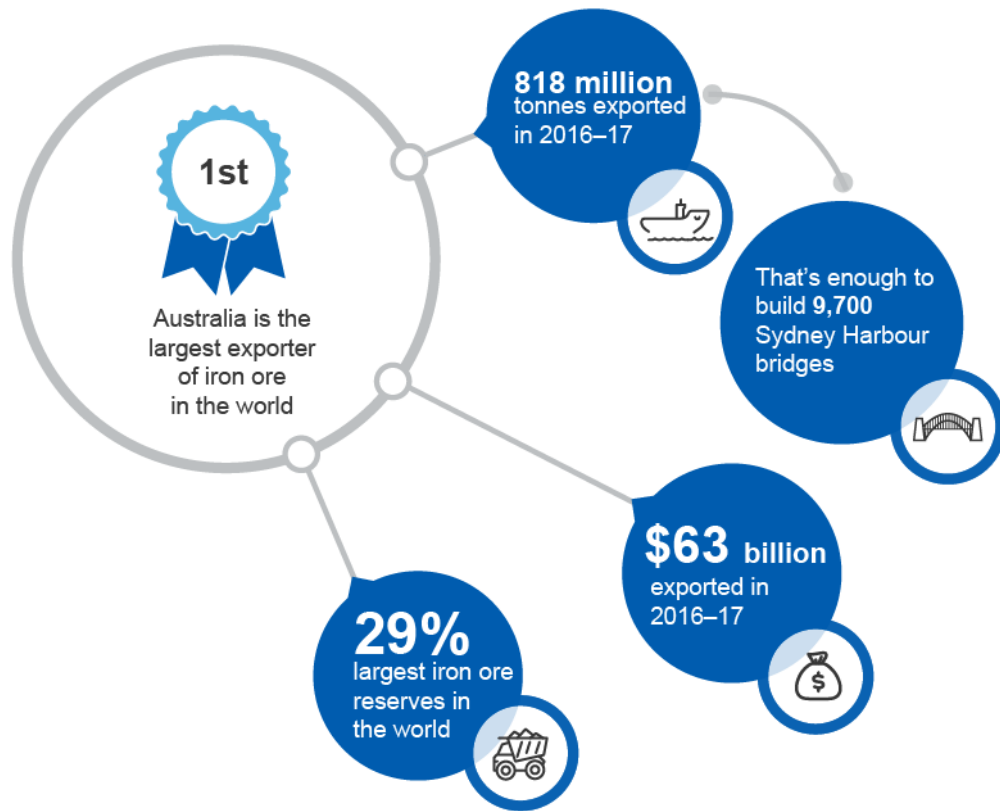


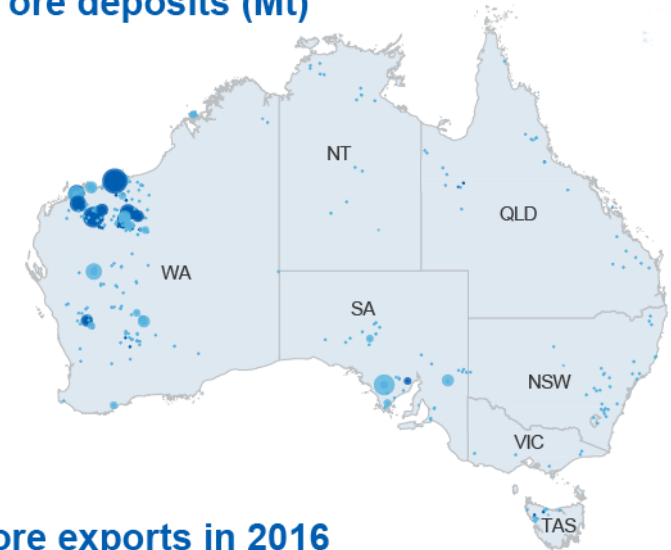
Iron Ore

Resources and Energy Quarterly June 2018

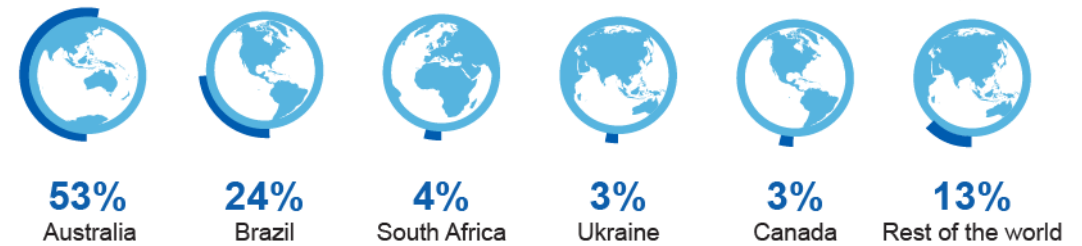


Major Australian iron ore deposits (Mt)

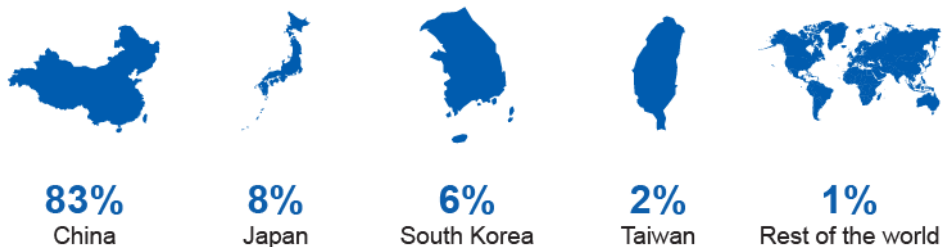
- <229
- 230–813
- 814–1,777
- 1,778–3,042
- 3,043–5,446
- >5,447
- Deposit
- Operating mine



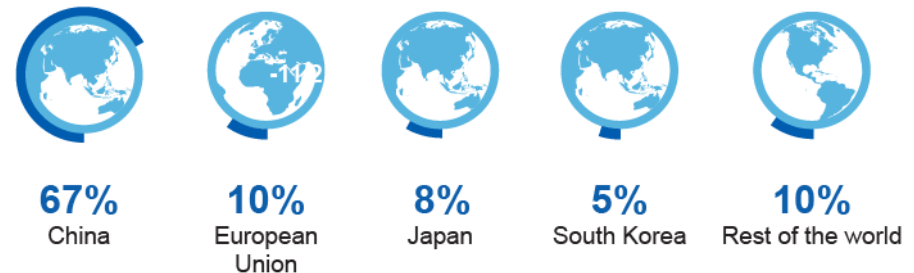
Global share of iron ore exports in 2016



Australia's iron ore key export destinations, 2016–17



Global share of iron ore imports in 2016



4.1 Summary

- The iron ore price is forecast to decline to US\$51 a tonne (FOB Australia) in 2020, as a result of a forecast decline in steel production in China and a well-supplied seaborne market.
- Australia's iron ore export volumes are forecast to increase from 846 million tonnes in 2017–18, to 887 million tonnes in 2019–20, driven by the ramp up in production by Australia's largest producers.
- The value of Australia's iron ore exports is forecast to decrease from \$62 billion in 2017–18 to \$55 billion in 2019–20, driven by lower prices offsetting growth in export volumes.

4.2 Prices

Iron ore prices diverge on quality

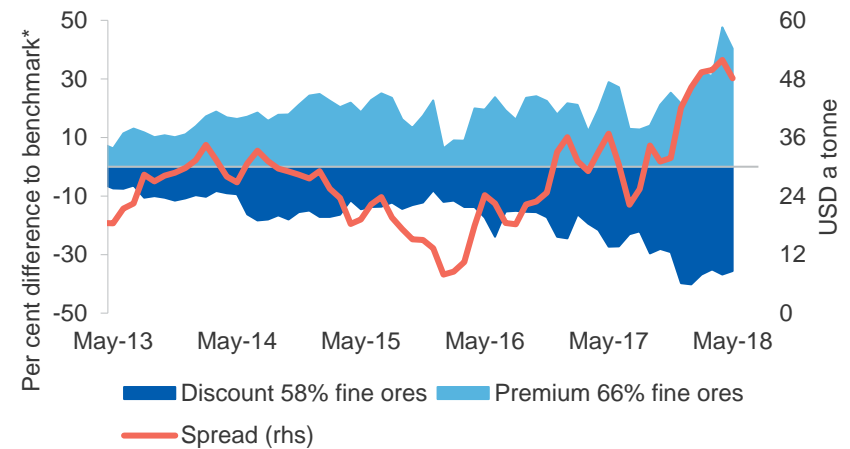
The iron ore price (FOB Australia) increased 2.9 per cent year-on-year in the June quarter of 2018, to average US\$58 a tonne. The price was supported by the recent ramp up in China's steel production (following winter production cuts and a seasonal rebound in demand from the construction and manufacturing sectors).

The price difference between premium and lower grade ores reached a historic high in April, driven by high steel margins which incentivise Chinese steel makers to use higher grade iron ore. The price spread is expected to narrow as steel production ramps up in China over the next few months, weighing on steel prices and profit margins and reducing incentives to purchase (more expensive) higher grade ores. Nevertheless, with an expected ongoing government push to improve air quality through increasingly stringent air pollution policies, the spread is not expected to return to historical levels.

Iron ore price forecast to gradually decline following short term support

The iron ore price is forecast to average US\$59 a tonne (FOB Australia) in 2018, with high steel prices, a positive outlook for industrial production and a seasonal rebound in construction activity in China's spring months all expected to provide some price support.

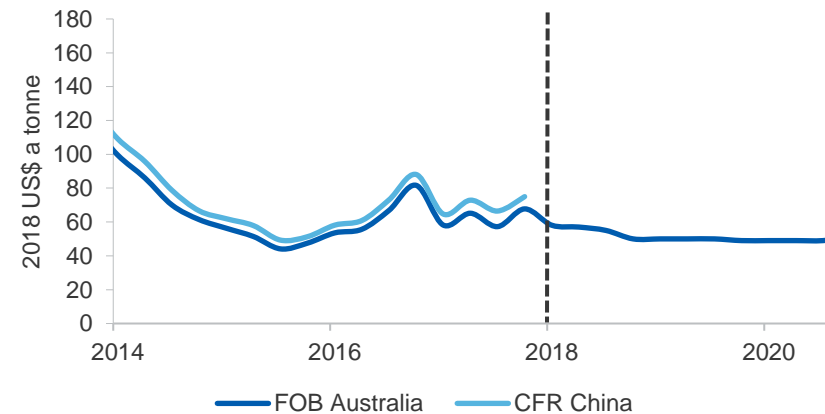
Figure 4.1: Iron ore price spread between grades



Notes: *Benchmark used is 62 per cent iron fines

Source: Bloomberg (2018) China Import prices

Figure 4.2: Iron ore price, FOB Australia and CFR China, quarterly



Notes: The OCE forecasts the FOB (free on board) Australia iron ore price, not the benchmark CFR (cost and freight) North China iron ore price.

Source: Bloomberg (2018) Metal Bulletin; Department of Industry, Innovation and Science (2018)

The iron ore price is forecast to gradually decline to average US\$51 a tonne (FOB Australia) in 2019 and 2020, as a result of moderating demand and growing supply, particularly from Brazil (as Vale's S11D project continues to ramp up).

China's steel sector is expected to continue to be characterised by ongoing capacity reductions and policies to address air pollution (see the *Steel chapter*). These factors are expected to provide some short term support to steel prices, and consequently, the iron ore price, which tracks steel prices very closely.

However, weaker steel production eventually also means weaker demand for iron ore. At the forecast price of US\$51 a tonne, the vast majority of Australian producers are expected to remain highly profitable.

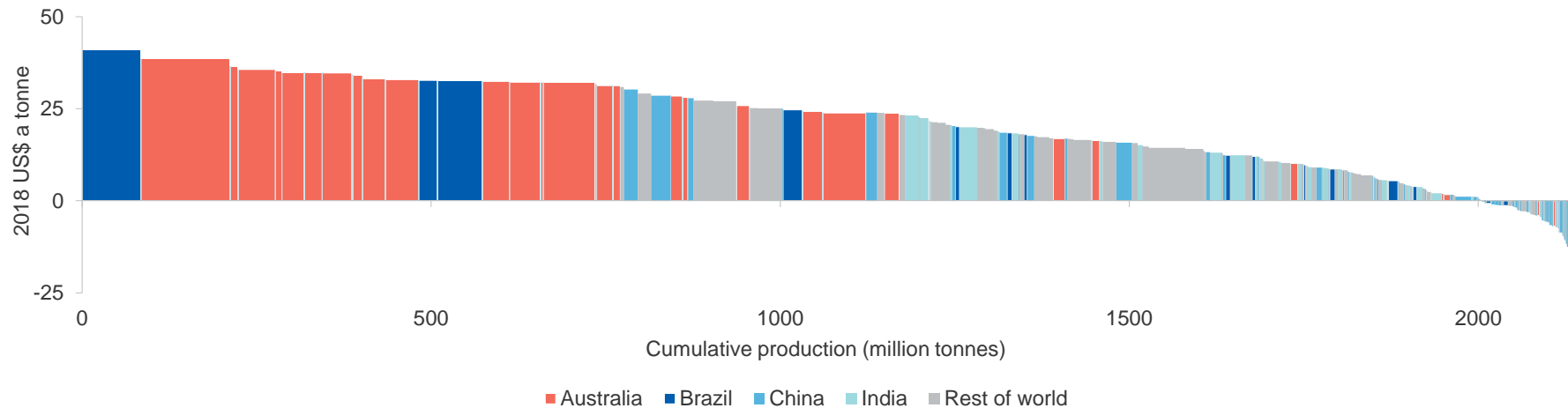
4.3 World trade

China's iron ore imports projected to gradually decline

China's iron ore imports held steady at 447 million tonnes in the five months to May 2018, as a 3.9 per cent increase in imports from Australia offset declines elsewhere. During the March quarter, Australia's iron ore exports accounted for 64 per cent of China's iron ore imports, while Brazil accounted for 20 per cent. Import demand held steady as lower steel demand due to winter production cuts, was offset by restocking demand in the lead up to Chinese New Year.

China's iron ore imports are forecast to gradually decline at an average annual rate of 0.6 per cent over the outlook period, to reach 1.07 billion tonnes in 2020. The outlook for China's iron ore import demand is driven by a projected decline in steel production (see the *Steel chapter*).

Figure 4.3: Projected iron ore margins by mine in 2020, based on projected price of US\$51 a tonne (FOB Australia)

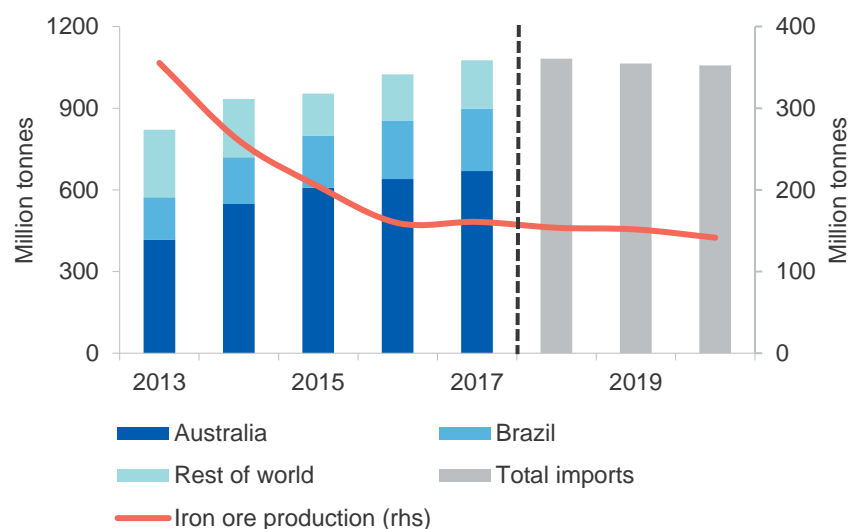


Notes: Margins are based on a projected iron ore price of US\$51 a tonne (FOB Australia); Production is in dry metric tonnes.

Source: AME Group (2018)

The effect of declining steel production on iron ore imports is expected to be partially offset by a projected decline in China's iron ore production. China's iron ore reserves are largely low grade, with an average iron content of around 30 per cent compared to the benchmark of 62 per cent. Stringent environmental policies are expected to encourage steel makers' preference for high grade imported ores and result in several closures over the outlook period, reducing domestic iron ore production. Authorities revoked about a third of iron ore mining licenses in 2017, in line with the government's stricter environmental policies. Conversely, some uneconomic mines may continue to operate, particularly those that are vertically integrated with steel mills or located inland with lower transport costs to nearby steel mills.

Figure 4.4: China's iron ore imports and production



Notes: China's iron ore production is quality adjusted.

Source: Bloomberg (2018) Antaika Information Development; Bloomberg (2018) China Customs General administration; Department of Industry, Innovation and Science (2018)

India set to become a net importer of iron ore in 2019

Indian consumption of iron ore is expected to exceed domestic production marginally in 2019, and by over 5 million tonnes in 2020, making India a net importer of iron ore.

India's iron ore production is forecast to decline to 175 million tonnes in 2018. The decline will be driven by the cancellation of mining permits (representing 20 million tonnes of predominantly low-grade iron ore, mostly exported to China) in Goa, due to renewal issues. India's iron ore production is forecast to reach 197 million tonnes in 2020, underpinned by rapidly growing demand from the domestic steel industry.

World export volumes forecast to rise, primarily from Brazil

The seaborne iron ore market is forecast to be well-supplied in the short term, with world iron ore exports forecast to grow by 4.3 per cent and 1.9 per cent in 2018 and 2019, respectively.

Exports from Brazil are forecast to grow by 4.1 per cent and 7.8 per cent over the same period, as Vale's S11D project at the Carajás complex ramps up production to 400 million tonnes by 2019. Anglo American's Minas-Rio expansion is also expected to reach full capacity of 26.5 million tonnes by 2020. Settlement negotiations concerning the Samarco mine in Brazil over civil claims totalling near US\$48 billion were extended over June 2018. The mine has been closed since the tailings dam burst in November 2015 but could return to production by 2019 if environmental licenses can be obtained.

Australia is also expected to contribute to export growth over the short term, as Rio Tinto and BHP continue to ramp up towards record production levels. BHP is expected to expand capacity at its Port Headland operations to reach 290 million tonnes by mid-2019. In May, Fortescue Metals approved the development of their Eliwana mine in the Pilbara region of Western Australia, expected to produce 30 million tonnes annually commencing in 2020. World export growth is forecast to rise by 0.5 per cent to 1,660 million tonnes in 2020, as Australia and Brazil benefit from the ramp up in production at new mines and expansions.

4.4 Australia

Australia's iron ore export volumes continue to grow

Australia's iron ore export volumes grew by 3.4 per cent to 199 million tonnes in the March 2018 quarter. Growth was led by productivity improvements at Rio Tinto's Pilbara operations and the ramp of its recently commissioned Silvergrass iron ore mine, as well as improved rail performance at BHP's operations.

Export volumes are estimated to have grown by 3.4 per cent in 2017–18 to 846 million tonnes, driven by the ramp up of Silvergrass and improvements to rail infrastructure. This is expected to offset lower production from BHP, which downgraded their guidance by 4.5 million tonnes to 237 million tonnes for 2017–18, reflecting train reliability issues.

Volumes are expected to increase by 3.5 per cent to 876 million tonnes in 2018–19 and a further 1.3 per cent to 887 million tonnes in 2019–20, marking the end of major expansions and additions. Higher volumes will be driven by productivity improvements and replacement mines at Rio Tinto and BHP's operations — as they attempt to reach their long-term production targets — as well as the commissioning and ramp up of some smaller projects, including Mount Gibson Iron's Koolan Island. Higher volumes will be partly offset by the closure of some mines due to depletion, and the announced cessation of production at Cliff's Koolyanobbing mine in late 2018.

Two large scale projects in the pipeline beyond the current outlook include Fortescue's Eliwana and BHP's South Flank projects. Both are expected to commence production in 2020–21, and produce 30 million and 80 million tonnes annually, respectively, with south flank to replace the existing production of Yandi as it ramps down by 2022.

Australia's iron ore export earnings to be weighed down by lower prices

Despite high production and export volumes, lower prices saw export earnings decrease to \$15 billion in the March quarter 2018, down 14 per cent year-on-year.

Australia's iron ore export values are estimated to have declined by 1.2 per cent in 2017–18 to \$62 billion, as lower prices offset growth in export volumes. Export values are forecast to decline noticeably in 2018–19 and 2019–20, falling by 6.7 and 4.0 per cent, respectively. Declining export earnings will be driven lower by iron ore prices.

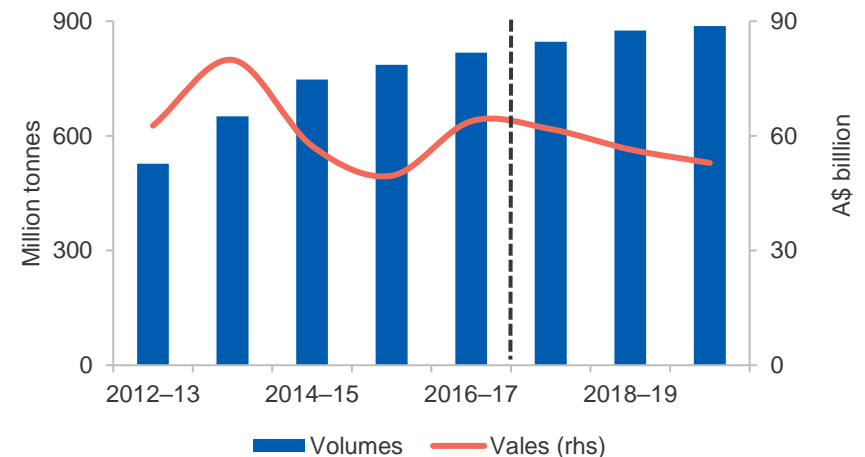
Revisions to export earnings

Australia's iron ore export earnings in 2017–18 have been revised down by \$3.5 billion. The revision reflects lower than expected iron ore prices and production coupled with higher domestic consumption — Australian steel production rose by 11 per cent year-on-year in the March quarter.

Iron ore exploration expenditure decreased in the December 2017 quarter

Australia's iron ore exploration expenditure totalled \$50 million in the March 2018 quarter, a decline of 6.4 per cent year-on-year. Iron ore exploration expenditure is likely to have largely bottomed out, with ongoing investment increasingly needed to replace depleting reserves.

Figure 4.5: Australia's iron ore export volumes and values



Source: ABS (2018) International Trade, Australia, 5454.0; Department of Industry, Innovation and Science (2018)

Table 4.1: World trade in iron ore

	Million tonnes				Annual percentage change		
	2017 ^s	2018 ^f	2019 ^f	2020 ^f	2018 ^f	2019 ^f	2020 ^f
Total world trade	1,554	1,621	1,652	1,660	4.3	1.9	0.5
Iron ore imports							
European Union 28	144	157	160	161	8.5	1.9	0.9
Japan	127	131	134	135	3.6	2.1	0.8
China	1,075	1,093	1,075	1,068	1.6	-1.6	-0.6
South Korea	72	76	75	75	4.5	-0.3	-0.4
India	5	8	16	22	57.1	99.5	38.7
Iron ore exports							
Australia	827	860	880	891	4.0	2.4	1.2
Brazil	384	399	430	437	4.1	7.8	1.5
India	29	11	15	16	-61.7	34.4	8.0
Ukraine	33	32	33	32	-1.7	0.6	-0.9

Notes: **s** Estimate; **f** Forecast.

Source: World Steel Association (2018); International Trade Centre (2018); Department of Industry, Innovation and Science (2018)

Table 4.2: Iron ore outlook

World	Unit	2017	2018 ^f	2019 ^f	2020 ^f	Annual percentage change		
						2018 ^f	2019 ^f	2020 ^f
Prices ^{bc}								
– nominal	US\$/t	64.0	59.4	51.1	51.0	–7.2	–14.0	–0.1
– real ^d	US\$/t	65.5	59.4	50.0	49.0	–9.3	–15.9	–2.0
Australia	Unit	2016–17	2017–18 ^s	2018–19 ^f	2019–20 ^f	2017–18 ^s	2018–19 ^f	2019–20 ^f
Production								
– Steel ^{hs}	Mt	5.35	5.40	5.40	5.40	1.0	0.0	0.0
– Iron ore	Mt	872.5	896.2	916.5	927.8	2.7	2.3	1.2
Exports								
Steel	Mt	1.00	0.88	0.93	0.93	–12.2	5.8	0.0
– nominal value	A\$m	875	788	701	701	–9.9	–11.0	0.0
– real value ^{hi}	A\$m	892	788	685	669	–11.6	–13.1	–2.3
Iron ore	Mt	817.9	845.8	875.7	886.9	3.4	3.5	1.3
– nominal value	A\$m	62,617	61,844	57,730	55,437	–1.2	–6.7	–4.0
– real value ⁱ	A\$m	63,844	61,844	56,405	52,921	–3.1	–8.8	–6.2

Notes: **b** fob Australian basis; **c** Spot price, 62 per cent iron content basis; **d** In 2018 US dollars; **h** Crude steel equivalent; Crude steel is defined as the first solid state of production after melting. In ABS Australian Harmonized Export Commodity Classification, crude steel equivalent includes most items from 7206 to 7307, excluding ferrous waste and scrap and ferroalloys; **i** In 2017–18 Australian dollars; **f** Forecast; **s** Estimate.

Source: ABS (2018) International Trade in Goods and Services, Australia, 5368.0; Bloomberg (2018) Metal Bulletin; World Steel Association (2018); AME Group (2018); Company Reports; Department of Industry, Innovation and Science (2018)