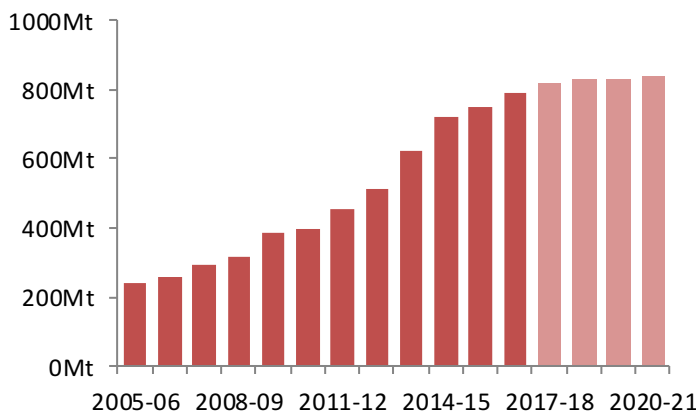




- Western Australia is the largest iron ore producer and exporter in the world, accounting for 38 per cent of global production and 53 per cent of global seaborne exports in 2016. The Pilbara region accounted for 95 per cent of Australia’s iron ore exports in 2016-17. The iron ore industry is a large part of Western Australia’s economy, accounting for 62 per cent of the value added by its mining industry and 18 per cent of its gross state product in 2016-17.
- Western Australia exports all of its iron ore production because there is no major steel production in Australia. Western Australia’s iron ore producers invested tens of billions of dollars in new mines and associated rail and port infrastructure in response to growth in Chinese steel production over the past decade. As a result, Western Australia’s iron ore production and exports have increased, mainly from the major iron ore miners Rio Tinto, BHP and Fortescue Metals Group (which are the world’s largest iron ore producers behind Brazilian company Vale). The iron ore industry’s share of Western Australia’s gross state product tripled from 6 per cent in 2005-06 to 18 per cent in 2016-17.
- China’s increasing demand for iron ore resulted in the iron ore price rising from US\$28 a tonne in 1999-00 to US\$173 a tonne in 2007-08 and it averaged US\$129 a tonne between 2008-09 and 2013-14. Western Australia’s increase in iron ore production 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 annual average price for iron ore price increased by 35 per cent to US\$70 a tonne in 2016-17 as demand from Chinese steel makers increased.
- Western Australia’s iron ore industry remains globally competitive with quality reserves, low cost production and established, long-term markets in China, Japan, Korea and Taiwan.

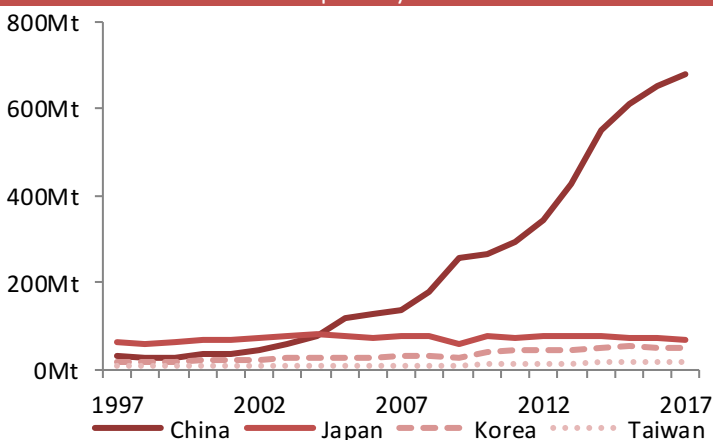
Iron ore sales



- Western Australia’s iron ore sales increased from 259 million tonnes in 2006-07 to 790 million tonnes in 2016-17, growing at an annual average rate of 12 per cent.
- Western Australia’s sales of iron ore are expected to increase as mine construction and expansions are completed, but the rate of increase will be slower than the past ten years.
- The 2017-18 Government Mid-Year Financial Projections Statement forecasts Western Australia’s iron ore sales to increase to 835 million tonnes by 2020-21.

Note – Forecasts start in 2017-18.  
Source: WA Department of Mines, Industry Regulation and Safety, Resource Data Files; WA 2017-18 Government Mid-Year Financial Projections Statement.

Iron ore exports by destination

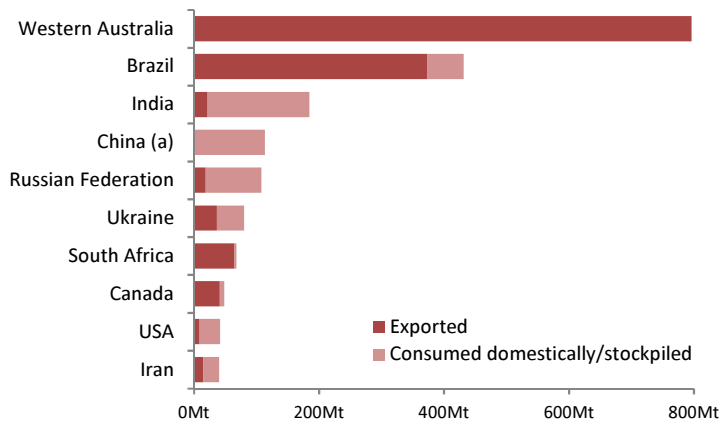


Source: ABS 5368.0 International Trade in Goods and Services.

- Western Australia exports nearly all the iron ore it produces to China, Japan, Korea and Taiwan.
- China accounted for 83 per cent of Western Australia’s iron ore exports in 2017, followed by Japan (8 per cent), Korea (6 per cent) and Taiwan (2 per cent).
- In 2017, Western Australia’s iron ore exports to:
  - China rose 4 per cent to 679 million tonnes.
  - Japan fell 9 per cent to 66 million tonnes.
  - Korea fell 4 per cent to 49 million tonnes.
  - Taiwan fell 7 per cent to 16 million tonnes.
- In 2017, Western Australia accounted for more than half of iron ore imports for China (65 per cent), Japan (53 per cent), Korea (66 per cent) and Taiwan (73 per cent).



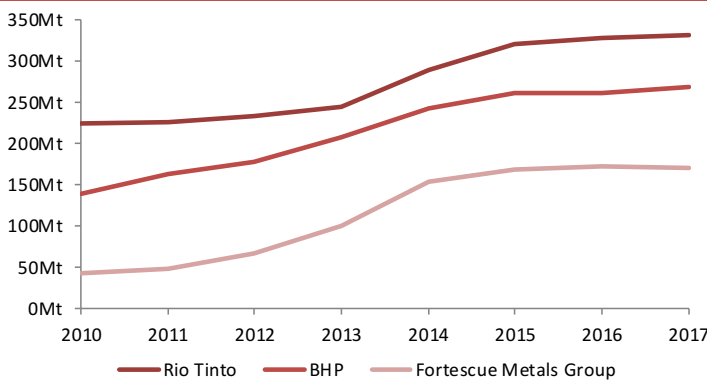
Major global iron ore producers: 2016



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

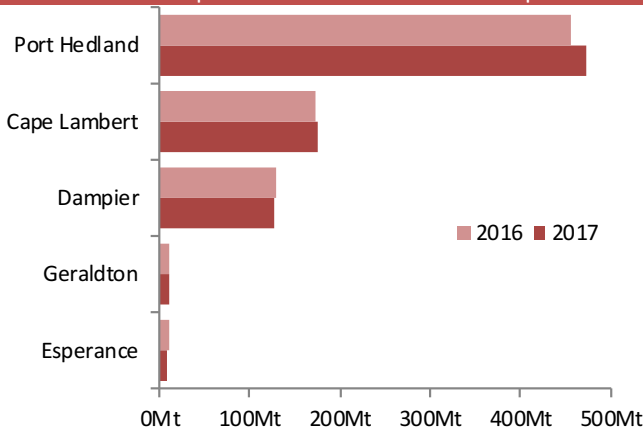
Source: United Nations Conference on Trade and Development, The Iron Ore Market 2017; and WA Department of Mines, Industry Regulation and Safety, Resource Data Files.

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.

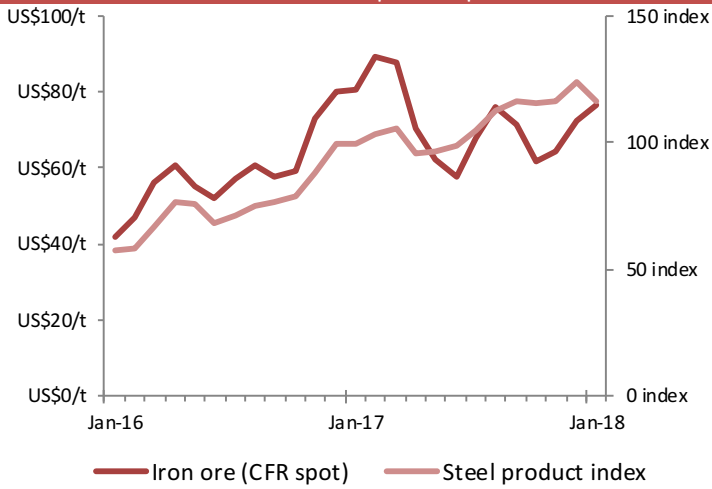
- Western Australia accounted for 38 per cent (797 million tonnes) of global iron ore production and 53 per cent of seaborne exports in 2016. Western Australia exported all of its iron ore production in 2016.
- Brazil accounted for 21 per cent (431 million tonnes) of global production and 25 per cent (374 million tonnes) of seaborne exports in 2016. Brazil exported 87 per cent of its iron ore production in 2016.
- India accounted for 9 per cent (185 million tonnes) of global production in 2016. India exported 12 per cent of its iron ore production in 2016.
- China accounted for 5 per cent (114 million tonnes) of global production in 2016. China used or stockpiled all of its iron ore production in 2016.

- In 2017, Western Australian iron ore sales of:
  - Rio Tinto rose 1 per cent to 330 million tonnes.
  - BHP rose 3 per cent to 268 million tonnes.
  - FMG fell 2 per cent to 169 million tonnes.
- Rio Tinto is developing the Pocket/Billiard South, West Angelas F, Silvergrass and Nammuldi deposits (57 mtpa), and plans to develop the Koodaideri deposit (40 mtpa) by 2021.
- BHP is ramping up the Jimblebar mine and proposing to develop the South Flank deposit to replace Yandi mine production by 2021 (80 mtpa).
- Fortescue Metals Group is proposing to develop the Eliwana deposit to replace Firetail mine production by 2020 (30 mtpa).
- Outside the majors, CITIC Pacific's Sino Iron (28 mtpa) and Hancock Prospecting's Roy Hill (55 mtpa) projects are ramping up production.

- Port Hedland (the world's largest bulk export port), Cape Lambert and Dampier are the largest iron ore export ports in Western Australia.
- In 2017, iron ore exports from:
  - Port Hedland rose 4 per cent to 472 million tonnes (58 per cent of Western Australia's exports).
  - Cape Lambert rose 3 per cent to 177 million tonnes (22 per cent of Western Australia's exports).
  - Dampier fell 2 per cent to 127 million tonnes (16 per cent of Western Australia's exports).
- In 2015, Rio Tinto completed expansions at Cape Lambert and Dampier, raising the capacity of these ports to 210 mtpa and 150 mtpa respectively. Shipping capacity in Port Hedland is planned to increase from 495 to 577 mtpa.



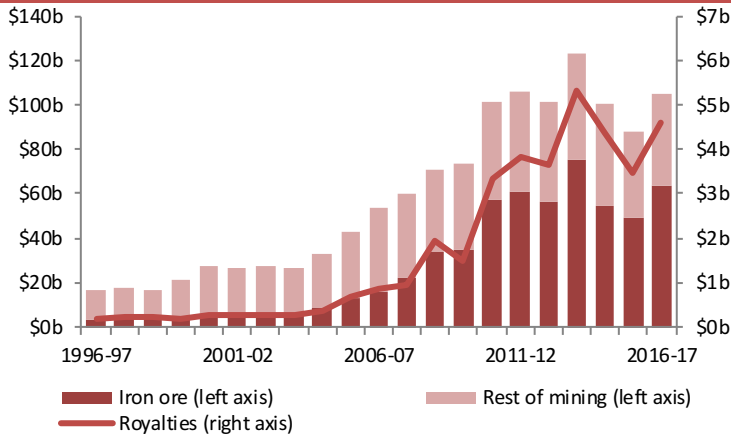
Iron ore and steel product prices



- The monthly average spot price for iron ore imports to China (including shipping costs) rose 6 per cent to US\$76.3 a tonne in January 2018. The annual average price rose 23 per cent to US\$71.8 a tonne in 2017.
- The monthly average price of steel products fell 6 per cent in January 2018. The annual average price rose 44 per cent in 2017.
- The 2017-18 Government Mid-Year Financial Projections Statement forecasts the average spot price for iron ore imports to China will be US\$65.7 a tonne in 2017-18 and will fall to US\$59.7 a tonne in 2020-21.

Iron ore price - Monthly average China spot prices in nominal US dollars (CFR = cost and freight).  
Steel product price - Monthly average China steel product prices index  
Source: World Bank, Commodity Market; CEIC, China Premium database

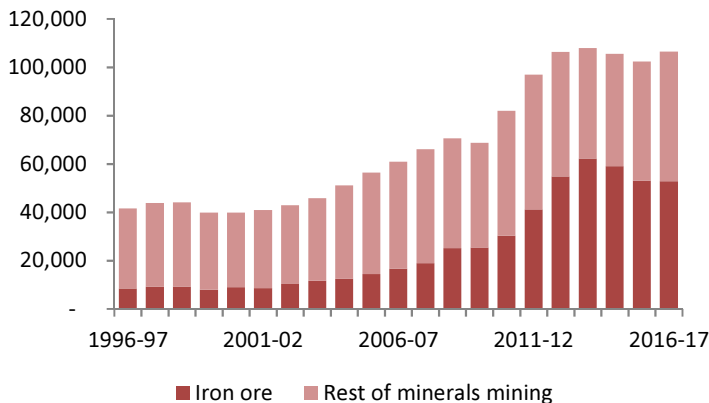
Value of iron ore sales and royalty receipts



Source: WA Department of Mines, Industry Regulation and Safety, Resource Data Files.

- The value of Western Australia's iron ore sales rose 31 per cent to \$63.7 billion in 2016-17, compared with annual average growth of 15 per cent over the past ten years.
- Iron ore accounted for 52 per cent of the value of Western Australia's merchandise exports and 61 per cent of the value of total minerals and petroleum sales in 2016-17.
- Western Australia's iron ore royalty receipts rose 33 per cent to \$4.6 billion in 2016-17. Iron ore accounted for 80 per cent of Western Australia's total royalty receipts (including North West Shelf grants) in 2016-17.
- Iron ore royalty income accounted for 18 per cent of total Western Australian Government revenue in 2016-17.

Direct employment in the iron ore industry



Source: WA Department of Mines, Industry Regulation and Safety, Resource Data Files.

- Iron ore accounted for 50 per cent of direct employment in Western Australia's minerals mining industry in 2016-17.
- Iron ore's share of Western Australia's direct minerals mining employment rose from 27 per cent to 50 per cent between 2006-07 and 2016-17.
- Direct employment in Western Australia's iron ore industry fell 0.4 per cent to 52,869 in 2016-17, the third successive annual decline.



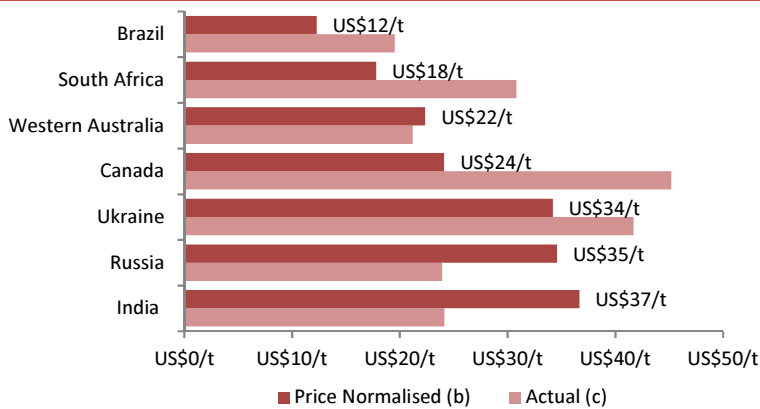
Estimated<sup>1</sup> iron ore resources



<sup>1</sup> Estimated based on Western Australia's 95 per cent share of Australia's iron ore resources and 98 per cent share of Australia's iron ore production.  
Source: ABS 5204.0 Australian System of National Accounts.

- Western Australia accounted for 29 per cent of global crude iron ore reserves in 2016 based on the United States Geological Survey.
- Western Australia had an estimated 56 billion tonnes of iron ore resources in 2016-17. At 2016-17 production rates, this resource could sustain production for another 67 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.

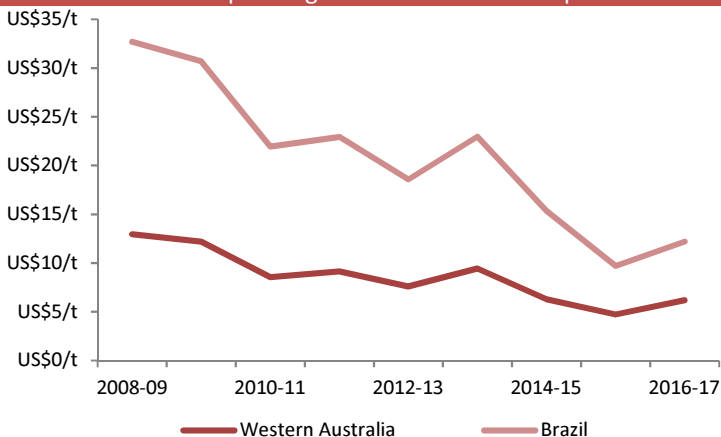
Total cash cost of iron ore seaborne exports, free on board (a): 2016



<sup>a</sup> All costs associated with iron ore production up to the point of shipment.  
<sup>b</sup> Production costs for different iron ore products are adjusted up/down based on whether the average price for the product was lower/higher than the average price for the benchmark product (i.e. the 62% Fe benchmark) in 2016.  
<sup>c</sup> Represents the total cash cost of iron ore exports irrespective of the specification or marketability of the product.  
Source: S&P Global Market Intelligence's Mine Economics Model

- Western Australia is among the world's lowest cost iron ore seaborne exporters.
- After normalising production costs of different iron ore products to a common benchmark, the average total cash cost of Western Australia's iron ore exports in 2016 was US\$22 a tonne (free on board). On this measure, Western Australia was the third lowest cost iron ore seaborne exporter in 2016, behind Brazil and South Africa.
- As Western Australia's iron ore exports are (on average) close to the benchmark product, the normalised cost of production is similar to the actual cost of production (US\$21 a tonne). The adjustment is greater for other countries because of the different quality and type of iron ore products these countries export.
- Normalised costs will vary over time with changes to actual costs, exchange rates and the relative prices of different iron ore products.

Iron ore spot freight rates to China and Japan



Source: United Nations Conference on Trade and Development, The Iron Ore Market 2017 and AME

- Western Australia's major iron ore ports are close to the largest iron ore importers in Asia, reducing shipping costs relative to some of its competitors.
- The annual average spot freight rate from Western Australia to China and Japan rose 31 per cent to US\$6.20 a tonne in 2016-17.
- Spot freight rates from Western Australia to China and Japan for 2016-17 were 49 per cent lower than the freight rate from Brazil (US\$12.20 a tonne). This difference may narrow in coming years if Brazil increases its Valemax fleet. Valemaxes are twice as big as the capesize vessels used to ship iron ore from Western Australia, which reduces per tonne shipping costs.