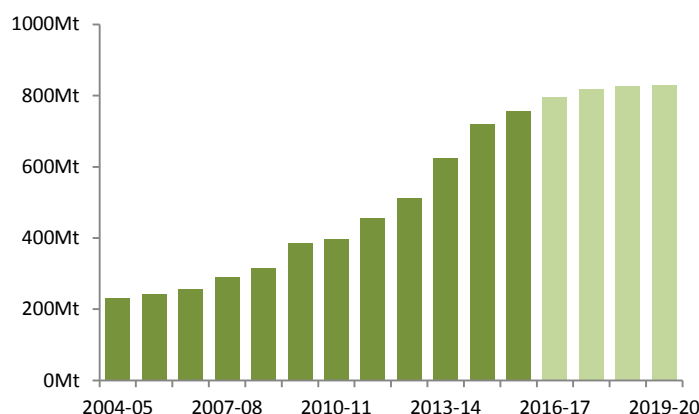




- Western Australia is the largest iron ore producer and exporter in the world, accounting for 37 per cent of global production and 52 per cent of global seaborne exports in 2015. The Pilbara region accounted for 94 per cent of Australia's iron ore production in 2015. Iron ore is used almost exclusively for steel making and with no major steel production in Australia, Western Australia exports all of its iron ore production.
- China is the world's largest steel producer and iron ore consumer and Western Australia's largest export market. In response to growth in Chinese steel production over the past decade, Western Australia's iron ore producers invested in the construction of new mines and associated infrastructure. As construction on these projects has completed, production and exports have increased, mainly from the major iron ore miners: Rio Tinto, BHP Billiton and Fortescue Metals Group.
- China's increasing demand for iron ore resulted in the iron ore price rising from around US\$30 a tonne in 2002-03 to around US\$150 a tonne in 2011-12. The increase in iron ore production in Western Australia displaced higher cost production in China and, combined with lower demand from Chinese steel makers, led to the iron ore price falling by 42 per cent in 2014-15 and a further 28 per cent in 2015-16. The iron ore price fell to as low as US\$37 a tonne in December 2015, but increased during 2016; the monthly average price for November 2016 was US\$73 a tonne.
- Western Australia's iron ore industry remains globally competitive with high quality reserves, low cost production and established, long-term markets in China, Japan, Korea and Taiwan.

#### Iron ore sales

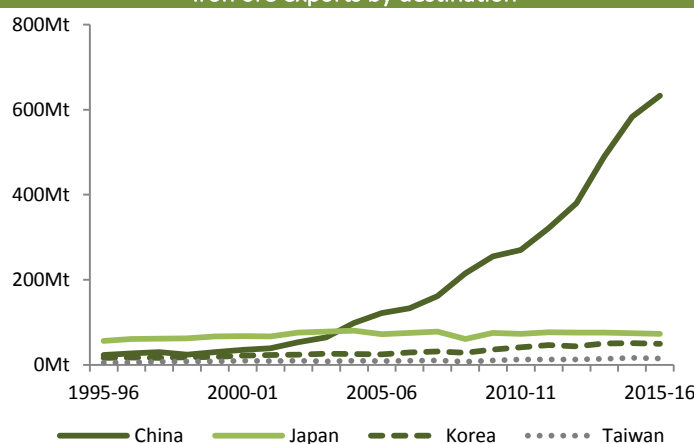


Note – Forecasts start in 2016-17.

Source: WA Department of Mines and Petroleum, Resource Data Files; and WA Government 2016-17 Mid-year Financial Projections Statement.

- Western Australia's iron ore sales rose from 243 million tonnes to 757 million tonnes between 2005-06 and 2015-16, at an annual average rate of 12 per cent.
- Western Australia's sales of iron ore are expected to rise as mine construction and expansions are completed, but the rate of increase will be slower than the past ten years.
- The WA Government's 2016-17 Mid-year Financial Projections Statement forecasts Western Australia's iron ore sales to increase to 830 million tonnes by 2019-20.

#### Iron ore exports by destination

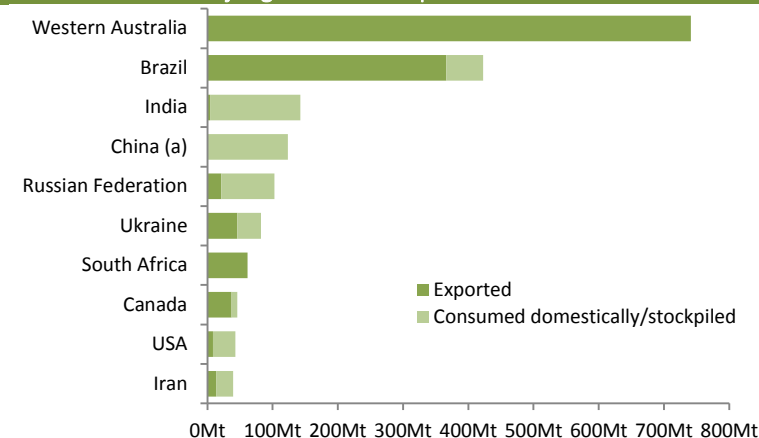


Source: ABS 5368.0 International Trade in Goods and Services.

- Western Australia exports nearly all the iron ore it produces to China, Japan, Korea and Taiwan.
- China accounted for 82 per cent of Western Australia's iron ore exports in 2015-16, followed by Japan (9 per cent), Korea (6 per cent) and Taiwan (2 per cent).
- Western Australia's iron ore exports to China rose 8 per cent to 633 million tonnes in 2015-16, below annual average growth of 18 per cent over the past ten years.
- Western Australia's iron ore exports to Japan fell 2 per cent to 73 million tonnes in 2015-16.
- Western Australia's iron ore exports to Korea fell 3 per cent to 50 million tonnes in 2015-16.
- Western Australia's iron ore exports to Taiwan fell 6 per cent to 15 million tonnes in 2015-16.



### Major global iron ore producers: 2015

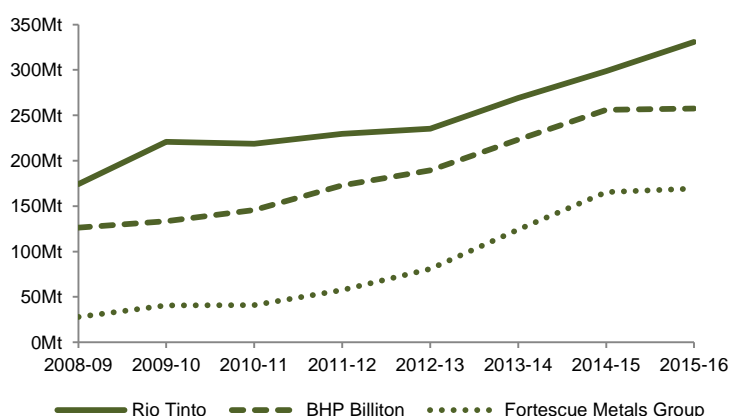


(a) Iron ore production is converted so that its iron content is about equal to the global average.

Source: United Nations Conference on Trade and Development, The Iron Ore Market 2016; and WA Department of Mines and Petroleum, Resource Data Files.

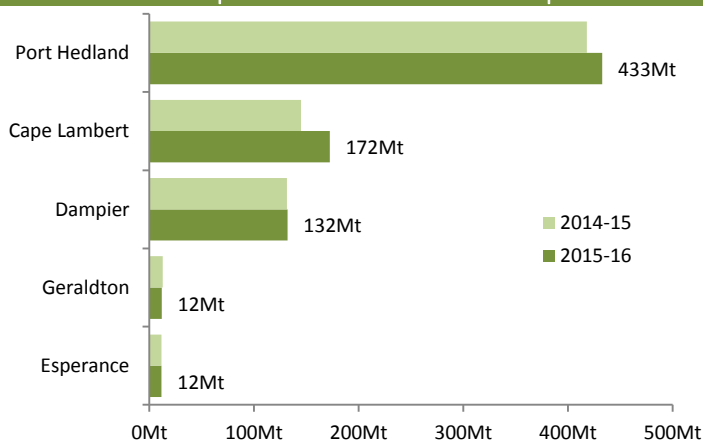
- Western Australia accounted for 37 per cent (741 million tonnes) of global iron ore production and 52 per cent of world exports in 2015. Western Australia exported all of its iron ore production in 2015.
- Brazil accounted for 21 per cent (423 million tonnes) of global iron ore production and 25 per cent (366 million tonnes) of world iron ore exports in 2015. Brazil exported 87 per cent of its iron ore production in 2015.
- India accounted for 7 per cent (143 million tonnes) of global iron ore production in 2015, taking over from China as the third largest producer of iron ore. India exported 3 per cent of its iron ore production in 2015.
- China accounted for 6 per cent (124 million tonnes) of global iron ore production in 2015. China used or stockpiled all of its iron ore production in 2015.

### Major iron ore producers' sales from Western Australia



Source: Company quarterly production reports. Note – Wet tonnes and inclusive of third party tonnes.

### Iron ore exports from Western Australia's ports



Source: ABS 5368.0 International Trade in Goods and Services.

- Rio Tinto, BHP Billiton and Fortescue Metals Group are the largest iron ore producers in Western Australia.
- Brazilian company, Vale, is the world's largest iron ore producer, followed by Rio Tinto, BHP Billiton and Fortescue Metals Group.
- Rio Tinto's iron ore sales from Western Australia rose 11 per cent to 331 million tonnes in 2015-16.
- BHP Billiton's iron ore sales from Western Australia rose 1 per cent to 257 million tonnes in 2015-16.
- Fortescue Metals Group's iron ore sales from Western Australia rose 2 per cent to 169 million tonnes in 2015-16.
- Port Hedland, Cape Lambert and Dampier are the largest iron ore export ports in Western Australia. In 2015-16, iron ore exports from:
  - Port Hedland rose 4 per cent to 433 million tonnes (56 per cent of Western Australia's iron ore exports).
  - Cape Lambert rose 19 per cent to 172 million tonnes (22 per cent of Western Australia's iron ore exports).
  - Dampier rose 0.5 per cent to 132 million tonnes (17 per cent of Western Australia's iron ore exports).
- In 2015, Rio Tinto completed expansions at Cape Lambert and Dampier, raising capacity to 210 and 150 million tonnes respectively. By 2018 capacity at Port Hedland – the world's largest bulk export port – could reach 495 million tonnes.



### Iron ore and steel product prices



Note – Forecasts start in 2016-17.

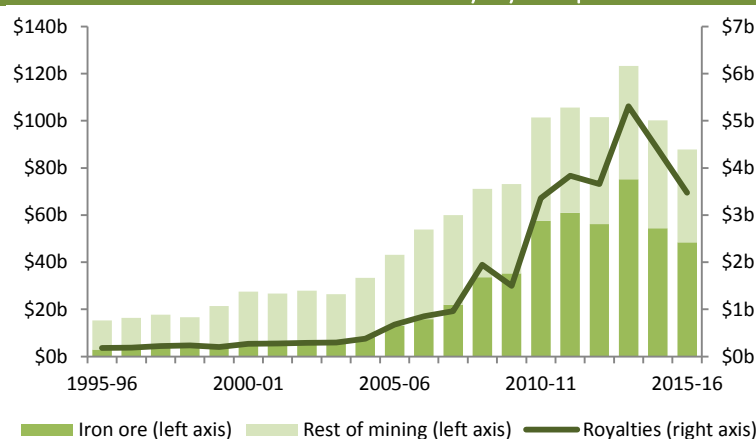
Iron ore price - Monthly average China spot prices in nominal US dollars (cost and freight).

Steel product price - Monthly average China steel product prices index

Source: World Bank, Commodity Market; CEIC, China Premium database.

- The monthly average spot price for iron ore imports to China (including shipping costs) rose 24 per cent to US\$73.0 a tonne in November 2016. The annual average price fell 28 per cent to US\$51.6 a tonne in 2015-16 (down 42 per cent to US\$55.8 a tonne in 2015).
- The monthly average price of steel products rose 12 per cent in November 2016. The annual average price fell 21 per cent in 2015-16 (down 27 per cent in 2015).
- The WA Government's 2016-17 Mid-year Financial Projections Statement forecasts the average spot price for iron ore imports to China will rise to US\$64.3 a tonne in 2016-17, before falling to US\$59.1 a tonne in 2017-18.

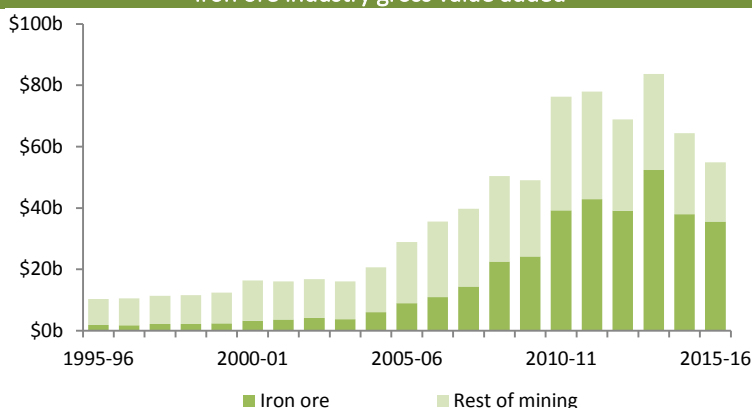
### Value of iron ore sales and royalty receipts



Source: WA Department of Mines and Petroleum, Resource Data Files.

- Iron ore accounted for 50 per cent of the value of Western Australia's merchandise exports and 55 per cent of the value of total minerals and petroleum sales in 2015-16.
- The value of Western Australia's iron ore sales fell 11.0 per cent to \$48.4 billion in 2015-16, compared with annual average growth of 14 per cent over the past ten years.
- Iron ore royalty income accounted for 14 per cent of total WA Government revenue in 2015-16.
- In 2015-16 iron ore accounted for 75 per cent of total royalty income (including North West Shelf grants).
- Western Australia's iron ore royalties fell 21 per cent to \$3.5 billion in 2015-16, due to the fall in the iron ore price, partially offset by higher production and a lower \$A/\$US exchange rate.

### Iron ore industry gross value added<sup>1</sup>



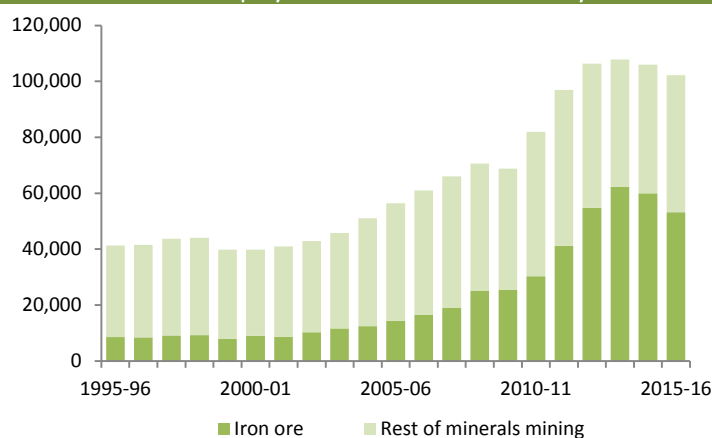
<sup>1</sup> Gross industry value added = Gross industry sales or production values less intermediate inputs.

Source: ABS 5204.0 Australian System of National Accounts; and 5220.0 State Accounts.

- The iron ore industry accounted for 65 per cent of the value added by Western Australia's mining industry and 15 per cent of Western Australia's gross state product in 2015-16. It also accounted for 36 per cent of the value added by Australia's mining industry in 2015-16.
- Iron ore's share of the value added by Western Australia's mining industry rose from 31 per cent to 65 per cent between 2005-06 and 2015-16.
- Iron ore's share of the value added by Western Australia's gross state product rose from 7 per cent to 15 per cent between 2005-06 and 2015-16.
- The value added by Western Australia's iron ore industry fell 6 per cent to \$35.6 billion in 2015-16.

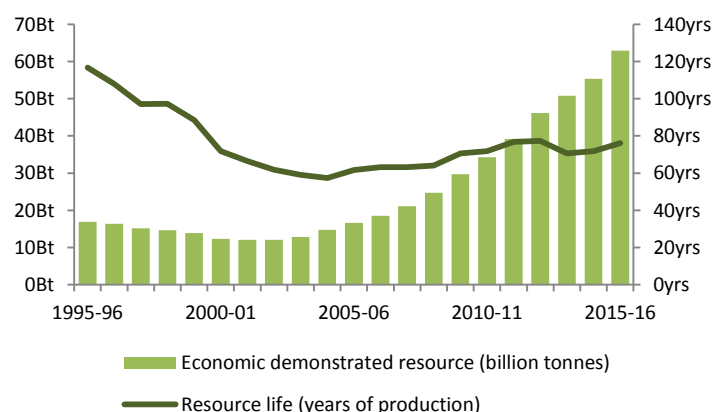


### Direct employment in the iron ore industry



Source: WA Department of Mines and Petroleum, Resource Data Files.

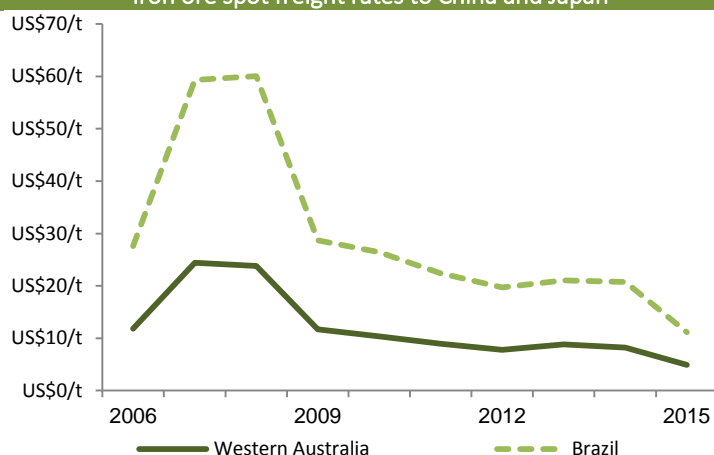
### Estimated<sup>1</sup> iron ore resources



<sup>1</sup> Estimated based on Western Australia's 95% share of Australia's iron ore resources and 98% share of Australia's iron ore production.

Source: ABS 5204.0 Australian System of National Accounts.

### Iron ore spot freight rates to China and Japan



Source: United Nations Conference on Trade and Development, The Iron Ore Market 2015 and AME

- Iron ore accounted for 52 per cent of direct employment in Western Australia's minerals mining industry in 2015-16.
- Iron ore's share of Western Australia's direct minerals mining employment rose from 26 per cent to 52 per cent between 2005-06 and 2015-16.
- Direct employment in Western Australia's iron ore industry fell 11 per cent to 53,229 in 2015-16, the second successive annual decline since 2013-14.

- Western Australia accounted for 27 per cent of global crude iron ore reserves in 2015 based on the United States Geological Survey.
- Western Australia had an estimated 63 billion tonnes of iron ore resources in 2015-16. At current production rates, this resource could sustain production for another 76 years.
- Hematite is the main type of iron ore mined in Western Australia. Most of the hematite exported from Western Australia has an iron content of between 56 and 62 per cent.
- The average iron content of Brazil's production is 65 per cent. Iron ore produced in India and South Africa is of a similar quality to Western Australian iron ore, while China's crude iron ore production has a much lower average iron content.

- Western Australia's major iron ore ports are relatively close to the largest iron ore importers in Asia, reducing shipping costs relative to its competitors.
- Spot freight rates from Western Australia to China and Japan for 2015 averaged US\$4.91 a tonne, 56 per cent lower than the freight rate from Brazil (US\$11.18 a tonne).
- The annual average spot freight rate from Western Australia to China and Japan fell 41 per cent in 2015. The fall in freight rates was due to lower iron ore demand, an oversupply of capesized vessels and lower fuel costs.
- The difference between iron ore shipping costs to Asia from Western Australia and Brazil will narrow in the coming years as Brazil increases its Valemax fleet. Valemaxes are twice as big as the capesize vessels used to ship iron ore from Western Australia, reducing per tonne shipping costs.