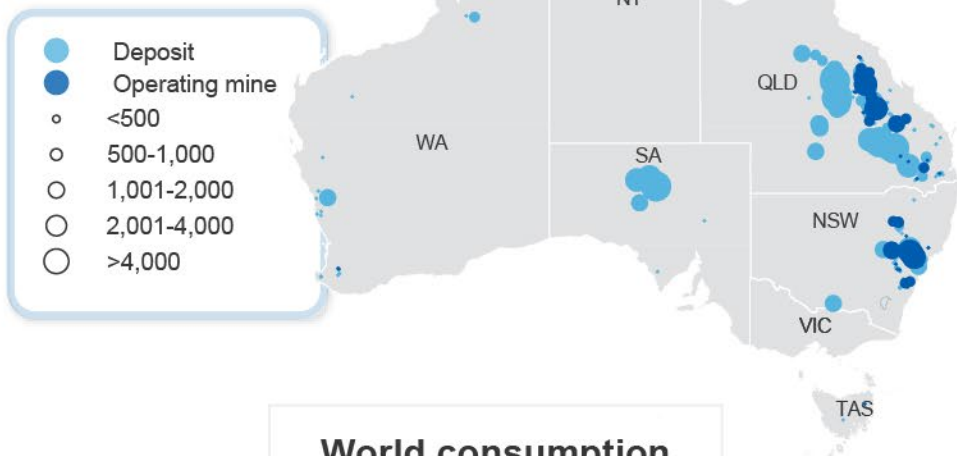
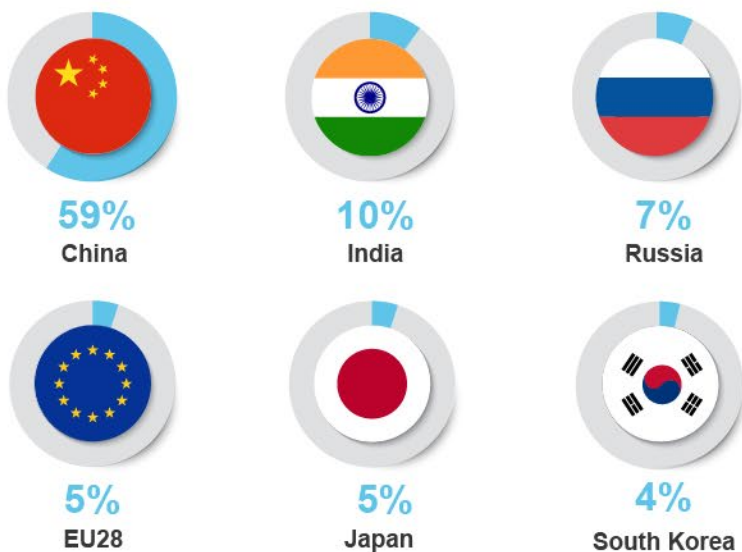


Metallurgical coal

Major Australian coal deposits (Mt)



World consumption



Metallurgical coal



Metallurgical coal is primarily used to make steel



Contains more carbon and less ash & moisture than thermal coal

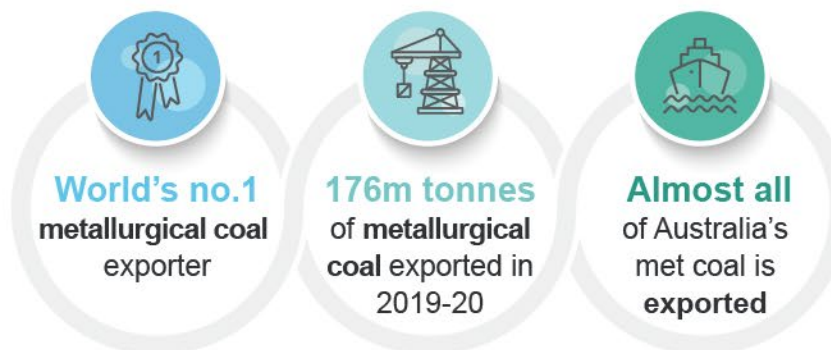


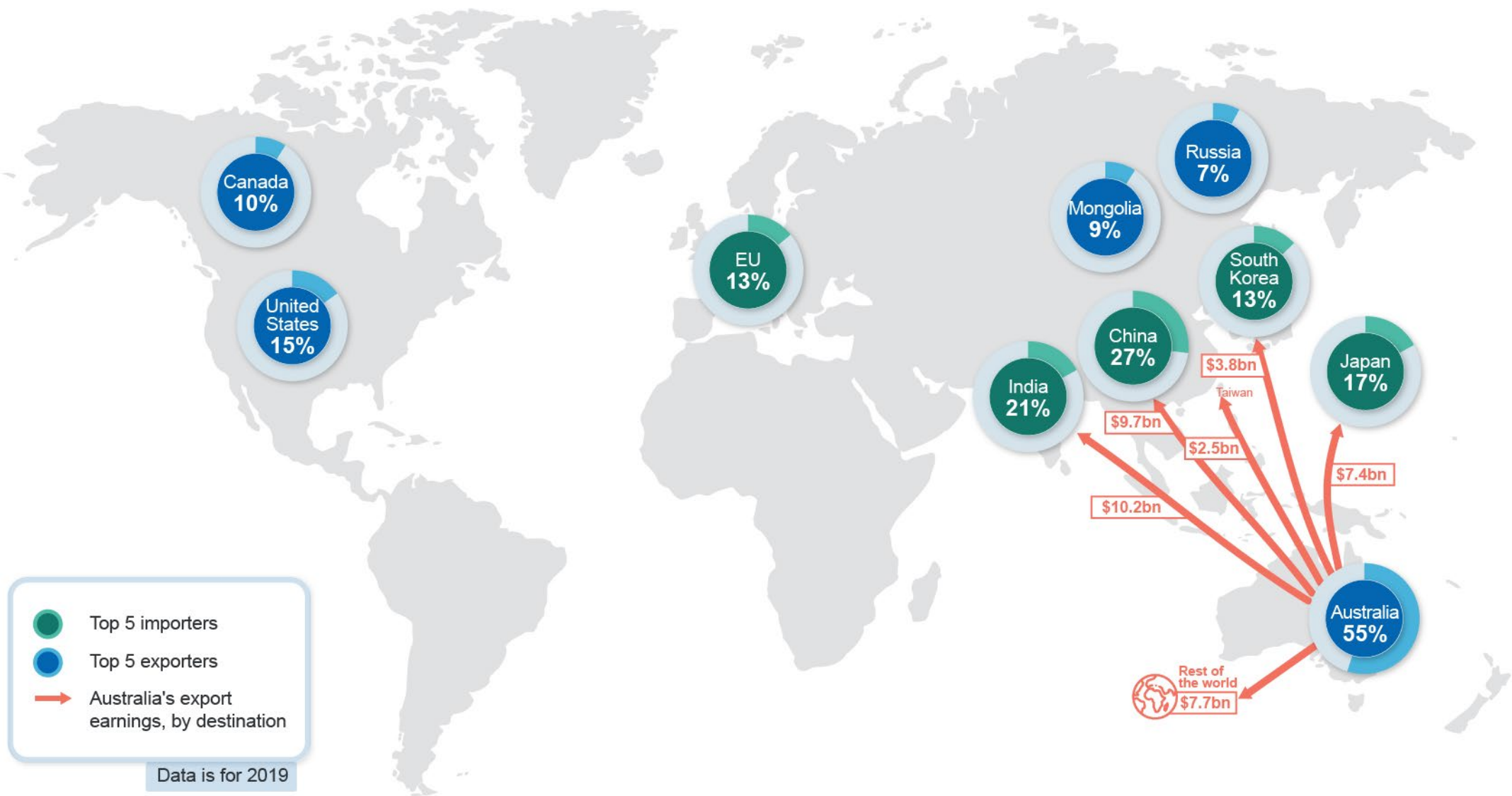
1x tonne of steel made in a blast furnace uses 780kg of met coal



Electric arc furnaces don't use met coal as a raw material

Australia's metallurgical coal





5.1 Summary

- Metallurgical coal prices have fallen sharply in recent months, reaching four year lows as a result of the demand-side impacts of COVID-19. The Australian premium hard coking coal (HCC) price is forecast to average US\$128 a tonne in 2020, down from US\$179 a tonne in 2019.
- Australia's export volumes are forecast to edge down by around 5 million tonnes in 2020–21 to 172 million tonnes, due to lower global demand, before lifting in 2021–22, as world steel production recovers.
- Australia's metallurgical coal exports are forecast to fall sharply in 2020–21, to \$23 billion from \$35 billion in 2019–20. They are forecast to recover partially to \$28 billion in 2021–22, as prices and volumes lift.

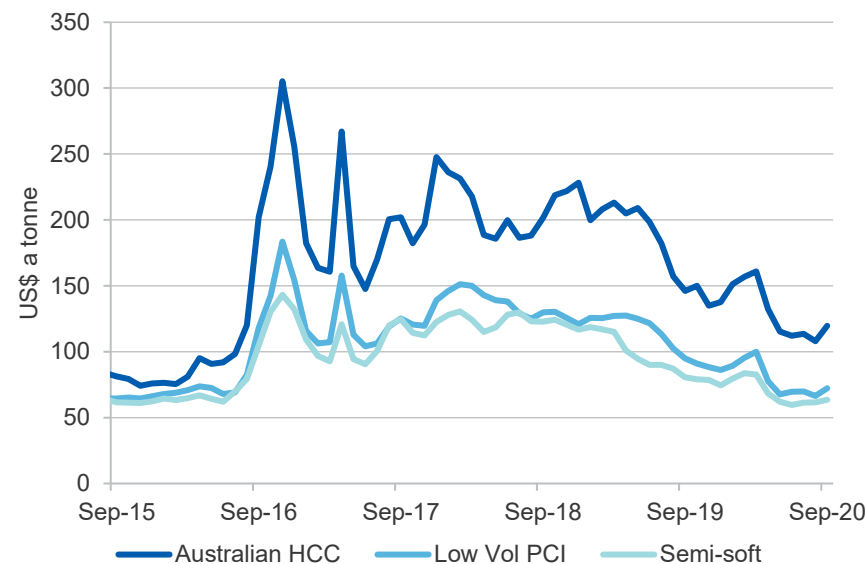
5.2 Prices

Metallurgical coal prices may have bottomed

After sustained declines through the first half of 2020, metallurgical coal prices may have reached a bottom, settling in the low US\$100's in the September quarter — at their lowest level in four years. The global COVID-19 pandemic has slowed the steel industry, driving the price decline (see the *steel* chapter). The Australian premium hard coking coal (HCC) spot price averaged US\$120 in the June quarter (down US\$36 a tonne from the March quarter), and then fell further to about \$114 in the September quarter (Figure 5.1). For a period, the HCC price was below the iron ore price for the first time in the history of the benchmarks.

Slowing global economic activity saw steel production curtailed dramatically across a number of nations in the first half of 2020, which in turn reduced demand for metallurgical coal. Indian steel mills reportedly cut output by 60–70 per cent during the initial national containment measures, causing some Indian ports to stop accepting coal deliveries to prevent further accumulation. Other major metallurgical coal buyers in North East Asia and Europe also cut steel production. The impact of demand reductions immediately affected high-cost US mines, who reduced output and exports from March. As prices fell further, miners in other major metallurgical coal exporting countries — including Australia from around May (see *Section 5.6 Australia*) — started to cut output.

Figure 5.1: Metallurgical coal prices, monthly



Notes: HCC stands for hard coking coal. PCI stands for pulverized coal for injection.

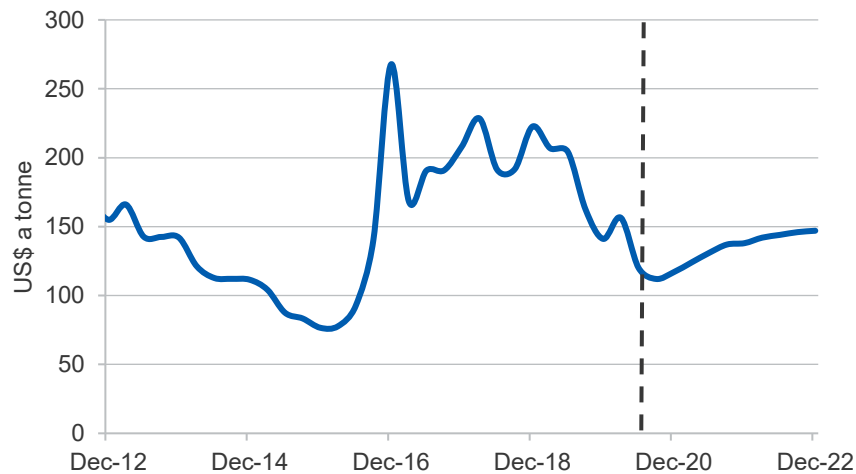
Source: Platts (2020)

The recovery of global metallurgical coal demand is expected to be slow, and patchy, which is likely to keep prices low for longer, even with planned supply cuts. The Australian premium HCC spot price is forecast to remain at current levels of around US\$120 a tonne over the remainder of 2020, averaging US\$128 a tonne for the year as a whole.

Chinese demand for metallurgical coal from the seaborne market will be the key driver of the metallurgical coal price outlook. This will depend on the Chinese coal industry's output of metallurgical coal, the impact of changes to China's import practices (including import licensing) as well as the rate of growth of China's massive steel industry. The other key demand-side uncertainty is the pace of the economic recovery in India, the world's 2nd largest metallurgical coal importer.

From 2021, metallurgical coal prices are expected to begin to recover in line with increasing steel production.

Figure 5.2: Australian premium HCC spot price, quarterly



Source: Platts (2020); Department of Industry, Science, Energy and Resources (2020)

The premium Australian HCC price is forecast to average US\$134 a tonne in 2021 and US\$145 a tonne in 2022, both well below the 2019 average (Figure 5.2).

5.3 World trade

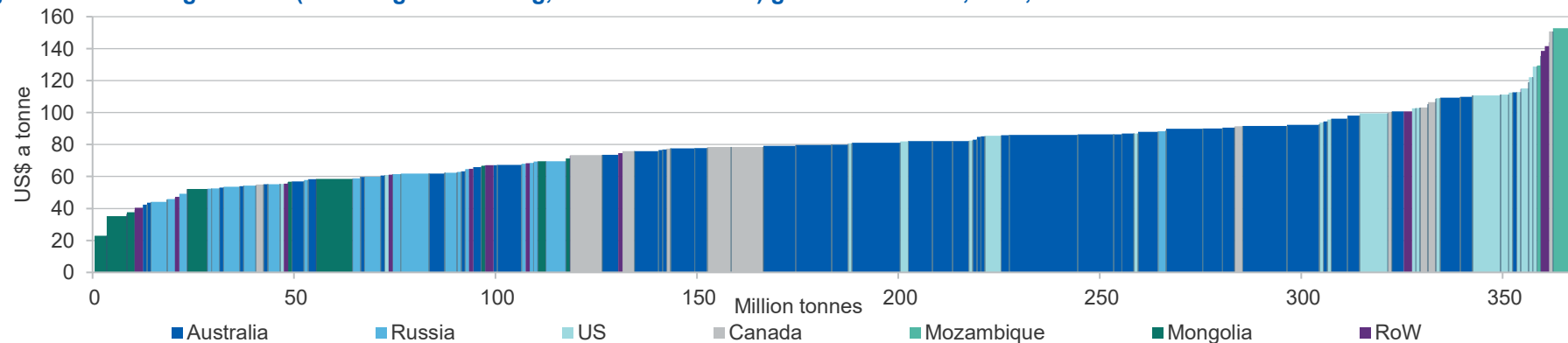
In 2019, world trade in metallurgical coal fell by 7 million tonnes (around 2 per cent) to 337 million tonnes. China's and India's imports increased strongly during the year, on the back of robust growth in steel production, but imports by other steel producing countries fell overall.

World metallurgical coal trade is forecast to fall by 41 million tonnes (or 12 per cent) to 296 million tonnes in 2020. India alone is expected to account for around half of the fall, with the rest of the decline spread across some other major steel producers, such as Europe and Japan.

Coal production cutbacks — as a percentage of 2019 levels — are expected to be most severe in the US, but other major exporters are also likely to be affected, including global leader Australia. The US is the second largest supplier, but many US producers have high costs, as shown in the global cost curve (Figure 5.3).

In 2021 and 2022, world trade in metallurgical coal is expected to grow strongly with the industrial production recovery; rising by 32 million tonnes in 2021 and a further 24 million tonnes in 2022. This stands in contrast to the forecasts for thermal coal, which is not expected to regain 2019 world trade levels during the outlook period (see *thermal coal* chapter).

Figure 5.3: Metallurgical coal (including hard coking, PCI and semi-soft) global cost curve, FOB, 2020



Notes: FOB is Free on Board. RoW is rest of world.

Source: AME Group (2020); Department of Industry, Science, Energy and Resources (2020)

5.4 World imports

China's steelmakers recover, but import restrictions expected

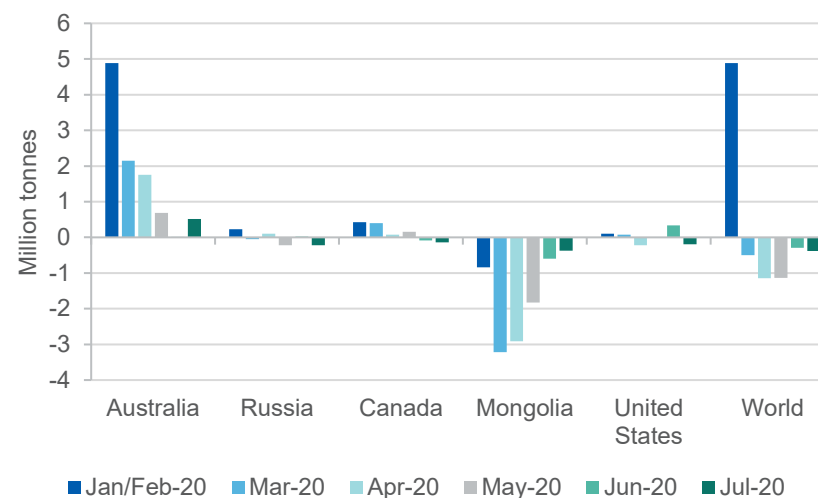
China is the world's largest steel maker, and imported 75 million tonnes of metallurgical coal in 2019 — making it the world's largest metallurgical coal buyer. Due to a sharp rise in China's seaborne metallurgical coal imports in the first quarter, the first half of 2020 saw imports increase by 5 per cent year-on-year (Figure 5.4). The early surge was driven by reduced domestic coal production (due to travel restrictions associated with the COVID-19 pandemic) and the halt to overland imports as Mongolia's border with China closed for many weeks.

After more than a decade of strong growth associated with the rise of the steel sector, China's metallurgical coal imports are expected to be around 70 million tonnes in 2020, as monthly import volumes decline over the rest of 2020. As the economic impacts of COVID-19 recede, metallurgical coal imports by China are expected to rise to 78 million tonnes in 2021, as steel production grows (see steel chapter). Chinese metallurgical coal output is also expected to lift, but is not expected to keep pace with demand growth given that China has limited reserves — particularly of high quality grades.

Reforms to Chinese coal mining regulation could adversely affect domestic metallurgical coal production, which would raise the need for imports to supply China's steelmakers. The safety, environmental and productivity goals of the reforms are making it more difficult for many small-scale coal mines to secure approvals to operate, and China's metallurgical coal output is more reliant on smaller mines than is thermal coal production. Shanxi's provincial government is planning to shut all coal mines that produce less than 0.6 million tonnes per annum by the end of 2020 — equivalent to around 15 million tonnes or 1.5 per cent of China's 2019 production.

Chinese coal imports (of all types from all countries) in the first six months were already 20 million tonnes ahead of where they were in the first 6 months of 2019. Consequently, China's metallurgical coal import volumes in the second half of 2020 could be constrained by slower customs clearance processes. In mid-September, around 100 vessels were queued

Figure 5.4: China's metallurgical coal imports, year-on-year change



Notes: China customs released combined January/February data for 2020.
Source: Bloomberg (2020) China customs

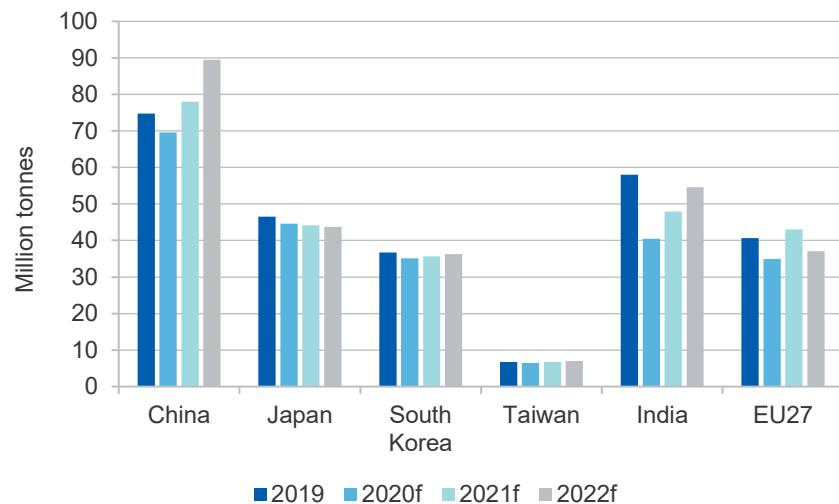
waiting to unload at major coal import terminals in northern China. This suggests China's policy of limiting coal imports to support domestic producer prices is slowing down cargos.

Australia's premium metallurgical coals have become China's metallurgical coal of choice in 2020. The volume of Australian cargos imported by China in the first 6 months of 2020 is estimated to be 24 million tonnes, up 65 per cent compared with the same period in 2019. Coincidentally, Australian cargos constituted almost two-thirds of all metallurgical coal imports to China in the first half of 2020.

India's metallurgical coal imports to fall sharply

India is the world's second largest steel producer and metallurgical coal buyer, importing 58 million tonnes in 2019. India's metallurgical coal imports fell by 23 per cent in the first six months of 2020 compared with a year earlier. The impact of the COVID-19 pandemic in India has seen its steel mills cut output by 70 per cent on a monthly basis, and much of India's steel sector remains 'hot idled' — whereby mills continued to

Figure 5.5: Metallurgical coal imports, annual



Notes: f Forecast

Source: IHS (2020); Department of Industry, Science, Energy and Resources (2020)

produce but at minimum levels in order to avoid the costs of later restarting furnaces. As India's steel production fell, so too did India's metallurgical coal demand. Steel mills and ports were unable to take more metallurgical coal cargos, and some had to be on-sold. India's metallurgical coal imports are forecast to fall by 18 million tonnes in 2020 to 40 million tonnes, a decline of 30 per cent.

After 2020, India's metallurgical coal imports are expected to begin to recover, increasing to 55 million tonnes in 2022 (Figure 5.5). India has ambitious plans to increase crude steel production capacity from 142 million tonnes to 300 million tonnes per year over the next decade. However, India has limited domestic reserves of metallurgical coal, and will need to increase imports to support rapid growth of its steel sector. The continuing impacts of the COVID-19 pandemic on India has further slowed the pace at which India's steel sector is able to expand, and this remains a key risk to the outlook for metallurgical coal.

Japan's imports to fall, while South Korea's to rise slightly after 2020

Japan is the world's third largest metallurgical coal importer, importing 47 million tonnes in 2019. Japan's imports were stable year-on-year in the first 6 months of 2020 despite the Japanese government announcing COVID-19 containment measures in early April. However, July saw a dramatic 29 per cent year-on-year fall in imports. With two major producers planning to retire some steel making capacity over the outlook period, Japan's metallurgical coal imports are forecast to fall to 45 million tonnes in 2020, and then to 44 million tonnes in 2022.

South Korea is the world's fourth largest metallurgical coal importer, bringing in 37 million tonnes in 2019. South Korea's imports fell 7 per cent year-on-year in the six months to end of June, and are forecast to be 35 million tonnes in 2020. South Korea's imports are expected to recover slowly, reaching 36 million tonnes in 2022.

5.5 World exports

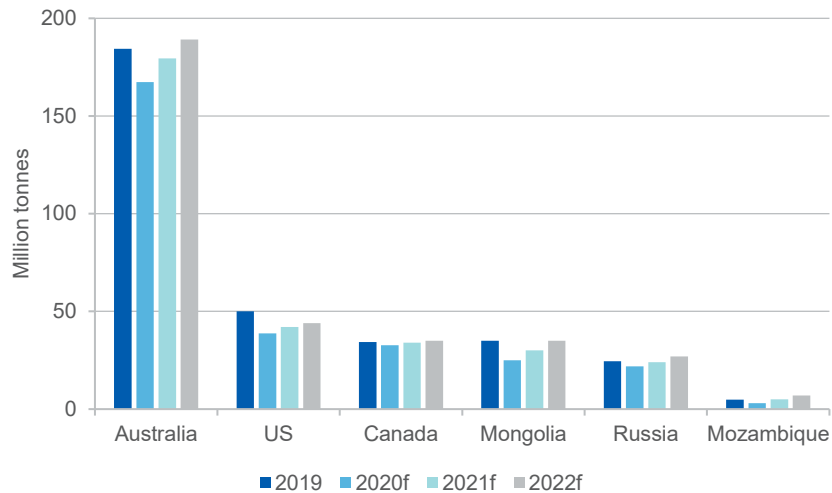
US exports volumes plunge and likely to stay down

The US is the world's second largest exporter of metallurgical coal after Australia, exporting 50 million tonnes in 2019. The US is a swing producer in metallurgical coal markets — due to higher production costs (Figure 5.3) and higher freight costs to key consumer markets — and exports fell 29 per cent year-on-year in the first half of 2020. Export volumes rose significantly in July such that US metallurgical coal exports are forecast to fall to 39 million tonnes in 2020, before rebounding in line with expected higher prices and lifting to 44 million tonnes in 2022 (Figure 5.6).

Russia's exports fall for now

Russia exported 25 million tonnes of metallurgical coal in 2019. Exports in the first quarter of 2020 were 13 per cent lower year-on-year, in response to declining prices. With the low prices of 2020, exports are forecast to be 22 million tonnes in 2020. After 2020, Russia's metallurgical coal exports are expected to gradually recover, reaching 27 million tonnes in 2022. Russia has been investing in new mining capacity, and rail and port expansions in recent years.

Figure 5.6: Metallurgical coal exports, annual



Notes: f Forecast

Source: IHS (2020); Department of Industry, Science, Energy and Resources (2020)

Mongolia's coal exports coming back after China border reopens

Mongolia surpassed both Russia and Canada to become the world's third largest metallurgical coal exporter in 2019, exporting 30 million tonnes. The closure of Mongolia's border with China from late January to April 2020 disrupted the crossing of coal trucks. Mongolia's metallurgical coal exports are now recovering from that hiatus, with reports of high numbers of trucks crossing into China in the September quarter. Nevertheless, due to the halt, Mongolia's exports are forecast to be lower at 25 million tonnes in 2020. Mongolia's exports are forecast to be 35 million tonnes in 2022.

Exports from Canada strong

Canada exported 34 million tonnes of metallurgical coal in 2019 (Figure 5.6). Canada's exports were strong in the first half of 2020 — despite the fall in prices — with exports up 9 per cent year-on-year. However, this strength was mainly in the March quarter and started to slow in the June quarter, as prices declined further. Given the expected persistence of weak prices, Canada's metallurgical coal exports are expected to decline

modestly to 33 million tonnes in 2020, and to bounce back to 35 million tonnes in 2022.

Mozambique's exports collapse

Mozambique currently has two exporting metallurgical coal mines: Vale's Moatize and Jindal Steel's Songa mines. Once touted as the next major supplier of metallurgical coal, Mozambique has faced a number of challenges in growing its exports, which were 5 million tonnes in 2019. Mozambique's metallurgical coal exports plummeted 41 per cent year-on-year in the first half of 2020, due to weak demand and low prices.

Mozambique's metallurgical coal exports are forecast to decline to 3 million tonnes in 2020, as low prices impact Mozambique's relatively high cost producers (Figure 5.3). After 2020, Mozambique's exports are forecast to begin to recover, reaching 7 million tonnes in 2022. The rise will be driven by the ramp up of Vale's Moatize mine, and facilitated by the 912 kilometre Nacala logistics corridor rail line and Nacala port expansion.

5.6 Australia

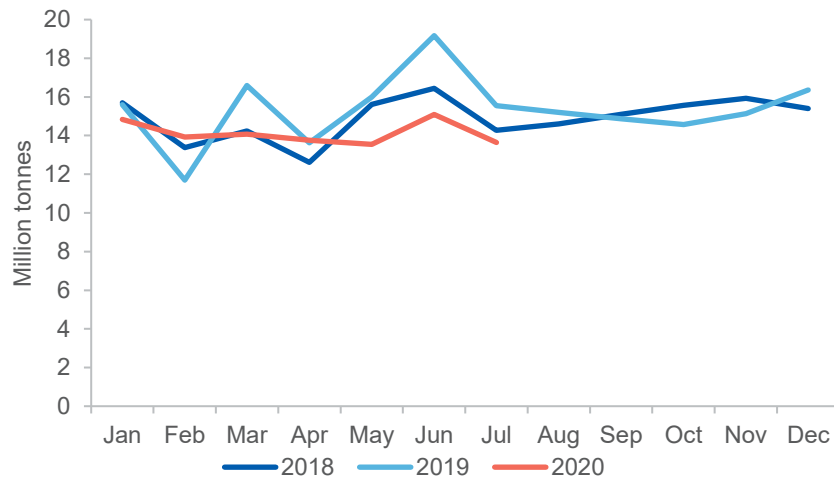
Metallurgical coal export earnings declined sharply in 2019–20

The value of Australia's metallurgical coal exports declined from \$44 billion in 2018–19 to \$35 billion in 2019–20, driven by both lower prices and lower export volumes. Metallurgical coal export volumes fell 8 per cent year-on-year in the June quarter, due to weak global demand — despite production recovering from the impacts of wet weather and bushfires in the March quarter.

Metallurgical coal export earnings to fall further in 2020–21

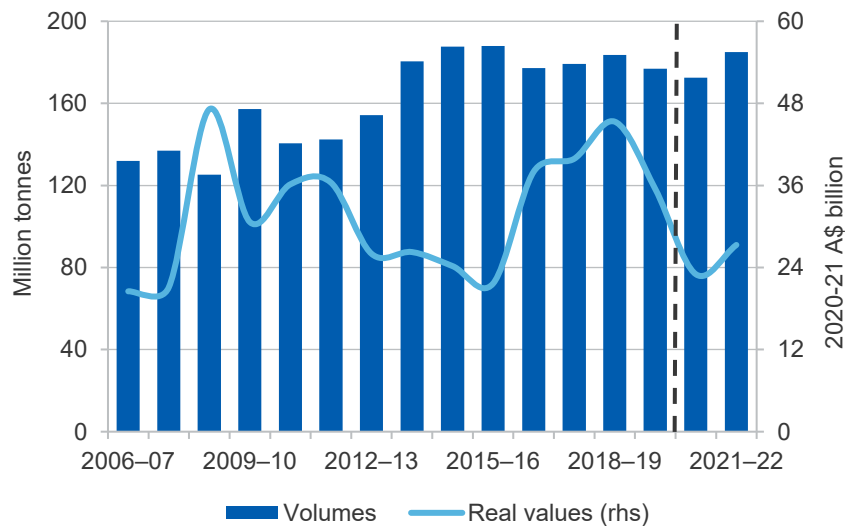
Metallurgical coal export earnings are forecast to decline further to \$23 billion in 2020–21, due to a combination of lower prices and reduced mine production (Figure 5.8). Export volumes are expected to decline due to lower global demand for metallurgical coal, with some Australian miners announcing production cutbacks or temporary closures (discussed below) and the potential for further announcements to follow. Export earnings are then expected to mount a partial recovery to \$28 billion in 2021–22.

Figure 5.7: Australia's metallurgical coal exports



Source: ABS (2020)

Figure 5.8: Australia's metallurgical coal exports



Source: ABS (2020) International Trade, Australia 5454.0; Department of Industry, Science, Energy and Resources (2020)

A key risk to the outlook is coal mines being placed on care and maintenance. However, there are a number of factors that reduce the risk of widespread mine closures in Australia; these include 'take-or-pay' contracts with rail and port operators, contracted export sales, and the costs associated with moving to care and maintenance (see the *thermal coal* chapter for discussion). About two-thirds of Australian metallurgical coal exports are HCC, while the remaining third is composed of pulverized coal for injection (PCI) and semi-soft coking coal. Most Australian HCC producers appear to be relatively well-positioned, even at current spot prices (Figure 5.9). However, producers of semi-soft coking coal and PCI appear to be more exposed to a prolonged period of low prices.

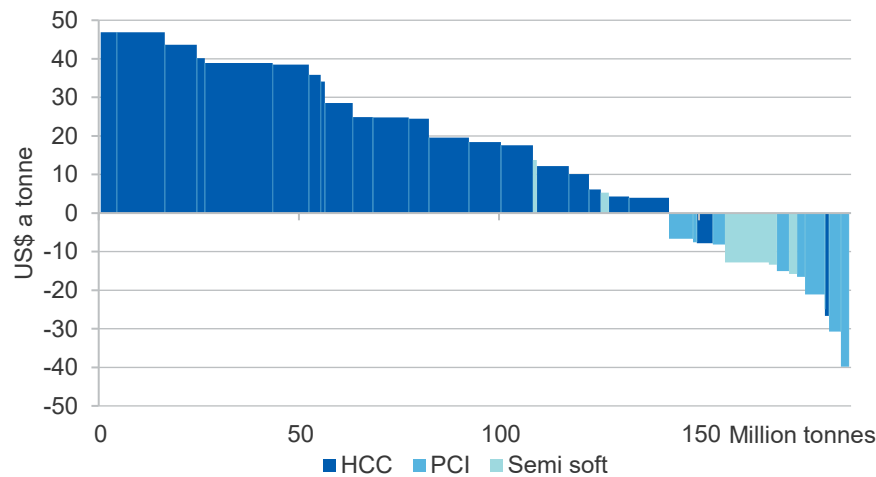
To date, several Australian mines have announced production cuts in response to low prices. In July, Glencore — Australia's largest coal miner in 2019–20 — announced that it would reduce global output over the rest of 2020. While the strategy aims mainly to reduce thermal coal output, it will target lower grade metallurgical coals too. This will be achieved with targeted shutdowns of two or three weeks at certain mines. Glencore reports that metallurgical coal was the only profitable part of its coal mining business in the 2019–20 financial year.

BHP, another major player in Australian coal, announced in August that it would reduce the output of its portfolio of metallurgical coal mines by about 4–6 per cent over the medium term, cutting annual output to 46–52 million tonnes. BHP too will focus its production efforts on higher quality coals.

Also in August, Peabody announced that it would halve the workforce at its 2.5 million tonne per annum Wambo underground thermal and semi-soft coking coal mine in New South Wales. This decision followed a two-month temporary closure since June. Production will also be slowed at Peabody and Yancoal's 2.7 million tonne Middlemount mine (which produces mostly PCI) in Queensland's Bowen Basin.

Anglo American's Grosvenor mine in Queensland — which closed due to an accident that injured 5 workers in early May — will remain suspended until at least the second half of 2021. This alone removes up to 4 million tonnes of prime hard mid volatile metallurgical coal from global supply.

Figure 5.9: Export margins of Australian metallurgical coal mines



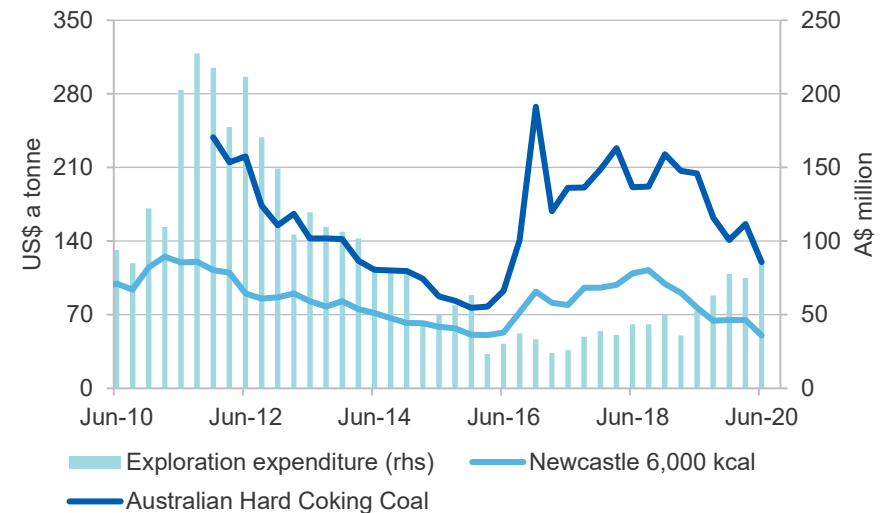
Notes: Semi soft is semi-soft coking coal; PCI is pulverized coal for injection; HCC is hard coking coal. Price assumptions are HCC = US\$120 a tonne; PCI = US\$70 a tonne; semi soft = US\$65 a tonne. Mines are categorized into HCC, PCI and semi soft based on which product they most produce of. Some mines produce a mixture of these products.

Source: AME (2020); Department of Industry, Innovation and Science (2020)

Another near term risk to mine production — not factored in to the forecast — is the higher likelihood of heavy rainfall in coal producing regions of NSW and Queensland. The Australian Bureau of Meteorology (BOM) has forecast the likelihood of La Niña this year is 70 per cent, roughly three times the normal likelihood. The last significant La Niña was in 2010–11 and resulted in around 85 per cent of Queensland coal mines either restricting output or closing because of record rainfall.

Longer term, deferred investment decisions — as a result of the demand-side impacts of COVID-19 — are likely to weigh on Australian metallurgical coal production. Coronado Coal has deferred an expansion of its Curragh mine in Queensland’s Bowen Basin, noting it would reduce capital expenditure by around 40 per cent in response to COVID-19. Similarly, South32 may push back the timetable for development and project expansion for its Appin and Dendrobium underground coal mines in New South Wales because of capital constraints adopted by the company.

Figure 5.10: Australian coal exploration expenditure and prices



Source: ABS (2020), IHS (2020), Platts (2020)

As the result of announced production cuts, Australian export volumes are forecast to fall by 3 per cent to 172 million tonnes in 2020–21. A full recovery is anticipated by 2021–22, with exports in that year rebounding up 7 per cent to 185 million tonnes.

Coal exploration expenditure increases

Australia’s coal exploration expenditure increased by 66 per cent year-on-year to \$87 million in the June quarter 2020, continuing to recover from the lows recorded over 2016 and 2017 (Figure 5.10). For the full year 2019–20 expenditure was \$303 million, 66 per cent higher than the previous year.

The outlook for Australia’s metallurgical coal exports has deteriorated

Australia’s forecast metallurgical coal export earnings have been revised down by \$2.3 billion in 2020–21 and by \$1.4 billion in 2021–22, due to a stronger \$A/\$US exchange rate and reduced export volumes. Forecast export volumes in 2020–21 have been revised down by 8 million tonnes, and volumes in 2021–22 down by 2 million tonnes.

Table 5.1: World trade in metallurgical coal

	Unit	2019	2020 ^f	2021 ^f	2022 ^f	Annual percentage change		
						2020 ^f	2021 ^f	2022 ^f
World trade	Mt	337	296	329	352	-12.1	10.8	7.2
Metallurgical coal imports								
China	Mt	75	70	78	89	-7.0	12.1	14.7
India	Mt	58	40	48	55	-30.2	18.4	14.0
Japan	Mt	47	45	44	44	-4.2	-1.0	-0.9
European Union 28	Mt	41	35	39	37	-14.0	11.5	-5.1
South Korea	Mt	37	35	36	36	-4.3	1.6	1.5
Metallurgical coal exports								
Australia	Mt	184	168	179	189	-8.6	6.4	5.3
United States	Mt	50	39	42	44	-22.5	8.4	4.8
Canada	Mt	34	33	34	35	-5.0	4.2	2.9
Russia	Mt	25	22	24	27	-11.1	9.8	12.5
Mongolia	Mt	30	25	30	35	-16.9	20.3	16.7
Mozambique	Mt	5	3	5	7	-39.3	68.3	40.0

Notes: **f** Forecast; **s** Estimate.

Source: IEA (2019) Coal Information; IHS (2020); Department of Industry, Innovation and Science (2020)

Table 5.2: Metallurgical coal outlook

World	Unit	2019	2020 ^f	2021 ^f	2022 ^f	Annual percentage change		
						2020 ^f	2021 ^f	2022 ^f
Contract prices ^e								
– nominal	US\$/t	184	129	133	145	-30.1	3.1	9.1
– real ^d	US\$/t	187	129	130	139	-31.3	0.7	7.0
Spot prices ^g								
– nominal	US\$/t	179	128	134	145	-28.4	5.0	8.2
– real ^d	US\$/t	182	128	131	139	-29.6	2.5	6.1
Australia	Unit	2018–19	2019–20	2020–21 ^f	2021–22 ^f	2019–20	2020–21 ^f	2021–22 ^f
Production	Mt	189	184	178	191	-2.8	-2.9	7.2
Export volume	Mt	184	177	172	185	-3.6	-2.6	7.2
– nominal value	A\$m	43,637	34,603	22,993	27,817	-20.7	-33.6	21.0
– real value ⁱ	A\$m	45,331	35,472	22,993	27,263	-21.7	-35.2	18.6

Notes: **d** In 2020 US dollars. **e** Contract price assessment for high-quality hard coking coal. **i** In 2020–21 Australian dollars. **f** Forecast. **g** Hard coking coal fob Australia east coast ports.

Source: ABS (2020) International Trade in Goods and Services, Australia, 5368.0; Department of Industry, Innovation and Science (2020); Platts (2020)