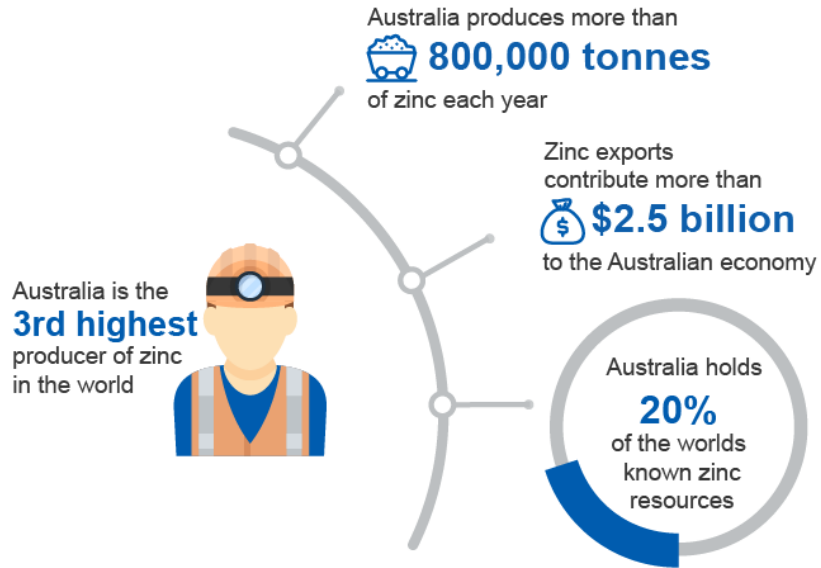


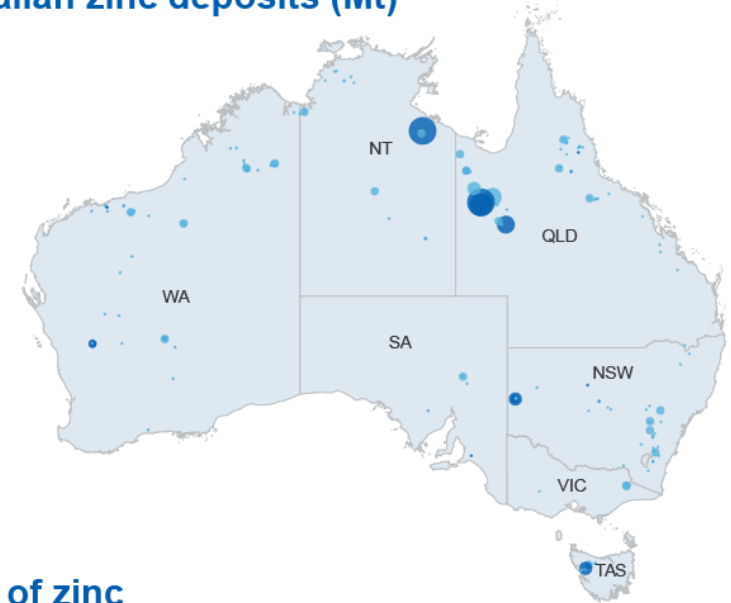
Zinc

Resources and Energy Quarterly March 2018

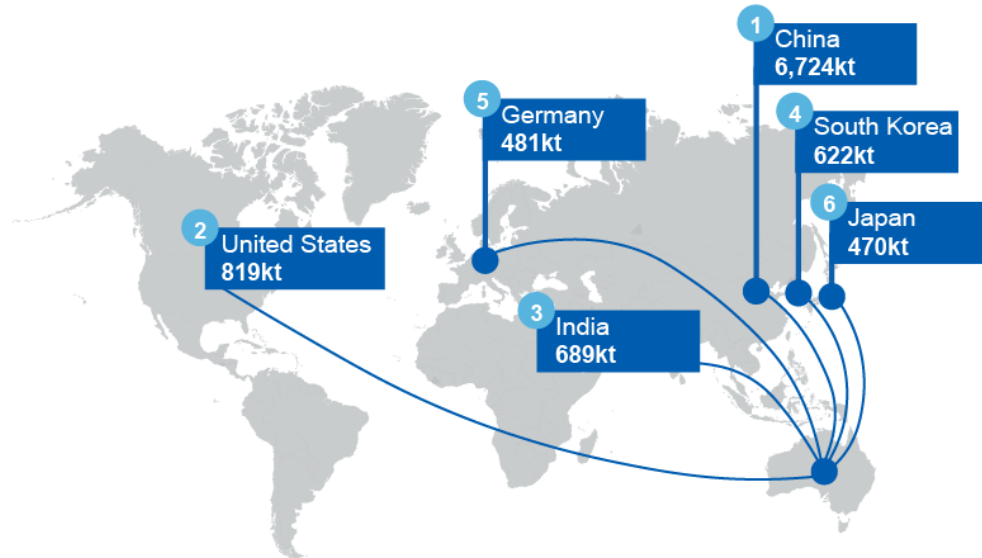


Major Australian zinc deposits (Mt)

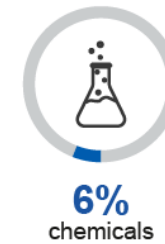
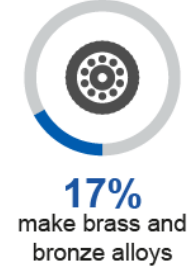
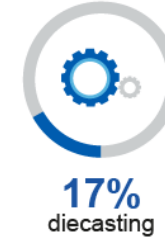
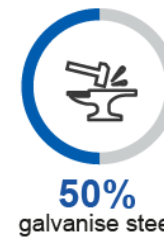
- <0.01
- 0.02–0.03
- 0.04–0.09
- 0.10–0.20
- 0.21–0.44
- >0.45
- Deposit
- Operating mine



Key zinc consumer markets



Global uses of zinc



14.1 Summary

- Zinc prices are expected to edge back from a peak in the first half of 2018 — falling from US\$3,155 a tonne in 2018 to US\$2,625 a tonne by 2020 — as supply closes the gap with demand.
- Australia's production is expected to rise sharply over the next year, before stabilising as mines reach their maximum output and prices ease. Export volumes are projected to rise from 1.1 million tonnes of metal content in 2017–18 to 1.6 million tonnes by 2019–20.
- Export values are expected to lock in the substantial gains recorded in 2017–18, remaining largely steady at around \$3.8 billion each year over the outlook period.

14.2 Prices and stocks

Zinc prices are expected to peak in 2018

The LME zinc price has edged back after an extremely strong March quarter, falling from US\$3,540 a tonne in February to US\$3,191 in April and under US\$3,100 in May/June. Prices are expected to ease a little further over the remainder of 2018, as demand growth continues to soften and new supply enters the market, narrowing the supply deficit.

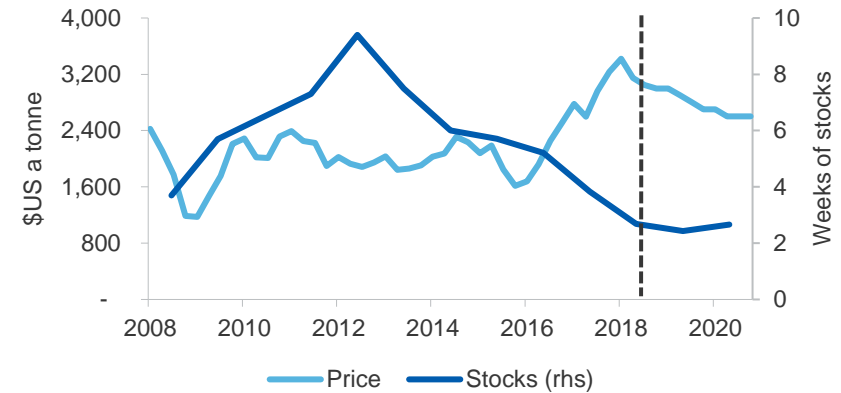
This price decline is expected to persist into 2019, as new supply from a range of mines around the world begins to enter markets in late 2018 and 2019. Prices are forecast to ease to US\$2,850 a tonne in 2019. A further fall to US\$2,625 is forecast for 2020, as the market moves into surplus. By this point, much (but not all) of the demand-fuelled price gain of 2017 will have been reversed.

14.3 World consumption

Consumption growth is expected to moderate over the outlook period

World refined zinc consumption is forecast to lift from 14.6 million tonnes in 2018 to 15.6 million tonnes by 2020. China remains the key player in global zinc demand, accounting for around half of all zinc consumption. However, it is likely to face a slight decline in its top-level growth figures,

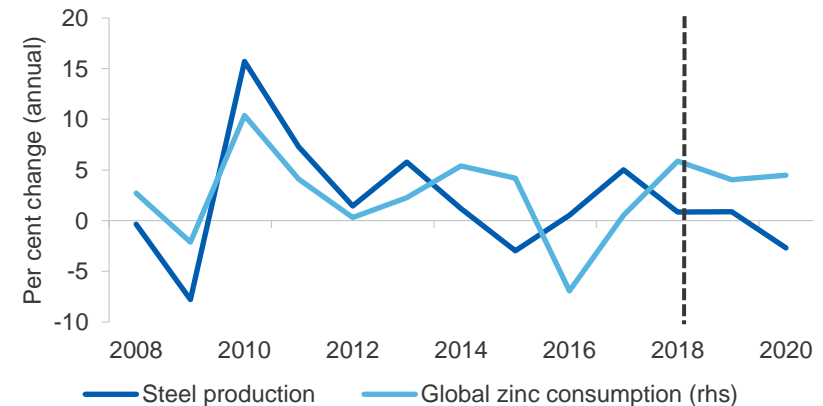
Figure 14.1: Zinc prices and stocks



Note: zinc spot price

Source: London Metals Exchange (2018) zinc spot price

Figure 14.2: Annual change in global steelmaking and zinc use



Source: IMF (2018), Department of Innovation, Industry and Science estimates

as its government seeks to reduce environmental degradation and shift China towards a more service and consumer-oriented economy. Housing construction in China remains healthy for the time being, but some softening remains in prospect given the scale of private debt. The Belt and Road Initiative represents a strong potential future source of zinc demand, but the scale of initiatives to be undertaken over the next two years is relatively modest in comparison to the long-term trajectory. As such, zinc consumption over the next two years is expected to remain relatively solid, but with a slight softening in its growth rate.

14.4 World production

Mine output should lift sharply towards the end of the outlook period

Previous falls in zinc prices led to many mines closing or reducing their output in 2016. Prices have since rebounded, and capital has been rapidly deployed to restore production and unlock new deposits. However, mines are yet to fully ramp back up, as restarting production requires hiring and training, site inspections and the (re)deployment of equipment.

More than 500,000 tonnes of new supply is forecast to enter markets in 2018, with more to follow in 2019. Most of this will be through re-openings and expansions of existing facilities, though several substantial new mines (including Ironbark's Citronen project, Arizona Mining's Hermosa project, and the Khnaiguiyah project in Saudi Arabia) could potentially add to supply towards the end of the outlook period.

Supply is forecast to rise from 14.0 million tonnes in 2018 to 14.7 million tonnes in 2019, then 15.3 million tonnes in 2020. This exceeds growth in demand, and should allow inventories to start recovering by 2020.

Refined production is expected to rise in line with mine output

Mine concentrates are expected to be in shortfall during the bulk of the outlook period, which will constrain growth in zinc refining. Refining capacity will be brought on line as the availability of raw material improves. Refined output is forecast to rise from 14.3 million tonnes in 2018 to 15.7 million tonnes by 2020.

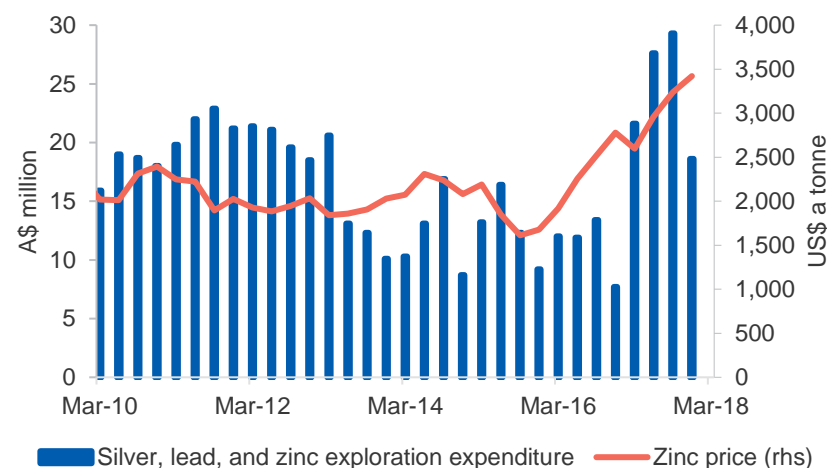
14.5 Australia

Exploration expenditure has edged back after a brief surge

Exploration spending for silver, lead and zinc dropped to \$18.6 million in the March quarter, from \$29.3 million in the December quarter. This remains well above the level of a year ago, when spending dropped to a low of \$7.7 million. However, with zinc prices showing signs of turning down, it is possible that exploration spending will ease back over the next year.

Unlike many other commodities, silver lead and zinc exploration is largest among the eastern states, with more than half of spending occurring in NSW and Queensland.

Figure 14.3: Australia's silver, lead and zinc exploration expenditure



Source: ABS (2018) Mineral and Petroleum Exploration, cat. no. 8412.0; LME (2018)

Australian mined production is recovering, due to a surge in investment

Australia's metal content production eased marginally in the March quarter — from 245,000 tonnes to 239,000 tonnes — largely due to a slight drop in production from Glencore's McArthur River mine, which produced at very high levels in December.

Annual production is forecast to rise significantly in 2018. Significant capital was invested in Australia following the 2017 zinc price surge. This investment has made zinc an outlier in the base metal complex (which has generally seen investment fall substantially). Australia's production of zinc is forecast to lift from 944,000 tonnes in 2017–18 to 1.3 million tonnes in 2018–19 and 1.4 million tonnes by 2019–20.

The Century mine — once the world's largest zinc mine — is set to recommence operations in late 2018. New Century Resources, which acquired the mine in 2017, is seeking to extract ore from the mine's tailings dam, which potentially holds more than 2.3 million tonnes of zinc. Feasibility studies are also underway on whether extraction can extend out to nearby resources, extending the project's life out to the 2030s.

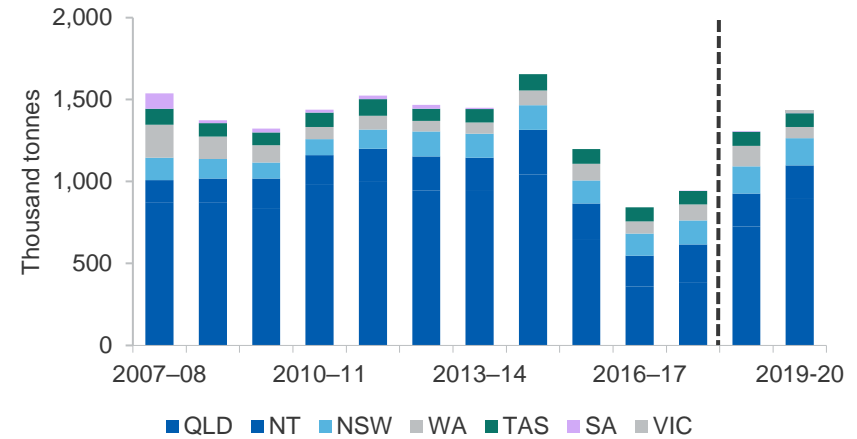
MMG's Dugald River project is also expected to make a substantial contribution to production over the outlook period. This deposit holds large, high-quality zinc reserves, and MMG has already invested more than A\$1 billion to open up the resource. Production has been ramping up steadily for six months, with a new processing plant now attached to the project.

Zinc exports are expected to grow in line with rising production

Australia has relatively modest domestic zinc use. As a result, the export outlook is expected to largely follow the production outlook, with exports of ore and ore concentrates expected to rise from 1.8 million tonnes in 2017–18 to 2.9 million tonnes by 2019–20.

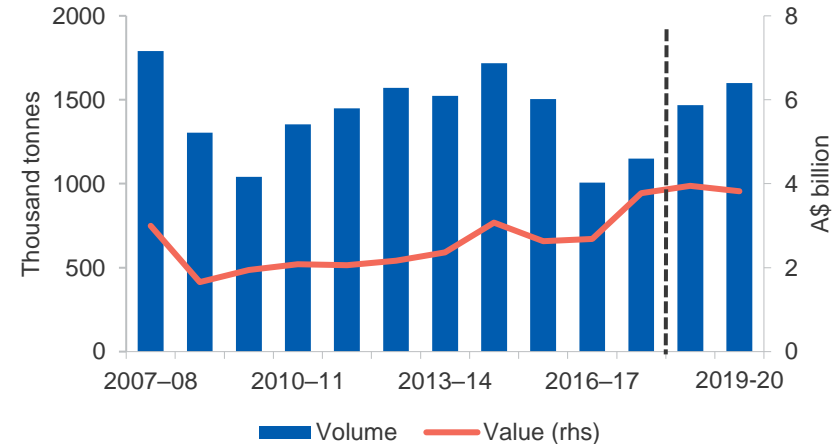
Export earnings are projected to largely hold their value, with higher volumes counteracting expected declines in prices. Earnings are projected to increase from \$3.8 billion in 2017–18 to \$3.9 billion in 2018–19, before settling back to \$3.8 billion again in 2019–20.

Figure 14.4: Australia's zinc production by main producing state



Source: Company reports; Department of Innovation, Industry and Science (2018)

Figure 14.5: Australia's zinc exports



Source: ABS (2018) International Trade in Goods and Services, cat. No. 5368.0, Department of Innovation, Industry and Science (2018)

Table 14.1: Zinc outlook

World	Unit	2017	2018 ^s	2019 ^f	2020 ^z	Annual percentage change		
						2018 ^s	2019 ^f	2020 ^z
Production								
– mine	kt	13,306	13,957	14,666	15,319	4.9	5.1	4.4
– refined	kt	13,597	14,278	15,037	15,733	5.0	5.3	4.6
Consumption	kt	14,071	14,563	15,085	15,638	3.5	3.6	3.7
Closing stocks	kt	1,035	751	703	798	–27.5	–6.3	13.5
– weeks of consumption		4	3	2	3	–29.9	–9.6	9.5
Price								
– nominal	US\$/t	2,894	3,155	2,850	2,625	9.0	–9.7	–7.9
	USc/lb	131	143	129	119	9.0	–9.7	–7.9
– real ^b	US\$/t	2,962	3,155	2,789	2,521	6.5	–11.6	–9.6
	USc/lb	134	143	127	114	6.5	–11.6	–9.6
Australia	Unit	2016–17	2017–18 ^s	2018–19 ^f	2019–20 ^z	2017–18 ^s	2018–19 ^f	2019–20 ^f
Mine output	kt	843	944	1,307	1,438	12.0	38.5	10.0
Refined output	kt	466	468	500	500	0.4	6.8	0.0
Export volume								
– ore and conc. ^c	kt	1,479	1,768	2,631	2,940	19.6	48.7	11.7
– refined	kt	372	402	356	357	8.1	–11.6	0.5
– total metallic content	kt	1,008	1,149	1,468	1,601	14.1	27.7	9.0
Export value								
– nominal	A\$m	2,688	3,774	3,949	3,820	40.4	4.7	–3.3
– real ^d	A\$m	2,740	3,774	3,859	3,646	37.7	2.3	–5.5

Notes: **b** In 2018 US dollars; **c** Quantities refer to gross weight of all ores and concentrates; **d** In 2017–18 Australian dollars; **f** Forecasts; **s** Estimate

Source: ABS (2018) International Trade in Goods and Services, Australia, Cat. No. 5368.0; Company reports; Department of Industry, Innovation and Science; International Lead Zinc Study Group (2018); LME (2018); World Bureau of Metal Statistics (2018)