

# Metallurgical Coal

Resources and Energy Quarterly June 2019

Australia is the largest exporter of metallurgical coal



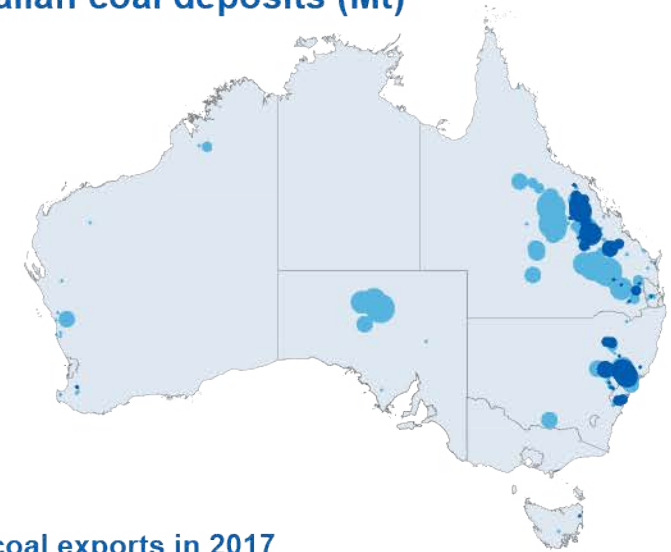
Every tonne of steel produced needs about **800kg** of metallurgical coal.



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

## Major Australian coal deposits (Mt)

- <500
- 500-1,000
- 1,001-2,000
- 2,001-4,000
- >4,000
- Deposit
- Operating mine



Australia accounted for around



17% of world production in 2017

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



Australia exported **179** million tonnes in 2018, valued at **\$41 billion**



## Australia's metallurgical coal export earnings by destination, 2018



**25%**  
India



**22%**  
China



**20%**  
Japan



**10%**  
South Korea



**6%**  
Taiwan



**17%**  
Rest of the world

## Global share of metallurgical coal exports in 2017



**54%**  
Australia



**15%**  
USA



**9%**  
Canada



**8%**  
Mongolia



**7%**  
Russia



**7%**  
Rest of the world

## Global share of metallurgical coal imports in 2017



**24%**  
China



**16%**  
India



**16%**  
Japan



**15%**  
EU



**12%**  
South Korea



**17%**  
Rest of the world

## 5.1 Summary

- The premium Australian hard coking coal (HCC) spot price has been resilient in the first half of 2019, reflecting a tight market. With supply growth expected to outpace demand, the premium HCC spot price is forecast to decline from an average of US\$207 a tonne in 2018 to US\$198 a tonne in 2019, and decline further to US\$160 a tonne in 2021.
- Australia's export volumes are expected to grow from an estimated 180 million tonnes in 2018–19 to 198 million tonnes by 2020–21. This reflects both an expected recovery from supply disruptions and production growth from restarts and new operations in the Bowen Basin.
- Australia's metallurgical coal export earnings are estimated to have reached a new record of \$42 billion in 2018–19. A forecast decline in prices is expected to reduce export earnings to \$36 billion in 2020–21.

## 5.2 Prices

The seaborne metallurgical coal market has remained relatively tight

The premium Australian hard coking coal (HCC) spot price has remained resilient in recent months, due to tight market conditions. The price traded in a very narrow band of between US\$200 and US\$213 a tonne between April to early June, before dipping below US\$200 (Figure 5.1).

**Figure 5.1: Australian premium HCC spot price, daily**



Source: Platts (2019); Department of Industry, Innovation and Science (2019)

At an estimated average of US\$205 a tonne in the June quarter, the price was only marginally lower than the March quarter, but 7.2 per cent higher year-on-year. Strong Chinese import demand — with Chinese steel production hitting a record high in April — has offset the impact of subdued imports from other nations. Supply from most exporters, including Australia, has been steady.

The premium HCC spot price is forecast to ease from current levels, but remain well supported over the rest of the year, averaging US\$198 a tonne in 2019. China is responding to slower economic growth and trade tensions with stimulatory measures, including looser monetary policy, tax cuts and new packages of infrastructure investment and construction. This is driving robust growth in steel output, and consequently metallurgical coal imports. A recovery in Indian metallurgical coal imports is also expected to boost demand growth.

**The metallurgical coal price is forecast to gradually ease**

The premium HCC spot price is forecast to drift lower over the outlook period, to average US\$170 a tonne in 2020 and US\$160 a tonne by 2021, broadly unchanged from the forecast in the March 2019 *Resources and Energy Quarterly*. Supply growth is expected to gradually outpace demand growth, placing downwards pressure on the metallurgical coal price.

Expected fluctuations in Chinese demand are expected to add considerable volatility to the metallurgical coal price over the outlook period. Steel production in China is expected to decline towards the end of the outlook period, leading to a slowdown in growth for metallurgical coal imports. The outlook for Chinese metallurgical coal demand remains subject to considerable uncertainty, with the extent of any further economic slowdown and import policies representing key risks to the metallurgical coal price forecast.

On the supply side, most major exporters, including Australia, Russia, Canada, Mozambique and Mongolia are expected to increase exports. Given Australia's dominance of the seaborne market, weather, infrastructure and other disruptions in Queensland have the potential to drive intermittent price spikes.

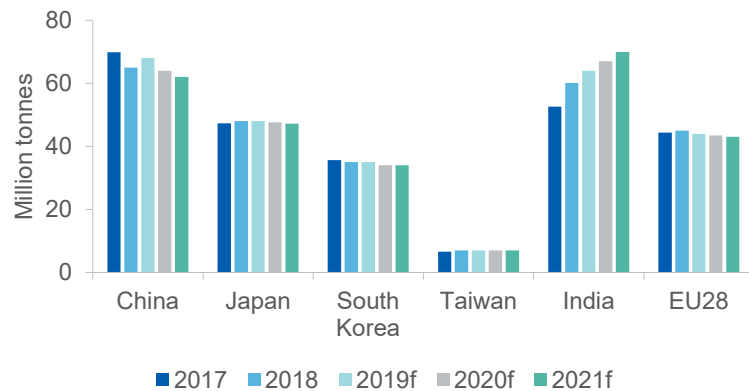
### 5.3 World trade

World trade in metallurgical coal grew by a robust 12 per cent to 328 million tonnes in 2018. The surge reflected strong global economic conditions and industrial production — which spurred rising steel production — and disrupted supply in 2017 due to Cyclone Debbie. As 2019 progresses, slowing industrial production growth and a deteriorating global economic outlook (see the *macroeconomic outlook* chapter) is expected to weigh on metallurgical coal demand. World metallurgical coal trade is forecast to grow at an average annual rate of 1.2 per cent over the outlook period, to reach 340 million tonnes in 2021.

#### World imports

Strong Chinese steel production has driven substantial growth in metallurgical coal demand in the first half of 2019. However, softening investment and a stagnant auto market has led to subdued metallurgical coal import demand outside of China. Over the outlook period, India is expected to emerge as the key source of demand growth and overtake China as the world's largest importer, as its domestic steel sector continues to expand. Demand is projected to be subdued or decline marginally among most other major importers, including China, as economic growth slows (Figure 5.2).

**Figure 5.2: Metallurgical coal imports**



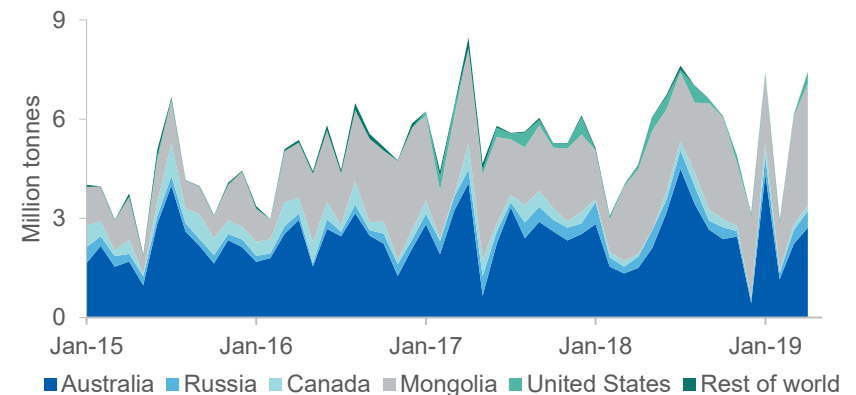
Notes: f Forecast  
Source: IHS (2019); Department of Industry, Innovation and Science (2019)

#### China's metallurgical coal imports forecast to ease

Seasonal influences and import policies have led to fluctuations in China's metallurgical coal imports over 2019 (Figure 5.3). Chinese imports fell sharply on a month-to-month basis in February — as they do every year, due to the Lunar New Year celebrations — and by 5.0 per cent year-on-year, as extended customs clearance times held up cargoes at some ports. Imports rebounded in March and April, growing by 57 per cent year-on-year. Part of the surge reflects a bounce back from the impact of import policies, as cargoes that were delayed at ports in February passed through after 40 day delays.

Robust steel production has also boosted import demand for metallurgical coal. China's steel sector has been buoyed by government stimulatory measures, including tax cuts and increased infrastructure investment (see the *steel* chapter).

**Figure 5.3: China's metallurgical coal imports**



Source: Bloomberg (2019) National Bureau of Statistics of China

While a weakening Chinese Purchasing Managers Index (PMI) and slowing industrial production growth points to the potential for softening steel production, China's imports of metallurgical coal are forecast to be well supported by stimulatory government policies in 2019. The government is expected to prioritise economic stability against a backdrop of growing trade tensions and economic risks.

Metallurgical coal imports are forecast to gradually decline from 68 million tonnes in 2019 to 62 million tonnes in 2021, as the Chinese government eases back on the stimulatory policies, and as steel production moderates in line with economic growth. As always, developments in China represent a major risk to the outlook, with China's fiscal and monetary policy changes potentially driving significant shifts in metallurgical coal imports. While imports are forecast to decline, China is expected to be more reliant on imports for metallurgical coal compared to thermal coal, particularly for higher quality grades as these are more difficult to source domestically.

#### India's metallurgical coal imports have slowed at the start of 2019

In contrast to the surge in India's imports of metallurgical coal last year, the first four months of 2019 have been sluggish. India's steel production has been largely flat, weighed down by slimmer profit margins and subdued consumption across the country. Infrastructure projects and investment slowed in the lead up to the May general election. Imports of metallurgical coal are expected to recover following the conclusion of the elections, with infrastructure investment and urban development expected to remain a government priority.

India's metallurgical coal imports are projected to grow at an average annual rate of 5.2 per cent over the outlook period, reaching 70 million tonnes by 2021. India has very limited domestic reserves of metallurgical coal, and will need to increase imports to support the rapid growth of its domestic steel sector. Steel production is expected to grow to meet rising domestic consumption. However, the pace at which India's steel sector is able to expand remains uncertain, and presents a risk to the outlook, with the sector facing ongoing financial, regulatory and other challenges.

#### Japan and South Korea's imports expected to remain subdued

Japan's imports of metallurgical coal fell by 40 per cent year-on-year in the first three months of 2019. Crude steel production fell by 5.8 per cent over the same period, due to production disruptions and slowing residential and Olympics-related construction. Metallurgical coal imports are forecast to decline to 47 million tonnes by 2021, weighed down by subdued economic growth.

South Korea's imports of metallurgical coal declined by 10 per cent year-on-year in the first three months of 2019, despite steel production growing by 1.1 per cent over the same period. Demand for metallurgical coal may have been dampened by high prices. Imports from Australia declined by 30 per cent, while imports from Russia were flat, and imports from Canada increased by 31 per cent, reflecting growing diversification in where South Korea sources metallurgical coal. South Korea's metallurgical coal imports are forecast to decline slightly to 34 million tonnes by 2021.

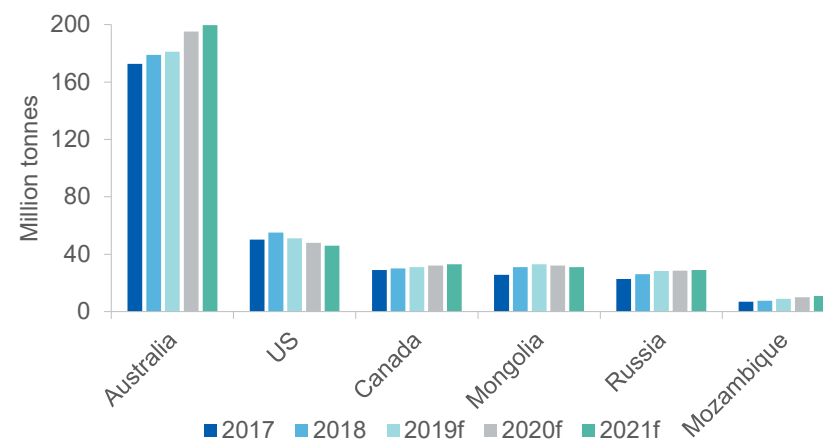
#### Metallurgical coal imports forecast to rise in emerging economies

Metallurgical coal imports are forecast to grow in South East Asia, although from a low base. Several blast furnace steel plants are expected to come online over the outlook period, notably in Vietnam, supporting import demand for metallurgical coal.

#### World exports

Persistently strong market conditions in 2017 and 2018 encouraged the restart of idled operations and decisions to proceed with new metallurgical coal mines, supporting supply growth out to 2021 (Figure 5.4).

Figure 5.4: Metallurgical coal exports



Notes: f Forecast

Source: IHS (2019); Department of Industry, Innovation and Science (2019)



Australia is expected to comfortably dominate the seaborne metallurgical coal market, accounting for over half of world exports in 2021. However, Australia's market share is expected to remain lower than the pre-Cyclone Debbie period (the share reached 60 per cent in 2016), with Russia, Canada, Mozambique and Mongolia all increasing their exports and their relative share of the internationally traded metallurgical coal market.

#### [Exports from the United States forecast to ease](#)

After solid growth over the last two years, metallurgical coal exports from the US declined by 11 per cent year-on-year in the first four months of the year. Exports to India declined by 40 per cent over the same period, due to subdued steel production in the lead up to the general election. Indian steel mills turned to US supplies in the second half of 2017, to fill the loss of Australian supply caused by Cyclone Debbie.

Metallurgical coal exports are projected to decrease at an average annual rate of 5.8 per cent to reach 46 million tonnes by 2021. As a marginal supplier of coal to Asia — due to both higher freight and production costs — the US is forecast to reduce its metallurgical coal exports modestly over the outlook period as prices ease and exports from other producing countries increase. Several US mine closures — due to resource depletion — are also expected to weigh on exports over the next few years.

#### [Exports forecast to grow from Russia](#)

Russia's metallurgical coal exports grew by 21 per cent year-on-year in the March quarter of 2019, driven by increased sales to the Asian market. Russia's metallurgical coal exports are forecast to grow at an annual average rate of 3.7 per cent to reach 29 million tonnes by 2021, supported by a weaker Ruble, new additions to mining capacity, and by rail and port expansions. The potential sale and expansion of the Elga mine could further contribute to export growth, but will require substantial capital investment.

#### [New capacity expected to support Canada's export growth](#)

Canada's metallurgical coal exports increased by 4.7 per cent year-on-year in the first four months of the year. Strong market conditions in the

last couple of years have spurred new interest in metallurgical coal projects, supporting supply growth. Metallurgical coal exports are forecast to continue to grow at an average annual rate of 3.2 per cent to reach 33 million tonnes by 2021, driven by restarts and new capacity.

#### [Mozambique's exports to grow, but headwinds remain](#)

After solid growth of around 7.9 per cent or 1 million tonnes in 2018, Mozambique's metallurgical coal exports were disrupted in early 2019 by Cyclone Idai, which closed the Beira port for a month.

Exports are forecast to continue to grow steadily, to reach 11 million tonnes by 2021. The most notable project is Vale's Moatize coal mine, which is expected to be the key source of export growth over the outlook period. Vale's production guidance for the Moatize mine remains at 14 million tonnes in 2019, with a target of reaching 20 million tonnes by 2021. Metallurgical coal is expected to account for over half of those volumes. The outlook for Mozambique's metallurgical coal exports is underpinned by considerable risks, with ongoing uncertainty surrounding a range of logistic, quality and community opposition issues.

#### [Mongolia's metallurgical coal exports to China have rebounded](#)

Mongolia's metallurgical coal exports to China surged by 44 per cent year-on-year in the first four months of 2019. Mongolia — which primarily trucks coal to China at the border — has filled some of the gap left by the reduction in metallurgical coal cargoes going through China's ports in the second month of the year. The rapid growth in Mongolia's exports reflects that Mongolia's coal operations near China's border are relatively flexible, and are able to quickly restart operations and truck coal overland to China.

Mongolia's metallurgical coal exports are forecast to remain subdued over the outlook period. With ongoing transportation bottlenecks, substantial investment in road and rail infrastructure will be required for any sustained growth in export volumes. However, political uncertainty — with recent changes to mining laws — and softening market conditions have slowed plans for expansions and new projects.

## 5.4 Australia

Australian metallurgical coal export volumes have been slow to pick up

Australia exported 44 million tonnes of metallurgical coal in the March quarter of 2019, an increase of 1.4 per cent year-on-year. Production increases at some operations were offset by scheduled maintenance and longwall moves, and by unfavorable weather-related impacts at other operations. Export earnings totalled \$10 billion over the quarter, an increase of 2.9 per cent year-on-year, supported by higher year-on-year prices.

Metallurgical coal export earnings estimated to have reached a record high

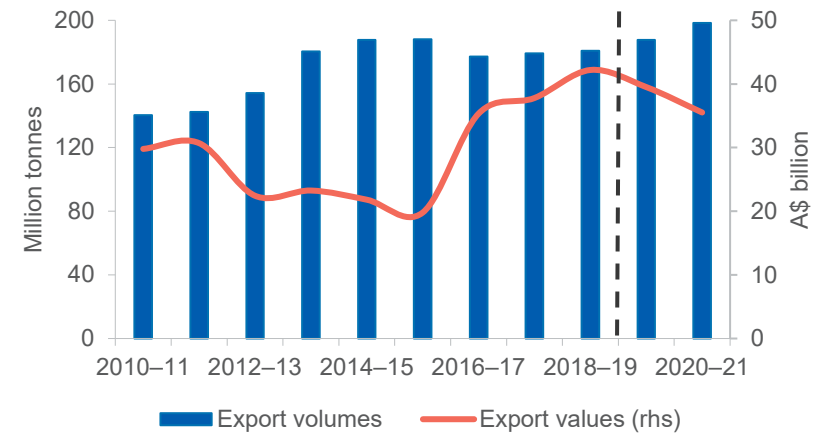
Australia's metallurgical coal export earnings are estimated to have reached a new record high of \$42 billion in 2018–19, up from an existing record of \$38 billion in 2017–18. The strong results were primarily driven by persistently high prices. Export volumes also grew by 0.6 per cent to an estimated 180 million tonnes in 2018–19 (Figure 5.5).

Beyond 2018–19, a forecast moderation of prices is expected to drive a decline in metallurgical coal export earnings, which are forecast to decrease by 6.1 per cent to \$39 billion in 2019–20, and by a further 10 per cent to \$36 billion in 2020–21.

A forecast rise in export volumes is expected to only partially offset the impact of lower prices (Figure 5.6). Export volumes are forecast to grow by 4.1 per cent to 188 million tonnes in 2019–20, and by a further 5.6 per cent to 198 million tonnes in 2020–21.

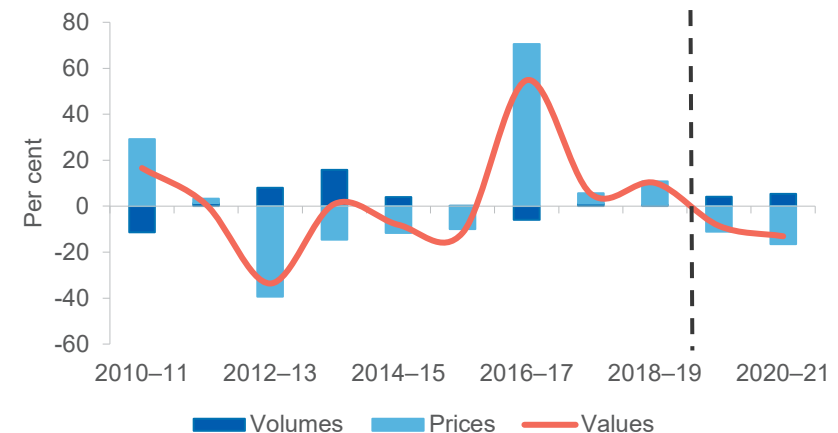
The forecast growth in Australia's metallurgical coal export volumes reflects several factors. A raft of restarts and ramp-ups at key mines, including Cook, Balaraba, Byerwen and Gregory Crinum, are expected to contribute to supply growth (Table 5.1). Supply has also been recovering from disruptions caused by weather, infrastructure, and technical issues. A fire at the North Goonyella mine in late 2018 resulted in a cessation of production. Restart is not expected to continue until at least early 2020.

Figure 5.5: Australia's metallurgical coal exports



Source: ABS (2019) International Trade, Australia 5368.0; Department of Industry, Innovation and Science (2019)

Figure 5.6: Annual growth in Australia's metallurgical coal exports values, and contributions from export volumes and prices



Notes: Price changes are based on export unit values.

Source: ABS (2019) International Trade, Australia 5368.0; Department of Industry, Innovation and Science (2019)

**Table 5.1: Metallurgical coal projects in Australia**

Project	Company	Development type	Coal type	Capacity (mtpa)	Start date
Byerwen	Qcoal	Greenfield	HCC	10	2017
Cook	Bounty Mining	Restart	HCC	2	2018
Baralaba North	Baralaba Coal Company	Restart	PCI	2-3	2018
Isaac Plains East	Stanmore Coal	Restart	SSC, thermal coal	2	2019
Gregory Crinum	Sojitz	Restart	HCC	6	2020 (est.)
Ironbark No. 1	Fitzroy Resources	Greenfield	HCC, thermal coal	3	2020 (est.)
Olive Downs South	Pembroke Resources	Greenfield	HCC, SSC, PCI	4 (first stage)	2020 (est.)

Notes: **HCC** Hard Coking Coal; **SSC** Semi-soft coking coal; **PCI** Pulverised coal injection; **est.** Estimated start date; Capacity refers to estimated nameplate capacity in million tonnes per annum of saleable production.

Source: Company reports and announcements, IHS Markit (2019); AME Group (2019)

### Revisions to the outlook

The forecasts for Australia’s metallurgical coal export earnings have been revised up by almost \$500 million in 2019–20 compared to the March 2019 *Resources and Energy Quarterly*. This reflects a revision to the exchange rate, and an upward revision to the 2019 premium HCC spot price forecast, which has been more resilient than originally anticipated. Forecast export earnings in 2020–21 are broadly unchanged compared to the March 2019 *Resources and Energy Quarterly*.

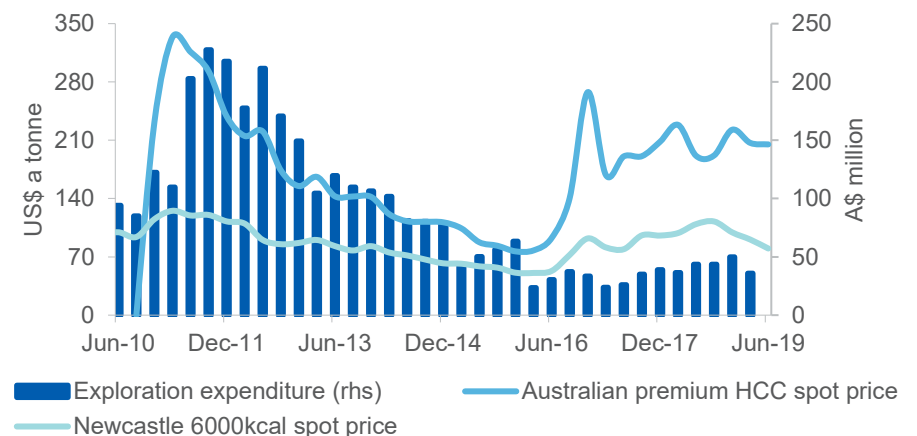
### Coal exploration expenditure rebounds

Australia’s coal exploration expenditure (including both metallurgical and thermal coal) totaled \$36 billion in the March quarter of 2019, a decrease of 28 per cent from the previous quarter and 1.1 per cent year-on-year (Figure 5.7). Coal exploration activity is generally seasonally weaker in the March quarter due to disruptive weather in Queensland.

Australian coal exploration expenditure remains substantially lower than its peak in 2011. Despite an improvement in market conditions since 2015–16, there are growing challenges for coal projects in Australia and around the world, particularly for thermal coal.

There is a growing reluctance to commit to new greenfield projects, and an expanding list of lenders announcing they will no longer finance thermal coal projects, pension and equity funds divesting from coal, growing community opposition, and challenging regulatory conditions all impacting on investment decisions.

**Figure 5.7: Australian coal exploration expenditure and prices**



Source: ABS (2019) Mineral and Petroleum Exploration, cat. no. 8412.0; IHS Markit (2019), Platts (2019)

**Table 5.2: World trade in metallurgical coal**

	Unit	2018	2019 <sup>f</sup>	2020 <sup>f</sup>	2021 <sup>f</sup>	Annual percentage change		
						2019 <sup>f</sup>	2020 <sup>f</sup>	2021 <sup>f</sup>
World trade	Mt	328	334	338	340	1.7	1.2	0.6
<b>Metallurgical coal imports</b>								
China	Mt	65	68	64	62	4.6	-5.9	-3.1
India	Mt	60	64	67	70	6.5	4.7	4.5
Japan	Mt	48	48	48	47	0.0	-0.8	-0.8
European Union 28	Mt	45	44	44	43	-2.2	-1.1	-1.1
South Korea	Mt	35	35	34	34	0.0	-2.9	0.0
<b>Metallurgical coal exports</b>								
Australia	Mt	179	181	195	200	1.3	7.7	2.3
United States	Mt	55	51	48	46	-7.3	-5.9	-4.2
Canada	Mt	30	31	32	33	3.3	3.2	3.1
Russia	Mt	26	28	29	29	9.1	0.5	1.8
Mongolia	Mt	31	33	32	31	6.5	-3.0	-3.1
Mozambique	Mt	8	9	10	11	20.0	11.1	10.0

Notes: <sup>f</sup> Forecast

Source: IEA (2018) Coal Information 2018, accessed through the IEA 20/20 Professional Browser; IEA (2018) Coal Market Report 2018; IHS (2019); Department of Industry, Innovation and Science (2019)



**Table 5.3: Metallurgical coal outlook**

World	Unit	2018	2019 <sup>f</sup>	2020 <sup>f</sup>	2021 <sup>f</sup>	Annual percentage change		
						2019 <sup>f</sup>	2020 <sup>f</sup>	2021 <sup>f</sup>
Contract prices <sup>e</sup>								
– nominal	US\$/t	208	201	171	160	-3.0	-14.9	-6.3
– real <sup>d</sup>	US\$/t	212	201	167	153	-5.1	-16.8	-8.3
Spot prices <sup>g</sup>								
– nominal	US\$/t	207	198	170	160	-4.5	-14.3	-5.6
– real <sup>d</sup>	US\$/t	212	198	166	153	-6.6	-16.2	-7.6
Australia	Unit	2017–18	2018–19 <sup>s</sup>	2019–20 <sup>f</sup>	2020–21 <sup>f</sup>	2019–20 <sup>f</sup>	2019–20 <sup>f</sup>	2020–21 <sup>f</sup>
Production	Mt	183	181	190	200	-1.5	5.1	5.6
Export volume	Mt	179	180	188	198	0.6	4.1	5.6
– nominal value	A\$m	37,793	42,045	39,498	35,506	11.3	-6.1	-10.1
– real value <sup>i</sup>	A\$m	38,546	42,045	38,572	33,840	9.1	-8.3	-12.3

Notes: **d** In 2019 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 (2019) International Trade in Goods and Services, Australia, 5368.0; Department of Industry, Innovation and Science (2019); Platts (2019)