

Metallurgical Coal

Resources and Energy Quarterly September 2018



1st

Australia is the largest exporter of metallurgical coal



Every tonne of steel produced needs about **800kg** of metallurgical coal.



Metallurgical coal is a non-substitutable raw material in the production of steel from iron ore.

Australia accounted for around **17%** of world production in 2017



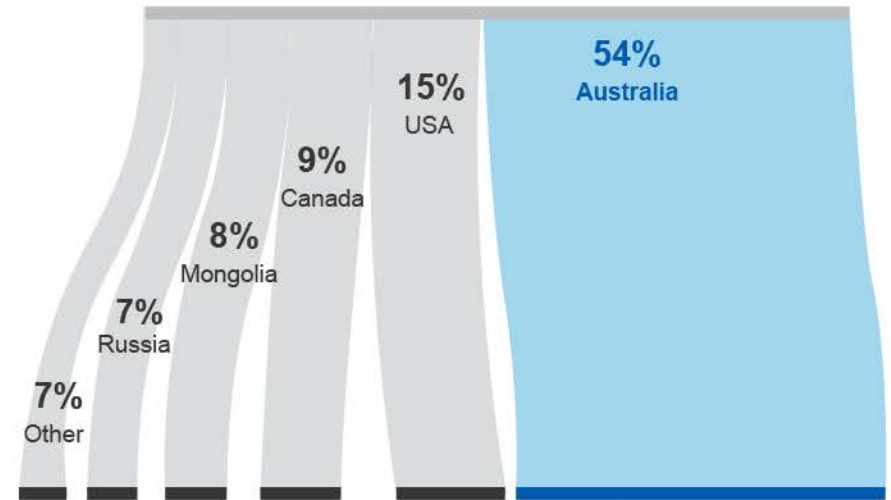
It takes more than **200 tonnes** of metallurgical coal to make every wind turbine



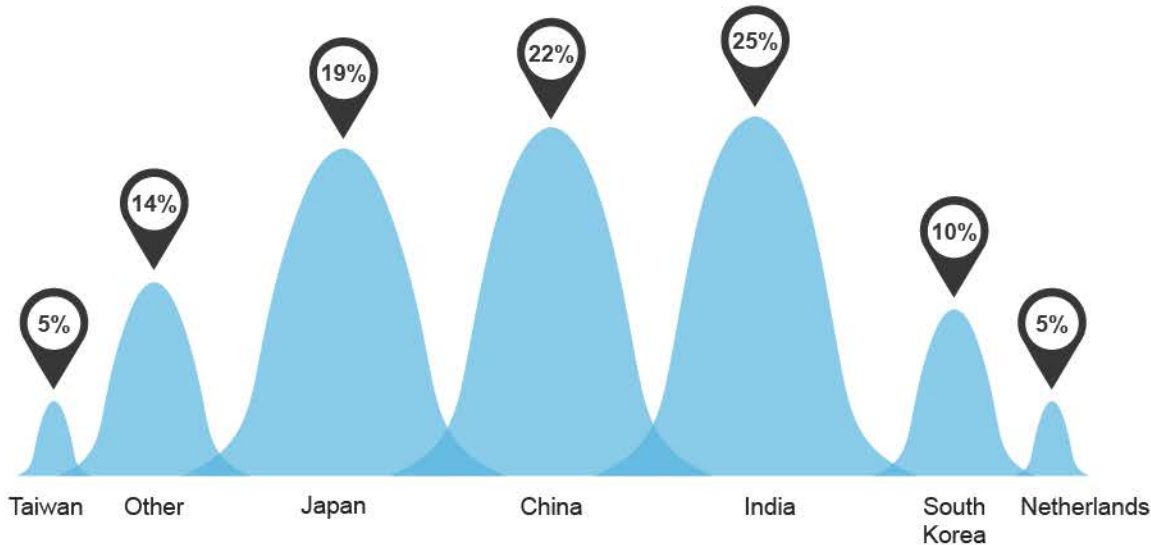
179 million tonnes exported in 2017-18 valued at **\$38 billion**



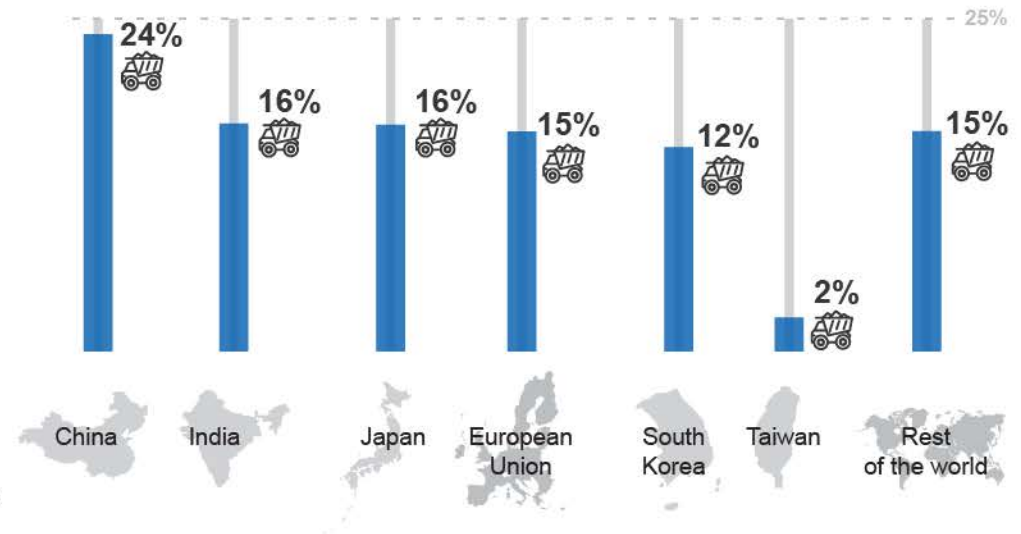
Share of world metallurgical coal exports, 2017



Australia's metallurgical coal key export earnings by destination, 2017-18



Share of world metallurgical coal imports, 2017



5.1 Summary

- Metallurgical coal prices have been supported by strong import demand from both China and India. Some further near-term support is expected amidst persistently high steel margins in China.
- The premium hard coking coal spot price is forecast to decline from an average of US\$197 a tonne in 2018 to US\$145 a tonne in 2020. The impacts of improved supply and weakening demand from China are expected to outweigh the impact of growing demand in India.
- Australia's export volumes are forecast to grow from 179 million tonnes in 2017–18 to 198 million tonnes in 2019–20. This reflects an expected recovery from supply disruptions and modest production growth.
- Australia's metallurgical coal export earnings reached a record \$38 billion in 2017–18, driven by strong prices. Export earnings are forecast to fall to \$31 billion in 2019–20, as rising export volumes are partly offset by lower prices.

5.2 Prices

Near-term support expected for the metallurgical coal price

The premium hard coking coal (HCC) spot price (FOB Australia) averaged an estimated US\$187 a tonne in the September quarter, down by 16 per cent quarter-on-quarter and 2.0 per cent year-on-year. Prices earlier in the quarter were weighed down by growth in global exports, but strong import demand from both China and India drove a subsequent rebound in the price. Some ongoing near-term price support is expected. China's imports of metallurgical coal are expected to remain elevated over the next couple of months as steel margins remain high, and as steel producers bring forward production before the winter production cuts.

Beyond 2018, the premium HCC spot price is forecast to decline from an average of US\$197 a tonne in 2018 to US\$157 a tonne in 2019 and US\$145 a tonne in 2020, weighed down by softening demand from China and supply growth from a number of new projects around the world. Nevertheless, with strong demand growth expected from India, the price is expected to remain well above the lows of 2016 (Figure 5.1).

Figure 5.1: Quarterly Australian premium HCC spot price



Source: IHS (2018); Department of Industry, Innovation and Science (2018)

5.3 World trade

World export trade in metallurgical coal grew by a solid 4.5 per cent in 2017 to 327 million tonnes, driven by firm economic growth and consequently strong growth in steel output around the world. However, the momentum that has driven the upswing in global economic activity appears to have peaked, with leading indicators, such as world industrial production, pointing to slowing growth in the future. Growth in world metallurgical coal trade is forecast to slow to an annual average of 1.8 per cent over the outlook period.

India is forecast to be the key source of import growth, driven by the ongoing expansion of its domestic steel sector (Figure 5.2). While Australia will comfortably remain the largest exporter of metallurgical coal — accounting for a forecast 57 per cent of the seaborne market in 2020 — this represents a decline from 60 per cent in 2016. Other countries, including Canada, Russia and Mozambique, are expected to increase their exports and market share.

World imports

China's metallurgical coal imports expected to drift lower

In line with expectations, China's metallurgical coal imports rebounded after a slow start to the year, growing by an estimated 23 per cent year-on-year from May to July 2018. Strong steel margins have driven steel output to record highs. At the same time, domestic production of coal has declined, driving demand for imports higher.

China's imports of metallurgical coal are expected to remain elevated over the next couple of months, with steel producers expected to bring forward production ahead of the winter production cuts that will begin in November. However, the enforced production cuts are bigger in coverage and scale than the previous year's, and are thus likely to have more of an impact on net steel production and on demand for metallurgical coal.

The trajectory of China's imports largely depends on domestic production, which accounts for around 90 per cent of total metallurgical coal consumption. If domestic output remains lower than expected, this could have a positive effect on import demand. China's imports of metallurgical coal are forecast to drift lower over the outlook period, as steel production gradually declines and as safety and environmental regulations ease and domestic coal output picks up.

India expected to become the largest metallurgical coal importer by 2020

India's imports of metallurgical coal grew by 26 per cent year-on-year to 28 million tonnes in the first half of 2018. Growth in metallurgical coal imports has been driven by the ongoing expansion of India's steel sector, with steel production increasing by 8.8 per cent over the same period.

Australia's share of India's metallurgical coal imports has declined from around 90 per cent in the March quarter of 2017 (just before Cyclone Debbie) to 75 per cent in the June quarter of 2018. India's steel mills have increasingly turning to the United States and Canada as an alternative source of supply, as a result of high prices and disruptions to Australian supply, particularly after Cyclone Debbie in 2017. Import growth from the United States is expected to soften as prices decline and production falls.

India is forecast to overtake China as the world's largest importer of metallurgical coal by 2020, with India's imports set to grow steadily over the outlook period. India has limited domestic reserves of metallurgical coal, and will need to increase imports to support the rapid growth of its domestic steel industry.

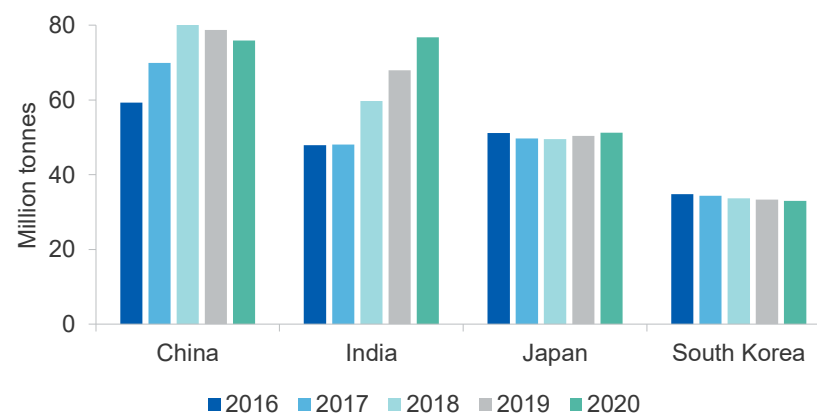
Japan's imports of metallurgical coal to grow modestly

Japan's metallurgical coal imports have been broadly steady year-on-year in the June quarter of 2018, after a decline in the March quarter. Stabilising imports reflect stronger growth in steel production, which is expected to continue over the outlook period, supported by robust domestic demand from the construction sector.

Marginal decline forecast for South Korea's metallurgical coal imports

South Korea's imports of metallurgical coal declined by 5.8 per cent year-on-year in year to July, and imports are forecast to remain subdued over the outlook period. South Korea's steel sector has been affected by soft domestic demand and declining exports, which have been subject to a range of anti-dumping and protectionist measures implemented by the United States, European Union, and Canada.

Figure 5.2: Metallurgical coal imports in Asia



Notes: 2018 and onwards are forecasts.

Source: IEA (2018); Department of Industry, Innovation and Science (2018)

World exports

Resilient prices have led to a lift in supply through increased production, the restart of idled operations, and decisions to proceed with the development of new mines around the world, including in Australia (Figure 5.3).

Russia and Mozambique's exports are forecast to grow

While Russia's metallurgical coal exports have remained broadly steady year-on-year, they are forecast to increase over the outlook period, as projects in the east — where there are substantial untapped deposits — are developed. Notably, the Elga mine is expected to gradually ramp up and produce over 28 million tonnes annually at full capacity.

Exports from Mozambique have grown substantially, although from a low base, as the Moatize mine reached record production in the June quarter of 2018. Exports are forecast to grow, as the mine continues to ramp up to a target of 22 million tonnes annually by 2022. Exports will also be supported by the development of the Nacala Logistics Corridor, which will reduce transport costs from mine to port.

Strong growth from North America, but US exports forecast to decline

Exports from Canada increased by 9.6 per cent year-on-year to 15 million tonnes in the first half of 2018, driven by strong demand from India and, to a lesser extent, Japan and South Korea. Canada's export growth is forecast to slow as prices decline, with exports forecast to grow at an average annual rate of 1.5 per cent in 2019 and 2020.

Metallurgical coal exports from the United States have steadily increased, growing by 24 per cent to 29 million tonnes in the first half of 2018. The growth has been primarily driven by a surge in exports to India, which more than doubled over the same period. Exports to China and Japan have also grown substantially.

China's Ministry of Commerce imposed a 25 per cent tariff on coal from the United States, which came into effect on 23 August 2018. This tariff makes coal from the United States — which already faces higher freight costs than other exporters — uncompetitive in Chinese markets.

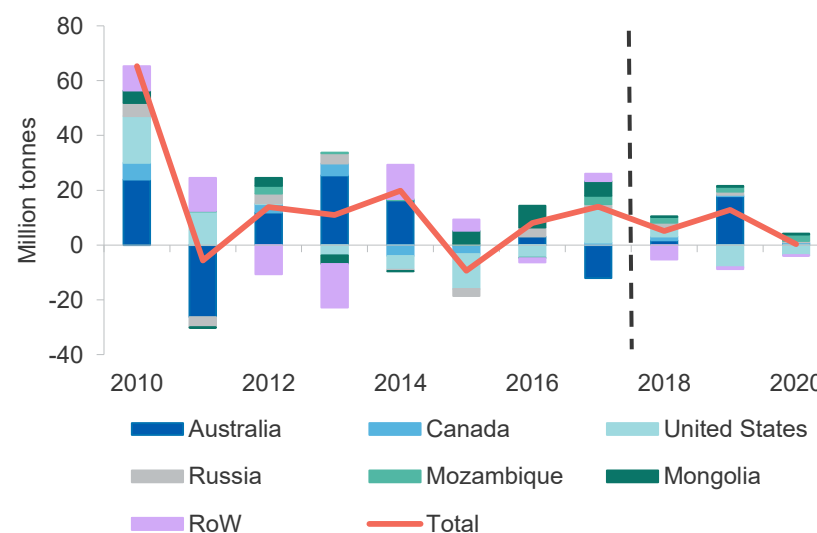
Nevertheless, the tariffs are not expected to have a substantial impact on exports of metallurgical coal from the United States, with China accounting for only 5.8 per cent of exports in the first half of 2018.

An expected softening of prices is expected to have more of an impact, with exports from the United States forecast to drift lower over the outlook period as some of the higher cost operations are rendered uneconomic.

Mongolia's exports expected to be constrained

While Mongolia has substantial reserves of metallurgical coal, exports have been constrained as a result of transportation bottlenecks at the China border. Substantial investment into road and rail infrastructure will be required for any substantial export growth. Earlier in 2018, Aspire Mining signed a memorandum of understanding for the construction of a railway to link the Ovoot mining area to the existing Erdenent railway. The proposed project will eventually enable coal from Mongolia's Ovoot mining area to be transported via the Trans-Mongolian railway. In the meantime, however, Mongolia's coal exports are forecast to remain subdued.

Figure 5.3: Annual change in world metallurgical coal exports



Source: IEA (2018); Department of Industry, Innovation and Science (2018)

5.4 Australia

Modest recovery in Australia's coal exploration expenditure

In the June quarter of 2018, Australia's coal exploration expenditure totaled \$45 million, the highest quarterly expenditure since 2015, and an increase of 24 per cent from the March quarter of 2018, and of 74 per cent year-on-year. Australia's coal exploration expenditure totaled \$156 million in 2017–18, up 29 per cent from 2016–17 (Figure 5.4).

The recovery in coal exploration expenditure reflects firmer prospects for the sector, on the back of the recent improvement in market conditions. Earlier in 2018, the Queensland Government called for tenders to explore for coal across more than 540 square kilometers in the Bowen, Surat and Galilee Basins.

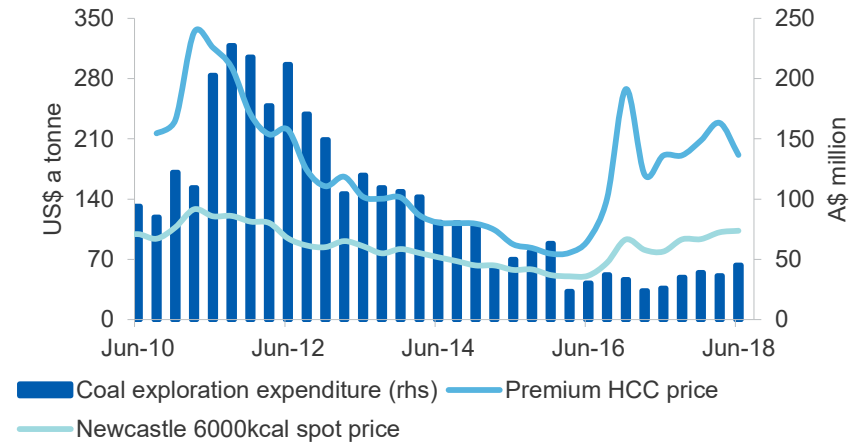
A record high in metallurgical coal export earnings

In 2017–18, the value of Australia's metallurgical coal exports grew by 6.7 per cent to a record \$38 billion, primarily driven by stronger prices (Figure 5.5).

Despite 2016–17 volumes being severely affected by Cyclone Debbie, export volumes in 2017–18 grew only modestly by 0.9 per cent, or 1.7 million tonnes, to 179 million tonnes. Export volumes in 2017–18 have been weighed down by weather and infrastructure related disruptions, such as congestion at ports. The narrowing gap between the price of semi-soft metallurgical coal and thermal coal has also seen some semi-soft cargoes sold in to thermal coal markets. Semi-soft coal can be sold as thermal coal without going through the process and costs of washing the coal.

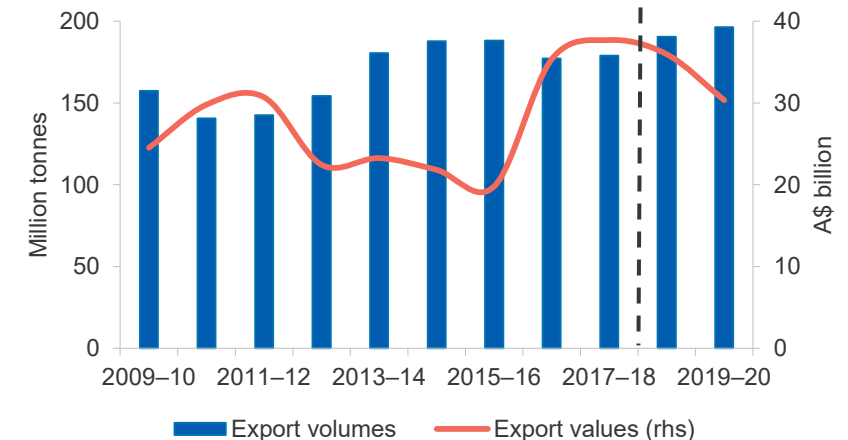
Nevertheless, production growth has been strong across several operations, notably at BHP and Anglo American's operations where record production volumes were achieved in 2017–18.

Figure 5.4: Australia's coal exploration expenditure and prices



Source: ABS (2018) Mineral and Petroleum Exploration, cat. no. 8412.0; IHS (2018)

Figure 5.5: Australia's metallurgical coal exports



Source: ABS (2018) International Trade, Australia 5454.0; Department of Industry, Innovation and Science (2018)

Metallurgical coal export earnings forecast to drift lower

Australia's metallurgical coal export earnings are forecast to decline by 3.8 per cent to \$36 billion in 2018–19, and by a further 16 per cent to \$31 billion in 2019–20, driven by a forecast decline in prices (Figure 5.5).

A forecast increase in production and export volumes is expected to partially offset the impact of softer prices (Figure 5.6). Metallurgical coal export volumes are forecast to grow by 7.2 per cent in 2018–19 to 192 million tonnes, and by a further 3.1 per cent to 198 million tonnes in 2019–20.

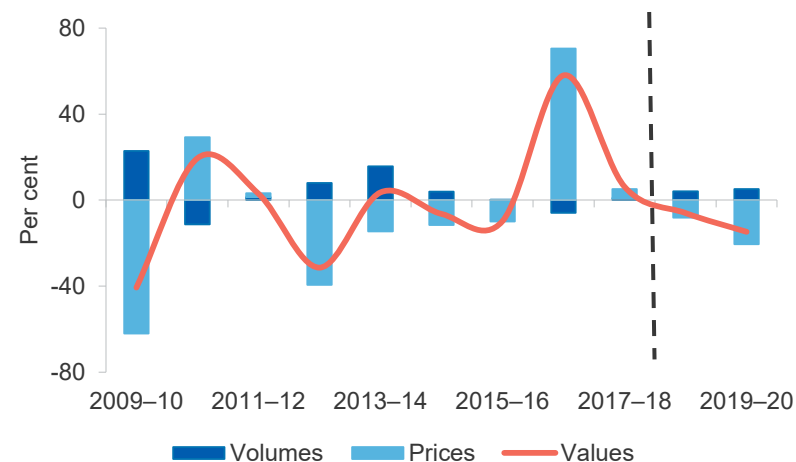
Several idled mines are expected to restart over the outlook period, including Sojitz's recently acquired Gregory Crinum, Baralaba Coal's Baralaba, and Bounty Mining's Cook operations, all in the Bowen Basin (Table 5.1). The ramp up of Qcoal's newly-started Byerwen mine and Stanmore's Isaac Plains East mine, and planned expansions and productivity improvements at Anglo American and BHP's operations are also expected to support production growth over the outlook period. Just beyond the outlook period, Pembroke Resource's Olive Downs project is targeting first coal in the second half of 2020.

In February 2018, Aurizon implemented changes to the maintenance and operating practices for the Central Queensland Coal Network (CQCN) in response to the Queensland Competition Authority's (QCA) draft access undertaking proposal (UT5). Aurizon have noted that the maintenance changes have resulted in potential lost capacity of 7 to 8 million tonnes in 2017–18, however all current contractual obligations have been met. There is some uncertainty regarding the future impacts of changes to the maintenance regime of the CQCN. The QCA is expected to hand down its final decision on UT5 by the end of 2018.

Revisions to the outlook

The forecasts for Australia's metallurgical coal export earnings are broadly unchanged from the June 2018 *Resources and Energy Quarterly*.

Figure 5.6: Year-on-year growth in Australia's metallurgical coal exports values, and contributions from export volumes and prices



Notes: Price changes based on export unit values

Source: ABS (2018) International Trade, Australia 5454.0; Department of Industry, Innovation and Science (2018)

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Table 5.1: Selected upcoming metallurgical coal projects

Project	Company	Development type	Capacity* (Mt)	Estimated start date
Isaac Plains East	Stanmore Coal	Greenfield	1.2	2018
Cook	Bounty Mining	Restart	1.5–2	2018
Baralaba North	Baralaba Coal	Restart	2–3	2018
Gregory/Crinum	Sojitz	Restart	2	2019
Olive Downs	Pembroke Resources	Greenfield	4 (First stage)	2020 (under assessment)

Notes: *Estimated annual ultimate saleable capacity in million tonnes
Source: Company reports; IHS Markit (2018); AME Group (2018)

Table 5.2: World trade in metallurgical coal

	Unit	2017	2018 ^f	2019 ^f	2020 ^f	Annual percentage change		
						2018 ^f	2019 ^f	2020 ^f
World trade	Mt	327	332	345	346	1.6	3.8	0.1
Metallurgical coal imports								
China	Mt	70	74	72	69	6.5	-3.7	-4.0
Japan	Mt	47	47	48	49	-1.0	1.7	1.8
India	Mt	47	56	64	73	18.4	15.2	13.2
European Union 28	Mt	44	47	48	49	4.9	3.1	2.8
South Korea	Mt	36	36	35	35	0.2	-1.0	-1.0
Metallurgical coal exports								
Australia	Mt	173	180	198	199	4.0	10.4	0.3
United States	Mt	50	53	45	41	6.4	-15.2	-8.3
Canada	Mt	29	30	31	31	4.8	1.5	1.5
Russia	Mt	23	25	26	26	8.0	4.7	1.8
Mozambique	Mt	7	9	11	13	31.0	19.8	21.1

Notes: ^f Forecast.

Source: IHS (2018); Department of Industry, Innovation and Science (2018)

Table 5.3: Metallurgical coal outlook

World	Unit	2017	2018 ^f	2019 ^f	2020 ^f	Annual percentage change		
						2018 ^f	2019 ^f	2020 ^f
Contract prices ^e								
– nominal	US\$/t	210	201	159	145	–4.1	–21.1	–8.8
– real ^d	US\$/t	215	201	156	140	–6.5	–22.8	–9.8
Spot prices ^g								
– nominal	US\$/t	190	197	157	145	4.0	–20.6	–7.7
– real ^d	US\$/t	194	197	153	140	1.5	–22.4	–8.7
Australia	Unit	2016–17	2017–18	2018–19 ^f	2019–20 ^f	2017–18	2018–19 ^f	2019–20 ^f
Production ^s	Mt	184	180	191	201	–1.9	5.7	5.2
Export volume	Mt	177	179	192	198	0.9	7.2	3.1
– nominal value	A\$m	35,335	37,687	36,269	30,556	6.7	–3.8	–15.8
– real value ⁱ	A\$m	36,845	38,554	36,269	29,832	4.6	–5.9	–17.7

Notes: **d** In 2018 US dollars. **e** Contract price assessment for high-quality hard coking coal. **i** In 2018–19 Australian dollars. **f** forecast. **g** Hard coking coal fob Australia east coast ports. **s** estimate.
Source: ABS (2018) International Trade in Goods and Services, Australia, 5368.0; Department of Industry, Innovation and Science (2018); IHS (2018)