



Data, Insight,
Strategy &
Communities

Lead supply – what is to come?

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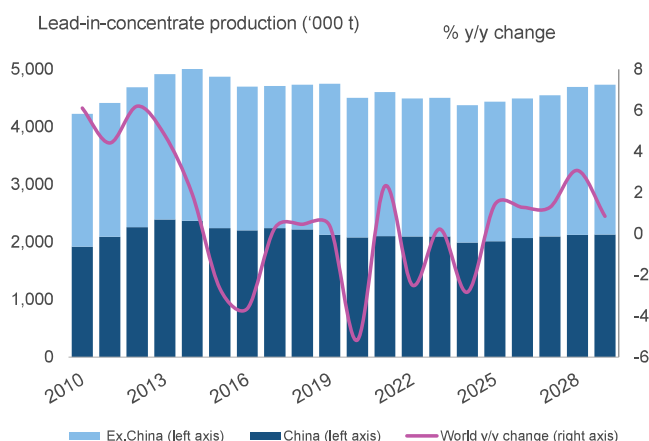
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Agenda

1. Mine supply
2. Refined lead supply
3. Market balances
4. Conclusions and risks

Global mine production set for growth

Growth to return after 2024 dip, notably in 2028



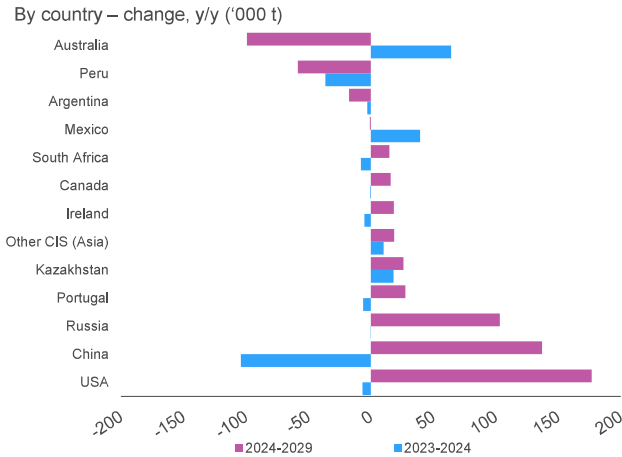
Ex. China mine supply expected to grow more than Chinese.

- Lead in concentrate production from mines supply expected to exhibit growth over our forecast period.
- Global lead in concentrate production to average growth of 1.6% per annum out to 2029.
- Chinese production estimated to grow at an average of 1.3% /y while Ex. China at 1.8% /y.
- Ex. China mine production to account for ~55% of global total.



Global mine production set for growth

Biggest contrasting swings in USA and Australia



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Degree of rise ahead dependent on a handful of mines

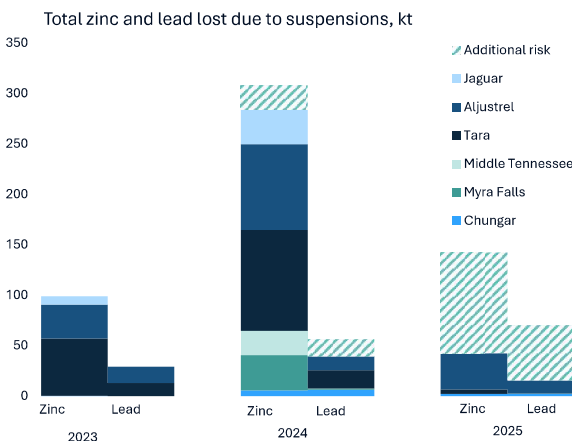
- Future growth in US lead-in-concentrate production reflects South32's Hermosa.
- Chinese production down in 2024 but growth expected as Huoshaoyun in Xinjiang province ramps up from 2026
- Ozeroye moves back into production for Russia (Huoshaoyun in Xinjiang province ramping up from 2026 (+ 38 kt/y).
- Australian production estimated to fall and only potentially offset by Abra.

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Some lead production subject to zinc terms

Some lead production still at risk in 2024 and 2025



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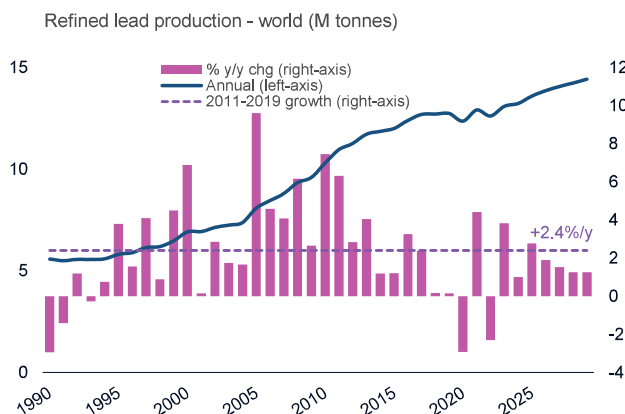


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Refined lead production lower in 2024

2025 production lifts briefly above 2010s growth before waning out to 2029



Modest refined lead growth anticipated

- 2024 production growth lower than 2023
- Forecast average annual growth to 2029 at 1.7% /y, higher in the closer future and lower in the distant.
- Total global refined production is forecast to breach 14 Mt in 2027

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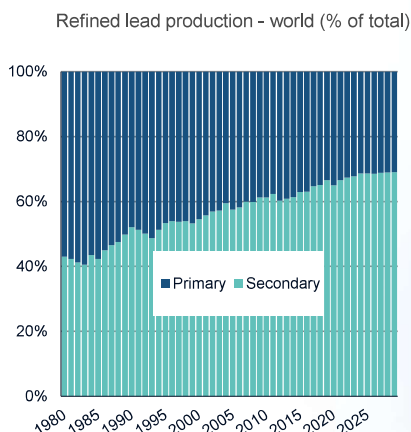
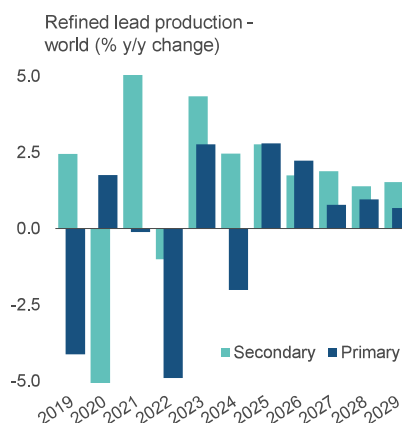
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Slower growth ahead for secondary as well as primary production

After another rebound in 2025, primary growth to slow by more than secondary in 2027-2029



Secondary will continue to make up more of the total

- Global lead production growth will slow out to 2029. More marked in primary than secondary
- Focus shifting to silver rather than lead recoveries and treating more lower lead content non-concentrate feed.
- Secondary output is approaching 70% of global refined lead production

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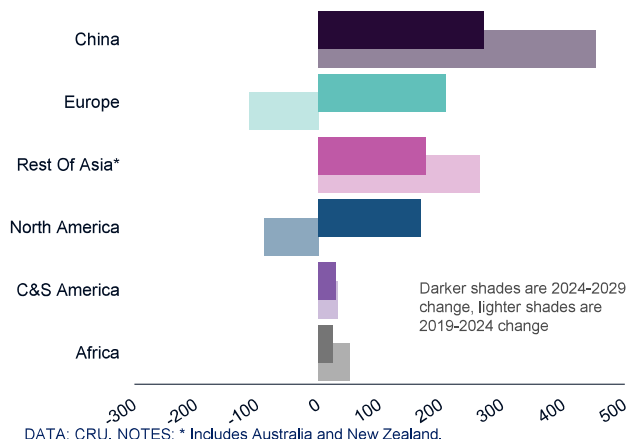
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Asia still the driver of global growth in recycling

China dominates the Asian market

Refined lead production - secondary, period changes ('000 tonnes)



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Secondary growth slowing

- Chinese secondary lead output growth will slow again further ahead
- Growth in the rest of Asia will be led by Korea and India
- Europe to turnaround and exhibit growth in secondary production
- North American growth portrays slow recovery after 2022 Covid-19 low

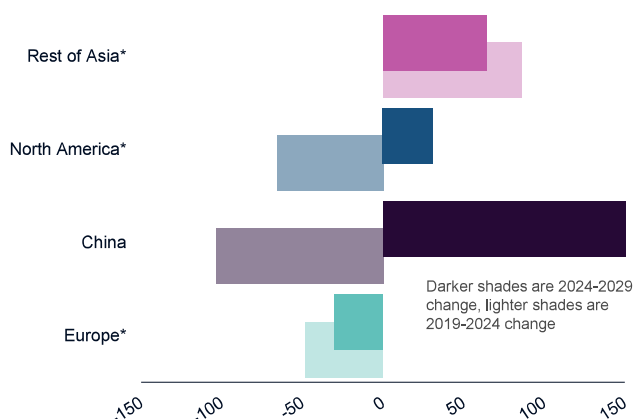
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Asia is the key driver of primary growth

China to lead growth out to 2029

Refined lead production - primary, period changes ('000 tonnes)



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Asia advances while Europe slips

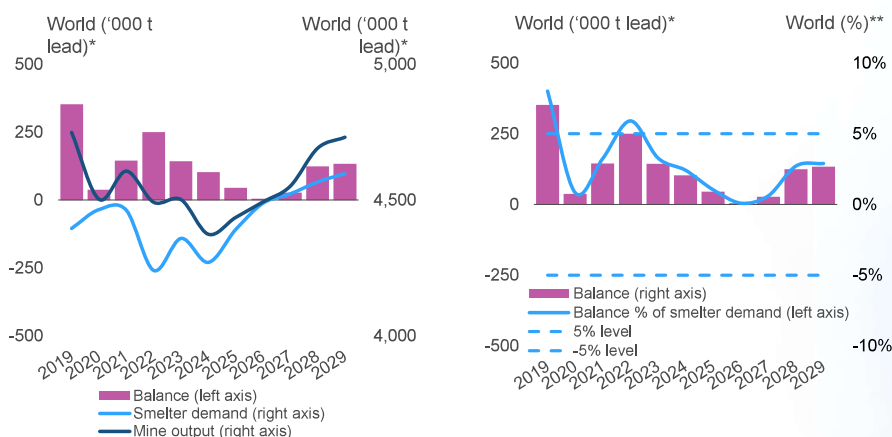
- Chinese primary production to move into growth
- Asia sees growth from South Korea, Kazakhstan and India
- Feed switches means lower European output
- North American lift mainly reflects a recovery at Teck's Trail

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Concentrate market surplus to shrink before widening again

Demand catches up supply until 2029 mine uptick



DATA: CRU. NOTES: * Contained lead in mined concentrate. ** Balance expressed as % of smelter demand provides some guidance on degree of excess or shortfall, with +/-5% an approximate tipping point into notably greater excess/shortfall.

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Smelter demand strength key to degree of tightening ahead

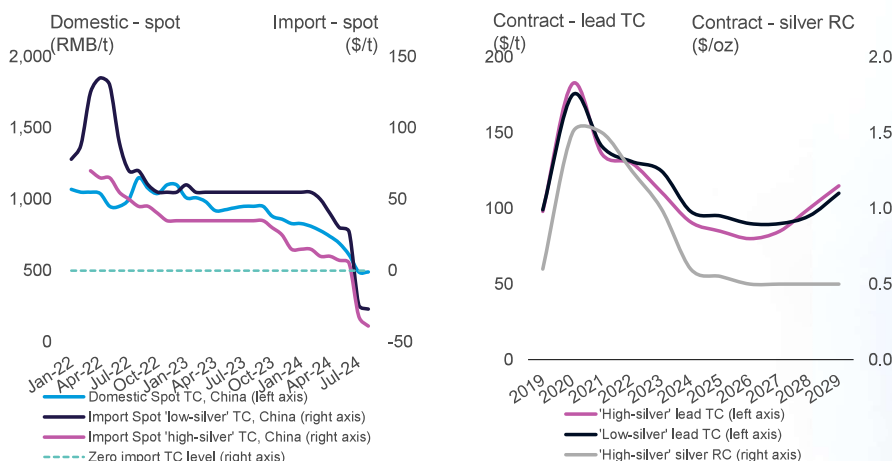
- The global lead concentrate market surplus will continue to shrink out to 2026
- The key driver of this tightening trend is a greater rise in smelter demand than mine output
- Surplus in 2028-2029 is due to a notable uptick in mine output

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Turning point for concentrate TCs to come in late 2020s

Contract TCs to keep slipping until 2028



Spot and contract TCs under downward pressure in near-term

- Chinese spot TCs have fallen more sharply over the summer
- Smelters are still making margins on by-product revenues and lead concentrate contract terms that make up most of their feed requirements
- Tighter concentrate availability ahead will ensure contract lead TCs continue to fall in the near-term before levelling out and then ticking up

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Conclusions and risks

- Lead mine supply is expected to grow but growth is mostly attributed to a select number of mines/projects
- Lead-in-concentrate will continue to come out of the ground alongside zinc, will also be subject to zinc prices/business cycles
- Refined lead production growth more prominent in secondary than primary but still slowing
- TCs to reflect a tighter balanced market while RCs remain lower due to high appetite for silver

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Thank you.

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