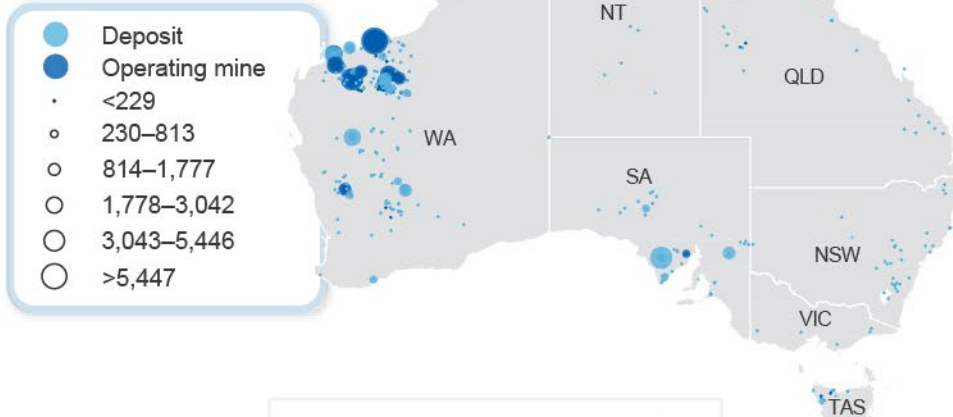


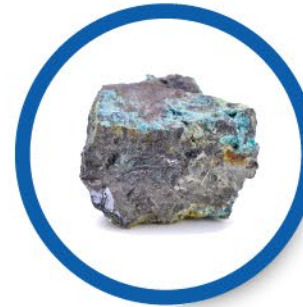


Iron Ore

Major Australian iron ore deposits (Mt)



Iron ore



Iron is earth's most common element, forming much of the planet's core



Iron ore deposits were originally formed by algae

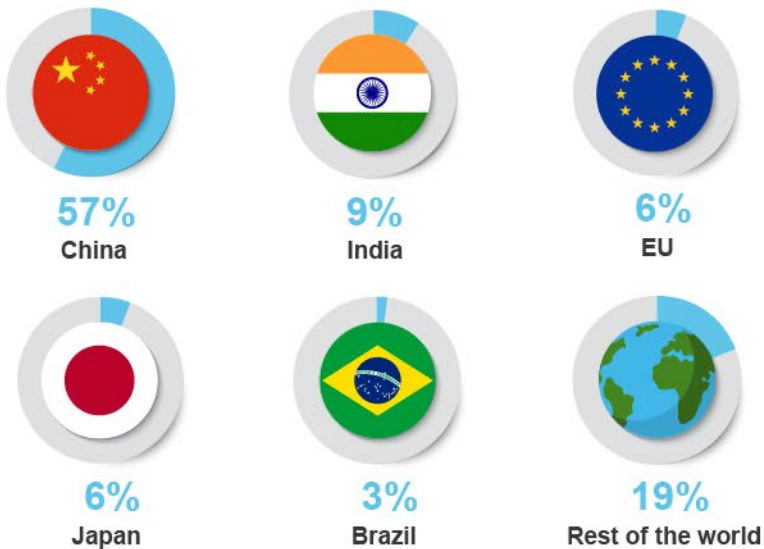


Humans have been working with iron for at least 5,000 years

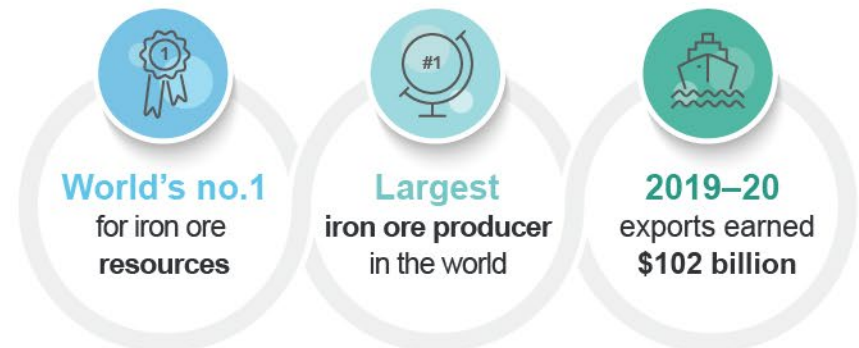


Iron was central to the industrial revolution

World consumption



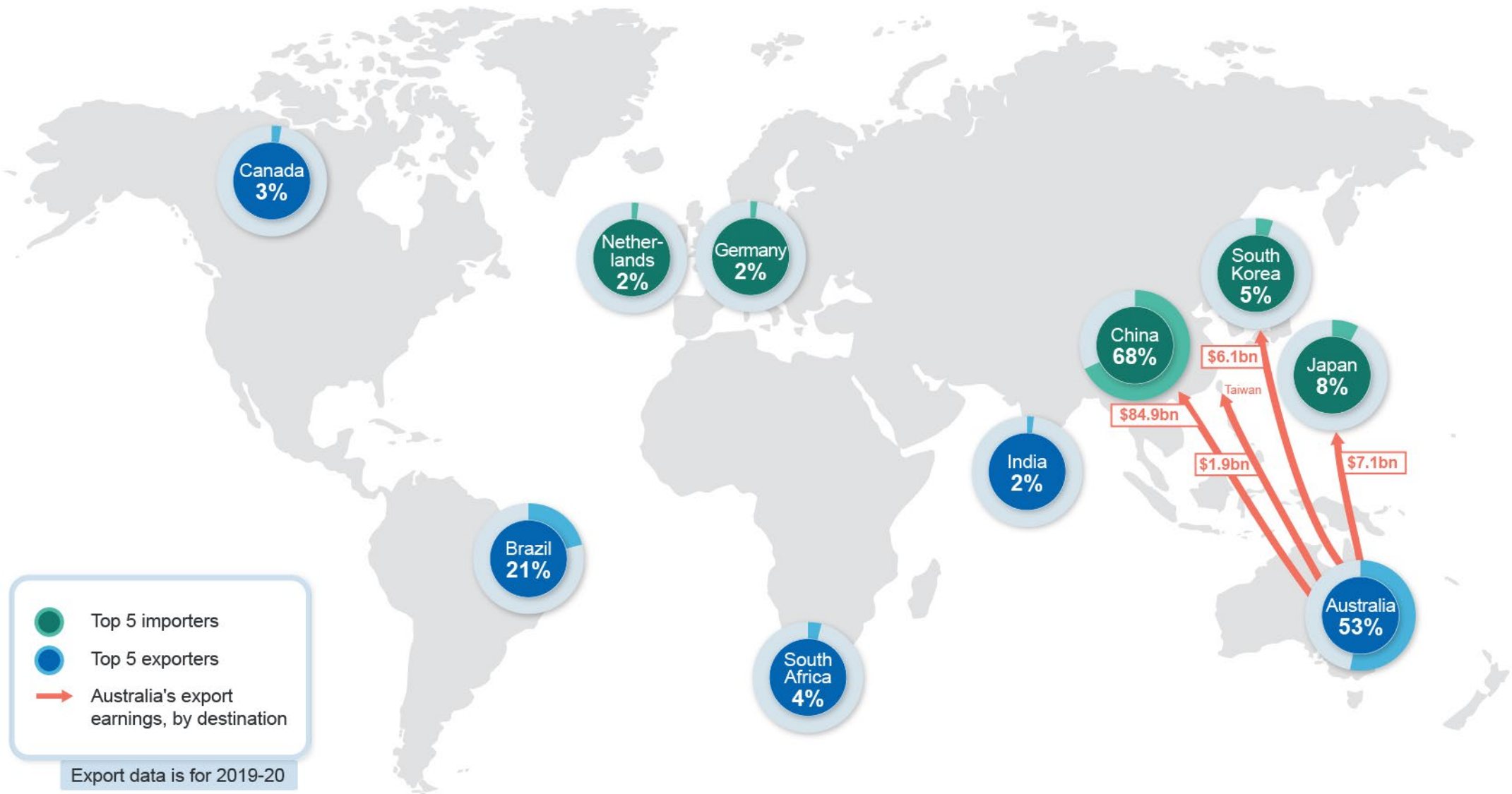
Australia's iron ore





Iron Ore

Trade map | September 2020



4.1 Summary

- The iron ore price has spiked repeatedly in recent months, rising to over US\$120 a tonne despite the global economic downturn and a significant fall in steel demand in many countries. This reflects ongoing supply disruptions in Brazil and robust demand in China.
- The iron ore price is forecast to be around US\$100 a tonne over the final quarter of 2020, before easing to around US\$80 a tonne by the end of 2021 and US\$75 a tonne by the end of 2022.
- Australian export volumes are expected to grow from 860 million tonnes in 2019–20 to 905 million tonnes by 2021–22. This reflects the commencement of several new mines in Western Australia.
- Australia's iron ore export values rose from \$78 billion in 2018–19 to \$102 billion in 2019–20, on the back of growing volumes, strong prices and a low Australian dollar. Falling prices are expected to push export earnings down to \$80 billion by 2021–22.

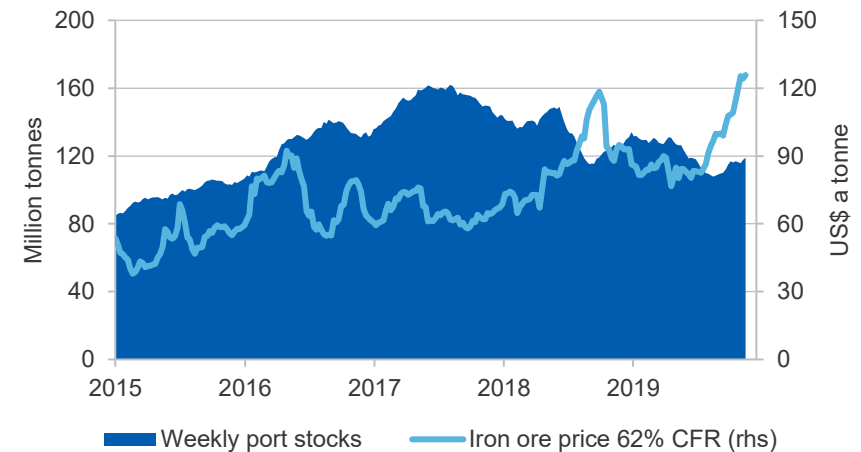
4.2 Prices

Iron ore prices remain strong due to supply disruptions

Unlike most other commodities, iron ore prices have now more than regained pre-COVID-19 levels (see Figure 4.1). The fundamental driver of price growth remains the nexus between volatile and disrupted supply from Brazil, against robust and consistent demand from China. Seaborne supply remains tight as a result, forcing prices to adjust even as broader global economic conditions remain uncertain.

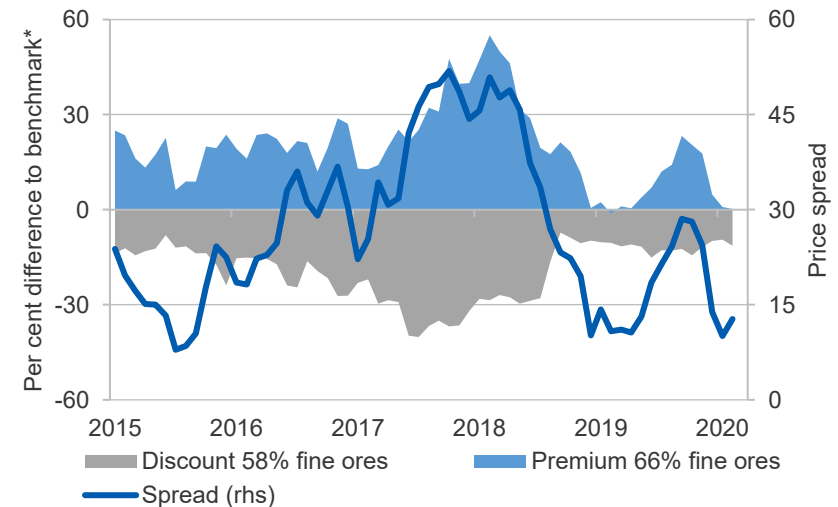
There is little immediate prospect for a major change in these dynamics: Brazil remains subject to extensive COVID-19 containment measures, and lingering after-effects from the collapse of the Brumadinho dam in early 2019. Significant growth in Brazilian short term supply remains unlikely due to the wider problems of COVID-19 across the Brazilian economy. Other supply sources around the world are not expected to rise noticeably over the next two years. The main risk to prices is thus on the demand side, with potential shifts in Chinese steel output now the main factor affecting iron ore prices over the outlook period.

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 (2020) Antaika 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 (2020) China import prices

The price spread between iron ore grades, which lifted sharply in April amidst a surge in demand for higher-grade ore, has abated somewhat in recent months (Figure 4.2). However, prices for all grades remain elevated (Figure 4.3), with the 62 per cent import fine ores price (FOB) hitting repeated highs over the last few months — US\$82.56 a tonne in April, US\$94.56 in May, US\$98.01 in June and US\$109.25 in July.

Iron ore prices are likely to stay strong as Chinese demand recovers

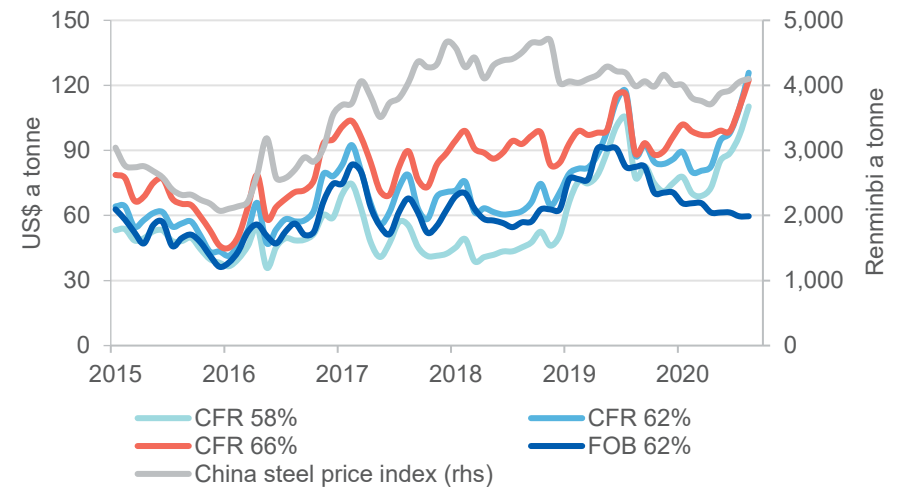
A plateau in prices is expected over the coming months, with risks weighted to the downside given the high dependency of global demand on China (see Figure 4.4), which currently imports more than two-thirds of global seaborne iron ore. Part of the recent price peak was also a result of fears over further significant supply disruptions in Brazil. These fears have not been borne out, though Brazilian output remains constrained overall. Another factor is the relatively low price of metallurgical coal, which provides steelmakers with more flexibility to pay more for iron ore.

China's dominance in iron ore consumption gives it considerable capacity to set global prices, and Chinese importers are unlikely to accept historically high prices for iron ore over an extended period, even with other commodities low/falling in cost. Some cooling in the seaborne market is thus expected towards the end of 2020. However, prices are not expected to yield much of their recent gains, holding near US\$100 a tonne over coming months and ending the 2020–21 year at just over US\$85 a tonne. Prices are expected to remain high — at over US\$75 a tonne — over the rest of the outlook period.

Freight costs, which have been pushed up significantly by Chinese demand in recent months, are expected to remain elevated in the short term, though efforts by Chinese importers to reduce costs may result in some downward pressure towards the end of 2020.

Overall, prices are expected to be supported by a gradual recovery in the global economy (and a linked recovery in steel production outside of China) in 2022. Offsetting this upward pressure, Brazilian supply is expected to partially recover in 2021, as currently idle capacity in the country's south starts to return to operation.

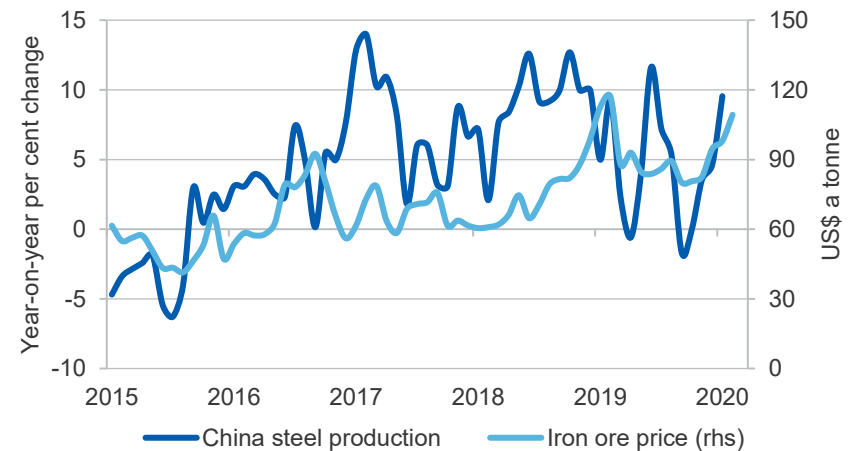
Figure 4.3: Iron ore price by grade and China steel price index



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, Science, Energy and Resources (2020)

Figure 4.4: Iron ore price vs China steel production growth



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

Source: Bloomberg (2020) China import prices; World Steel Association (2020)

4.3 World trade

Export growth is recovering despite some recent setbacks

Iron ore exports have continued to rise in 2020 (see Figure 4.5) despite the global economic downturn associated with the COVID-19 outbreak. Iron ore has largely been insulated from the global recession by ongoing robust steel demand in China, and global demand is expected to remain solid over the outlook period.

Production in Brazil continues to rise slowly, with Vale ramping up some latent capacity in recent months. The company has significant mines and facilities in the north of Brazil, where operations are relatively remote and somewhat protected from the COVID-19 outbreak — which has severely affected towns and cities in the south of the country. Vale remains confident of expanding exports over the rest of 2020, citing a monthly lift in production in June, as well as recent falls in absentee rates (which had spiked due to COVID-19).

However, Vale's production showed signs of lagging again in July, and the company has repeatedly fallen short of its announced targets. Vale is facing tougher regulatory requirements following the collapse of its Brumadinho dam construction in early 2019. Production plans have also been derailed by the impact of the COVID-19 outbreak, which has led to more than 100,000 deaths across Brazil and severely disrupted transport and labour across the country.

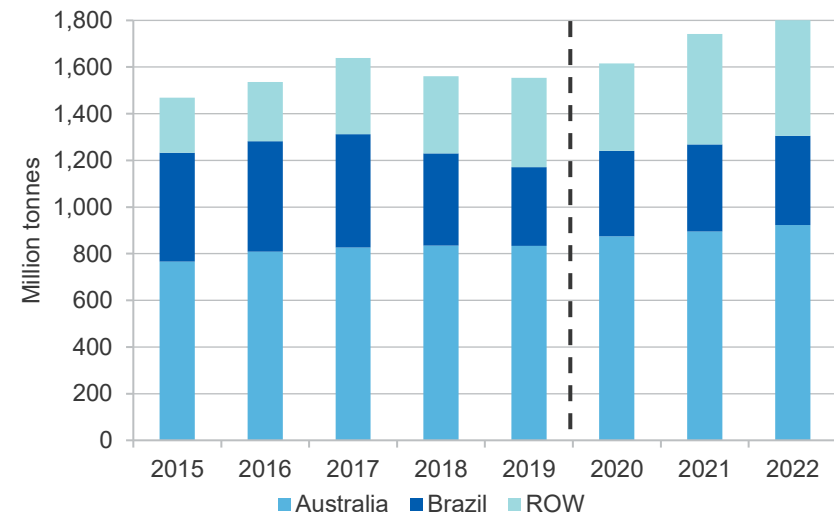
Brazilian production is not expected to return to normal levels until late 2022, and even this schedule faces risks should efforts to contain the COVID-19 pandemic continue to fall short. South African and Canadian production have also been affected by labour and transport problems linked to the COVID-19 outbreak. While the effects on these countries have been less severe, it is unlikely that their production could rise sufficiently to fill the gap created by the downturn in output from Brazil.

Production in Africa is expected to grow over the longer term, with recent rapid progress being made on development of the US\$20 billion Simandou deposit in Guinea. China has long sought to diversify its iron ore sources,

and Baowu — a large Chinese steelmaker — is now expected to lead the acquisition of Chinalco's stake in the mine, which amounts to one half of the overall deposit. The other half is held by Rio Tinto. Full production at the site is not expected until after 2025.

Australia is expected to account for a rising share of steel output over the next two years as new mines open in the Pilbara region.

Figure 4.5: Outlook for global iron ore exports



Source: World Steel Association (2020); Department of Industry, Science, Energy and Resources (2020)

4.4 Australia

Australia's export earnings are set to rise despite short-term setbacks

Australian iron ore exports grew by 8 per cent (through the year) to \$9.9 billion in June. Volumes reached 82 million tonnes in the month. This was a record monthly result both for volumes and values, and reflects a surge in shipments from Port Hedland.

The June result brought 2019–20 earnings to \$102 billion, easily above the previous annual record for iron ore earnings (of \$78 billion in 2018–19). It

also makes iron ore the first commodity to earn Australia more than \$100 billion in a single year.

As a low-cost producer, Australia is unlikely to see any major decline in export volumes in the outlook period; on the contrary, it appears Australia is set to raise export volumes given production shortfalls elsewhere. On the negative side, the loss of European steelmaking capacity will force Australian suppliers to adjust to falls in a modest but reliable iron ore export market.

Australian iron ore miners continue to invest in new supply sources. New output is expected from significant projects in the Pilbara region of Western Australia, including BHP's South Flank project (from 2021), Fortescue's Eliwana project (from 2021), and Brockman's Marillana mine (after 2021). This will expand on existing capacity and substitute for falling output from some existing mines in the region, which are approaching depletion.

Export capacity is also being expanded, with Fortescue proceeding with plans to expand its capacity at Port Hedland by 20 million tonnes, to 210 million tonnes per year. BHP has announced plans to increase its own capacity at the same site from 290 million tonnes a year to 330 million tonnes. This signals a degree of confidence that Chinese demand for steelmaking will remain strong for several more years.

Australia's iron ore export volumes are forecast to grow

Export volumes are expected to follow the trajectory of production, increasing from an estimated 860 million tonnes in 2019–20 to 905 million tonnes by 2021–22 (see Figure 4.6).

This volume growth should largely reduce the impact of likely price declines, leading to still relatively strong export earnings over the next few years.

Australia's iron ore export values are expected to ease as prices retreat

Historically high iron ore prices have resulted in an export earnings boon, with values peaking above \$100 billion this year. While volumes are

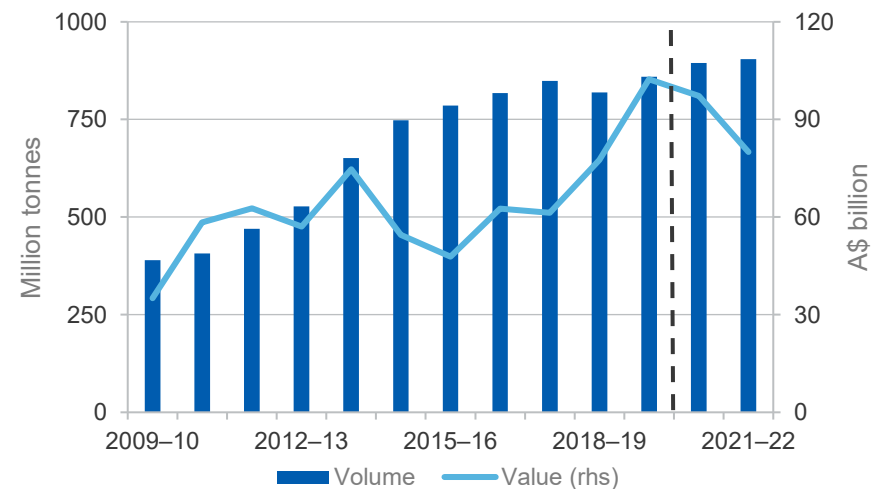
expected to hold up, an expected correction in prices will lead to some retreat in export value, with earnings forecast to shift down from \$102 billion in 2019–20 to \$80 billion by 2021–22.

Iron ore exploration expenditure is growing as prices lift

Iron ore exploration has picked up in recent quarters as prices have lifted. A total of \$98.7 million was invested in exploration in the June quarter: this was up by 31 per cent in the quarter and 4 per cent through the year. The overwhelming majority of exploration occurred in Western Australia, where the most substantial deposits exist.

Iron ore exploration for the full 2019–20 year was \$361.3 million. This was the highest annual total since 2014–15.

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



Source: ABS (2020) International Trade, Australia, 5368.0; Department of Industry, Science, Energy and Resources (2020)

Revisions

Forecast export earnings for 2021–22 and 2021–22 are largely unchanged from the June quarter 2020 *Resources and Energy Quarterly*.

Table 4.1: World trade in iron ore

	Million tonnes				Annual percentage change		
	2019	2020 ^f	2021 ^f	2022 ^f	2020 ^f	2021 ^f	2022 ^f
Total world trade	1,554	1,616	1,741	1,824	4.0	7.8	4.8
Iron ore imports							
China	1,071	1,157	1,288	1,371	8.1	11.4	6.4
European Union 27	137	128	125	125	-7.0	-2.2	0.0
Japan	120	117	116	115	-2.0	-1.0	-0.9
South Korea	74	71	72	73	-4.2	1.6	1.5
India	5	5	5	5	-6.5	-2.1	0.0
Iron ore exports							
Australia	836	874	896	922	4.6	2.5	3.0
Brazil	336	366	372	382	8.9	1.6	2.7
Ukraine	45	45	57	60	0.9	25.7	6.2
India	41	38	48	52	-6.2	27.1	7.6

Notes: **f** forecast

Source: World Steel Association (2020); International Trade Centre (2020); Department of Industry, Science, Energy and Resources (2020)

Table 4.2: Iron ore outlook

World	Unit	2019	2020 ^f	2021 ^f	2022 ^f	Annual percentage change		
						2020 ^f	2021 ^f	2022 ^f
Prices ^{bc}								
– nominal	US\$/t	83.0	90.7	85.5	76.1	9.3	-5.7	-11.0
– real ^d	US\$/t	84.3	90.7	83.6	73.0	7.6	-7.9	-12.7
Australia	Unit	2018–19	2019–20 ^s	2020–21 ^f	2021–22 ^f	2019–20 ^s	2020–21 ^f	2021–22 ^f
Production								
– Steel ^{hs}	Mt	6.05	5.78	5.79	5.78	-4.5	0.2	-0.1
– Iron ore	Mt	924.2	924.0	928.0	928.7	0.0	0.4	0.1
Exports		189	187	185	193	-0.9	-1.0	4.0
Steel	Mt	1.21	0.88	1.00	0.99	-27.6	13.5	-0.1
– nominal value	A\$m	1 287	1 008	752	751	-21.7	-25.4	-0.1
– real value ^{hi}	A\$m	1 337	1 034	752	736	-22.7	-27.2	-2.1
Iron ore	Mt	818.0	859.6	895.0	904.7	5.1	4.1	1.1
– nominal value	A\$m	77,553	102,345	97,219	79,963	32.0	-5.0	-17.8
– real value ⁱ	A\$m	80,564	104,916	97,219	78,370	30.2	-7.3	-19.4

Notes: **b** fob Australian basis; **c** Spot price, 62 per cent iron content basis; **d** In 2020 US dollars; **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 2020–21 Australian dollars.

Source: ABS (2020) International Trade in Goods and Services, Australia, 5368.0; Bloomberg (2019) Metal Bulletin; World Steel Association (2020); AME Group (2020); Company Reports; Department of Industry, Science, Energy and Resources (2020)