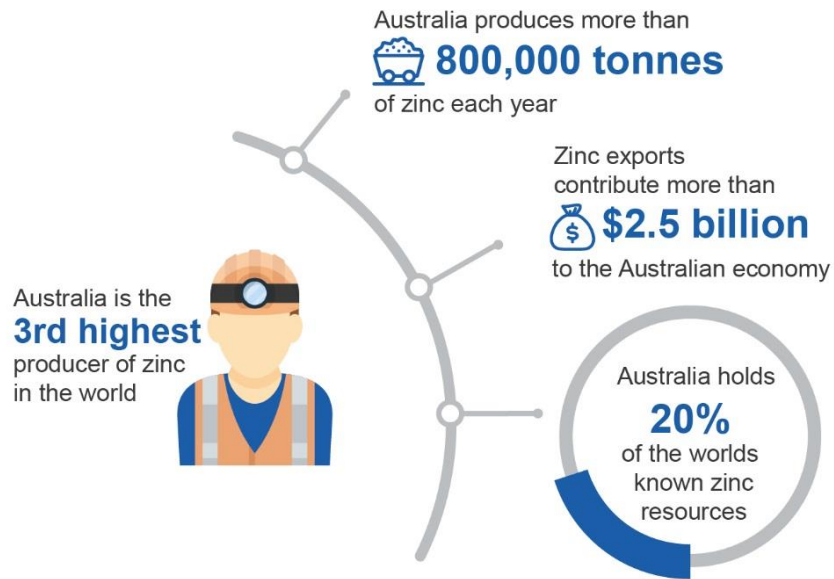


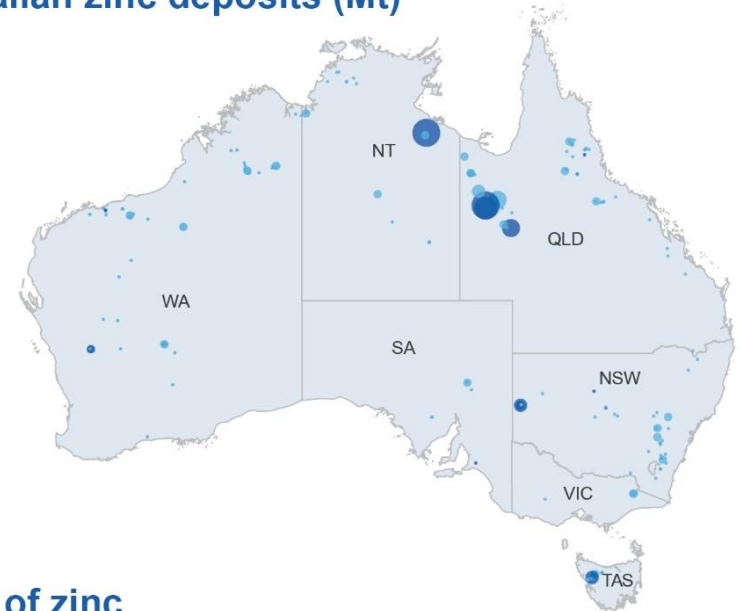
# Zinc

Resources and Energy Quarterly December 2017

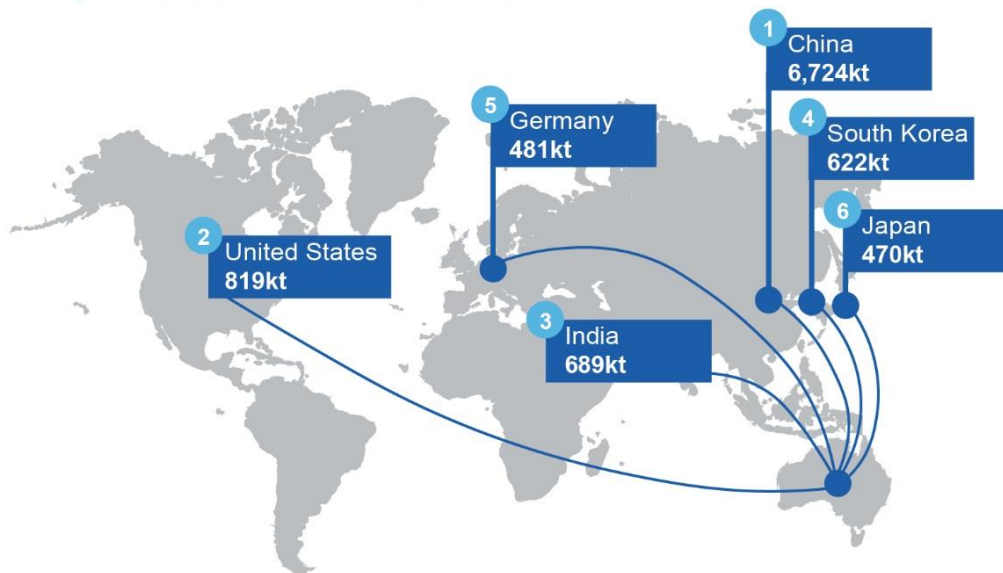


## Major Australian zinc deposits (Mt)

- <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

- High prices are expected to drive a rise in mine supply during 2018, but the outlook for refined supply is somewhat less clear.
- Rising prices are expected to boost Australia's export earnings by 11 per cent to \$3.0 billion in 2017–18. Production growth is forecast to push earnings up 4 per cent to \$3.1 billion in 2018–19.

## 14.2 Prices and stocks

### Zinc prices have lifted strongly due to supply constraints

The LME zinc price is estimated to have averaged \$US2,860 a tonne in 2017 — 37 per cent higher than in 2016. The zinc price rose steadily during the September and December quarters, peaking at over \$US3,300 a tonne at the start of November.

Price forecasts have been revised up from the September 2017 *Resources and Energy Quarterly*, as industrial action at a key Canadian refinery has reduced refined supply. Prices are now forecast to average \$US2,990 a tonne over 2018, remaining above \$US3,000 a tonne for the first half of 2018 before easing back in the second half. Additional supply is forecast to bring prices down to around \$US2,840 a tonne over 2019.

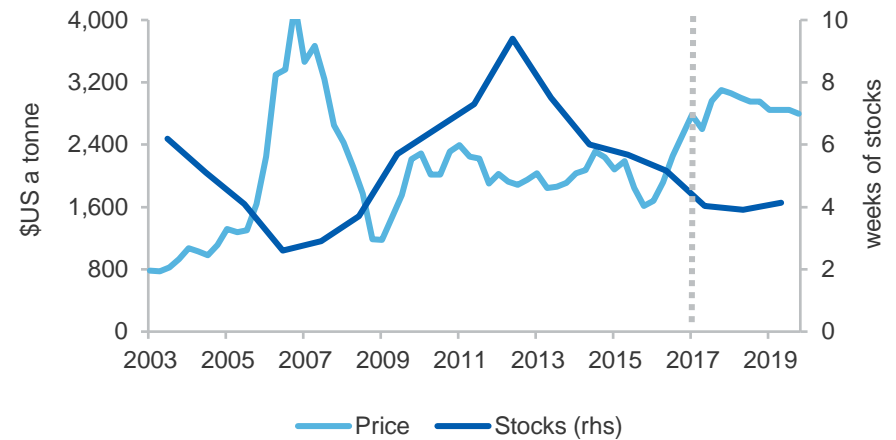
Stocks are forecast to edge up as prices and supply pressures ease off, slightly towards the end of the outlook period.

## 14.3 World consumption

### Consumption growth is steady in Asia, but unpredictable in the US

World refined zinc consumption is forecast to rise by 3.5 per cent to 14.9 million tonnes in 2018, and by a further 3.6 per cent to 15.4 million tonnes in 2019. Zinc demand is expected to be supported by increased global car sales, rising world industrial production, and increased rail and infrastructure investment across Asia.

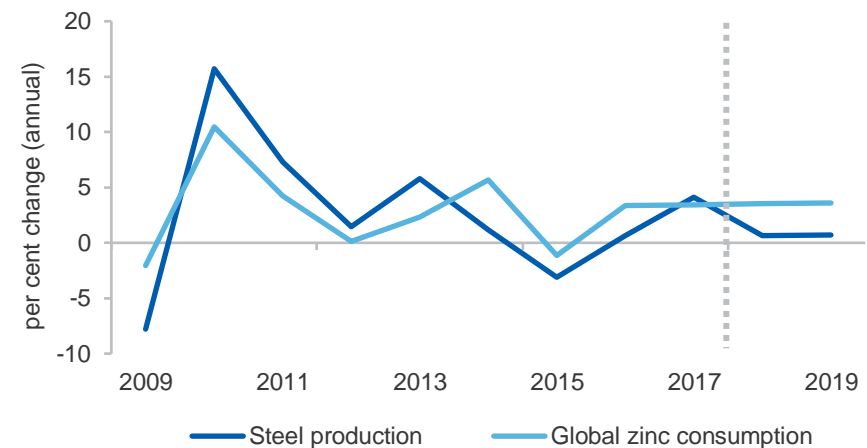
Figure 14.1: Zinc prices and stocks



Note: Zinc spot price

Source: London Metal Exchange (2017)

Figure 14.2: Annual change in global steelmaking and zinc use



Source: IMF (2017), Department of Industry, Innovation and Science (2017)

Infrastructure spending remains the key “swing factor” in zinc demand. Chinese infrastructure spending faces downside risks, as a result of surging debt among local governments, who typically supply most of the funding. Pressure to build infrastructure in China may also ease following the end of the 19th Party Congress and the commencement of a new five-year political cycle. The prospects for the planned upgrade of US infrastructure are also unclear, with no timetable or budget in place yet.

## 14.4 World production

### World mined production is expected to pick up in 2018

Miners have responded to high prices and rising demand by developing a range of new deposits, with substantial additional supply expected in 2018. Among these sources are Vedanta’s Gamsberg mine in South Africa, which is expected to add 60,000 tonnes of production in 2018. Output from this mine is subsequently expected to scale up, eventually reaching 250,000 tonnes per year. Trafigura’s Castellanos project in Cuba (which was carried out in partnership with the Cuban Government) is expected to add around 50,000 tonnes of global supply in 2018, with supply ultimately scaling up to 100,000 tonnes per year. Several smaller Chinese projects are also expected to increase their output over 2018 and 2019.

This new mine supply is expected to lift total mined output by 5.5 per cent to 14.2 million tonnes in 2018, with a further rise of 2.6 per cent (to 14.5 million tonnes) forecast for 2019.

### Refined production is expected to rise, but at a slower pace

Refined zinc supply has risen over the past few years, as Asian smelters have expanded their output. However, a notable bottleneck remains. Output at the Noranda Income Fund’s CEZ plant in Quebec — which is among the largest producers of refined metal in the world — fell by almost half during 2017, as a result of industrial action. A conclusion to the dispute will likely add more than 120,000 tonnes of refining capacity. Government mediation is underway, but it remains unclear when an agreement can be struck, and thus when full production to resume.

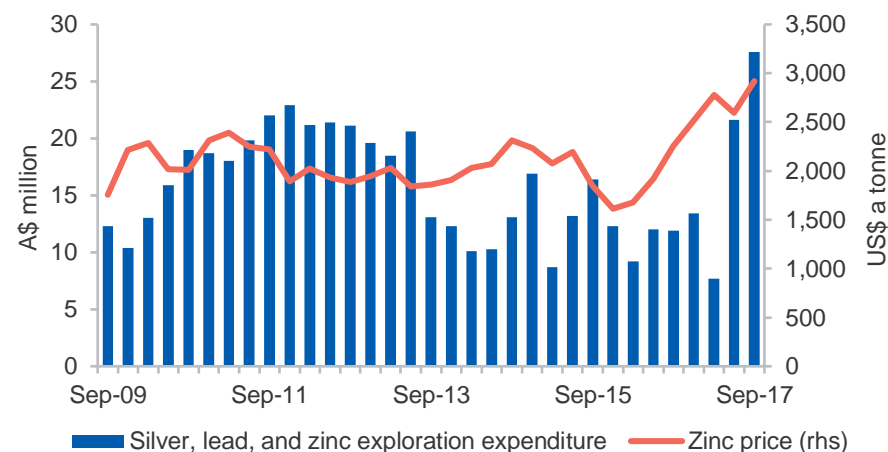
It is expected that refined production will rise by 5.4 per cent to 14.9 million tonnes in 2018. A further rise of 2.9 per cent (to 15.3 million tonnes) is forecast for 2019. However, the existence of constraints at both the mine and refining stages of zinc supply will complicate efforts to bring supply into line with global zinc demand.

## 14.5 Australia’s exploration, production and exports

### Higher prices have led to a strong rebound in exploration expenditure

Australia’s expenditure on zinc, lead and silver exploration rose to \$28 million during the September quarter — more than double the level of a year ago. The bulk of exploration occurred in northern Australia, where zinc deposits are concentrated.

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



Source: ABS (2017) Mineral and Petroleum Exploration, cat. no. 8412.0; LME (2017)

### Australian mined production is starting to recover

Australian mined output has been constrained since the closure of MMG's Century mine in 2015. However, the recent zinc price surge has accelerated efforts to bring new capacity online. Among the new supply sources is MMG's Dugald River mine, which produced its first shipment of concentrate in November. This mine is expected to produce around 80,000 tonnes of output in 2017–18, eventually doubling from this level to become one of the largest zinc mines in the world.

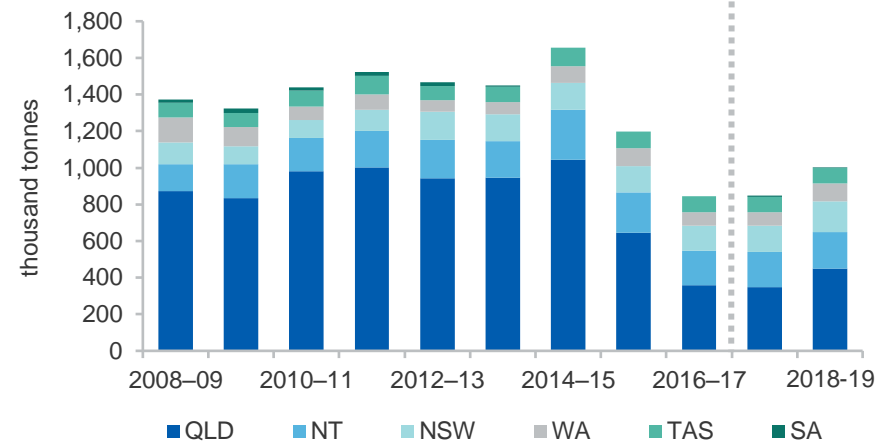
Other mines moving towards production in 2018–19 include KBL's Sorby Hills mine and Heron Resources' Woodlawn mine, with Independence Group's Stockman operation expected to come online towards the end of the outlook period. Surging prices have even led to the possibility of a re-opening of the Century mine, which still retains significant zinc deposits in its tailings. Glencore has announced a re-opening of its Lady Loretta mine, and a restart of its McArthur River mine is also possible. However, the company has revised down zinc production targets for other mines.

Australia's refined production is forecast to remain largely unchanged over the outlook period, with no significant disruptions expected at Sun Metal's Townsville smelter or Nyrstar's Hobart smelter. A shift from 30 minute to five minute settlements within the National Electricity Market is likely to help contain power prices, enabling both smelters to operate near capacity.

### Zinc exports are expected to grow in line with rising production

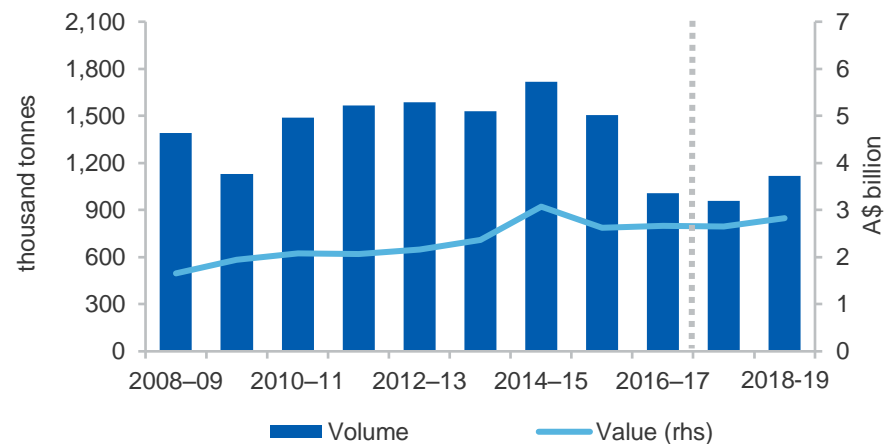
Higher mine production is expected to feed through to increase export volumes, with Australia's exports of metallic content forecast to rise by 1.9 per cent in 2017–18, and then by 18 per cent in 2018–19. Export earnings are also forecast to rise. Earnings are expected to grow by 11 per cent in 2017–18, propelled by higher prices. Prices are subsequently expected to fall, but higher export volumes should to lift export earnings by 4.4 per cent in 2018–19. Rail and infrastructure development and automotive sales across Asia will continue to create strong opportunities for Australian exporters, with capacity likely to remain the primary constraint.

Figure 14.4: Australia's zinc 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, cat. No. 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	13,437	14,176	14,546	4.7	5.5	2.6
– refined	kt	14,004	14,128	14,895	15,324	0.9	5.4	2.9
Consumption	kt	13,914	14,389	14,895	15,435	3.4	3.5	3.6
Closing stocks	kt	1,375	1,114	1,114	1,225	-19.0	0.0	10.0
– weeks of consumption		5	4	4	4	-21.7	-3.4	6.1
Price								
– nominal	US\$/t	2,092	2,860	2,990	2,838	36.7	4.5	-5.1
	USc/lb	95	130	136	129	36.7	4.5	-5.1
– real <sup>b</sup>	US\$/t	2,136	2,860	2,928	2,719	33.9	2.4	-7.1
	USc/lb	97	130	133	123	33.9	2.4	-7.1
Australia	Unit	2015–16	2016–17 <sup>s</sup>	2017–18 f	2018–19 f	2016–17 <sup>s</sup>	2017–18 f	2018–19 f
Mine output	kt	1,197	843	828	1,040	-29.6	-1.8	25.6
Refined output	kt	459	466	486	500	1.6	4.2	3.0
Export volume								
– ore and conc. <sup>c</sup>	kt	2,222	1,479	1,600	2,095	-33.4	8.1	31.0
– refined	kt	497	372	351	327	-25.1	-5.8	-6.9
– total metallic content	kt	1,507	1,008	1,026	1,212	-33.1	1.8	18.2
Export value								
– nominal	A\$m	2,628	2,688	2,991	3,118	2.3	11.3	4.2
– real <sup>d</sup>	A\$m	2,728	2,743	2,991	3,045	0.6	9.1	1.8

Notes: <sup>b</sup> In 2017 US dollars; <sup>c</sup> Quantities refer to gross weight of all ores and concentrates; <sup>d</sup> In 2017–18 Australian dollars; <sup>f</sup> 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)