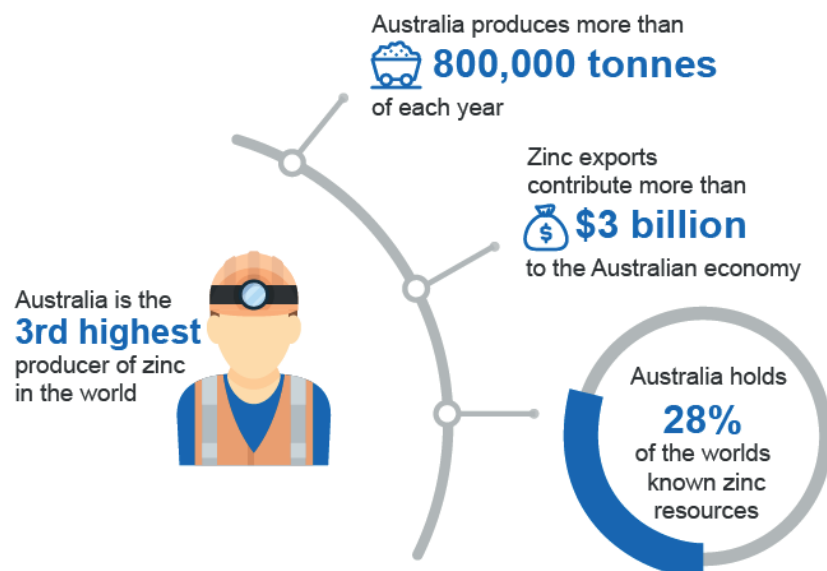


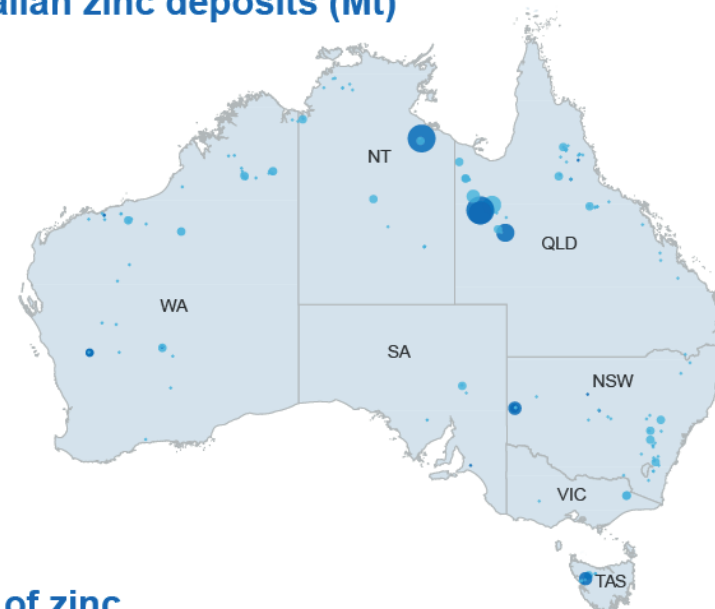
Zinc

Resources and Energy Quarterly December 2018

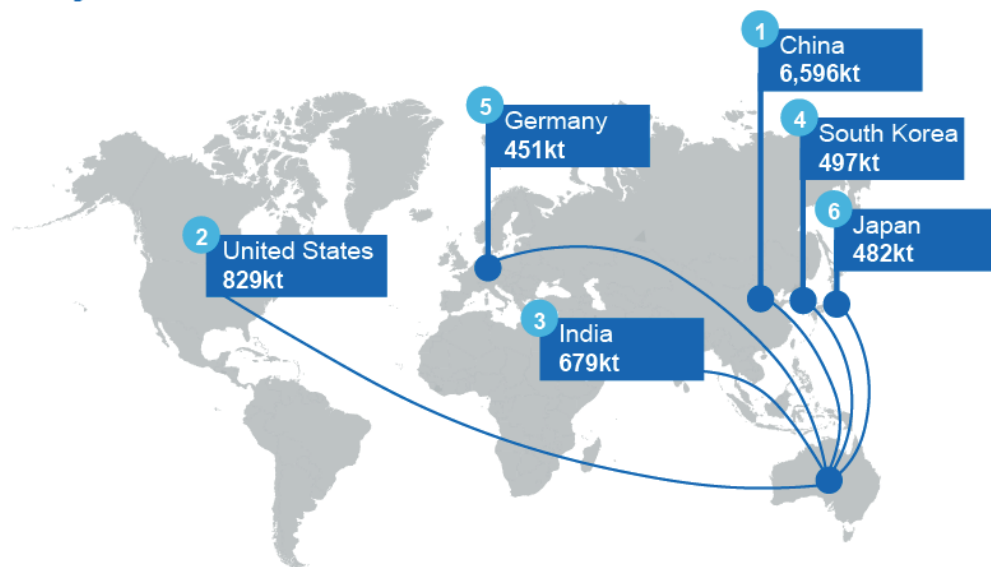


Major Australian zinc deposits (Mt)

- <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



50% galvanise steel



17% diecasting



17% make brass and bronze alloys



6% rolled zinc



6% chemicals



4% other

14.1 Summary

- After hitting an 11-year peak in early 2018, zinc prices declined in the second half of 2018. Prices are expected to rebound modestly in the near term, as fears ease over both oversupply and trade tensions. Prices are expected to slowly ease over the outlook period, to average US\$2,775 a tonne in 2019 and US\$2,625 a tonne in 2020.
- Australia's output is expected to lift over the next two years, as production ramps up at the re-opened Century mine in Queensland. Export volumes of ores and concentrates are forecast to rise from 1.7 million tonnes in 2017–18 to 2.8 million tonnes by 2019–20.
- Export values are expected to lock in the substantial gains recorded in 2017–18, remaining above \$3.7 billion annually over the outlook period.

14.2 Prices

Zinc prices forecast to decline after a peak in 2018

After strong prices during the beginning of 2018, the London Metal Exchange (LME) zinc spot price eased over the second half of the year. Prices averaged US\$2,537 a tonne over the September quarter, but rebounded towards the end of the year (Figure 14.1).

Inventories remain tight, with LME stocks reaching 10-year lows over the December 2018 quarter. Similarly Shanghai Futures Exchange (SHFE) inventories reached their lowest levels in more than 10 years at the end of September, with stocks remaining low relative to historical levels through the December 2018 quarter. The low level of stocks are attributed to lower smelter output levels in China and Europe over the period, and are expected to keep the price elevated in the short-term.

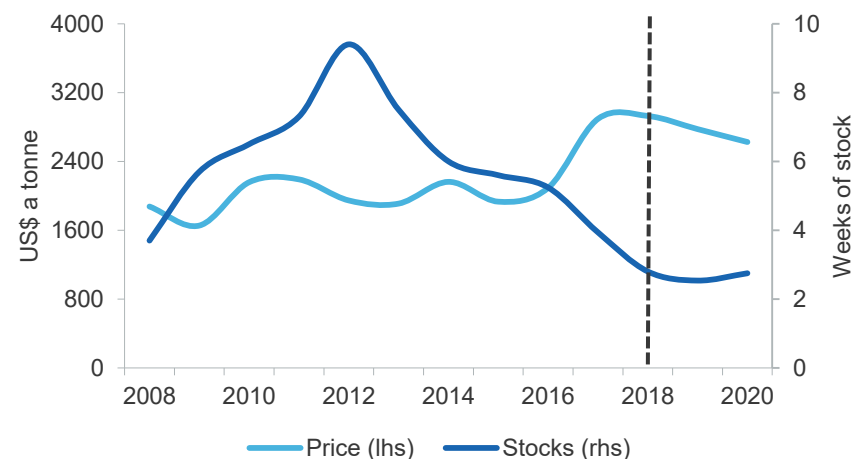
Prices are forecast to ease further over the outlook period, due to new concentrate production from mines entering the market. Prices are forecast to average US\$2,775 a tonne in 2019 and US\$2,625 a tonne by 2020 (Figure 14.2) as the market continues to rebalance and inventories bottom out.

Figure 14.1: Zinc monthly spot prices



Source: London Metal Exchange (2018)

Figure 14.2: Zinc prices and stocks



Source: London Metal Exchange (2018) and Department of Industry, Innovation and Science (2018)

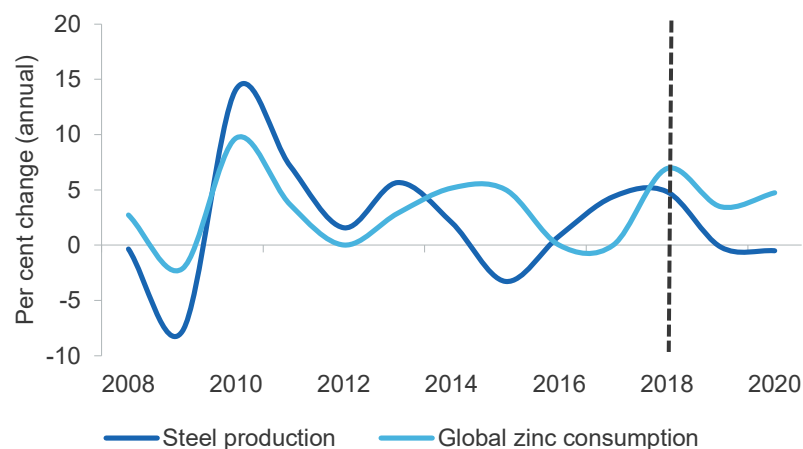
14.3 World consumption

Consumption growth is expected to moderate over the outlook period

Global refined zinc consumption is forecast to increase moderately over the outlook period reaching 14.2 million tonnes in 2018 and 15.3 million tonnes in 2020. Zinc's primary use is galvanizing steel, so consumption is heavily linked to steel use (Figure 14.3), and in turn, vehicle production and infrastructure development. China remains the key player in global zinc demand, accounting for around half of all zinc consumption. Moderating demand during 2018 is linked to a reduction in the output of galvanised steel from China.

Consumption in China presents a key uncertainty to the outlook. The imposition of the US tariffs on a number of Chinese goods has the potential to decrease zinc demand, as export goods containing zinc, or galvanized steel become more expensive for US consumers. The trade impact will potentially be offset by measures taken by the Chinese government to stimulate domestic growth with higher infrastructure spending.

Figure 14.3: Annual change in global steelmaking and zinc use



Source: International Monetary fund (2018), Department of Innovation, Industry and Science estimates

14.4 World production

Mine output to rise over the next two years

Global mine output is expected to grow steadily over the outlook period; a surge in investment in mines followed a sharp rebound in prices during 2017 and early 2018. Several large mines are expected to enter the market in the short-term as a result of the renewed investment.

Major mine projects coming online during the outlook period include the 250ktpa capacity Vendanta Gamsberg mine in South Africa (at the end of 2018) and the Xinjiang Guanghui's 590ktpa Huoshaoyun mine in 2020. Australia also has significant mine capacity ramping up over the outlook period (see below). World production is forecast to rise from 13.5 million tonnes in 2018 to 14.3 million tonnes in 2019, and further to 14.9 million tonnes in 2020.

Refined production to lift with mine output

Refinery production is expected to keep pace with mine output over the outlook period. Refined output is forecast to rise from 13.9 million tonnes in 2018 to 14.7 million tonnes in 2019, and 15.4 million tonnes by 2020. This is broadly in line with demand, and should keep the market in rough balance.

China accounts for the vast majority of global refined production, producing 44 per cent of total output during 2017. The next largest global producers are South Korea and China, which account for approximately 6 per cent of global output each. A majority of refined capacity coming online over the outlook period is expected to come from China.

A key uncertainty to the outlook is refined output from China. During 2018, global refining capacity faced some disruption as a result of cuts in output from Chinese facilities. The Chinese government is seeking to reduce environmental degradation. This focus on environmental outcomes could lead to slower expansion of refinery capacity over the outlook period.

14.5 Australia

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

Australia's zinc production increased in the September quarter — rising from 247,000 tonnes to 293,000 tonnes in metal content terms. The increase has been driven by the ramping up of Glencore's Lady Loretta mine and the re-opening of New Century Resources' mine. Australia's zinc production is forecast to lift from 952,000 tonnes in 2017–18 to 1.3 million tonnes in 2018–19, and 1.4 million tonnes by 2019–20 (Figure 14.4).

The forecast rise in Australian output over the outlook period stems primarily from New Century Resources' Century mine in Queensland. Hydraulic mining in the tailings dam commenced in August, and the first shipment of concentrate to China was announced in October. The company is targeting a full ramp up mining rate by the end of 2019. Full capacity at the operation is 264,000 tonnes per annum. Some rise in output is also expected from MMG's Dugald River mine in Queensland. The mine commenced operations in late 2017, and is ahead of schedule for ramping up to full capacity of 170,000 tonnes.

Australia's exploration spending for silver, lead and zinc dropped to \$26 million in the September 2018 quarter from \$28 million in the June quarter.

Zinc exports are expected to grow in line with rising production

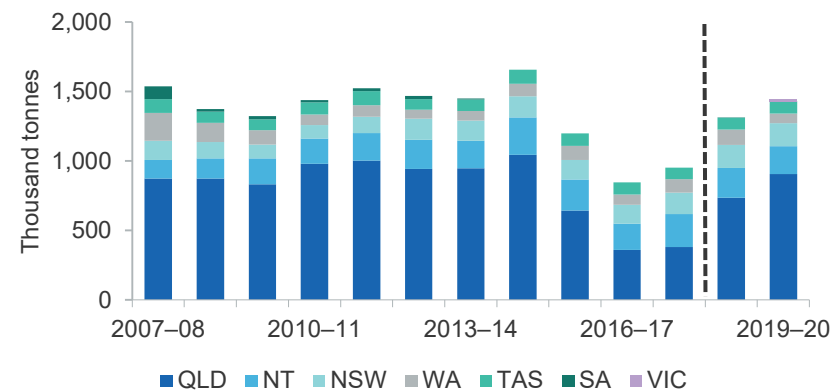
Export volumes are expected to largely track the production outlook, with export ores and concentrates expected to rise from 1.7 million tonnes in 2017–18 to 2.8 million tonnes by 2019–20. Increased earnings from the impact of higher volumes of zinc exports are expected to be offset by declining prices over the outlook period. As Figure 14.5 shows, earnings are projected to be \$3.9 billion in 2018–19, before settling back to \$3.8 billion as prices ease in 2019–20.

A risk to the export earnings outlook is the trade tensions between the US and China. While the full effect of the tariffs on the demand for zinc is not yet fully apparent, there is potential for global demand to slow and prices to fall, before trade flows are re-arranged. This has the potential to impact Australia's export earnings in the short-term.

Export earnings revisions

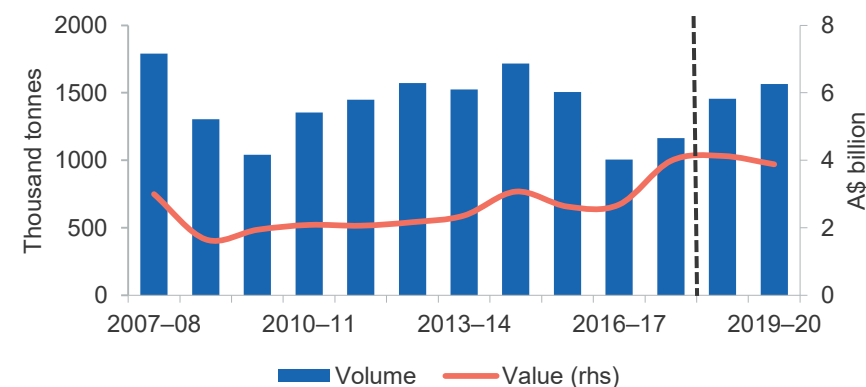
Since the September *Resources and Energy Quarterly* zinc export earnings have been revised down by \$224 million in 2018–19 and \$120 million in 2019–20. This is due to lower than expected prices for the end of 2018 and minor downward revisions to prices over the outlook.

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, metallic content



Source: ABS (2018) International Trade in Goods and Services, 5368.0, Department of Innovation, Industry and Science (2018)

Table 14.1: Zinc outlook

Annual percentage change								
World	Unit	2017	2018 ^s	2019 ^f	2020 ^f	2018 ^s	2019 ^f	2020 ^f
Production								
– mine	kt	13,306	13,546	14,269	14,940	1.8	5.3	4.7
– refined	kt	13,597	13,921	14,694	15,407	2.4	5.6	4.9
Consumption	kt	13,686	14,192	14,739	15,317	3.7	3.9	3.9
Closing stocks	kt	1,034	763	718	808	–26.2	–5.9	12.6
– weeks of consumption		4	3	3	3	–28.9	–9.4	8.4
Price								
– nominal	US\$/t	2,894	2,928	2,775	2,625	1.2	–5.2	–5.4
	USc/lb	131	133	126	119	1.2	–5.2	–5.4
– real ^b	US\$/t	2,966	2,928	2,714	2,538	–1.3	–7.3	–6.5
	USc/lb	135	133	123	115	–1.3	–7.3	–6.5
Australia	Unit	2016–17	2017–18 ^s	2018–19 ^f	2019–20 ^f	2017–18 ^s	2018–19 ^f	2019–20 ^f
Mine output	kt	843	952	1,314	1,446	13.0	38.0	10.0
Refined output	kt	466	474	501	500	1.7	5.6	–0.1
Export volume								
– ore and concentrate ^c	kt	1,479	1,737	2,512	2,805	17.5	44.6	11.7
– refined	kt	372	417	383	364	12.0	–8.2	–4.9
– total metallic content	kt	1,008	1,164	1,456	1,565	15.5	25.1	7.5
Export value								
– nominal	A\$m	2,688	3,975	3,905	3,761	47.9	–1.8	–3.7
– real ^d	A\$m	2,802	4,067	3,905	3,672	45.1	–4.0	–6.0

Notes: **b** In 2018 US dollars; **c** Quantities refer to gross weight of all ores and concentrates; **d** In 2018–19 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)