRU cash costs including by-product credits \$/t Cu



Cumulative copper production, '000 tonnes

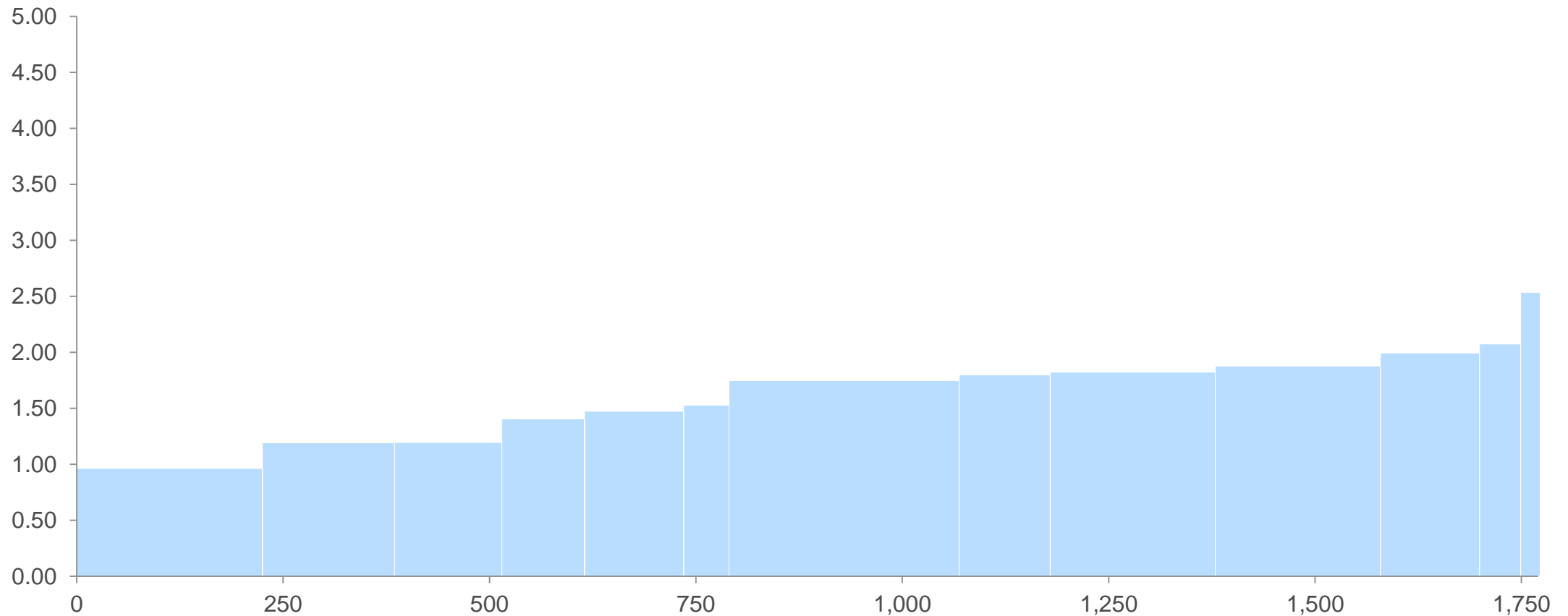
Peru's operations 2019 CRU Cash Costs Including By-product Credits



Project economics is not holding back development in Peru

Peru's copper mining projects

2030 Economic Cost, \$/lb (2019 real terms)



Conclusions

Demand

- Cyclical slowdown, trade frictions, disruption to the automotive sector

Supply

- Mine supply to decline in 2019 due to disruptions and Grasberg but growth to resume thereafter

Balance & Price

- Balanced/surplus market over next 4 years, longer term deficits still expected
- Price close to recent trading levels over near term, medium term increases

Peru

- Project economics not holding back project development in Peru



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