

Zinc

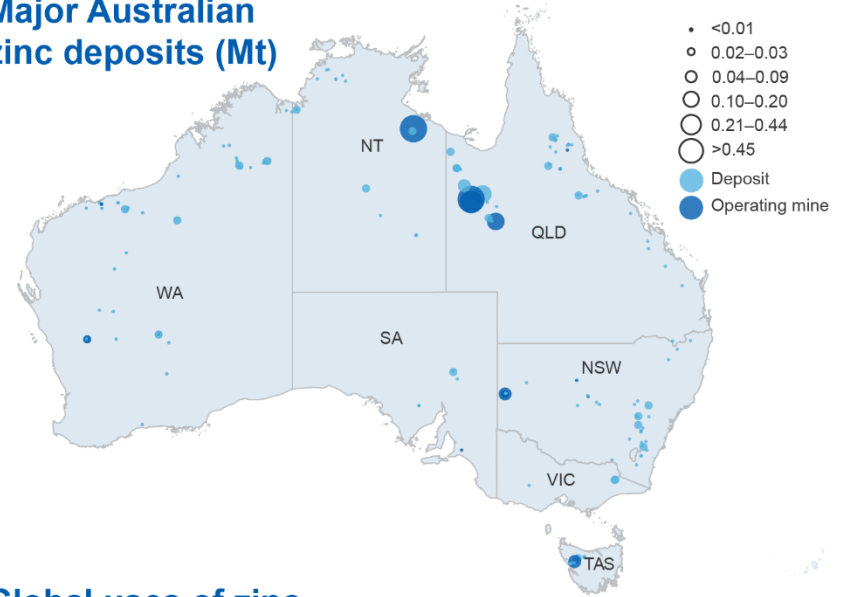
Resources and Energy Quarterly June 2017

 **1,026 million tonnes**
of metallic content is expected to be
exported in 2016–17

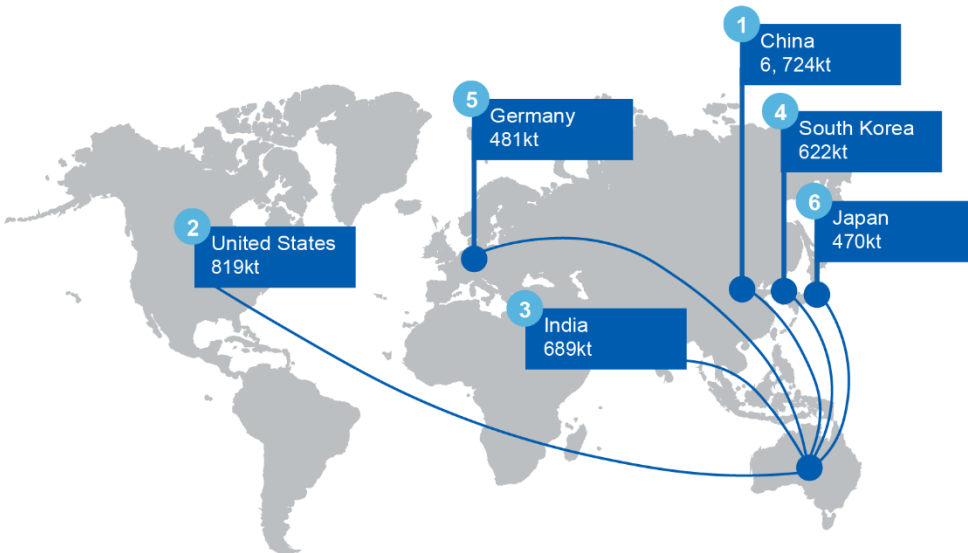
 **\$2,456 billion**
worth of zinc is expected to be
exported in 2016–17



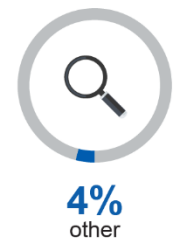
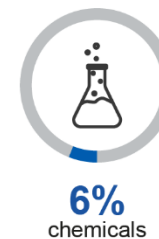
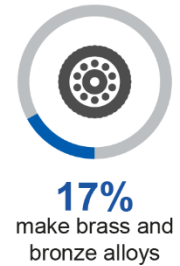
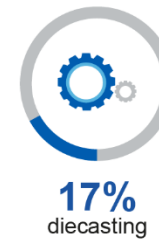
Major Australian zinc deposits (Mt)



Key zinc consumer markets



Global uses of zinc



Market summary

At present, fundamentals for zinc producers are among the strongest for any base metal. Prices lifted sharply during 2016 — amidst strong global demand and following a range of mine closures — and 2017 is shaping up as a year of high prices. Influences include significant drawdowns in inventories. Efforts are underway to increase extraction at a range of mines and facilities around the world.

Australia faces some obstacles to capitalising on the current opportunities in the global market. Export volumes in 2016–17 are estimated to have fallen, due to some mine closures over the past two years. However, price increases are expected to provide some windfall to producers over the medium term. Exports of zinc (metallic content) are forecast to lift to 1,008,000 tonnes in 2017–18 and to 1,169,000 tonnes in 2018–19. Real export earnings are forecast to decline slightly in 2017–18 to \$2,426 million, before recovering to \$2,652 million in 2018–19.

Prices and stocks

Zinc prices have lifted strongly due to supply constraints and higher demand

The LME zinc price averaged US\$2,092 a tonne in 2016, with a sharp spike late in the year. This spike largely reflected an acute production shortage, which is expected to lead to a fall in global stocks during 2017.

The zinc price is estimated to average US\$2,670 a tonne in 2017, as the supply deficit increases. Further out, increased output from large producers — including China — is expected to gradually bring the price back down to US\$2,525 a tonne in 2018 and US\$2,475 a tonne in 2019.

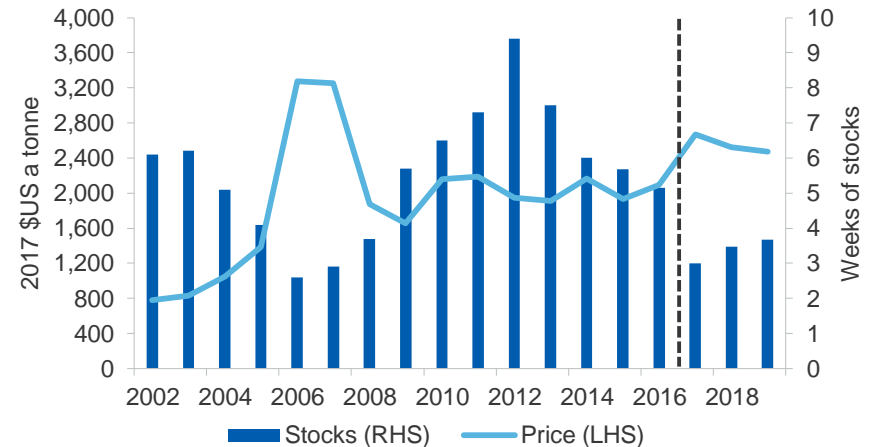
There is little chance of any dramatic falls in zinc prices in coming years: consumption growth in the automobile and infrastructure sectors is generally expected to remain solid. One risk is that infrastructure spending in the United States fails to occur, or fails to match the pace currently anticipated by the market. Production at existing zinc mining operations, particularly in China, is also expected to increase steadily over time, constraining price gains over the longer term.

Figure 14.1: Zinc monthly price



Source: LME (2017) zinc spot price

Figure 14.2: Annual zinc spot price and weeks of stocks



Source: LME (2017) zinc price; Department of Industry, Innovation and Science (2017)

World consumption

Car manufacturing and infrastructure spending remain crucial to consumption growth

Refined zinc consumption was virtually unchanged in 2016, at just under 14 million tonnes. China — which currently consumes around half of the world's refined zinc — is expected to continue driving demand in the outlook period, through ongoing public sector investment. There is also a potential for higher zinc demand in the US, should the Trump Administration succeed in steering its investment proposals through Congress.

Global consumption is forecast to rise to 14.4 million tonnes in 2017, and to 14.9 million tonnes in 2018. Higher consumption is expected to contribute to higher prices and sharp falls in inventories in 2017, though an increase in supply in late 2017 and throughout 2018 will limit inventory gains in 2018.

World production

Mined production has good growth prospects

Zinc production dropped during 2016, due to mine closures — notably in China, where 26 zinc mines were shuttered due to severe environmental problems. Other mines around the world are also facing ore depletion, creating tight supply conditions. However, in light of higher prices, it is likely that a range of expansion plans (some of which were previously curtailed) will now be revisited. Efforts to source additional zinc deposits are underway in several countries.

Mined zinc production is estimated to rise by 6 per cent to 13.6 million tonnes in 2017 — notably short of global consumption. Production is subsequently forecast to rise to 14.5 million tonnes in 2018, and to 15.1 million tonnes in 2019, gradually closing the gap with demand. Stocks will remain relatively tight in 2017, but are expected to start to rebuild during 2018.

Refined production is still constrained by mined supply

Refined zinc production is being constrained by mine closures, and by the suspension of smelter operations — many of which have had difficulties in accessing concentrates.

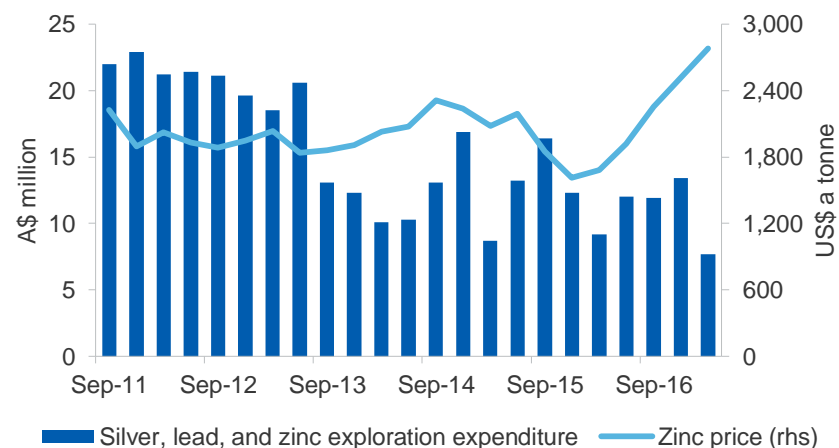
Growth in refined production is likely to continue to be checked in the short term by constrained mined supply; some smelters are operating below capacity, due to the difficulty in obtaining feedstock. Refined production is expected to edge down by 1.2 per cent to 13.8 million tonnes in 2017, before rebounding to 14.7 million tonnes in 2018 and 15.3 million tonnes in 2019.

Australia's exploration, production and exports

The prospect of higher prices sustains exploration expenditure

Australia's expenditure on zinc, lead and silver exploration is trending down, with quarterly expenditure falling from \$13.4 million in the December quarter 2016 to \$7.7 million in the March quarter 2017. However, strong zinc prices are attracting more interest among resource companies, and there are signs that exploration spending may start to recover in the coming few quarters.

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



Source: ABS (2017) Mineral and Petroleum Exploration, 8412.0; LME (2017) zinc price

Australian output is rising despite issues with ore depletion

Australia's mined zinc production is forecast to increase from 868,000 tonnes in 2015–16 to 916,000 tonnes in 2016–17.

Production is forecast to remain on an upward trend, rising to 1,049,000 tonnes in 2017–18 and to 1,054,000 tonnes in 2018–19. New mines scheduled for completion — including MMG's Dugald River, KBL's Sorby Hills and Independence Group's Stockman operation — will help to increase production, even as mines at Endeavour, Cannington, Golden Grove and Jaguar reach the end of their operating life.

Australia's refined production is set to increase marginally

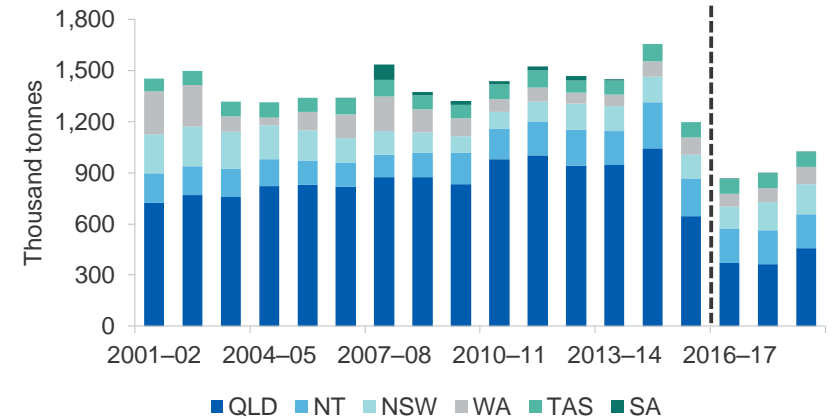
Australia's refined production is estimated to have increased slightly in 2016–17, to 465,000 tonnes, driven by a rise in output at the Port Pirie smelter. Production is expected to lift gradually over the forecast period, to 472,000 tonnes in 2017–18 and to 500,000 tonnes in 2018–19.

Export volumes are expected to rise gradually, after a large fall in 2016

Export conditions are strengthening, due to the projected increase in zinc consumption in Emerging economies, and to the tightening global availability of zinc concentrates. Despite these opportunities, Australia's export capacity will be constrained by the capacity of the remaining mines: the closure of MMG's 500,000 tonne Century mine in early 2016 significantly lowered the ceiling for potential exports.

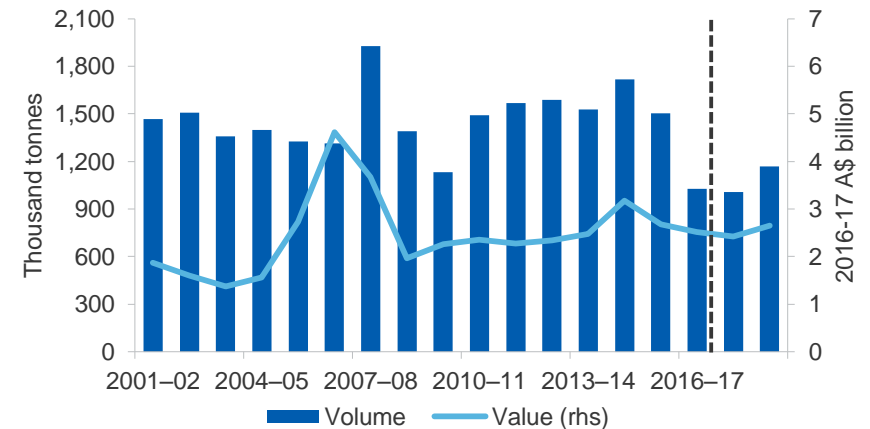
A fall in export volumes to 1,026,000 tonnes (metallic content) is estimated for 2016–17, due to earlier mine closures and production cuts. Zinc export volumes are forecast to edge down to 1,008,000 tonnes in 2017–18, before rising to 1,169,000 tonnes in 2018–19 as new mines at Dugald and Sorby Hills come online. Export earnings are forecast to edge down from \$2,521 million in 2016–17 to \$2,426 million in 2017–18 (in real terms), before lifting to \$2,652 million in 2018–19.

Figure 14.4: Australia's mine production by state



Source: Company reports; Department of Industry, Innovation and Science (2017)

Figure 14.5: Australia's zinc exports



Source: ABS (2017) International Trade in Goods and Services, 5368.0; Department of Industry, Innovation and Science (2017)

Table 14.1 Zinc outlook

World	Unit	2016	2017 f	2018 f	2019 f	Annual percentage change		
						2017 f	2018 f	2019 f
Production								
– mine	kt	12,838	13,610	14,521	15,099	6.0	6.7	4.0
– refined	kt	14,004	13,829	14,727	15,333	-1.2	6.5	4.1
Consumption	kt	13,914	14,379	14,892	15,432	3.3	3.6	3.6
Stocks	kt	1,375	825	990	1,089	-40.0	20.0	10.0
– weeks of consumption		5	3	3	4	-41.9	15.9	6.1
Price LME								
– nominal	US\$/t	2,092	2,670	2,525	2,475	27.6	-5.4	-2.0
	USc/lb	95	121	115	112	27.6	-5.4	-2.0
– real	US\$/t	2,139	2,670	2,466	2,363	24.8	-7.6	-4.2
	USc/lb	97	121	112	107	24.8	-7.6	-4.2
Australia	Unit	2015–16	2016–17 s	2017–18 f	2018–19 f	Annual percentage change		
						2016–17 s	2017–18 f	2018–19 f
Mine output	kt	868	916	1,049	1,054	5.6	14.5	0.5
Refined output	kt	459	465	472	500	1.2	1.6	6.0
Export volume								
– ore and conc. c	kt	2,222	1,537	1,611	1,906	-30.8	4.8	18.3
– refined	kt	497	326	297	327	-34.4	-9.1	10.2
– total metallic content	kt	1,507	1,026	1,008	1,169	-31.9	-1.8	15.9
Export value								
– nominal	A\$m	2,628	2,521	2,478	2,768	-4.1	-1.7	11.7
– real d	A\$m	2,674	2,521	2,426	2,652	-5.7	-3.8	9.3

Notes: **b** In 2017 US dollars; **c**. Quantities refer to gross weight of all ores and concentrates; **d** In 2016-17 Australian dollars; **f** forecasts

Source: ABS (2017) International Trade in Goods and Services, Australia, Cat. No. 5368.0; Company reports; Department of Industry, Innovation and Science; International Lead Zinc Study Group (2017); LME (2017); World Bureau of Metal Statistics (2017).