Iron Ore

Resources and Energy Quarterly December 2019

1st

Australia is the largest exporter of iron ore in the world

835 million tonnes exported in 2018

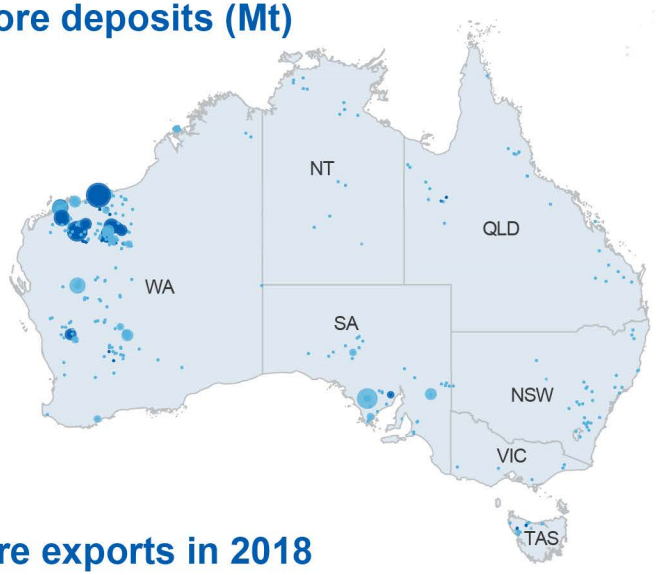
That's enough to build **10,050** Sydney Harbour bridges

$64 billion exported in 2018

29% of the world's iron ore reserves

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 2018

53%	25%	4%	3%	3%	12%
Australia	Brazil	South Africa	Canada	Ukraine	Rest of the world

Australia's iron ore key export destinations, 2018

81%	8%	6%	2%	3%
China	Japan	South Korea	Taiwan	Rest of the world

Global share of iron ore imports in 2018

68%	9%	8%	5%	10%
China	European Union	Japan	South Korea	Rest of the world

4.1 Summary

- The iron ore price in 2019 is expected to average around US$80 a tonne Free on board (FOB) Australia. Iron ore prices remain at unusually high level following production shortfalls. The iron ore price is forecast to decline to average US$60 a tonne (FOB Australia) by 2021, as the seaborne market gradually returns to balance.
- Australia's iron ore export earnings are set to increase from $77 billion in 2018–19 to $84 billion in 2019–20. Earnings are then projected to ease to $66 billion in the final year (2020–21) of the outlook period, as seaborne prices gradually decline.
- Export volumes are expected to grow from 834 million tonnes in 2019 to 878 million tonnes by 2021 as new production commences in Western Australia.

4.2 Prices

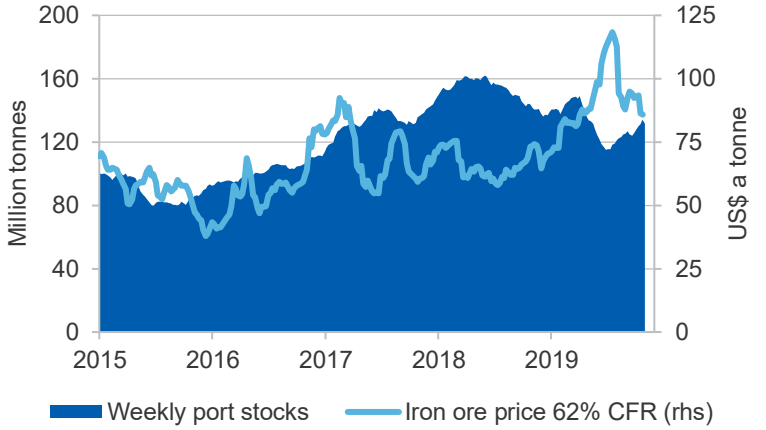
Iron ore prices have reversed some of their early 2019 surge

Weaker global steel demand and low margins for most steelmakers have fed through to the global iron ore market, constraining demand in recent months. Iron ore prices have dropped noticeably from their 2019 peak, as supply shortfalls have gradually closed. However, prices are not likely to retreat much further in the short term, as iron ore markets remain tight and iron ore stocks remain near five-year lows.

The FOB Australia iron ore price (62% iron content) — at which most Australian iron ore is sold — peaked in mid-2019 following the fallout from the tailings dam collapse in Brazil, but subsequently corrected. In late 2019, iron ore prices have stabilised at around the same level as in late 2018 (Figure 4.1).

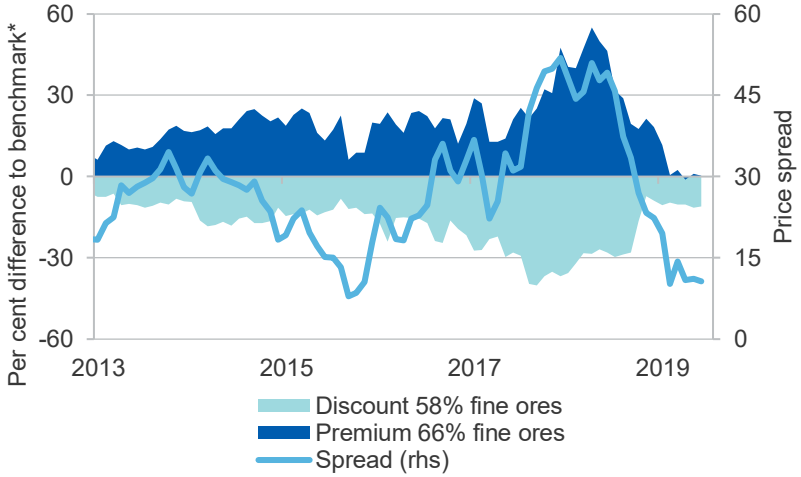
The price premium for high quality iron ore rose sharply in late-2018, as high-quality ore supply from Brazil was reduced. Subsequently, markets have adjusted to use greater quantities of lower grade ore, with the price premium between grades easing recently (Figure 4.2).

Figure 4.1: China's iron ore port stocks and spot price



Notes: China import Iron ore fines 62% Fe spot (CFR Tianjin port)
Source: Bloomberg (2019) Antaike iron ore port stocks and Metal Bulletin

Figure 4.2: Iron ore price spread between grades



Notes: *Benchmark used is 62 per cent iron fines CFR
Source: Bloomberg (2019) China import prices

Iron ore prices have become more dependent on Chinese demand

Around 70 per cent of seaborne iron ore is imported by China, where steelmaking has remained strong (and demand for pig iron high) despite a slowing growth rate in September and October (Figure 4.3). Since mid-2019, a substantial drawdown in Chinese iron ore inventories has helped to support iron ore prices even as steel production has softened in Europe, North Asia and India.

China's use of scrap steel appears to have eased back in recent months, following a period of growth which spanned several years. The turnaround in scrap steel use reflects falling iron ore prices (and low steel margins) which drove a shift back towards use of cheaper pig iron and lower grade ores (Figure 4.4). The Chinese Government is continuing to fund infrastructure to process and collect scrap, but scrap usage is not yet widespread, and remains subject to unpredictable swings as prices move up and down.

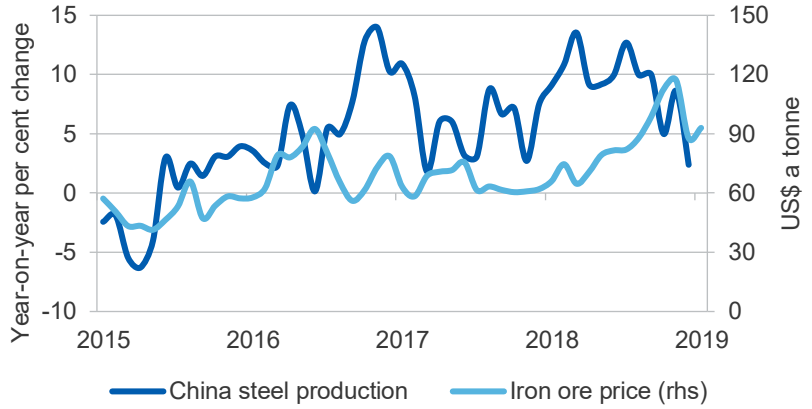
Global economic growth is expected to affect iron ore prices strongly over 2020 and 2021. Substantial uncertainty remains around the trajectory and outcome of trade negotiations between the US and China (see the *Macroeconomic Outlook* chapter).

Trade tensions could destabilise the global economy next year, and this possibility represents a general downside risk for prices. However, the Phase One US-China trade deal is likely to offset some of this risk.

Iron ore prices are likely to average about 30 per cent higher in 2019 compared to 2018 (FOB), in large part due to the supply deficit over the first half of the year. Iron ore prices declined from August, but remain around 15 per cent higher in November 2019 relative to a year ago.

As production comes back online in Brazil and rises elsewhere, prices are expected to ease over the outlook period, declining to an average of US$57 a tonne by 2021.

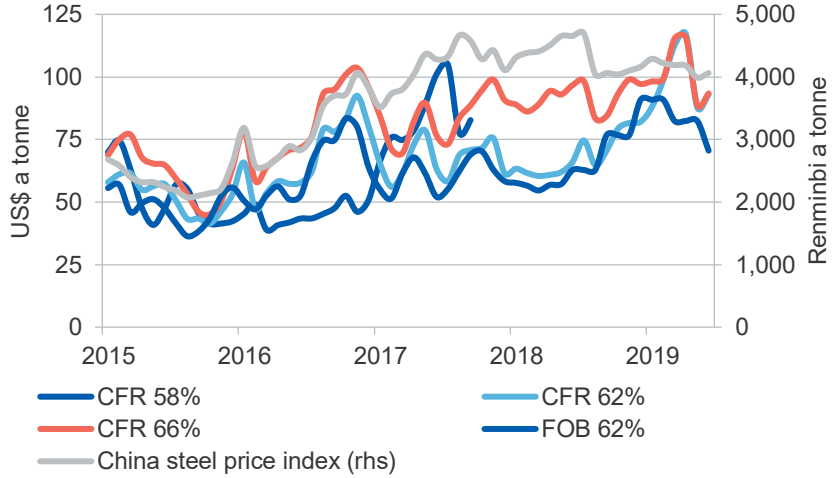
Figure 4.3: Iron ore price and China steel production growth



Notes: China import Iron ore fines 62% Fe spot (CFR Tianjin port)

Source: Bloomberg (2019) China import prices; World Steel Association (2019)

Figure 4.4: Iron ore price by grade and China steel price index



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 (2019) Metal Bulletin; Department of Industry, Innovation and Science (2019)

4.3 World trade

China's iron ore imports held up well over the final months of 2019

Iron ore demand remains China-centred, with no significant change in Chinese imports over October and November. Flattening imports partly reflect the release of a new round of pollution controls, which are considered unlikely to result in dramatic cuts in steel output over winter. China ran down iron ore inventories during the global supply shortage which followed the fallout from the Vale tailings dam collapse. Subsequently, imports to China have grown solidly and are expected to end 2019 on a high note. Imports elsewhere remain relatively subdued, partly as a result of declining steel demand linked to lower automotive production, and partly due to fears around global economic growth prospects in 2020.

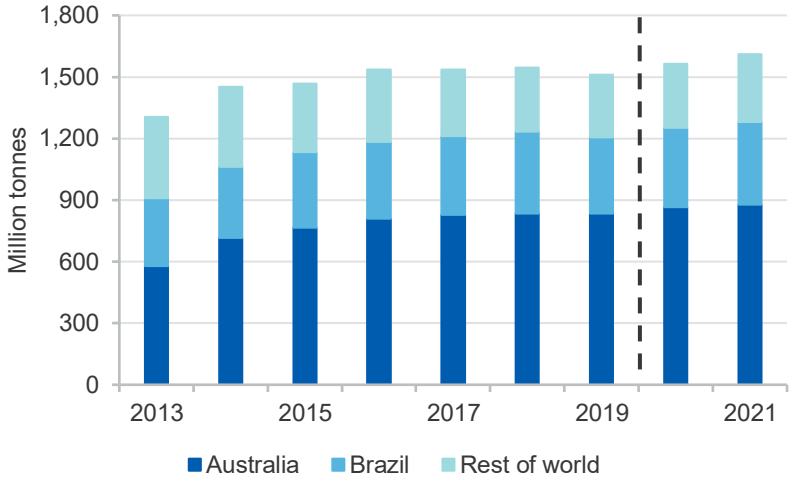
Export growth is recovering despite some recent setbacks

Global seaborne iron ore supply is estimated to edge down to just over 1,500 million tonnes in 2019. This reflects a decline in output from Brazil, offset by rising production elsewhere. Overall supply is projected to pass 1,600 million tonnes by 2021 (Figure 4.5).

Brazilian supply is also recovering, albeit at an uneven pace. Output from Vale remains constrained, with the company focused on dismantling a further nine tailings dams identified as facing potential collapse. Three of these dams are likely to be fully decommissioned and reintegrated into the surrounding environments by 2022, with the company increasingly focused on risk management over recent months. Output from Vale facilities remains uneven across Brazil, with regulators having frozen output at some sites during the September quarter. Vale is currently monitoring a major dam and has revised its forecast for the first quarter of 2020 down to 68-73 million tonnes of iron ore, from a previous forecast of 70-75 million tonnes. This will contribute to tight global supply conditions in 2020.

Iron ore production in the US appears to have firmed up in recent months. Part of this is a result of China's recent shift towards stronger environmental protection, which has led to greater use of pellets and lumps in its production process. While this shift benefits US producers, there is a risk that trade tensions could undermine the gains.

Figure 4.5: Outlook for global iron ore exports



Source: World Steel Association (2019); Department of Industry, Innovation and Science (2019)

Increased supply elsewhere to gradually help ease the market deficit

A number of projects in Africa are expected to ramp up over the next two to three years. These include the recently announced Glencore and Zanga joint venture in the Democratic Republic of Congo (DRC), which is expected to jointly supply 2 million tonnes of high grade iron ore over 2019 and 2020. The Sapro group also commenced a project in the DRC in mid-2019, and output is now ramping up, with the company projecting annual output of 12 million tonnes by 2022. The Société Minière de Boké–Winning consortium, which includes Chinese, French, Singaporean and Guinean interests—has announced a large bid for the Simandou deposit in Guinea.

Tacora's Wabush high grade iron ore mine in Canada is on track to restart in June 2020 and gradually ramp up to 6 million tonnes per annum. The mine previously closed in 2014 when iron prices fell to historical lows.

4.4 Australia

Australia's iron ore export earnings have not peaked yet

Australia's iron ore export earnings are forecast to reach a new record of $84 billion in 2019-20, up more than $5 billion from the previous record set in 2018–19 (Figure 4.8). Growth in 2018–19 was based on higher prices, which offset the impact of lower export volumes (due to weather-related disruptions in Western Australia). In 2019–20, growth is expected to come from volumes, with a key contribution coming from BHP's South Flank project in Western Australia. BHP announced that construction at the site had passed the half-way point in October, with production expected to ramp up rapidly from 2021.

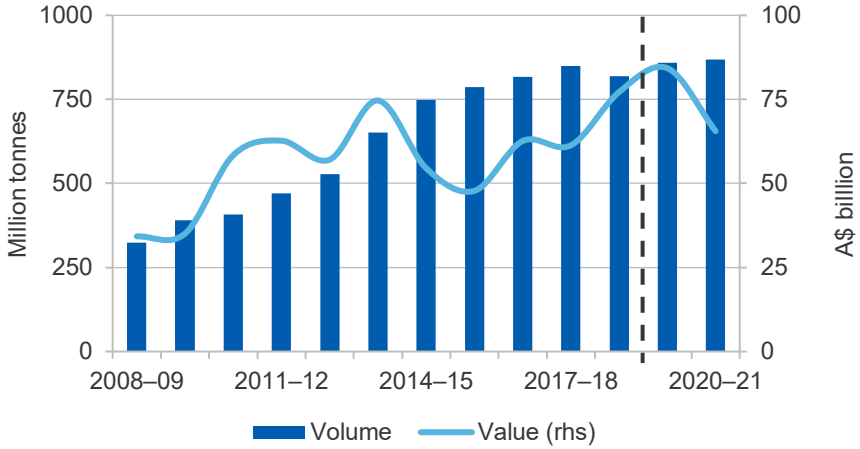
Although long-term prospects are solid, Australian production is closing 2019 on a slightly subdued note, with small drops evident in the September and December quarters. However, there are signs of quality improvement, notably from Fortescue, which recently announced that the proportion of output listed in the lowest quality category declined from 42 per cent in the September quarter 2018, to just 34 per cent one year later. The introduction of a new high-grade product called 'West Pilbara Fines' also appears to have been successful, with the new category now accounting for 10 per cent of the company's exports. Higher grade iron ores have been in particular shortfall since the Vale dam collapse early in 2019.

After growth in 2019–20, Australian iron ore export values are set to ease back, declining to around $66 billion in 2020–21. This is largely a price effect, with the remaining price surge of early 2019 expected to gradually unwind.

Australia's iron ore export volumes are forecast to grow

Australia's iron ore export volumes edged up by 1 per cent year-on-year in the September quarter to 214 million tonnes. There has been little structural change in export volumes over the year, despite a brief fall in output late March following Cyclone Veronica.

Figure 4.6: Australia's iron ore export volumes and values



Source: ABS (2019) International Trade, Australia, 5368.0; Department of Industry, Innovation and Science (2019)

Revisions to export earnings

Australia's iron ore export earnings forecast for 2019–20 has been revised up by $2 billion to $84 billion since the September quarter *Resources and Energy Quarterly*. Earnings for 2020–21 have not been revised significantly. Changes reflect more clarity on the pace of recovery for global production, and a marginal lift in the price outlook for the year.

Iron ore exploration expenditure is expected to rise over the outlook

Australia's iron ore exploration expenditure increased by 17 per cent year-on-year to $101.2 million in the September quarter 2019. Iron ore exploration has benefited from the surge in prices early in 2019, and robust demand from key markets including China. Iron ore exploration is overwhelmingly concentrated in Western Australia, where a range of deposits are being investigated.

The *Major Projects* chapter in this edition includes more detailed information on exploration for iron ore and other commodities.

Table 4.1: World trade in iron ore

	Million tonnes				Annual percentage change		
	2018	2019[s]	2020[f]	2021[f]	2019[s]	2020[f]	2021[f]
Total world trade	1,546	1,512	1,566	1,610	-2.2	3.6	2.9
Iron ore imports							
China	1,056	1,055	1,056	1,114	-0.1	0.1	5.5
European Union 28	154	159	160	163	3.1	0.8	1.8
Japan	124	125	127	132	0.8	0.9	4.4
South Korea	77	76	75	75	-2.1	-0.4	-0.4
India	5	1	2	5	-75.0	41.9	199.6
Iron ore exports							
Australia	835	834	864	878	-0.1	3.7	1.6
Brazil	397	380	408	413	-4.3	7.4	1.1
Ukraine	30	27	26	28	-11.6	-1.2	8.1
India	11	6	4	4	-46.2	-33.3	8.0

Notes: **f** forecast; **s** estimate.

Source: World Steel Association (2019); International Trade Centre (2019); Department of Industry, Innovation and Science (2019)

Table 4.2: Iron ore outlook

						Annual percentage change		
World	**Unit**	**2018**	**2019[s]**	**2020[f]**	**2021[f]**	**2019[s]**	**2020[f]**	**2021[f]**
Prices [bc]								
– nominal	US$/t	61.2	80.1	63.0	60.5	30.9	-21.3	-4.1
– real [d]	US$/t	62.3	80.1	61.7	58.0	28.6	-23.0	-6.0
Australia	**Unit**	**2017–18**	**2018–19**	**2019–20[f]**	**2020–21[f]**	**2018–19**	**2019–20[f]**	**2020–21[f]**
Production								
– Steel [hs]	Mt	5.71	6.05	6.06	5.73	6.0	0.1	-5.4
– Iron ore	Mt	900	924	901	912	2.6	-2.5	1.2
Exports								
Steel	Mt	1.15	1.21	0.92	1.00	5.1	-23.8	7.9
– nominal value	A$m	926	1 286	797	752	38.8	-38.0	-5.6
– real value [hi]	A$m	958	1 308	797	738	36.6	-39.1	-7.3
Iron ore	Mt	848	819	859	869	-3.4	4.9	1.1
– nominal value	A$m	61,392	77,188	84,270	65,535	25.7	9.2	-22.2
– real value [i]	A$m	63,483	78,524	84,270	64,316	23.7	7.3	-23.7

Notes: **b** fob Australian basis; **c** Spot price, 62 per cent iron content basis; **d** In 2019 US dollars; **s** estimate; **f** Forecast; **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 2019–20 Australian dollars; s estimate.

Source: ABS (2019) International Trade in Goods and Services, Australia, 5368.0; Bloomberg (2019) Metal Bulletin; World Steel Association (2019); AME Group (2019); Company Reports; Department of Industry, Innovation and Science (2019)