



Aluminium Market Outlook

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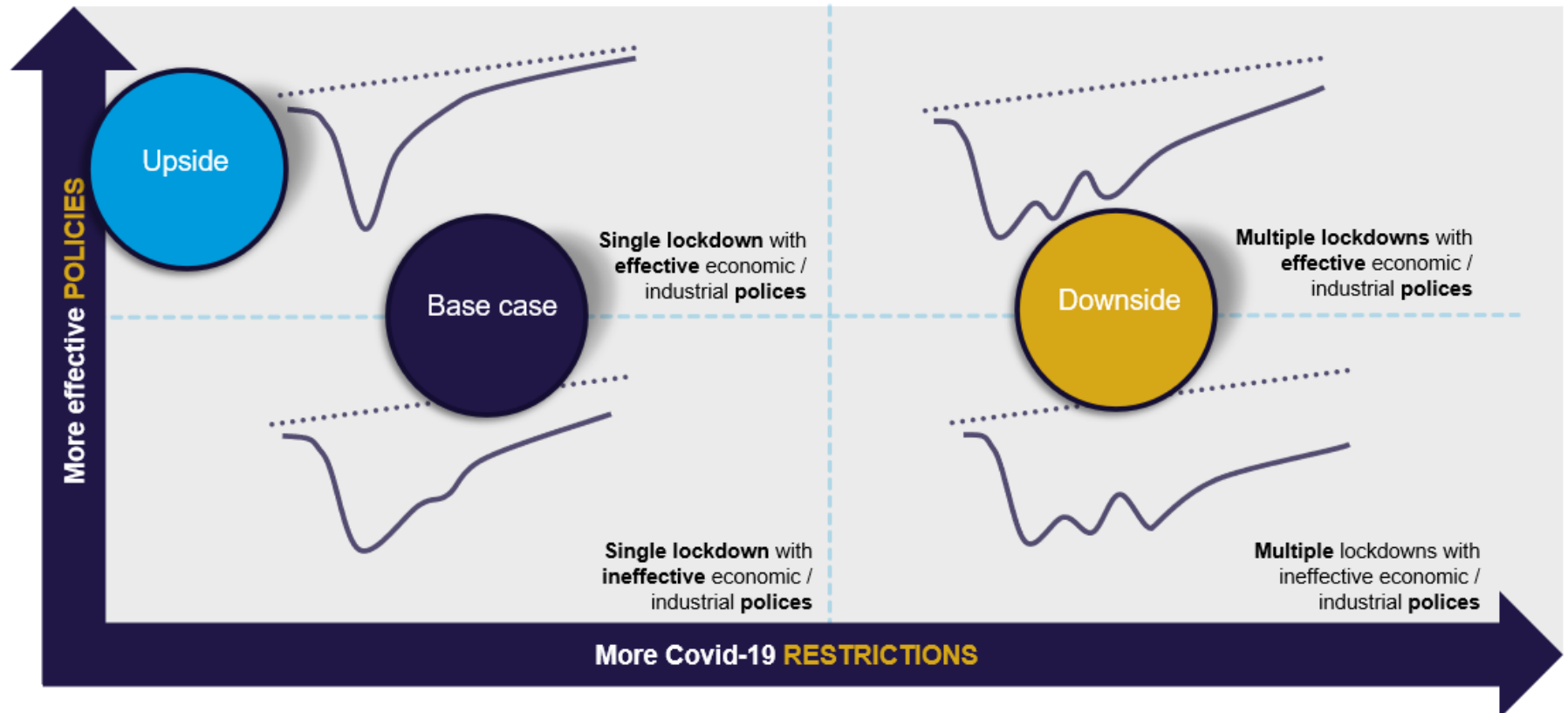


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- Primary research and robust, transparent, methodologies
- Global team of 250 analysts, consultants, experts. Key to gaining a real understanding of critical markets
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Economic overlay of forecasts

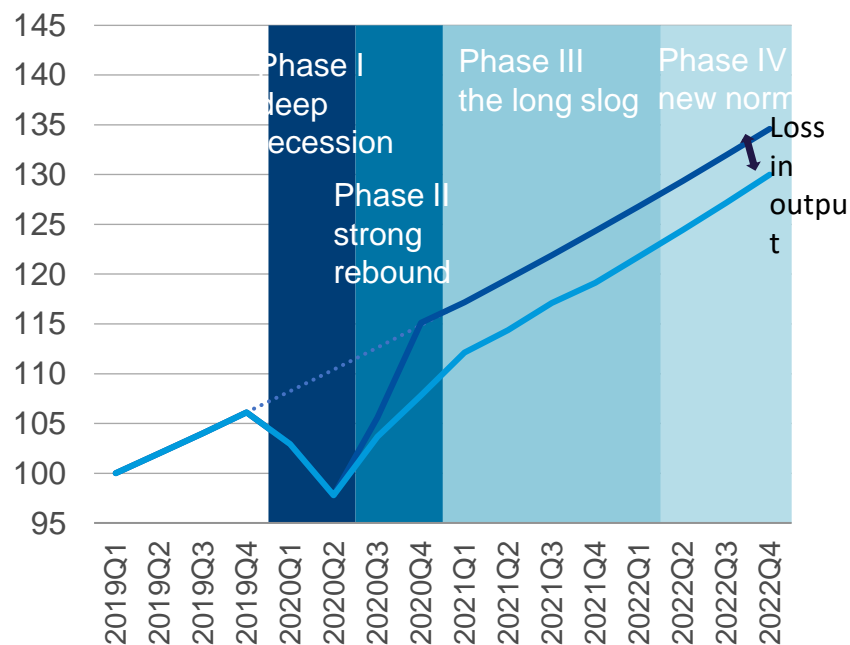


Shape of the recovery

Stylised illustration of stages of recession and recovery

Level of output, illustrative scale

..... Pre-Covid19 output trend
 — V-shaped

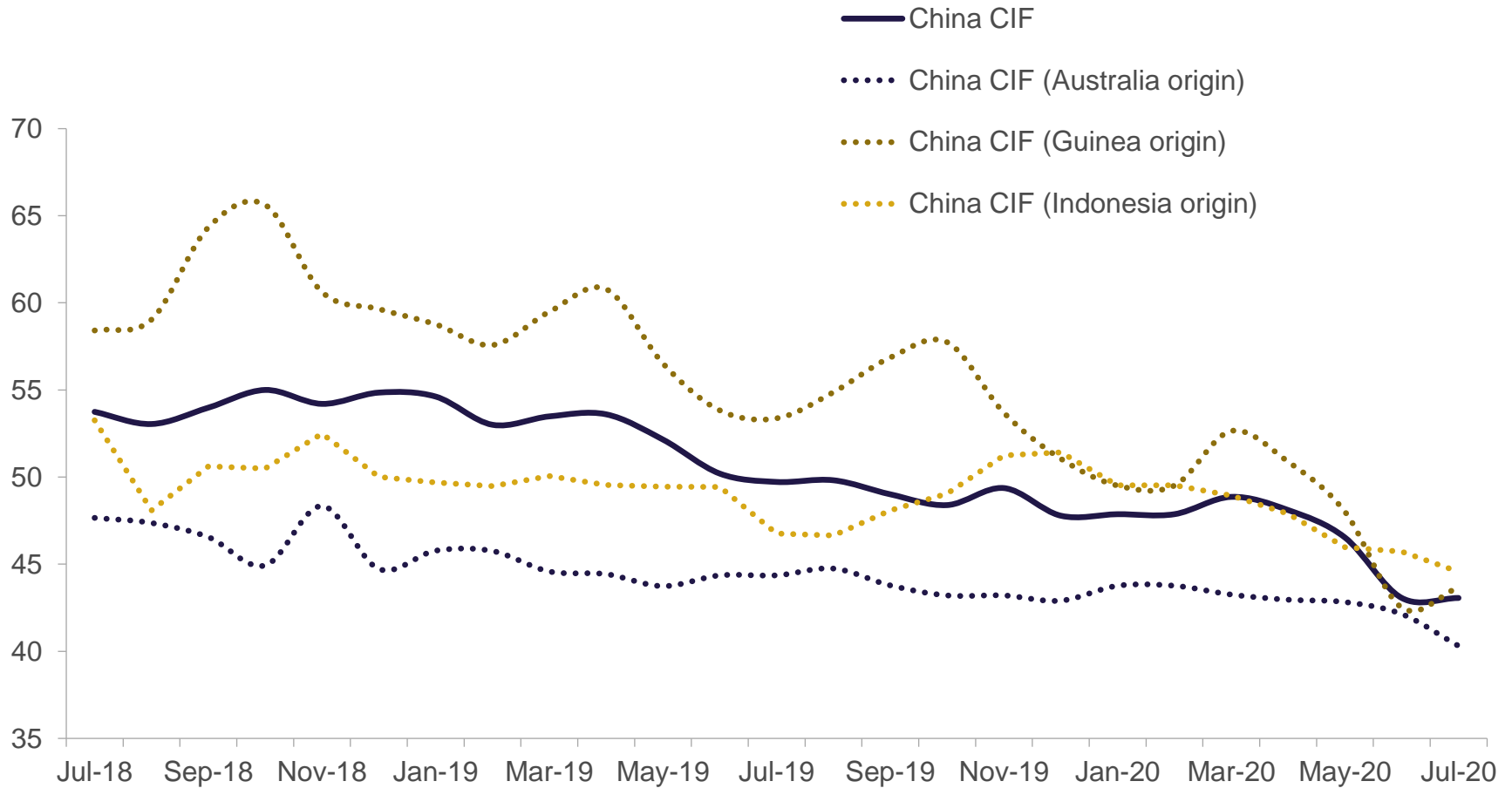


Source: CRU Global Economic Outlook

- **Phase I:** Deep and sharp downturn at time of Covid-19 outbreak (Q1 in China, Q2 in Europe and USA)
- **Phase II:** Sharp rebound in Q3 as the economy re-opens – quick wins
- **Phase III:** Long-slog – getting the economy back to normal while social distancing remains in place
- **Phase IV:** New normal – unclear when we will get there and what it will look like in aggregate (trends will vary by region, some winners and other losers)

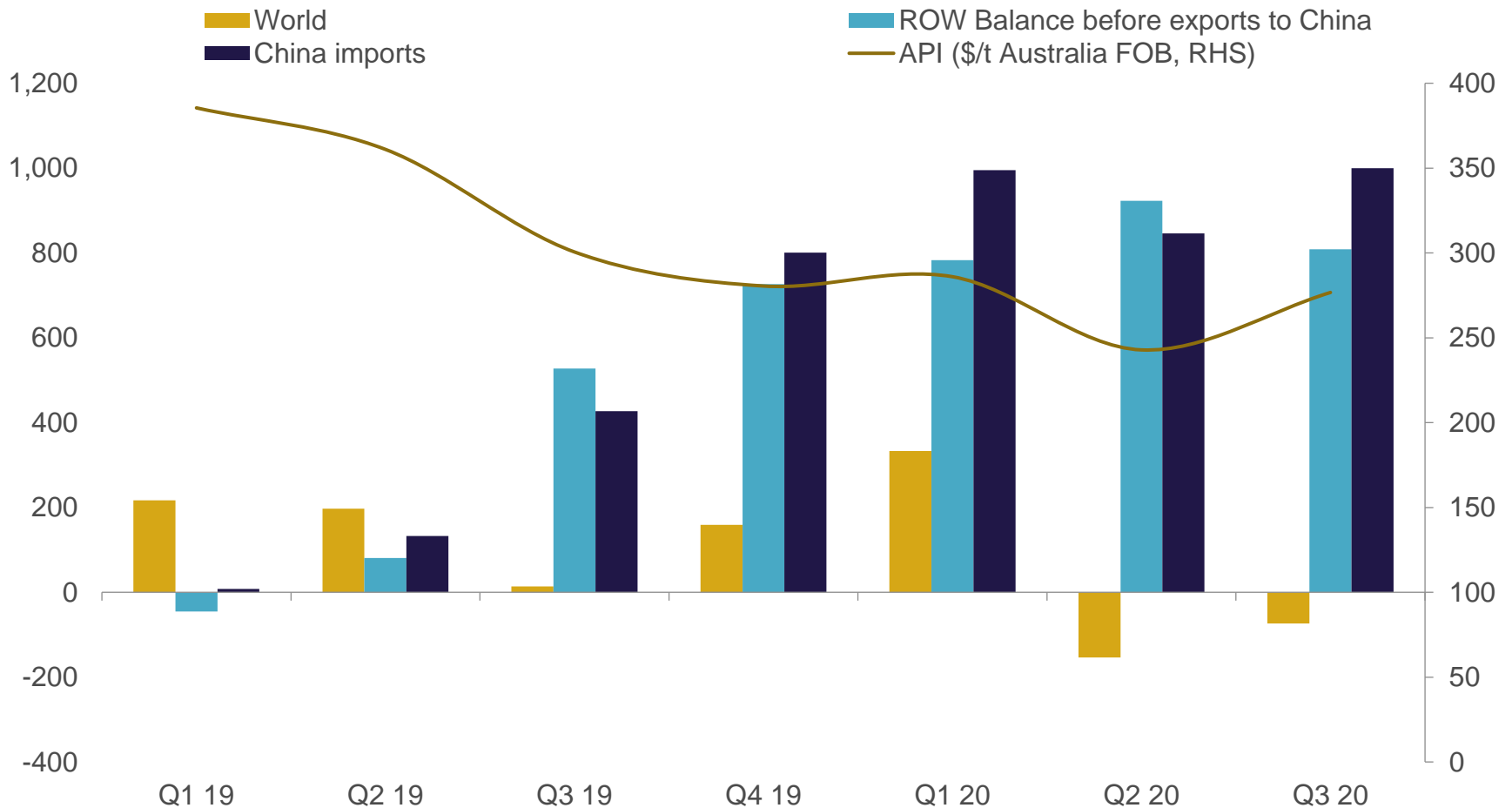
Average bauxite prices holding at \$43/t China CIF

Bauxite prices, \$/t China CIF



Alumina impact of Alunorte

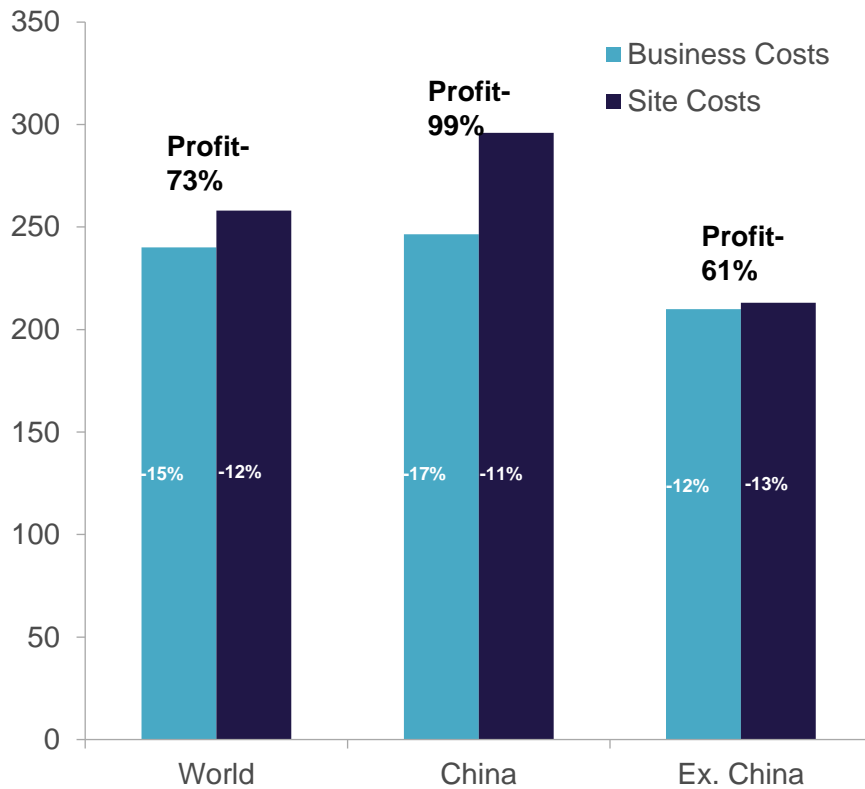
Global alumina supply/demand balance, '000 tonnes



Alumina refining costs

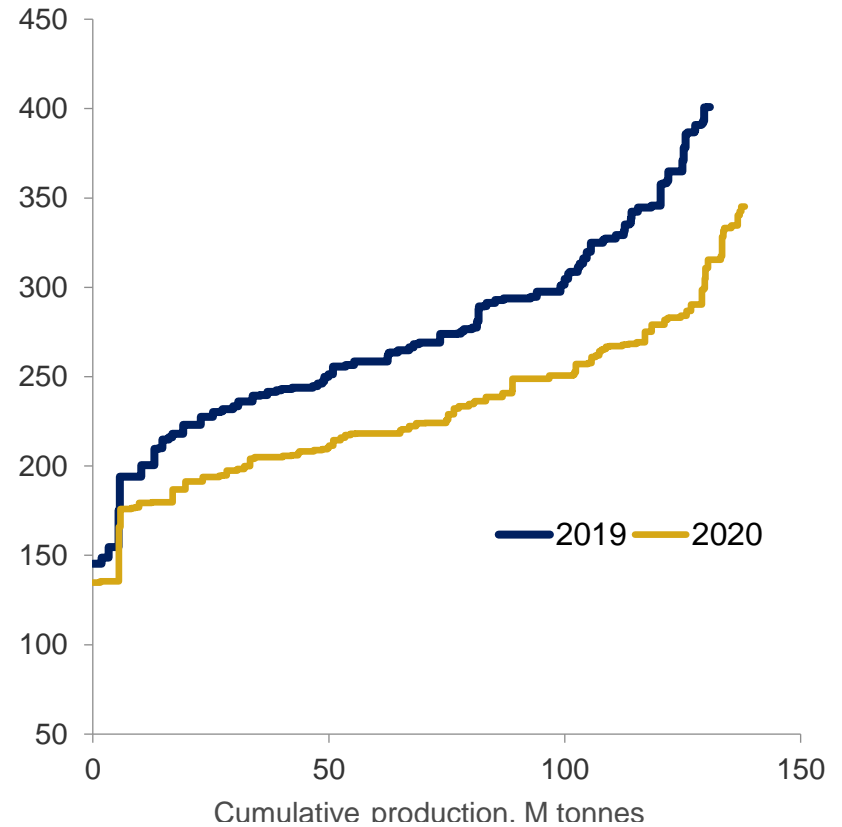
Eroding margins in refining sector despite cost deflation in 2020

2020 forecast averages (\$/t) and y/y changes (%)



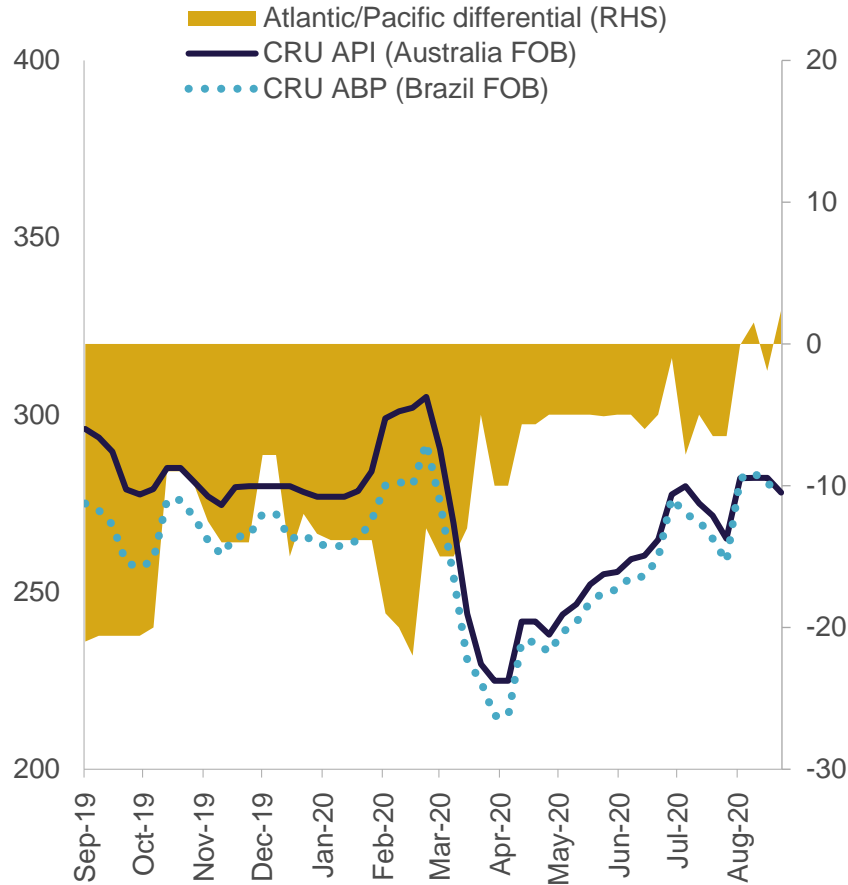
Alumina refining costs down in 2020

World alumina business costs, 2019 and 2020 (\$/t)

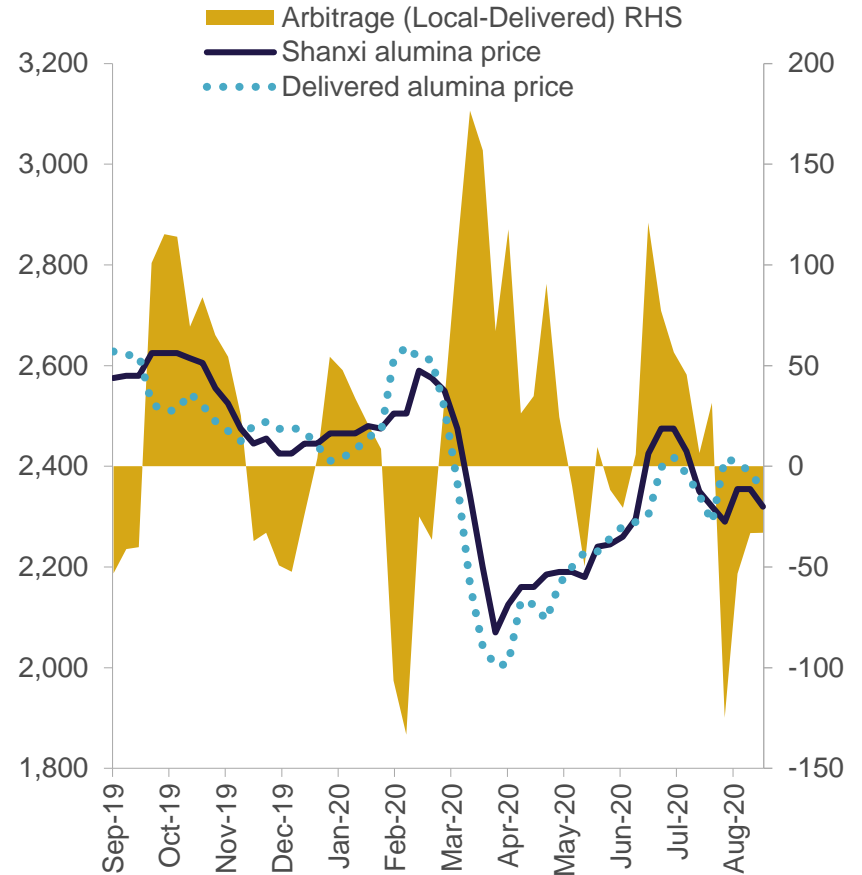


Alumina prices converge between ocean basins

Atlantic prices move back lower
\$/t FOB

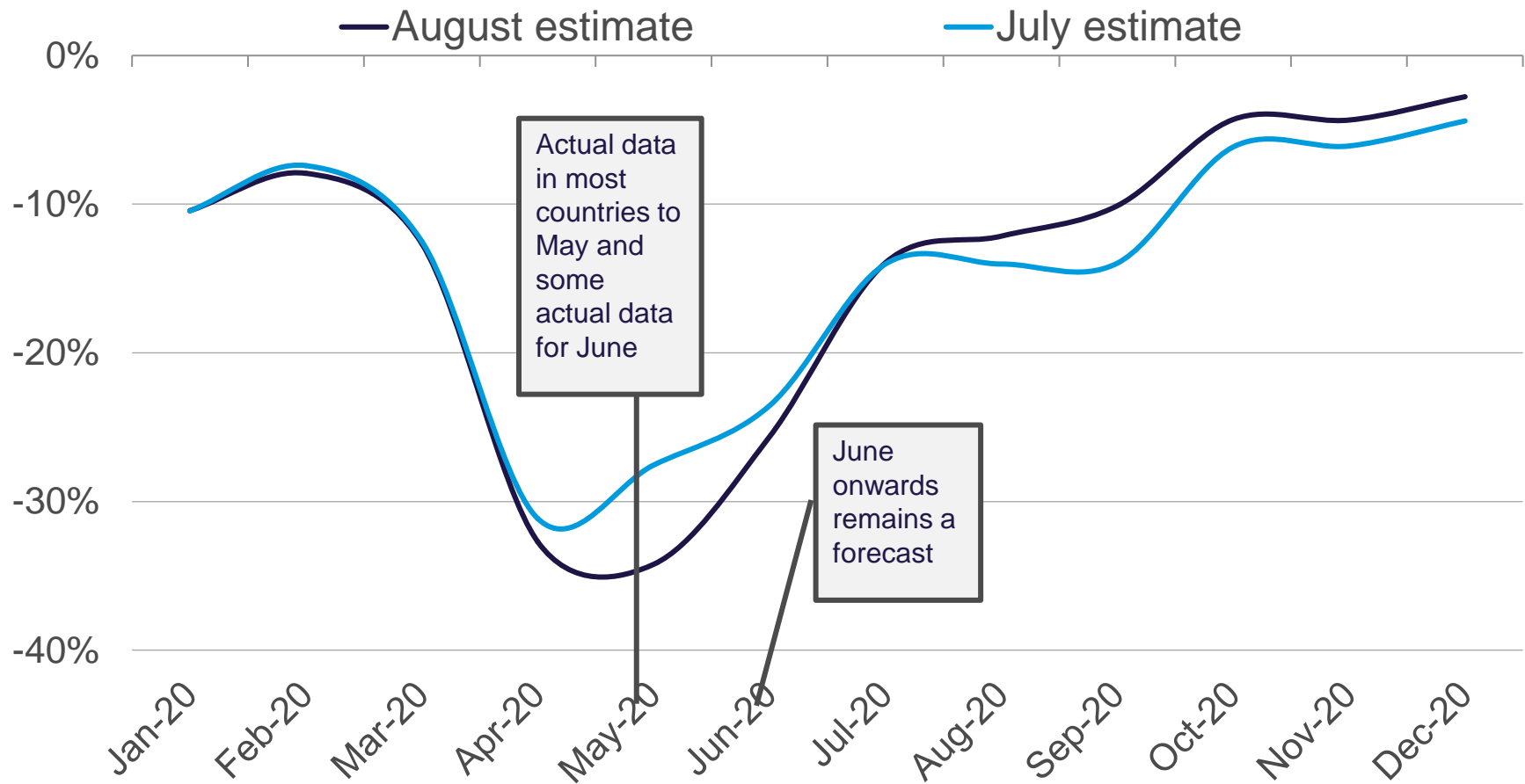


Chinese alumina prices decreasing again
RMB/t



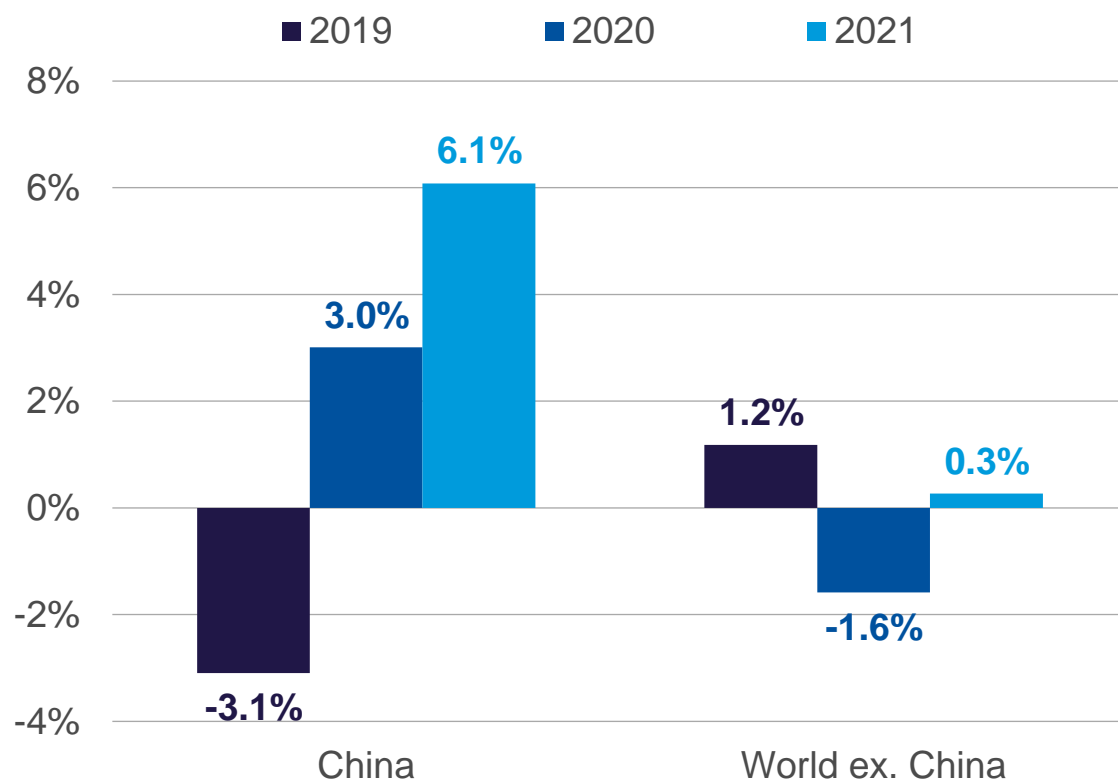
World ex. China aluminium consumption – data confirmed

World ex. China aluminium consumption, y/y % change



Chinese production returns to growth despite closures

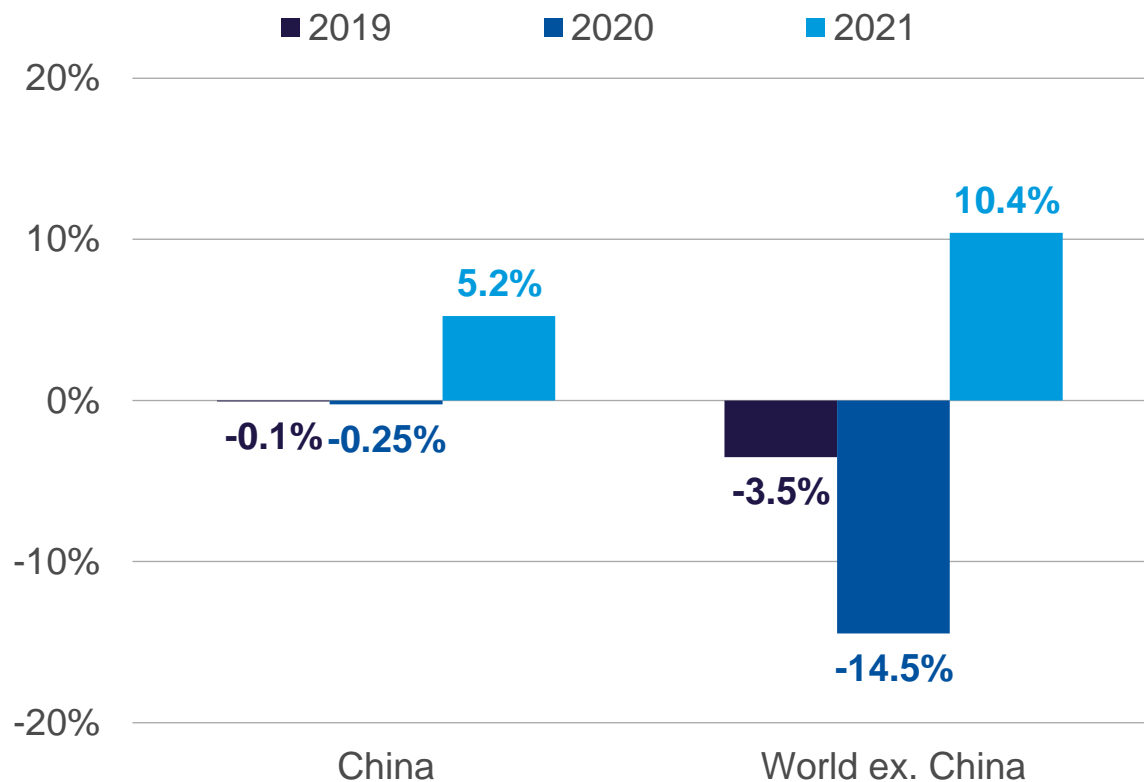
Primary aluminium production, y/y % change



- Ex China closures/disruptions:
 - Tiwai Point, Ferndale, San Ciprian, Aluar (temporary)
- China closures in Q1 650k t/y, ~150kt/y restarted
- China 2.6 Mt/y starting-up in 2020

Swift Chinese recovery prevents steep consumption decline

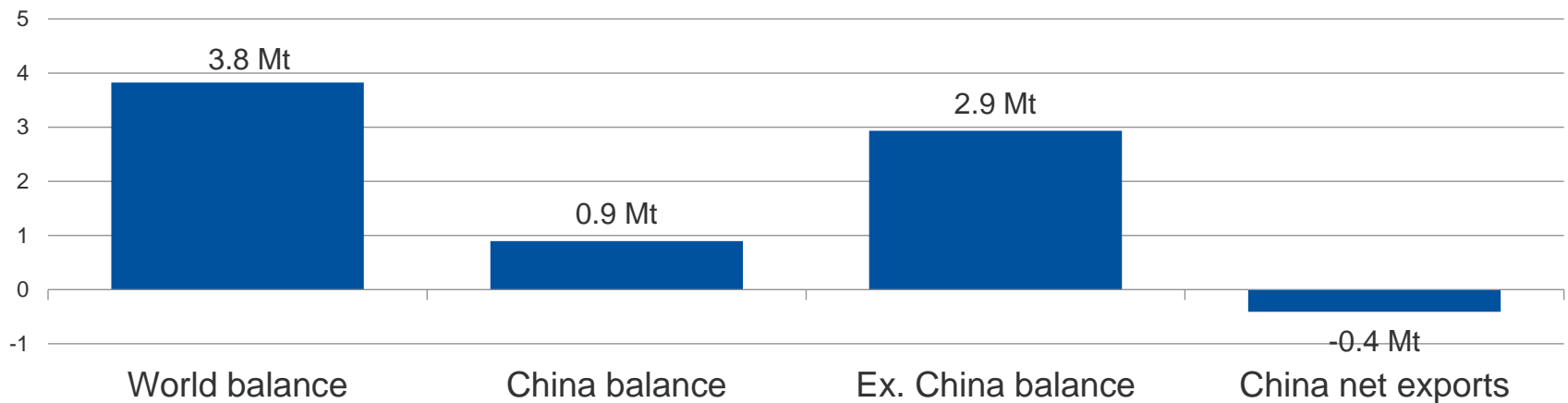
Primary aluminium consumption, y/y % change



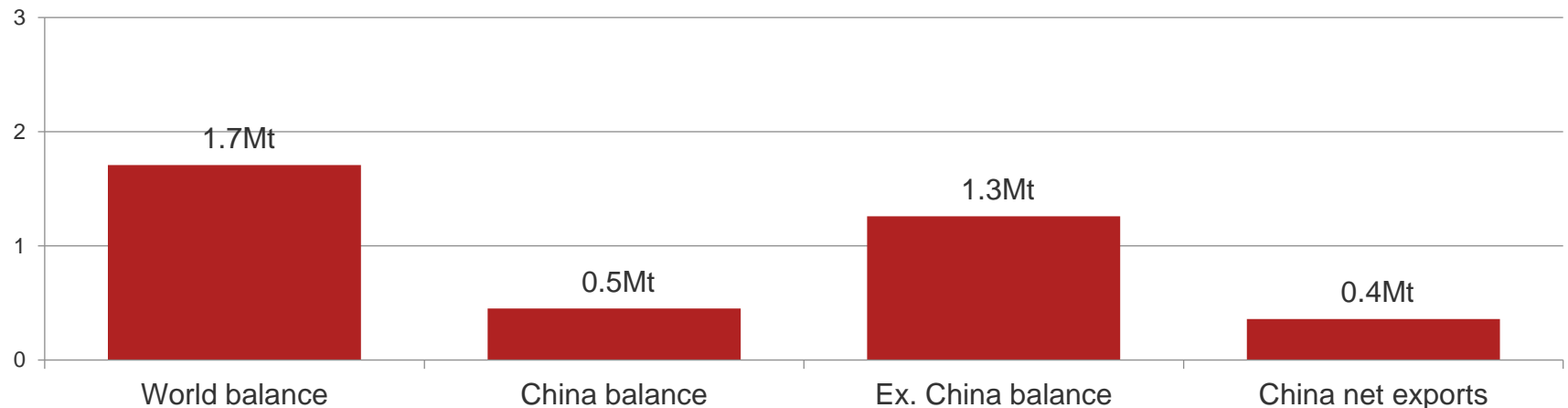
- China has rebounded strongly on restocking and catch-up in Q2
- China will start to slow in H2 on lower exports
- Automotive weakest sector globally
- Packaging offering some support, but less primary intensive

Balance: China will only see a small surplus in 2021

2020 aluminium market balance, million tonnes

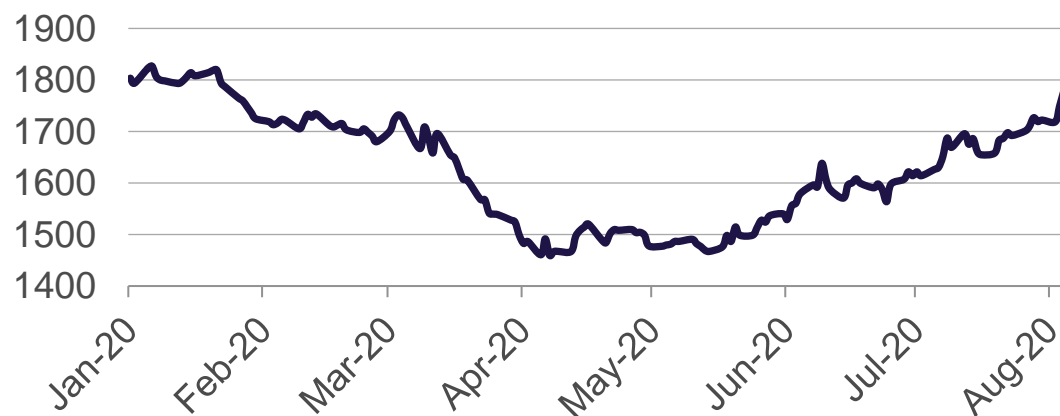


2021 aluminium market balance, million tonnes

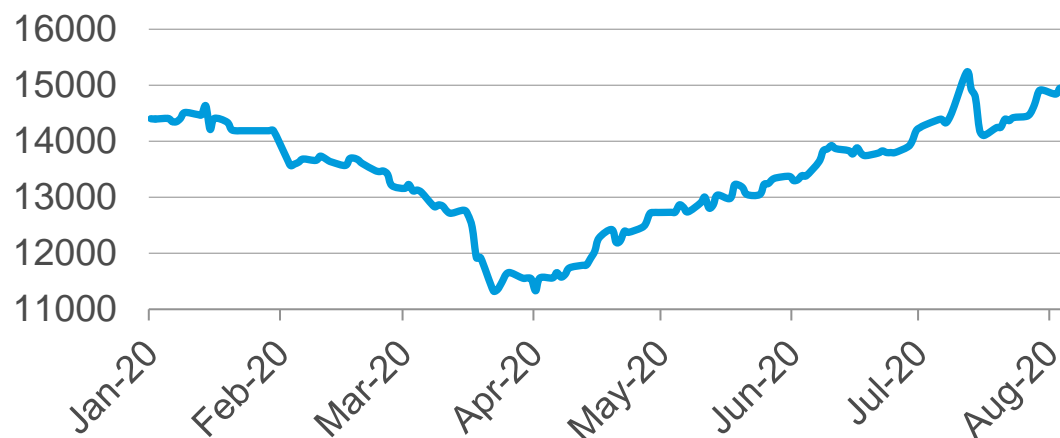


LME/SHFE rally following Chinese recovery and USD weakness

LME aluminium 3-month price, \$/t



SHFE aluminium cash, RMB/t



LME

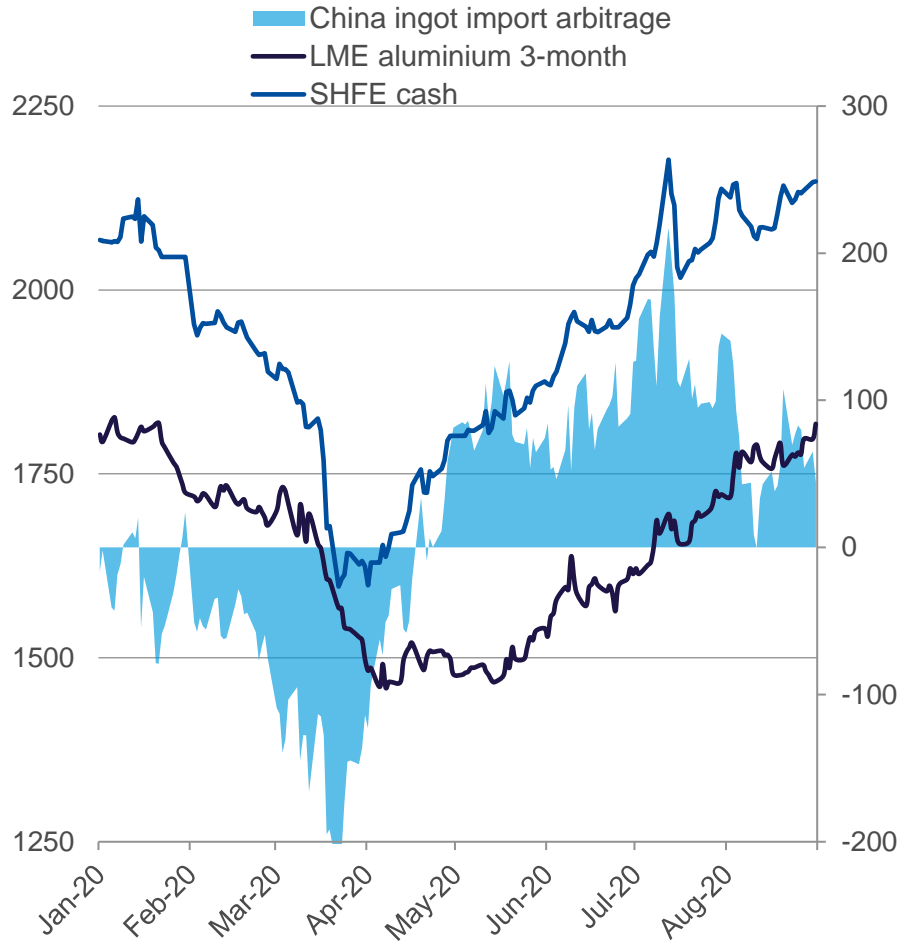
- Supported by global economic recovery
- Weak dollar impact supporting price
- Chasing SHFE higher on import arbitrage

SHFE

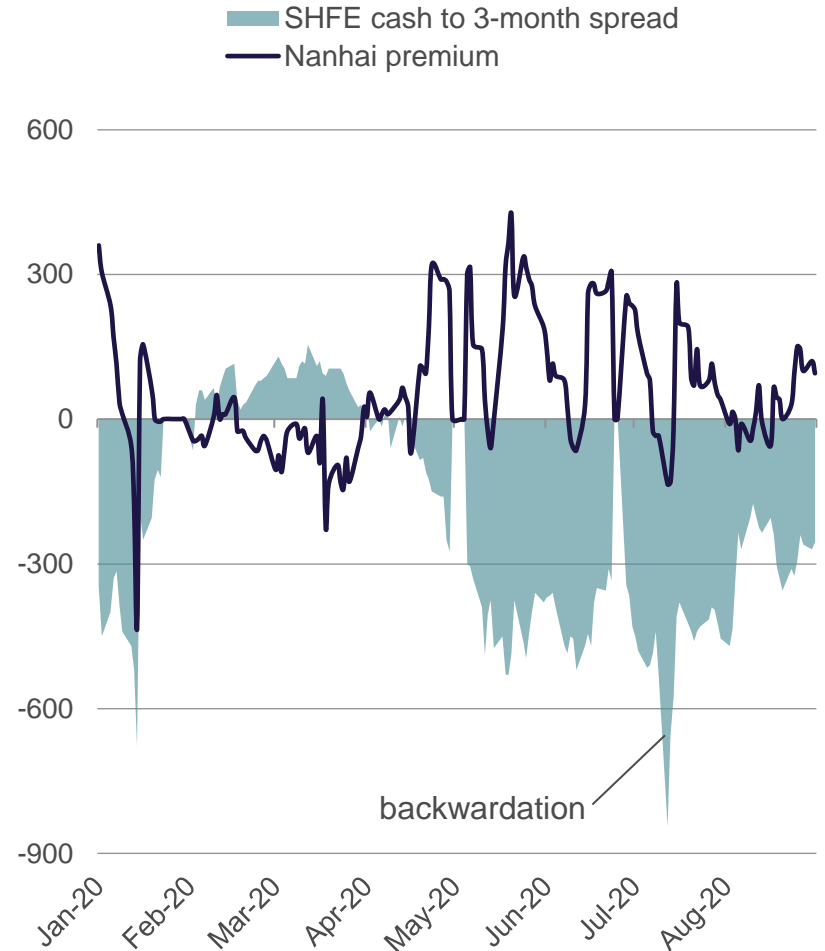
- Recovered to pre-Covid level by July
- Inventory decline supportive
- Increases liquidity in Chinese market
- Backwardations and squeezes of speculative shorts

China ingot import arbitrage remains open, but China is past its tightest

Aluminium prices, \$/t

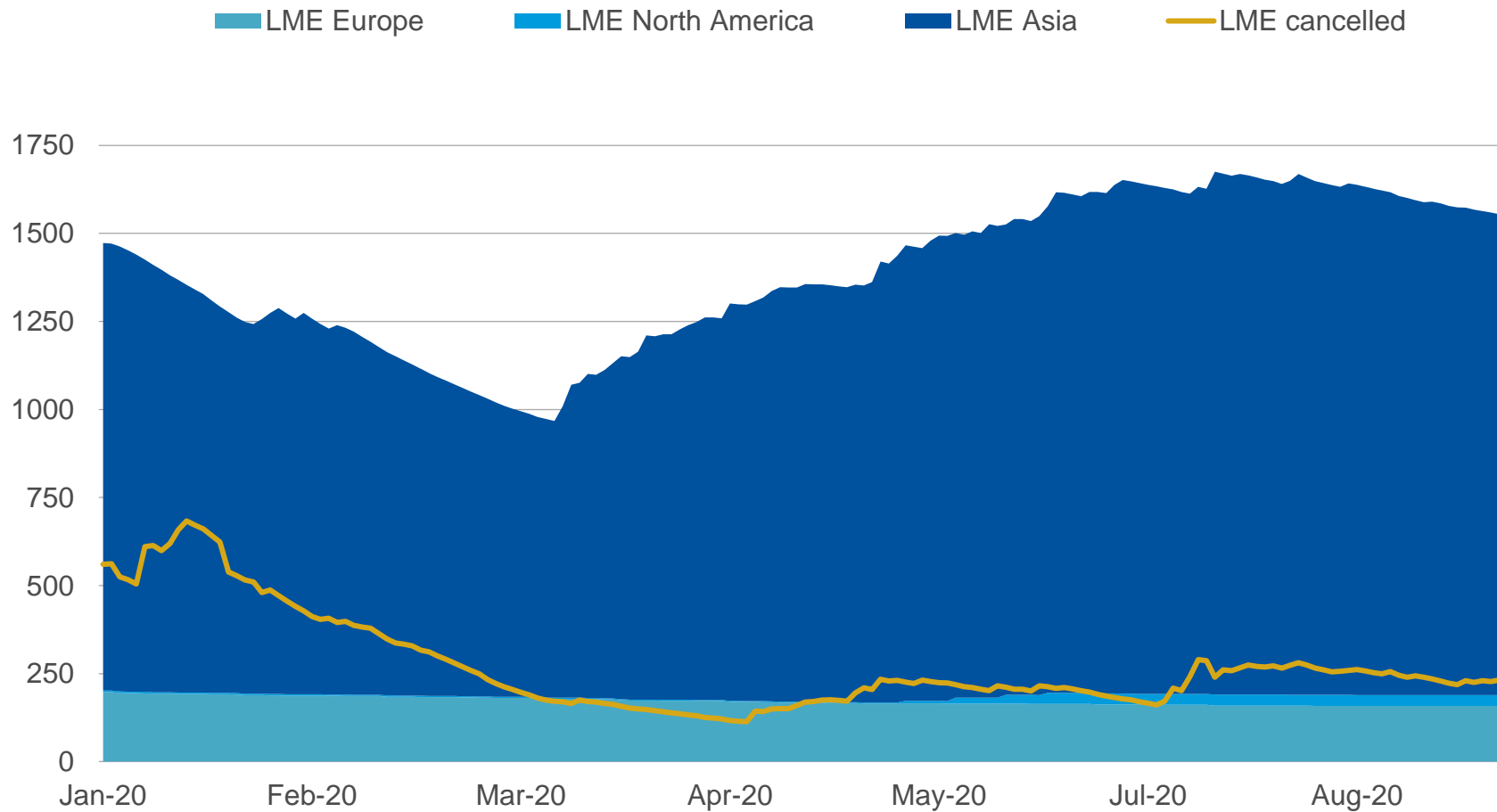


China aluminium indicators, RMB/t



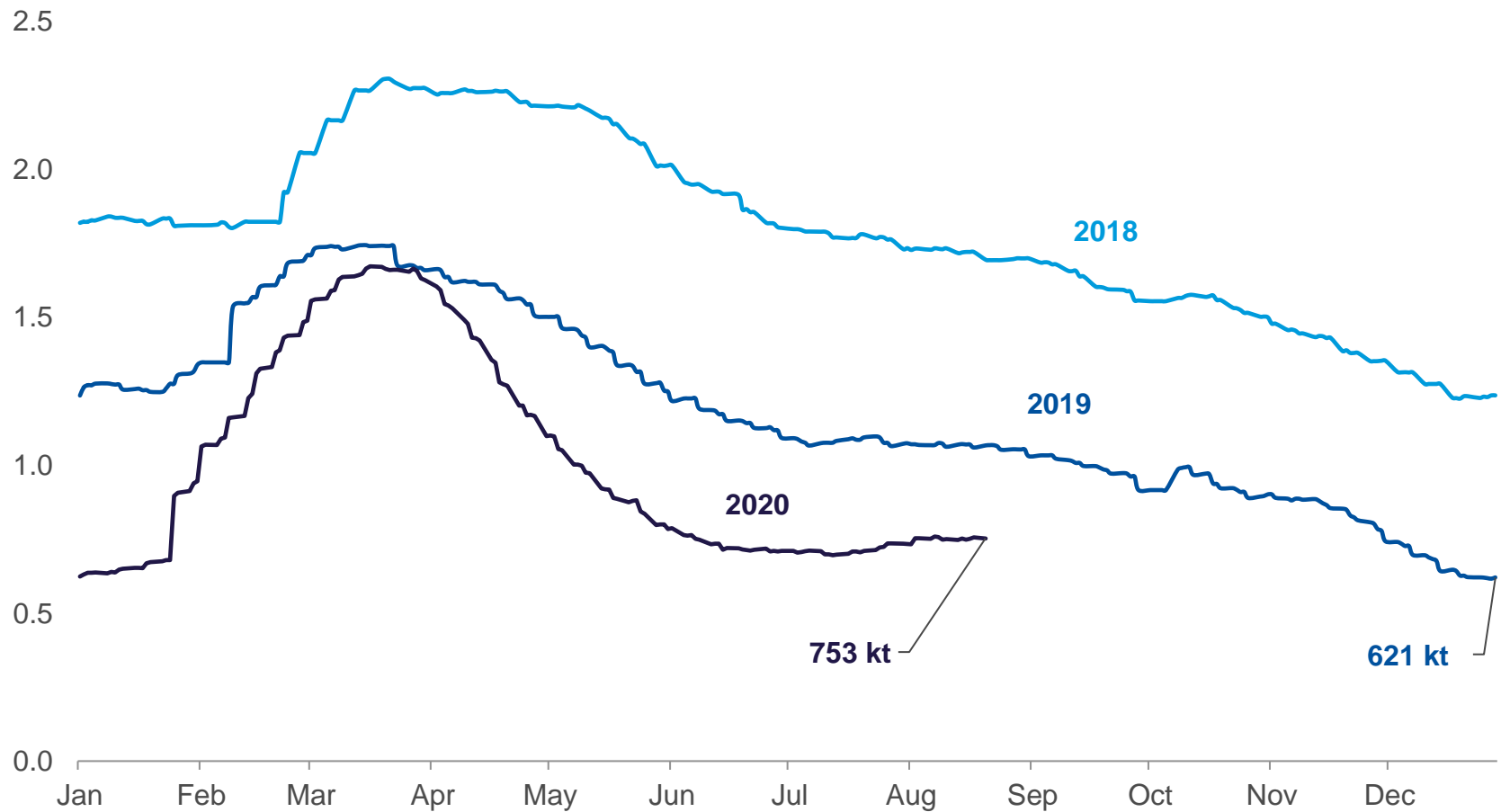
LME inventories

LME aluminium inventories, '000 tonnes



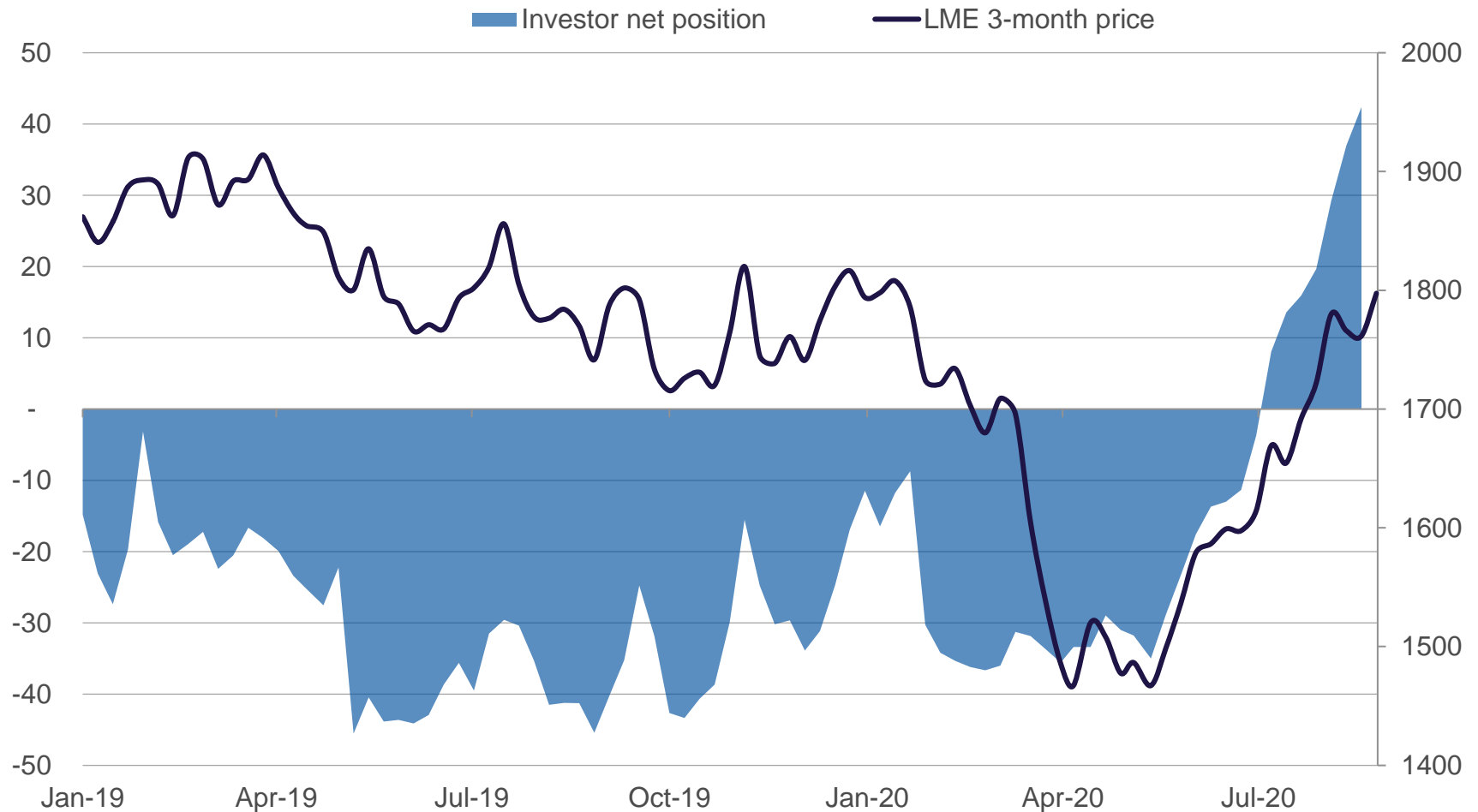
Stock levels in China y/y

China SHFE plus unregistered warehouse inventories, million tonnes



Investor positioning turns bullish

LME aluminium 3-month price, \$/t (RHS) and investor positioning '000 lots (LHS)



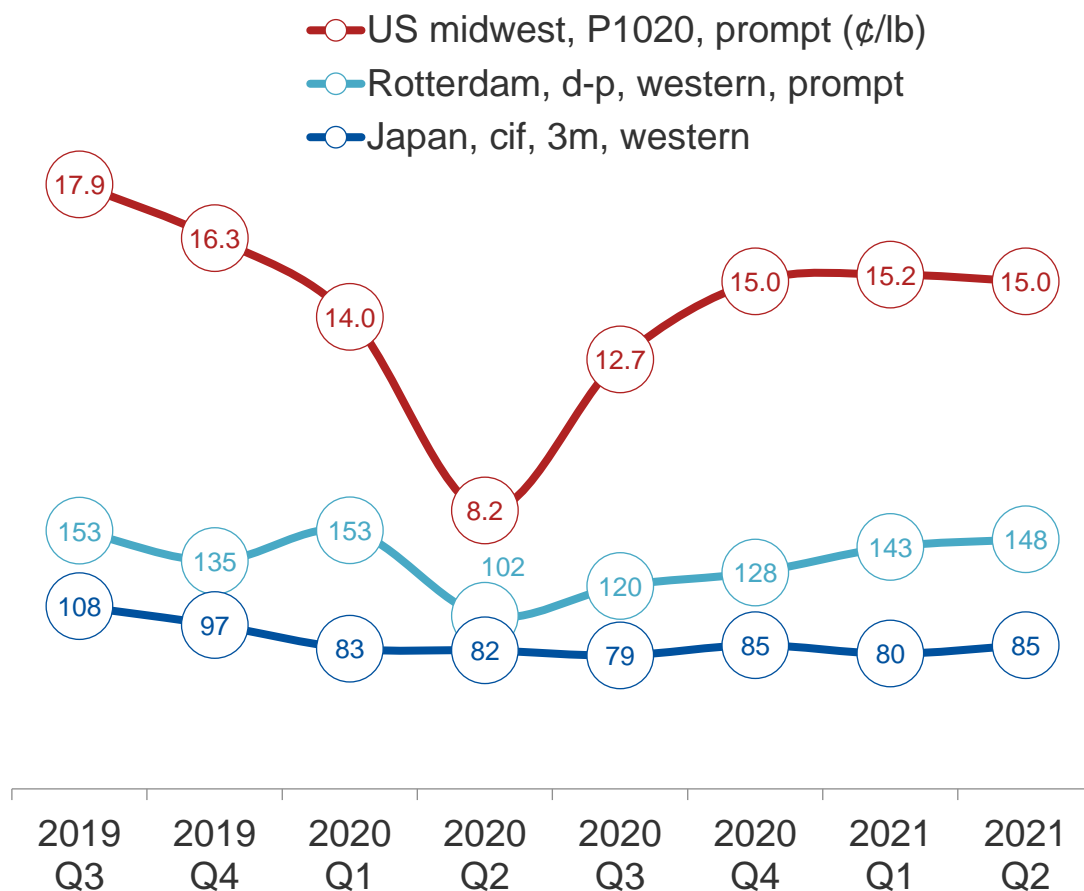
Significant downside risk to 2021 LME forecasts

LME aluminium 3-month price, \$ /t



Section 232 and financing support Ingot premiums

Regional ingot premiums, Europe and Japan \$/t, US ¢/lb



- US announcement came as expected, Midwest already above 14¢/lb. Balance of year forecast will be revised higher.
- Europe, duty paid wont price the full 3% until European producers move back to VAP
- Asia, \$70-85 /t will hold given warehouse incentives, Australasia closures also supportive.

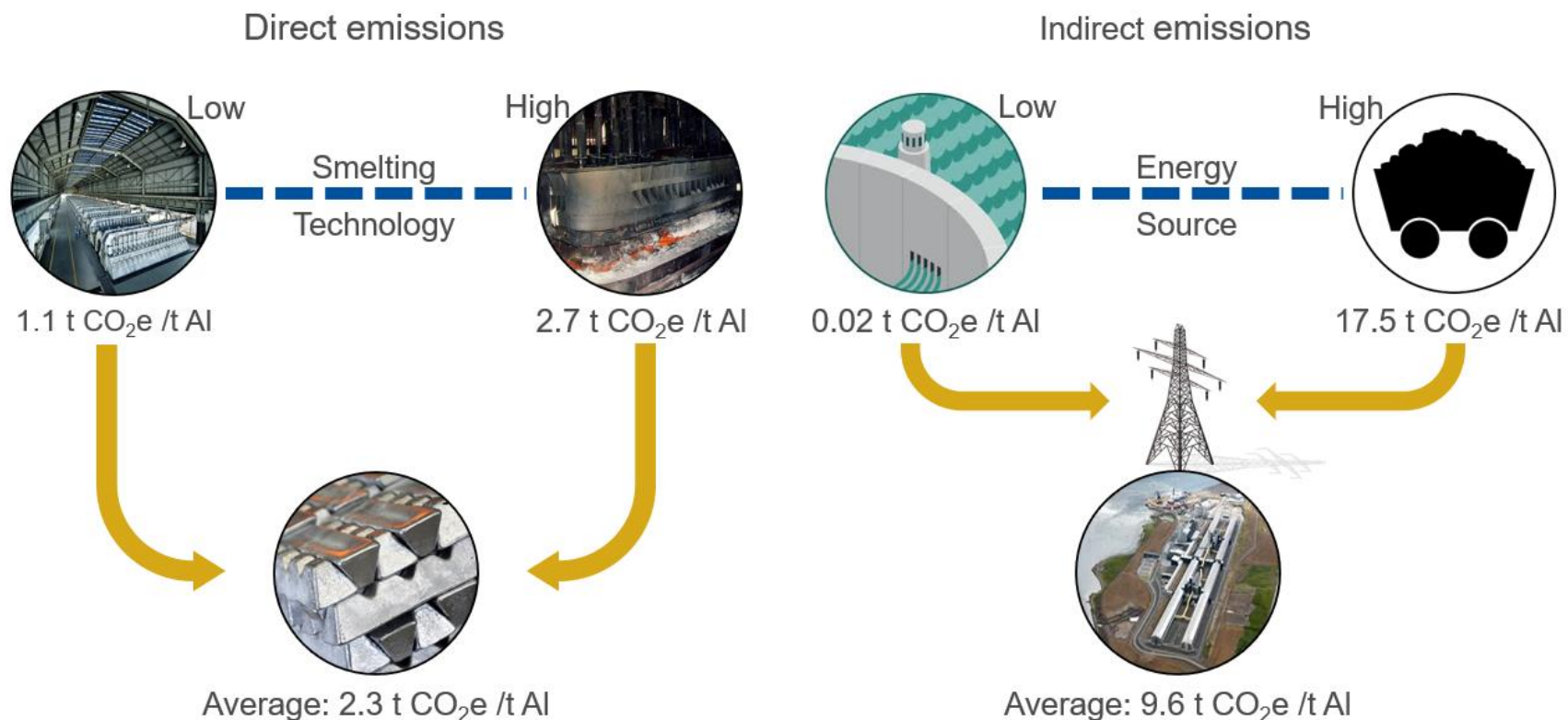
Major risks to outlook

<u>Model levers</u>	<u>Upside</u>	<u>Base case</u>	<u>Downside</u>
Covid-19 RESTRICTIONS	Lockdowns ease, nearly all restrictions end by June 2020 .	Social distancing (enforced and voluntary) ends by December 2020 .	Additional lockdowns in 2020 Q4 and 2021 Q2, followed by gradual easing with social distancing until December 2021 .
Effectiveness of POLICIES	Rapid recovery allows GDP to return to 2019 Q4 levels by 2020 Q4 . Return to pre-Covid growth rates.	Moderate recovery starts later, in 2020 H2. GDP returns to 2019 Q4 levels by 2021 Q2 . Permanent loss in output.	Slow recovery starts later, at end of 2021. GDP returns to 2019 Q4 levels by 2022 Q3 . Permanent output loss is more severe than in the base case.

Conclusions

- Recovery in aluminium demand is uncertain
- Smelters have been profitable – less than expected hit in ROW and China
- Prices have factored in a major recovery
- Premium volatility low in EU and Asia, very high in US

Is low-carbon aluminium the future?





Thank you for your time



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