

Copper market outlook: Transitioning to deficits

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Market Forum, 25th May 2017**

Prepared by:

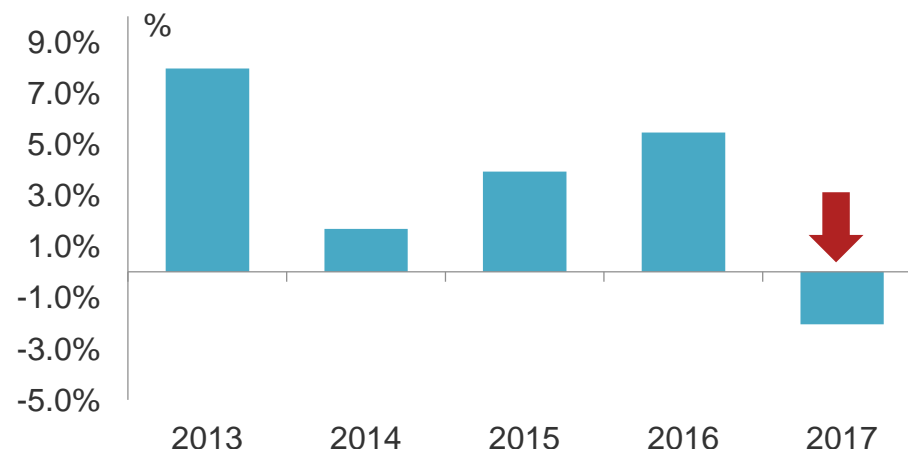
**Erik Heimlich,
Senior Consultant, Copper**

Price has recovered from the lows and concentrates market is tightening

LME copper price recovers from the lows



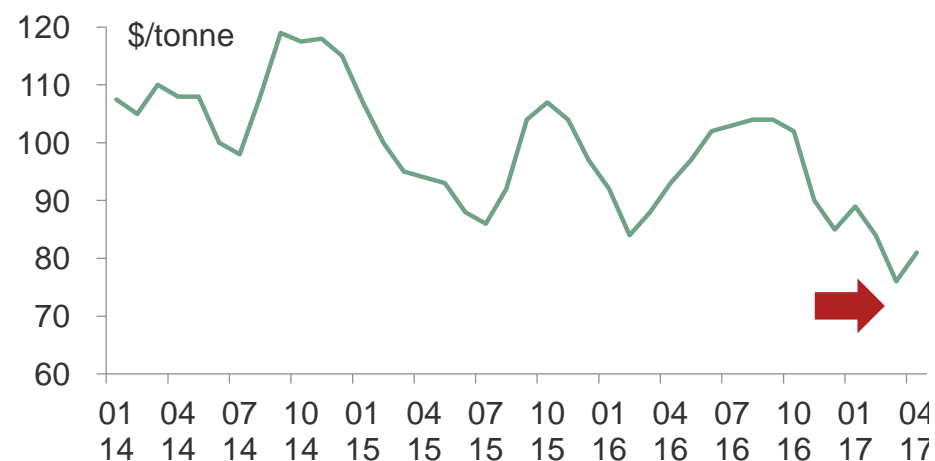
Global mine output to fall due to disruptions



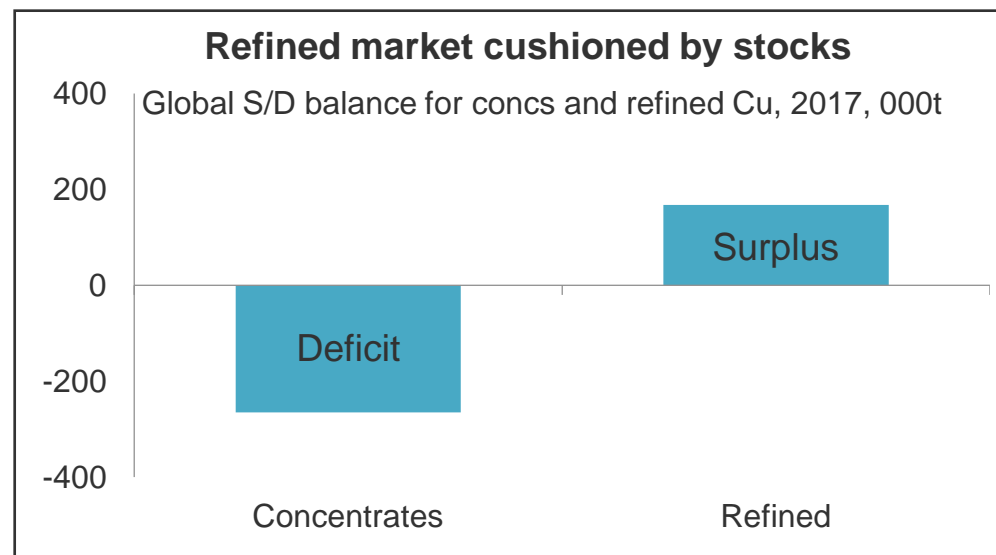
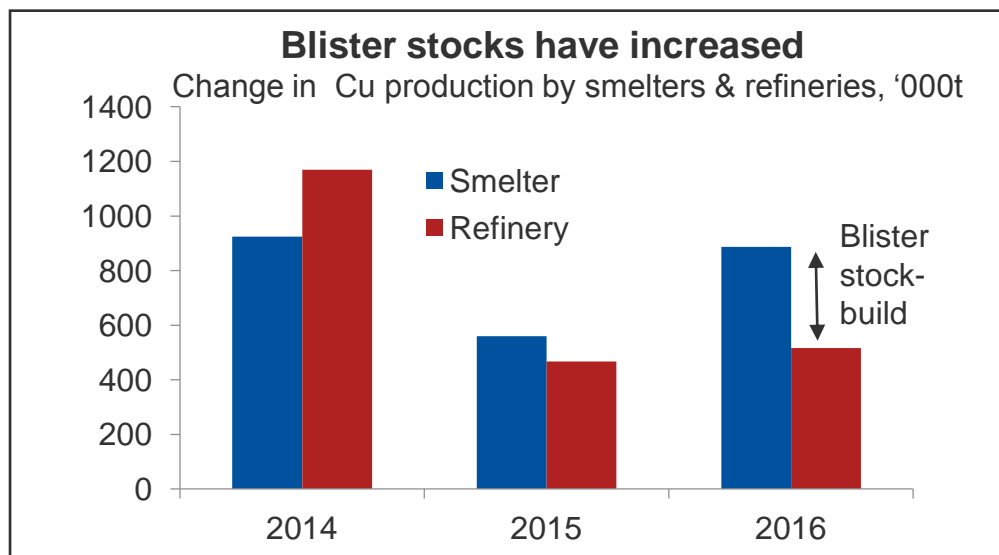
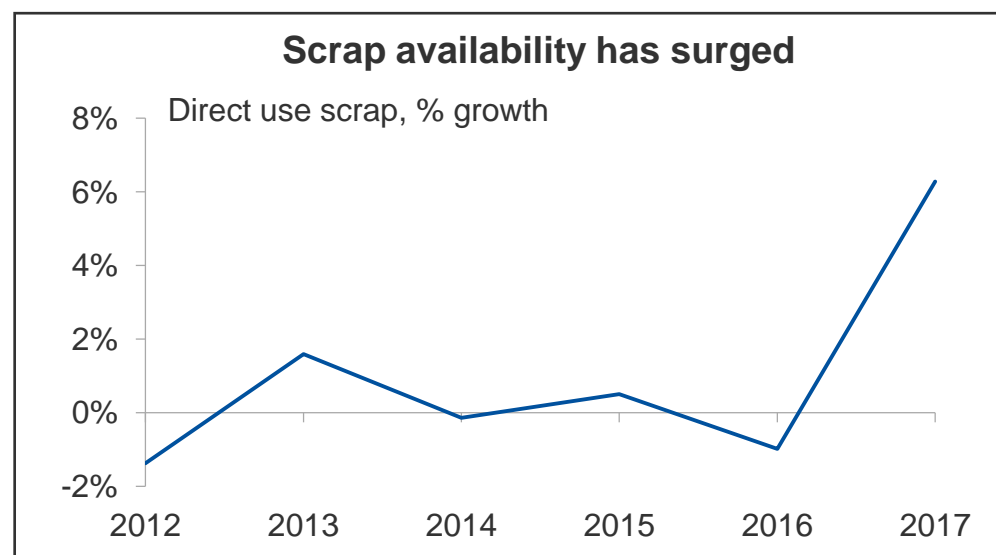
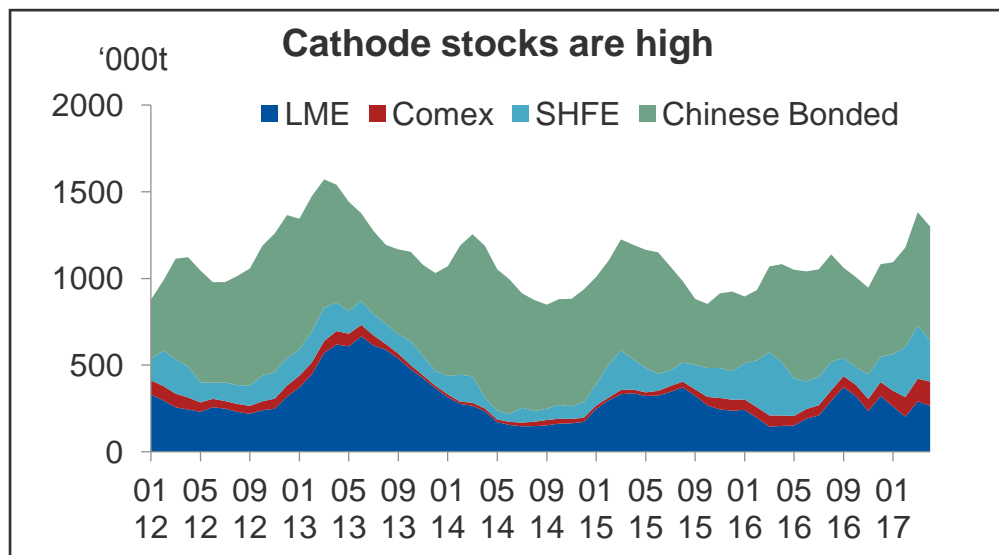
Production losses were sizeable in Q1

Mine output losses, '000t	Q1 2017
Escondida	164
Grasberg	117
Total	281

Spot TC's (Chinese smelter) drop sharply



Refined market is insulated by scrap and stocks for the time being



Nevertheless Cu will be one of the best performing metals in 2017

Expected performance of selection of metals in 2017 vs 2016

Price supportive factors	Met Coal	Nickel	Iron Ore	Zinc	Aluminium	Copper	Cobalt
Stronger demand	-1.0%	3.1%	0.0%	2.3%	5.2%	1.8%	5.2%
Limited new supply	X	X	X	✓	X	✓	✓
No production cuts ⁽¹⁾ are required	X	X	X (not in H1)	✓	✓	✓	✓
Market forecast in deficit	X	✓	X	✓	X	X	✓
Stocks critically low	X	X	X	✓ (Concs)	X	X	X
Mine costs rising	Up (temp)	Up 5%	Up 5%	Up 2%	Up 8%	Up 1%	-
CRU price outlook ⁽²⁾	Down 50%	Down 9%	Down 9%	Up 7%	Up 10%	Up 11%	Up 58%



Structural deficits are imminent for the copper market



❑ Existing mine production to decline by 1% p.a. in years to 2025, due to declining ore grades and reserve exhaustion



❑ The downturn has led to project delays, downsizing and cancellations of projects and expansions



❑ Scrap availability to grow more strongly in higher price environment but will not fully compensate for the slow growth in mine supply



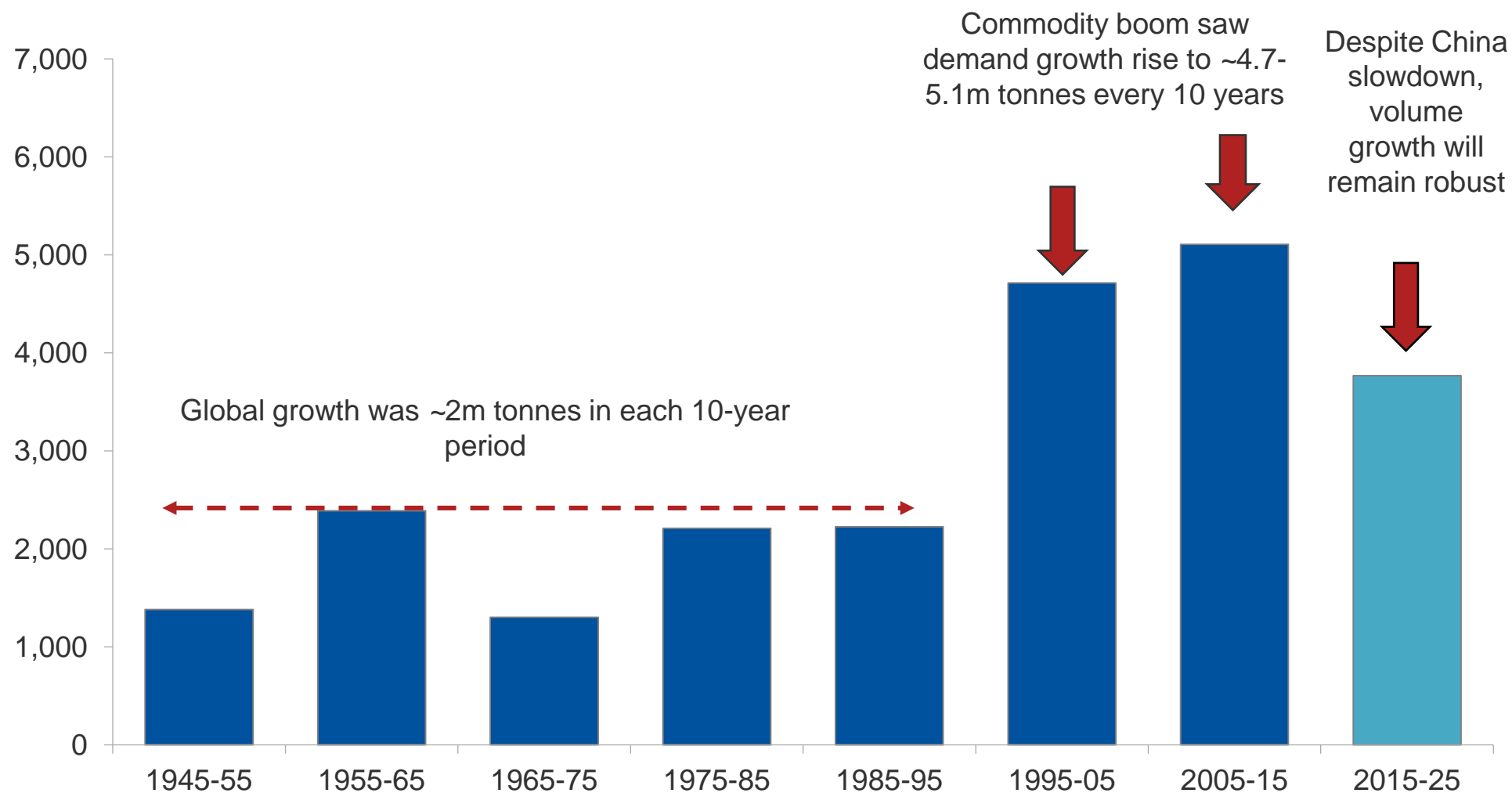
❑ There are limits to the speed at which producers can bring new mine supply on-stream quickly



❑ As long as global demand continues to expand at close to 2.0% p.a., structural deficits in this market appear inevitable

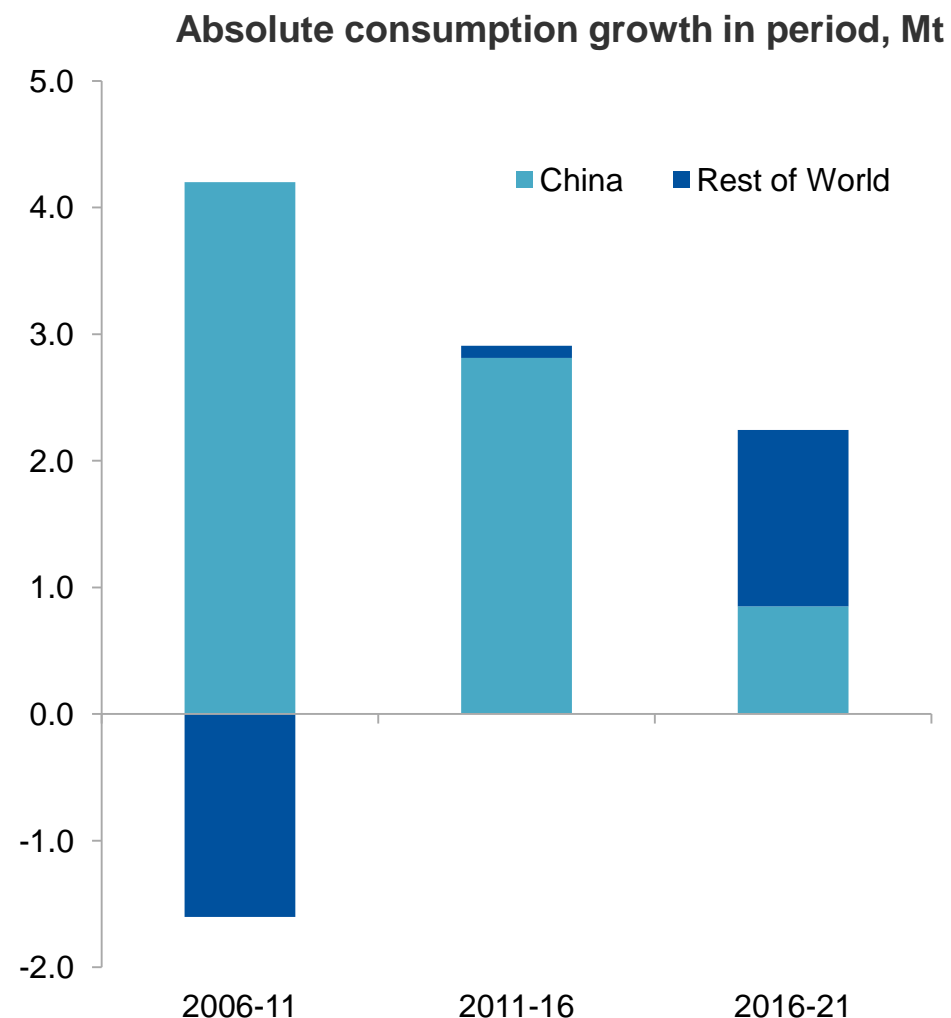
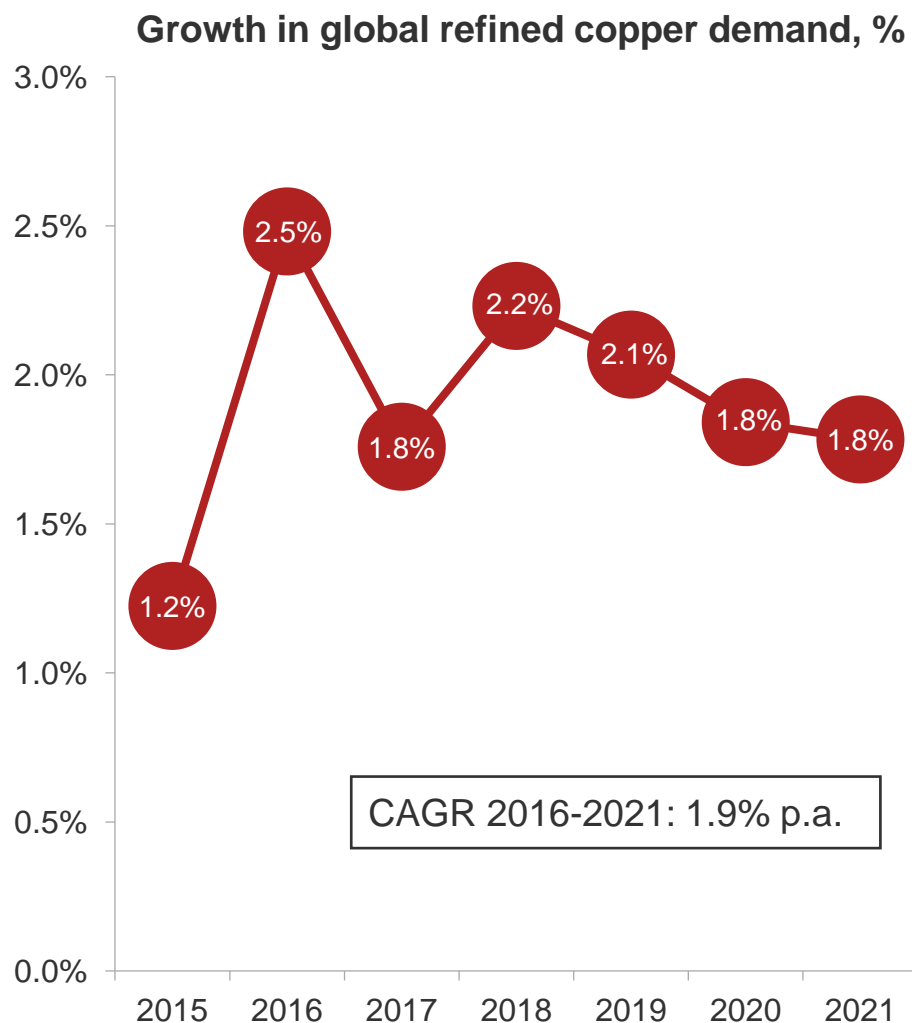
Demand growth expected to remain robust despite slowdown

Global growth in refined copper consumption by decade, '000t



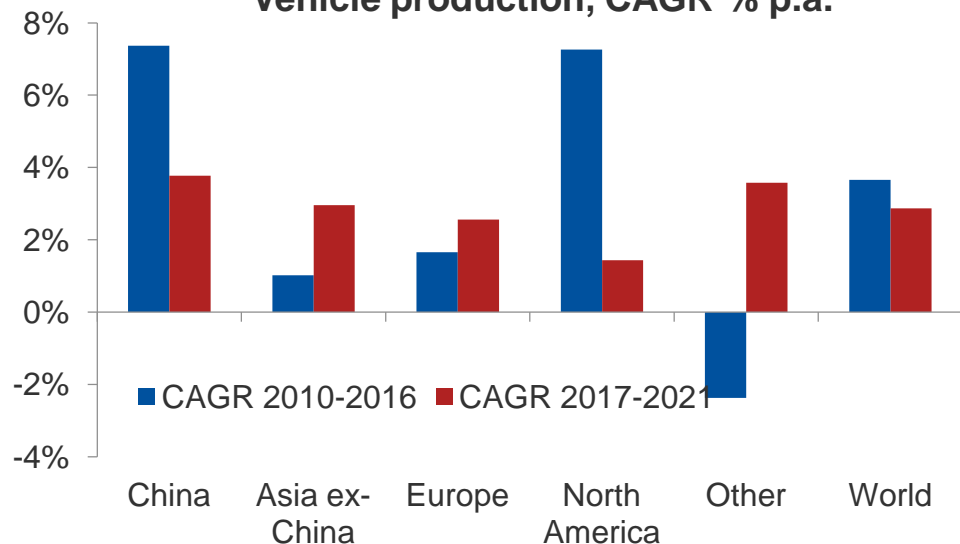
China will represent less than 40% of growth in demand in 2016-21

Growth in world refined copper consumption and volume growth in selected 5-year periods

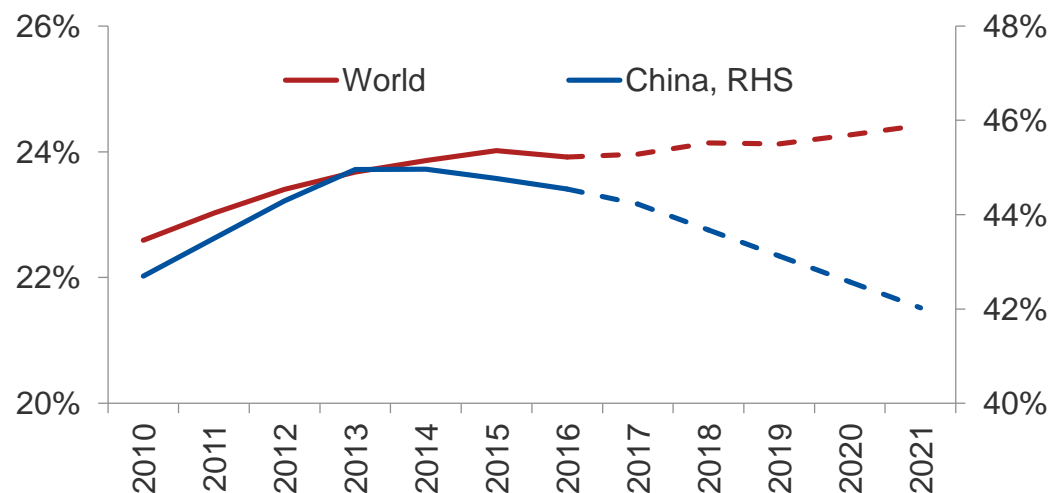


Other parts of global economy expected to offset Chinese slowdown

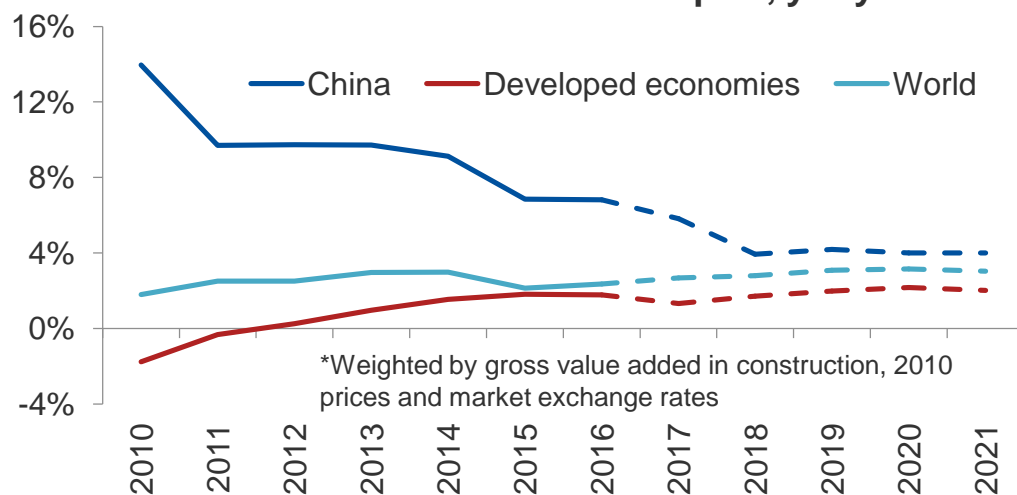
Vehicle production, CAGR % p.a.



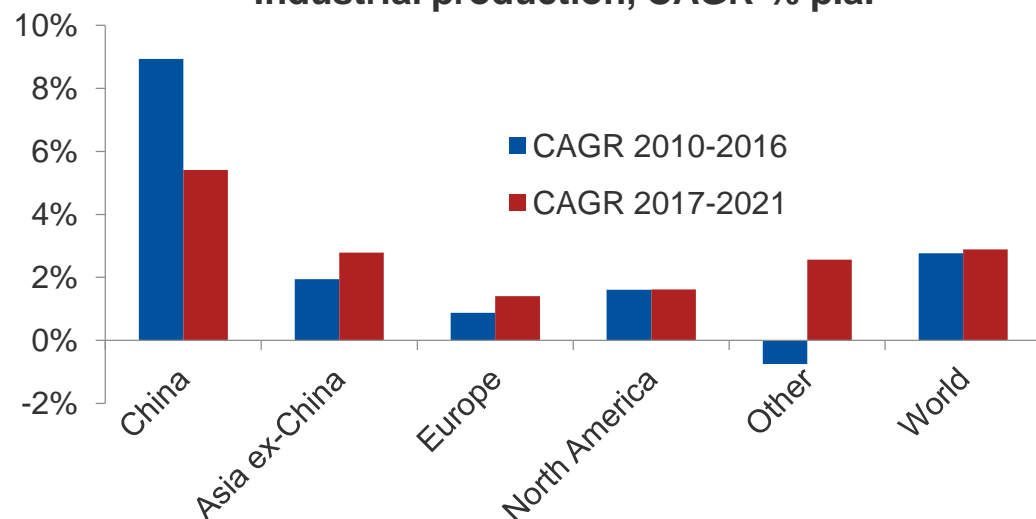
Investment, as % GDP



Growth in construction output*, y-o-y%

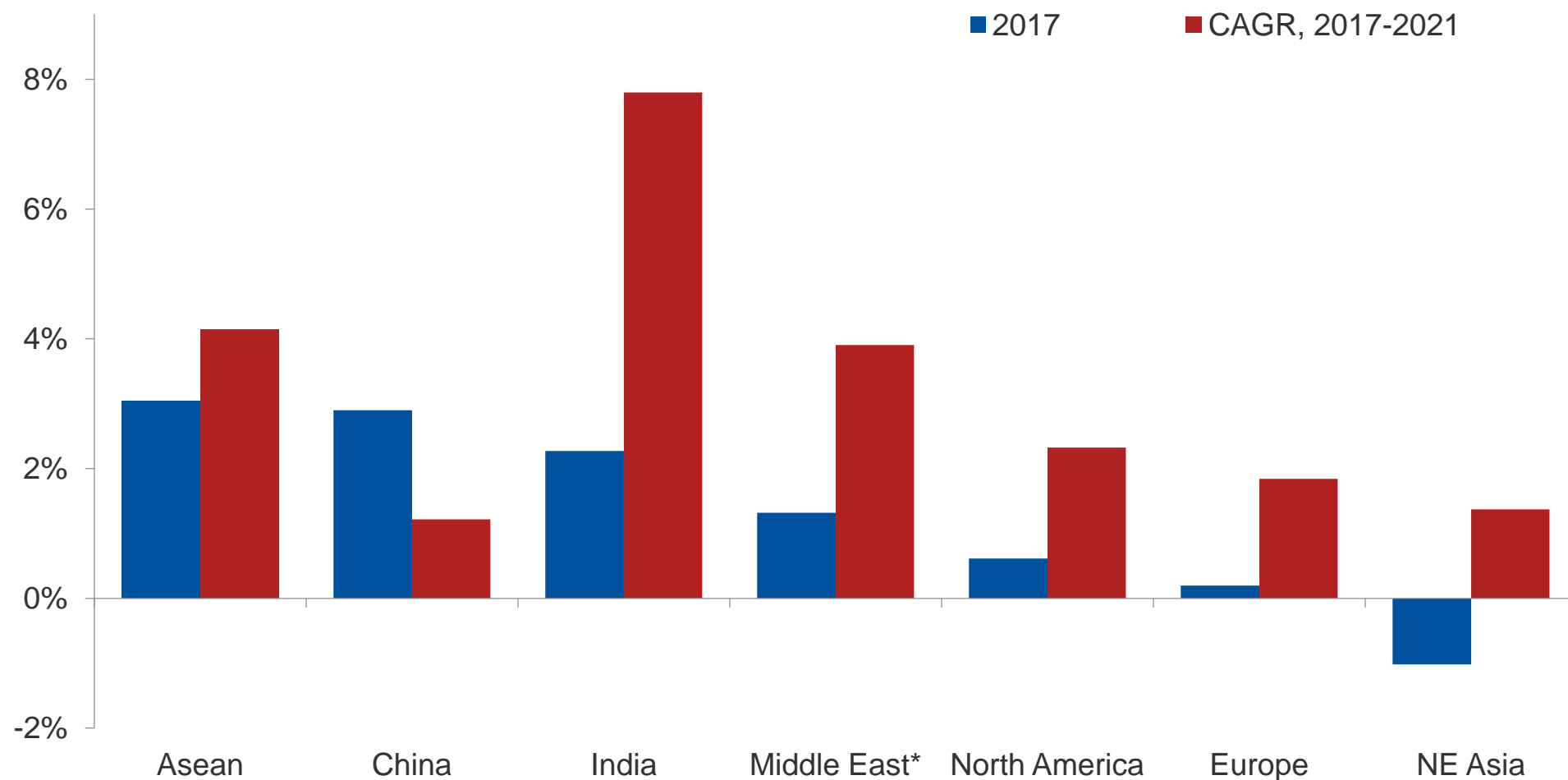


Industrial production, CAGR % p.a.



India and ASEAN will see fastest growth in copper demand

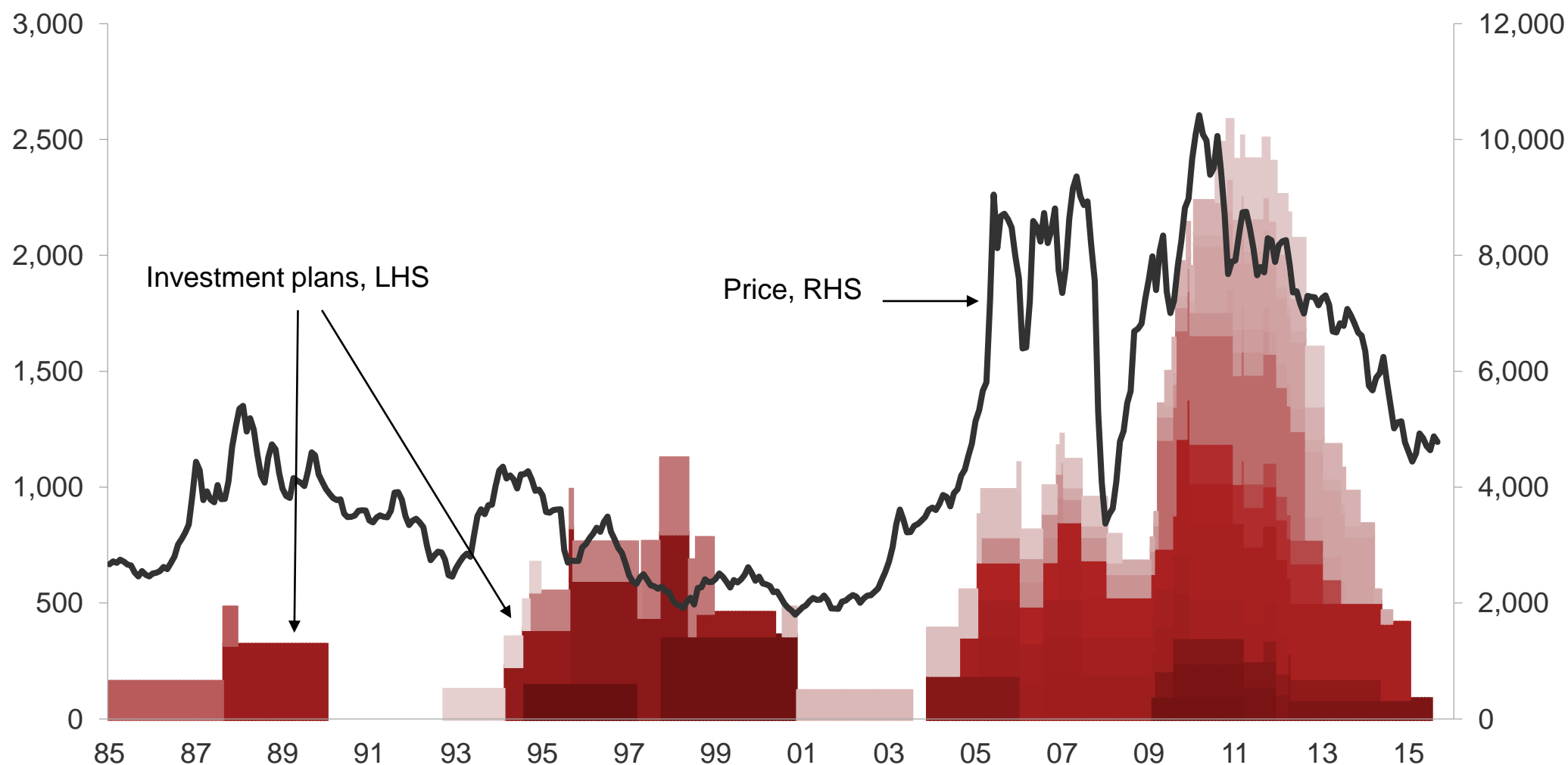
Refined copper consumption growth and compound annual growth in selected periods, % p.a.



Supply: Investment in the copper industry is highly pro-cyclical

Selected projects* investment plans**, '000t

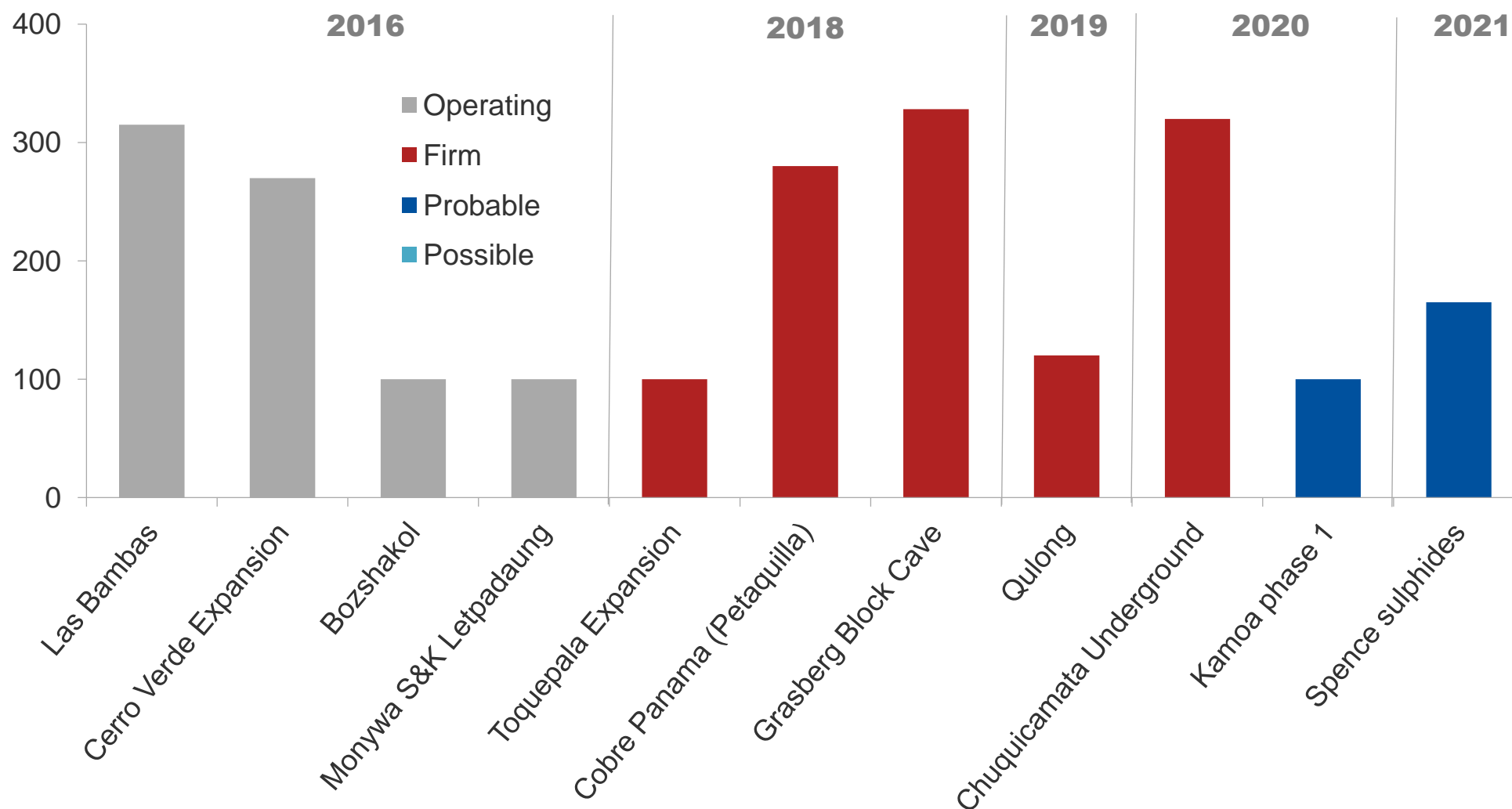
LME 3-month copper price, real (2016\$)



Note: *35 projects with an average nominal capacity of 185,000t **based on nominal capacity and measured from date of first approval to first commercial production

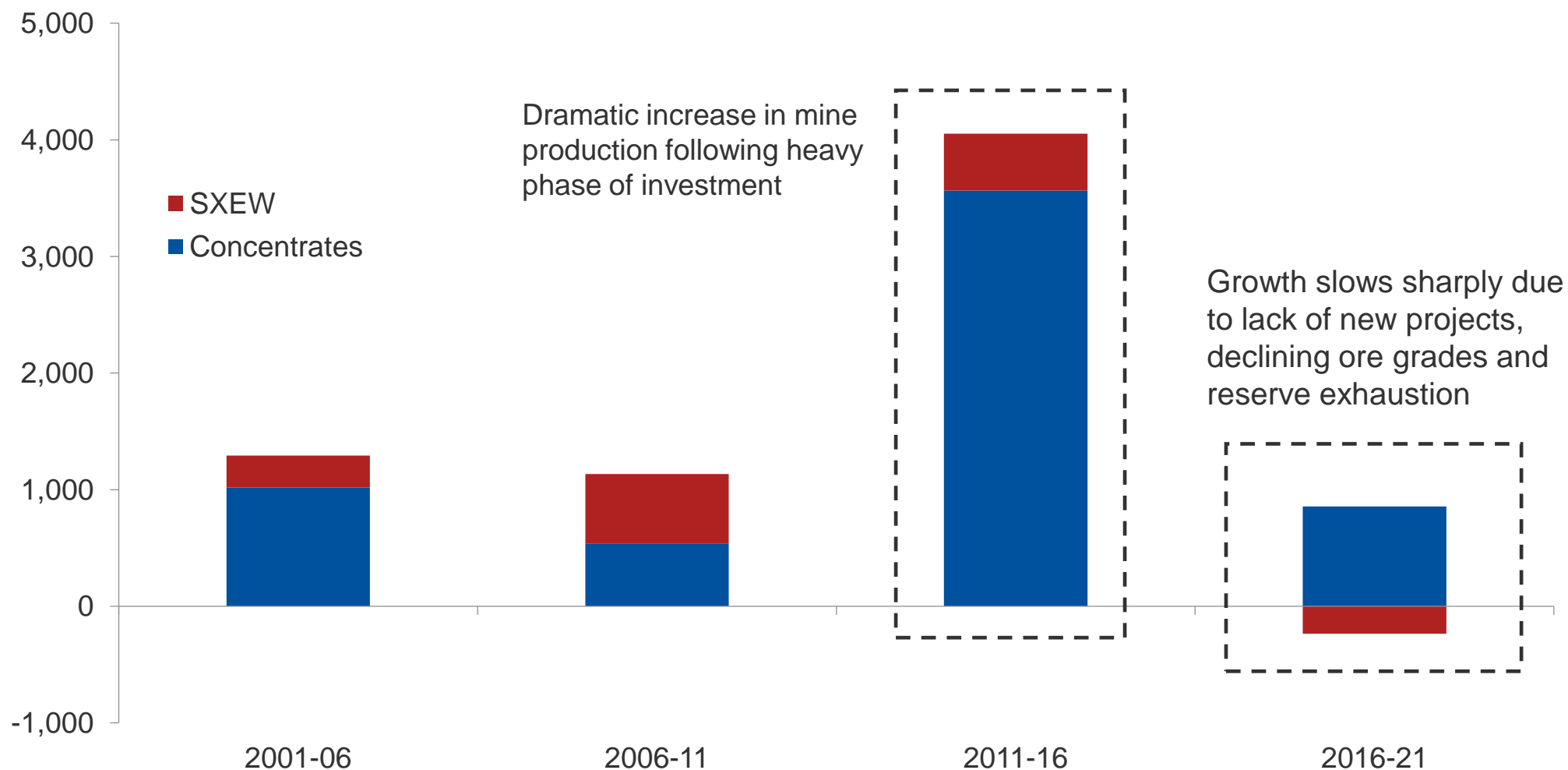
Pipeline of mine projects is very thin: no large projects starting up in 2017

Copper mine projects with capacity of >100,000t/y; LOM annual copper production capacity; '000t



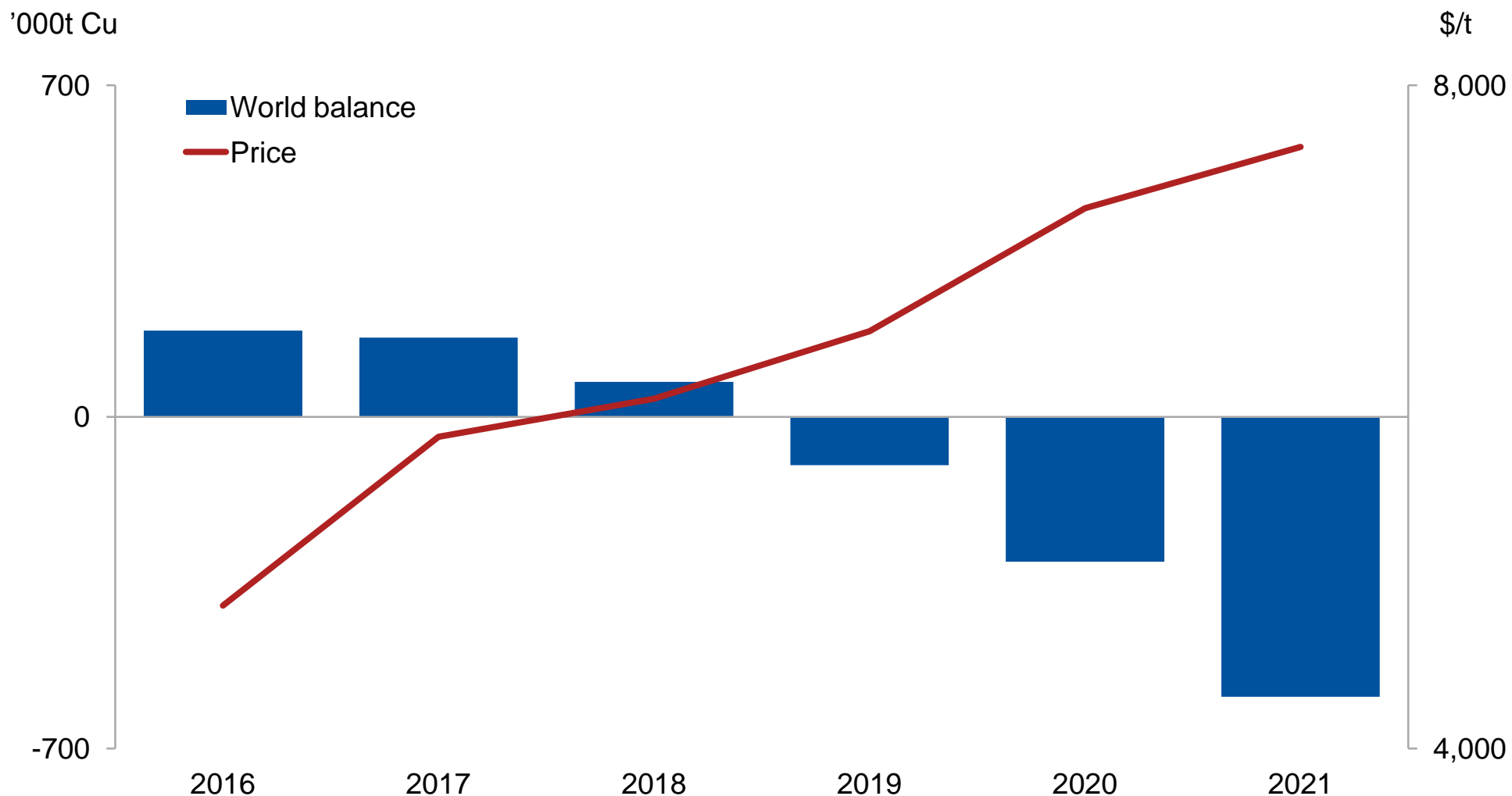
Our estimates suggest growth in mine output will be <1Mt in 2016-21

Growth in global mine production, copper-in-concentrates and EW cathode, '000t Cu



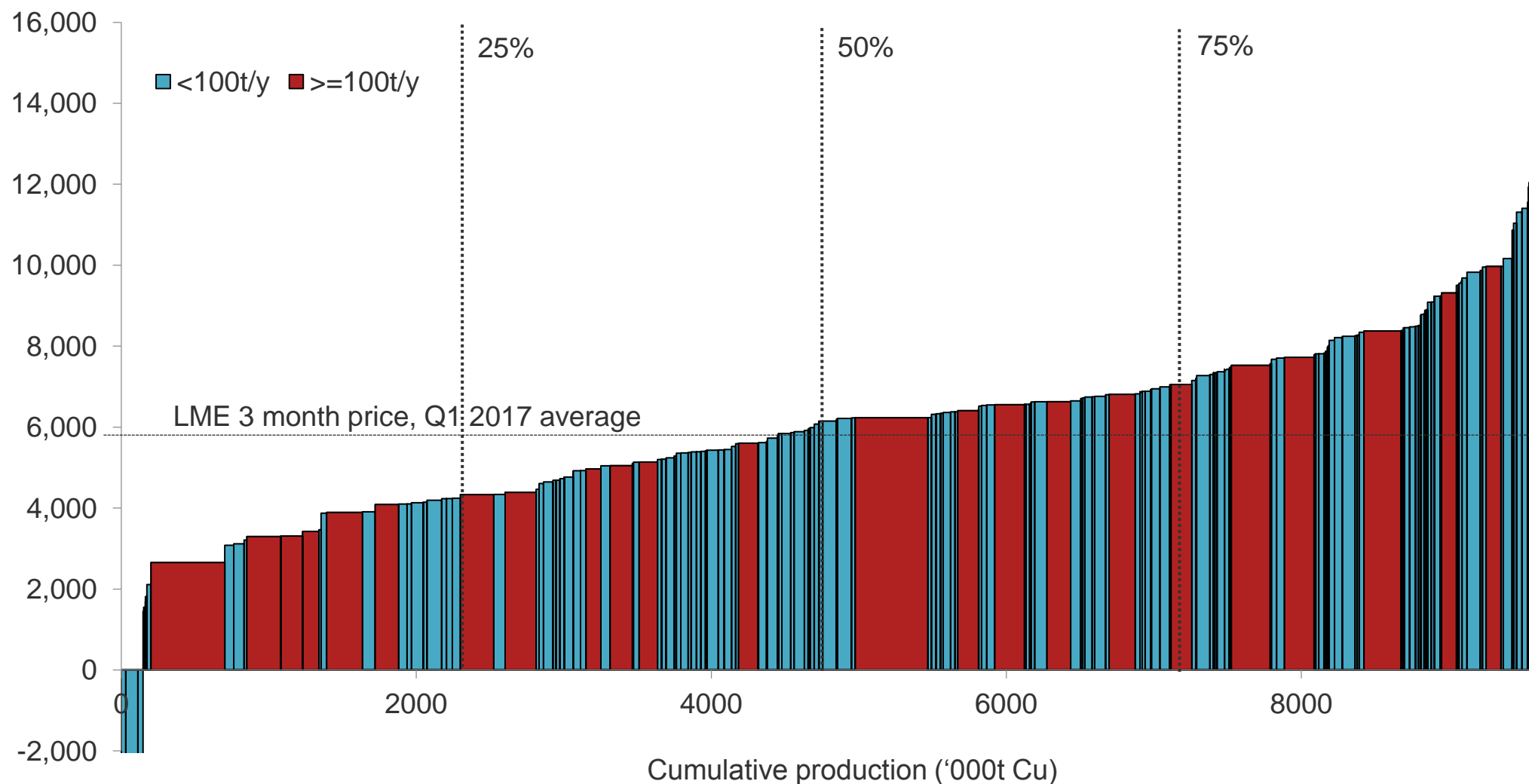
Causing structural deficits and copper prices to recover

Copper LME cash price and global supply/demand balance, 2015-2021



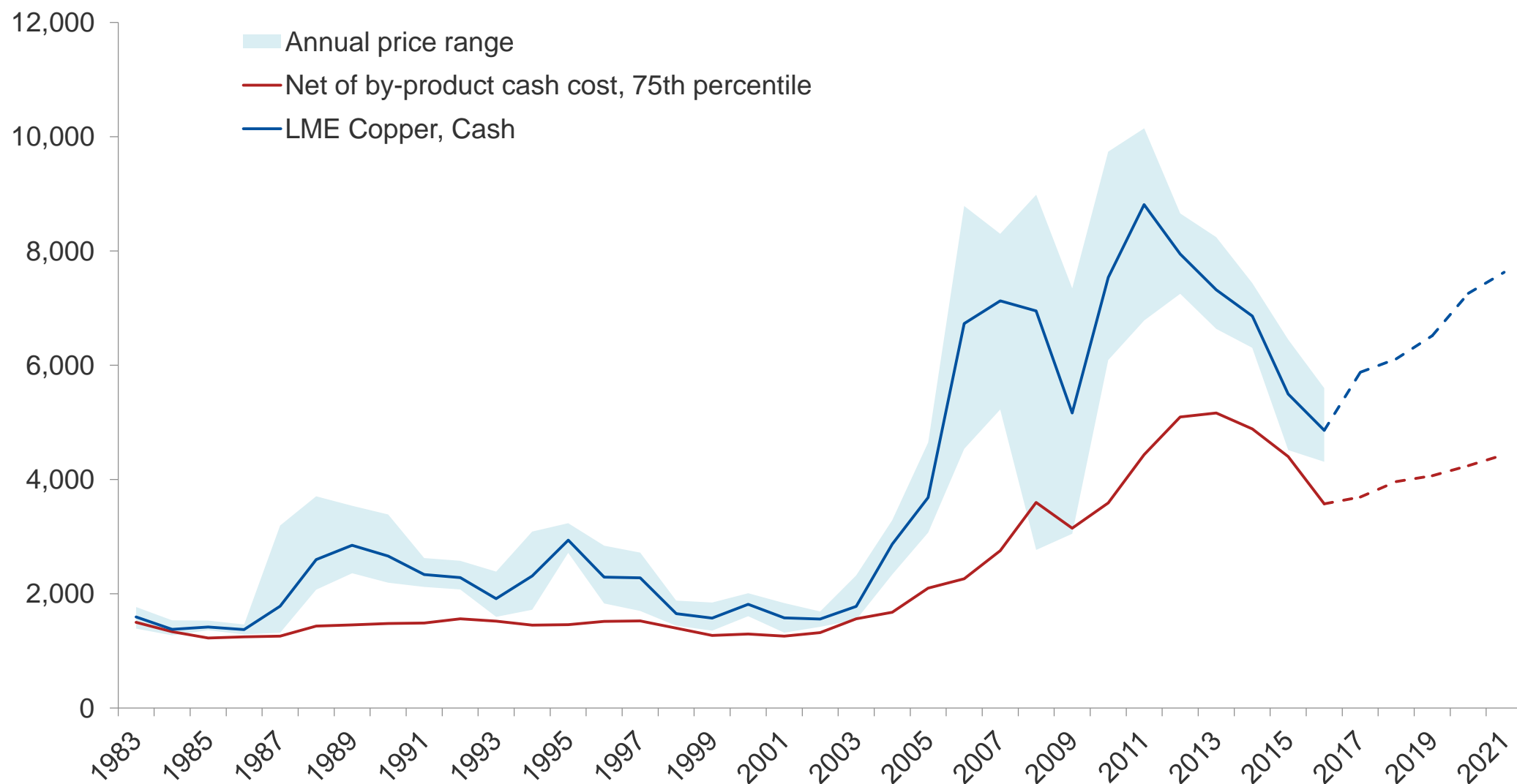
Next phase of investment should begin as long as prices hold up

Real (2016\$) full economic costs for all projects due to start-up between 2017-2028, \$/t



In the meantime, prices set to rise faster than costs: Margins to improve

LME cash price and 75th percentile net of by-product cash costs, \$/t, 1983-2021



Have we turned the corner?

- ❑ Copper prices recovered sharply at end-2016 and were buoyed in early-2017 by sizeable disruptions to mine output
- ❑ While the concentrates market has tightened, the refined market will be the last to pick-up in the cycle, due to the existence of stocks
- ❑ However, destocking along the supply chain is already underway, which gives us cause for optimism
- ❑ The increase in copper prices in 2017 is expected to be amongst the highest of the major metals
- ❑ Following the downturn, the pipeline of major projects is extremely thin
- ❑ Assuming we continue to see global growth in demand of around 2% p.a., the copper market will move into structural deficit
- ❑ Producer margins are expected to improve to around \$3,200/t by 2021 for the mine at the 75th percentile of the cost curve; an increase of 150% compared to 2016

Our services for base metals

MARKET ANALYSIS

Copper Monitor	Nickel Chrome Molybdenum Monitor
Copper Market Outlook	Nickel Market Outlook
Copper Long Term Market Outlook	Molybdenum Market Outlook
Copper Mine Project Profiles	Cobalt Market Outlook
Copper Raw Materials Monitor	Lead Monitor
Copper Concentrates Market Outlook	Lead Market Outlook
Copper Studies	Lead and Zinc Concentrates Monitor
Copper Semis Market Outlook	Zinc Monitor
	Zinc Market Outlook

COST SERVICES

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Nickel Cost Service
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