Iron Ore

Major Australian iron ore deposits (Mt)
- Deposit
  - <229
  - 230–813
  - 814–1,777
  - 1,778–3,042
  - 3,043–5,446
  - >5,447
  - Operating mine

World consumption
- China: 57%
- India: 9%
- EU: 6%
- Japan: 6%
- Brazil: 3%
- Rest of the world: 19%

Australia’s iron ore
- World’s no.1 for iron ore resources
- Largest iron ore producer in the world
- 2019–20 exports to top $100 billion

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
4.1 Summary

- Iron ore prices have held up through the early stages of the COVID-19 pandemic, despite a global economic downturn and a significant fall in steel demand in many countries. This reflects ongoing supply disruptions in Brazil and surprisingly robust demand in China.
- In 2020, the iron ore price is forecast to average about US$79 a tonne free on board (FOB) Australia. Growing supply is expected to reduce the iron ore price to an average of US$65 a tonne by 2022.
- Export volumes are expected to grow from an estimated 852 million tonnes in 2019–20 to 915 million tonnes by 2021–22. This reflects the commencement of several new mines in Western Australia.
- Australia’s iron ore export values are estimated to have risen from $78 billion in 2018–19 to $103 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 $81 billion by 2021–22.

4.2 Prices

Iron ore prices remain strong due to supply disruptions

Persistent supply disruptions have kept iron ore prices above US$80 a tonne in May and June. This has occurred in marked contrast to prices for metallurgical coal, which is the other primary component of steel. Although both commodities are linked to the steel supply chain, market conditions between them have varied markedly in recent months. This largely reflects conditions in China, which produces a large amount of coal, but which remains highly dependent on imports to meet its iron ore needs. Chinese import demand has remained robust as South African exports remained subdued and Brazilian exports faced more disruptions.

Prices for iron ore remain robust (Figure 4.1); while demand has been impacted by COVID-19 containment measures, these have been offset by supply problems — including weather issues in Brazil and Australia and the lingering impacts of the Brumadinho dam collapse in 2019. It is expected that supply conditions will improve before the impacts of COVID-19 fully pass, creating a likelihood of weaker prices.
The FOB Australia iron ore price (62% iron content) remains robust, albeit below its peak in July 2019, when it rose above US$110 a tonne. Supply shortfalls and weather disruptions kept prices above US$80 a tonne over most of the June quarter.

Weather issues and the COVID-19 outbreak (a protracted wet season and operational issues adversely affected Vale’s Northern System in Brazil) have had a significant impact on Brazil’s higher quality iron ore outputs, with supply concerns driving Vale’s premium Brazilian Blends fines product to an 11-month high (see Figures 4.2 and 4.3). The price premium has supported other suppliers of high grade iron ore, including Australia.

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

China currently imports more than two-thirds of global seaborne iron ore, and declines in its steel production in late 2019 (see Figure 4.4) had significant implications for iron ore markets. However, Chinese demand for iron ore has thus far proven to be relatively robust, despite the impact of COVID-19 and the shutdown of significant sectors of the Chinese manufacturing industry. At this stage, it is not expected that Chinese demand will fall significantly, though the ongoing decline of consumer spending in OECD nations will increase the dependence of the Chinese steel industry on domestic stimulus measures.

Iron ore prices are expected to largely hold at current levels over the remainder of 2020, as Chinese demand absorbs an expected slow pickup in supply. As the dominant purchasers by far, Chinese importers will likely back away from the seaborne market on moves above US$100 a tonne.

Prices are likely to come under downward pressure after 2020, as supply shifts back towards normal levels. However, a significant global recovery is also expected in 2021, which will likely add to steel demand and provide a floor for prices. The weak demand and poor supply that appear likely to characterise 2020 are thus expected to go into reverse in 2021.
4.3 World trade

Export growth is recovering despite some recent setbacks

Exports of iron ore are expected to hold up relatively well in 2020 (see Figure 4.5) as a result of surprisingly robust Chinese demand.

Chinese imports of iron ore rose 13 per cent in April, to 97 million tonnes. Over the first four months of 2020, Chinese iron ore imports were 5.8 per cent higher than in the equivalent period of 2019. This growth partly reflects the impact of supply constraints in early 2019, when a cyclone in the Pilbara and a dam collapse in Brazil significantly affected seaborne markets. However, it also reflects increasing production from steel mills in expectation of higher spending on infrastructure over the rest of 2020.

With weather issues giving way to problems caused by the COVID-19 outbreak, Brazilian iron ore supply remains disrupted. Brazil has become one the world’s worst-affected countries, with a lack of initial containment resulting in a rapid spread of the virus and subsequent containment measures in ten cities across Para — a key iron ore producing state. The containment measures are hampering efforts to restore output, leaving Brazilian exports stagnant at levels well below the long-run average.

Responding to the challenging conditions, Vale has announced that its planned capital expenditure in Brazil will be cut from US$5 billion to US$4.6 billion in 2020. The company has advised that the COVID-19 pandemic has made construction and maintenance unsafe at several sites. Vale has reduced its guidance for iron ore production in 2020 from 340-355 million tonnes to 310-330 million tonnes.

Indian iron ore exports have fallen sharply, due to port closures and labour shortages. Exports from countries such as Ukraine, South Africa and Canada — which have fewer economies of scale than Australia — have also come under pressure in 2020 as a result of the pandemic.

The world retains a significant pipeline of promising iron ore projects, most of which remain in prospect despite delays brought about by the COVID-19 outbreak. However, significant growth in iron ore production is not likely to occur over the next two years.

4.4 Australia

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

Australia’s iron ore exports have recovered following recent weather disruptions and difficulties in the Pilbara. Export values increased by 36 per cent in March (or 47 per cent through the year) to reach $8.9 billion in the month. This brings output and earnings back to the strong levels seen through most of the second half of 2019.

Most domestic operations are performing strongly. Shipments from Fortescue Metals increased by 10 per cent in the March quarter, reaching 42.3 million tonnes. The company has reported that shipments and payments remain largely unaffected by COVID-19, and Fortescue has raised its 2020 iron ore export target up to 175-177 million tonnes (from 170-175 million tonnes previously) as supply disruptions continue to affect producers elsewhere in the world. The company has reduced its net debt and operating costs, and is predicting a moderate but steady recovery in economic growth in China. Fortescue has announced that no investments
will be cancelled or postponed as a result of the COVID-19 outbreak, though the timing of some payments has been adjusted. Previously announced plans to expand its Port Hedland capacity from 190 million tonnes a year to 210 million tonnes a year remain on track.

In late April, BHP announced plans to increase its export capacity at Port Hedland from 290 million tonnes a year to 330 million tonnes. These plans reflect a general expectation that Chinese steel production will remain robust, with a peak expected around 2025.

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 Marallana mine (from 2021). This will expand on existing capacity and substitute for falling output elsewhere in the region, where some existing mines are approaching depletion.

With Australian iron ore production now returning to the strong levels of late 2019, and with the Australian dollar having depreciated sharply, export earnings are estimated to have reached a new record of $103 billion in 2019–20. Beyond this, falling US dollar prices and a rising Australian dollar are expected to more than offset the impact of production growth, leading to falls in earnings over the subsequent two 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 852 million tonnes in 2019–20 to 912 million tonnes by 2021–22 (see Figure 4.6).

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

Iron ore exploration expenditure is solid, but has room to grow

Australia’s iron ore exploration expenditure increased by 12 per cent year-on-year to $75.5 million in the March quarter 2020.

Iron ore exploration has benefited from the surge in prices since early 2019, and from generally robust demand from key markets including China.

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 2020–21 have been revised up from $86 billion to $97 billion. Forecast earnings for 2021–22 are largely unchanged. The revisions reflect the impact of the COVID-19 outbreak and the resulting weakness in the Australian dollar.
Table 4.1: World trade in iron ore

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<thead>
<tr>
<th></th>
<th>2019</th>
<th>2020f</th>
<th>2021f</th>
<th>2022f</th>
<th>2020f</th>
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<tr>
<td><strong>Total world trade</strong></td>
<td>1,554</td>
<td>1,580</td>
<td>1,688</td>
<td>1,752</td>
<td>1.6</td>
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<td></td>
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<tr>
<td>China</td>
<td>1,071</td>
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<td>121</td>
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<td>-1.1</td>
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<tr>
<td>South Korea</td>
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<td>71</td>
<td>-2.1</td>
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<td>5</td>
<td>5</td>
<td>-6.5</td>
<td>-2.1</td>
<td>0.0</td>
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<td><strong>Iron ore exports</strong></td>
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<tr>
<td>Australia</td>
<td>835</td>
<td>866</td>
<td>903</td>
<td>920</td>
<td>3.6</td>
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<td>1.6</td>
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<tr>
<td>India</td>
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<td>14</td>
<td>-20.0</td>
<td>21.4</td>
<td>1.8</td>
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</table>

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

<table>
<thead>
<tr>
<th>World</th>
<th>Unit</th>
<th>2019</th>
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<th>2022f</th>
<th>2020f</th>
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<tr>
<td>– nominal</td>
<td>US$/t</td>
<td>80.1</td>
<td>79.5</td>
<td>71.0</td>
<td>64.8</td>
<td>-0.8</td>
<td>-10.7</td>
<td>-8.8</td>
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<td>– real d</td>
<td>US$/t</td>
<td>81.8</td>
<td>79.5</td>
<td>69.5</td>
<td>62.0</td>
<td>-2.9</td>
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<td>Production</td>
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<tr>
<td>– Steel hs</td>
<td>Mt</td>
<td>6.05</td>
<td>5.78</td>
<td>5.79</td>
<td>5.78</td>
<td>-4.5</td>
<td>0.2</td>
<td>-0.1</td>
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<td>– Iron ore</td>
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<td>915.2</td>
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<td>935.8</td>
<td>-1.0</td>
<td>1.2</td>
<td>1.1</td>
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</table>

| Exports |      |         |          |          |          |          |          |          |
| Steel | Mt | 1.21    | 0.86     | 1.00     | 0.99     | -28.8    | 15.4     | -0.1     |
| – nominal value | A$m | 1 287 | 917     | 752     | 751     | -28.8    | -17.9    | -0.1     |
| – real value hi | A$m | 1 312 | 917     | 738     | 721     | -30.1    | -19.5    | -2.2     |
| Iron ore | Mt | 818.0   | 851.5   | 892.9   | 911.9   | 4.1      | 4.9      | 2.1      |
| – nominal value | A$m | 77,553 | 102,662 | 97,017  | 80,612  | 32.4     | -5.5     | -16.9    |
| – real value i | A$m | 79,010 | 102,662 | 95,138  | 77,387  | 29.9     | -7.3     | -18.7    |

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 2019–20 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)