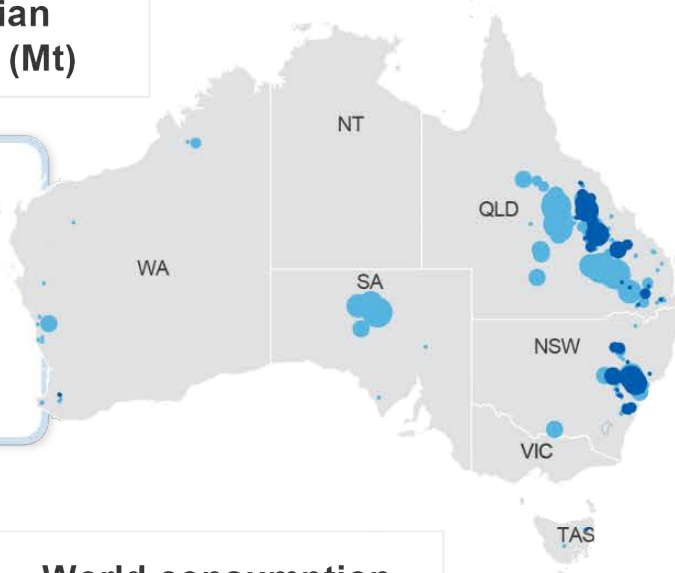


Metallurgical coal

Major Australian coal deposits (Mt)

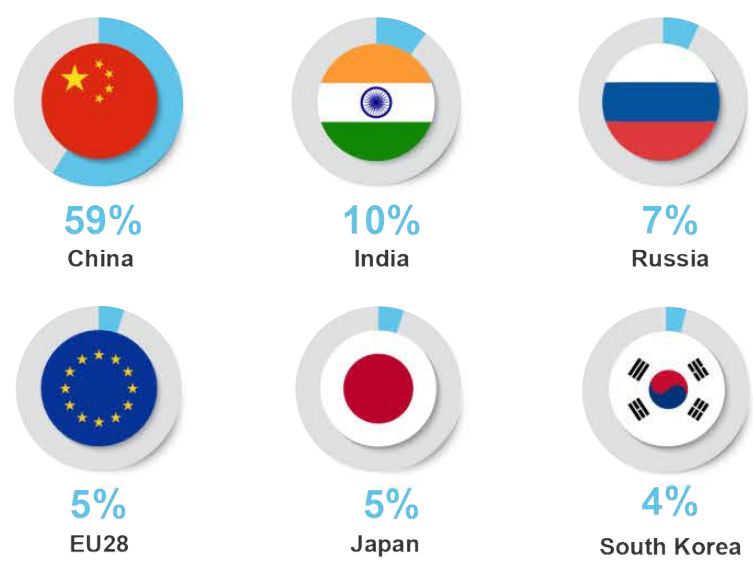


Metallurgical coal

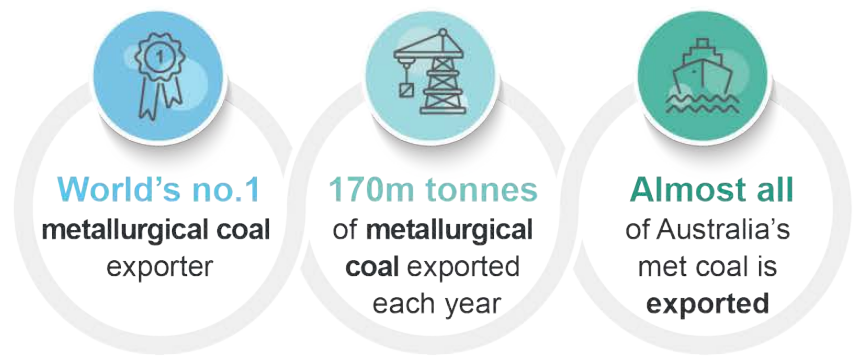


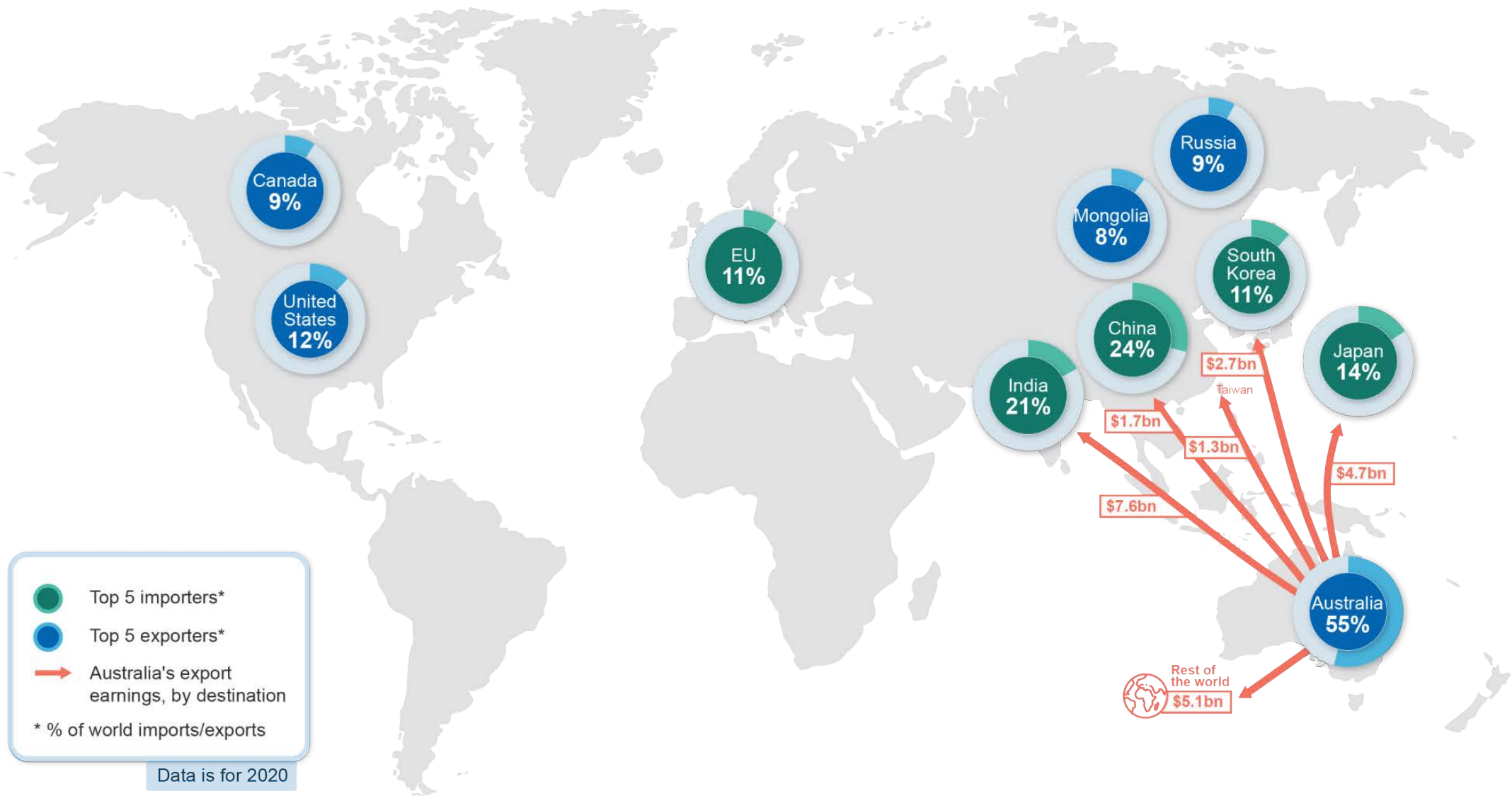
- Metallurgical coal is primarily used to make steel
- Contains more carbon and less ash & moisture than thermal coal
- 1x tonne of steel made in a blast furnace uses 780kg of met coal
- Electric arc furnaces don't use met coal as a raw material

World consumption



Australia's metallurgical coal





5.1 Summary

- Metallurgical coal prices have held at historic highs for several months, as supply shortages have met strong Chinese demand and rebounding global industrial production. The Australian premium hard coking coal (HCC) price is forecast to ease from an average US\$227 a tonne in 2021 to still-high US\$162 a tonne by 2023.
- Australia's exports are forecast to rise from 171 million tonnes in 2020–21 to 181 million tonnes by 2022–23. Supply chains disrupted by China's informal import restrictions have largely reorganised (see [Australia section](#)).
- Australia's metallurgical coal export values are forecast to surge with recent price movements, rebounding from \$23 billion in 2020–21 to peak above \$50 billion in 2021–22, before easing to \$37 billion in 2022–23.

5.2 World trade

Strong global demand and tight supply drove metallurgical coal prices to extremely high levels in late September, and these prices have persisted for more than two months. Prices for virtually all grades have more than doubled in through-the-year terms. China's informal import restrictions on Australian exports have obliged the country's steel mills to draw in supply from virtually all non-Australian sources. India, Japan, South Korea and the EU have all switched to Australian-sourced imports in response. The price differential which affected Australian suppliers in the immediate aftermath of the Chinese import restrictions has reduced, with prices now at historical highs for Australian metallurgical coal.

Supply and demand are expected to come into better balance over the outlook period, as supply disruptions pass. Supply growth is expected from Canada, the US, Australia and Mongolia. BHP, which owns mines in multiple countries, has released guidance suggesting that its output across the board could rise significantly in 2022.

This rebalance may happen more swiftly in the event that Chinese policy or economic factors change in the months ahead (see [China section](#)). However, risks also remain in the other direction, with China still short of

coal and likely to seek higher imports in 2022. As much of the new supply expected in 2022 is likely to come from Australia, Chinese demand will need to bring in an even greater share of ex-Australian coal than now, resulting in potential for price breakouts and further supply chain disruptions. Freight prices may also rise as a result of the greater distances which coal redirected to alternative markets might need to travel.

Globally, consumer spending and industrial activity are expected to remain strong, ensuring generally solid conditions for metallurgical coal even under pessimistic scenarios. However, the worsening shortage of semiconductors presents risks to this growth outlook, potentially disrupting or halting large swaths of automotive and consumer goods manufacturing. Impacts on these sectors could easily spread to global steelmaking chains, potentially reducing metallurgical coal use sharply.

On balance, metallurgical coal trade is forecast to increase from 320 million tonnes in 2020 to 344 million tonnes in 2023, matching the previous peak recorded in 2018. Supply is expected to grow steadily, while demand remains strong, albeit with downside risks.

5.3 World imports

[Chinese steel demand is easing, and remains subject to downside risks](#)

Metallurgical coal prices in China have surged, due to a combination of strong domestic steel demand, constrained global supply, and informal import restrictions against Australian supply. This has led to domestic coking coal prices reaching new highs in October, when premium coal topped US\$600 a tonne.

The Chinese Government has moved to curb steel production in response. Steel mills in Hebei, Shandong and Tianjin will be obliged to cut their output in the December quarter, and the Government has flagged a potential further cut early in the March quarter of 2022, prior to the Beijing Winter Olympics. Mandated output cuts are set to land heaviest on carbon-intensive producers, with authorities providing leeway for low-carbon mills and electric arc furnaces (which use recycled steel scrap) to hold output at current levels for the time being.

Steel output in China may also slow in line with industrial production and GDP growth, which are both softening. Rapid growth in real estate investment (which topped 10% over the year to August) also appears now to be easing as regulatory measures intended to slow the flow of resources to the property sector take effect. Construction accounts for around half of China’s domestic steel use, but has faced difficulties in the wake of the Evergrande debt crisis, which led to increasing concerns that many Chinese real estate companies could hold unsustainable levels of debt. These risks to steel demand (see *Steel chapter*) also represent a sizeable risk for metallurgical coal demand and prices.

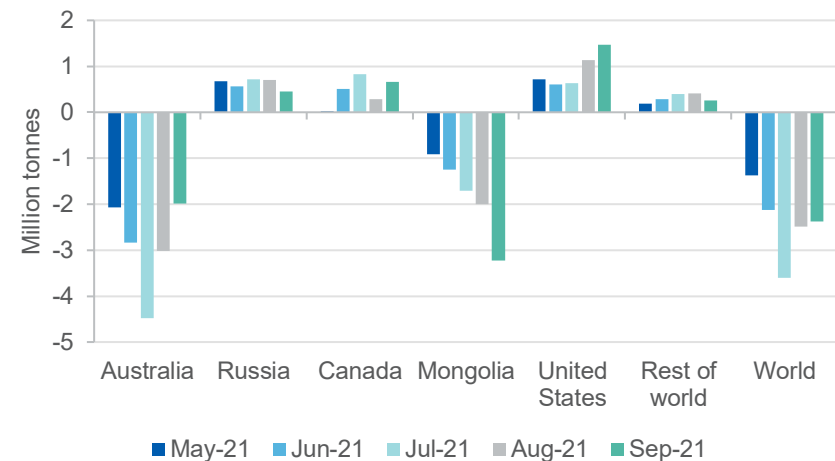
On balance, it is estimated that Chinese metallurgical coal imports have dropped significantly in 2021 (Figure 5.1), with a partial recovery expected in 2022. Imports are not expected to reach pre-COVID-19 levels during the outlook period.

India’s metallurgical coal imports are recovering

Indian steel output has risen significantly in the second half of 2021, but the growing shortage of metallurgical coal supply may hamper further growth. Australia accounted for around three-quarters of metallurgical coal imports to India over the year to September, while import shares for Canada and the US declined to 3% and 5% over the same time period, reflecting their redirection to China. This creates added risk that any weather or shipping disruptions from Australia could affect Indian steelmaking in particular, and lead to seaborne prices spiking further.

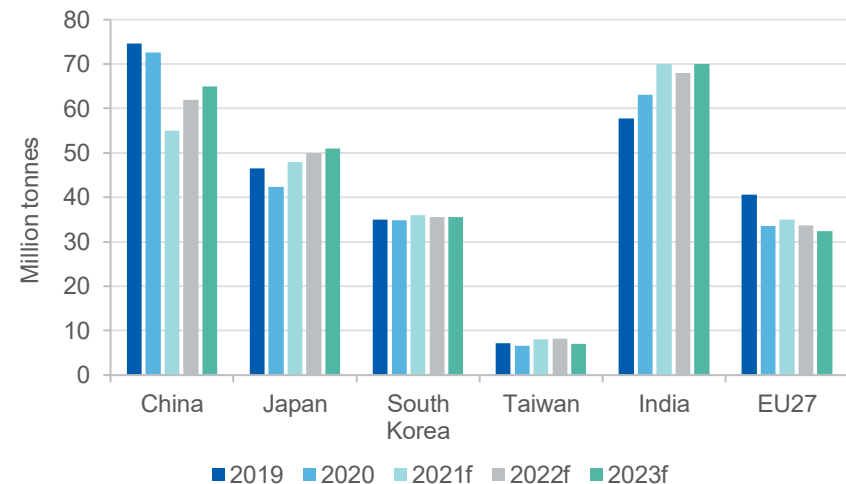
India’s metallurgical coal needs are likely to grow in subsequent years. Indian steelmakers have announced projects worth a total of US\$11 billion over the next five years (though final investment decisions are yet to be made in many cases). Recent growth in imports is likely to continue, given the pressure to expand steel output. Imports are estimated to have risen strongly in 2021 (bringing India ahead of China), but are forecast to edge back in 2022 as capacity limits are reached and supply constraints on metallurgical coal persist. However, further growth is expected in 2023, as more supply becomes available (Figure 5.2).

Figure 5.1: China’s metallurgical coal imports, year-on-year change



Notes: China customs released combined January/February data for 2021.
Source: Bloomberg (2021); China customs (2021)

Figure 5.2: Metallurgical coal imports



Notes: f Forecast..Source: IHS (2021); Department of Industry, Science, Energy and Resources (2021)

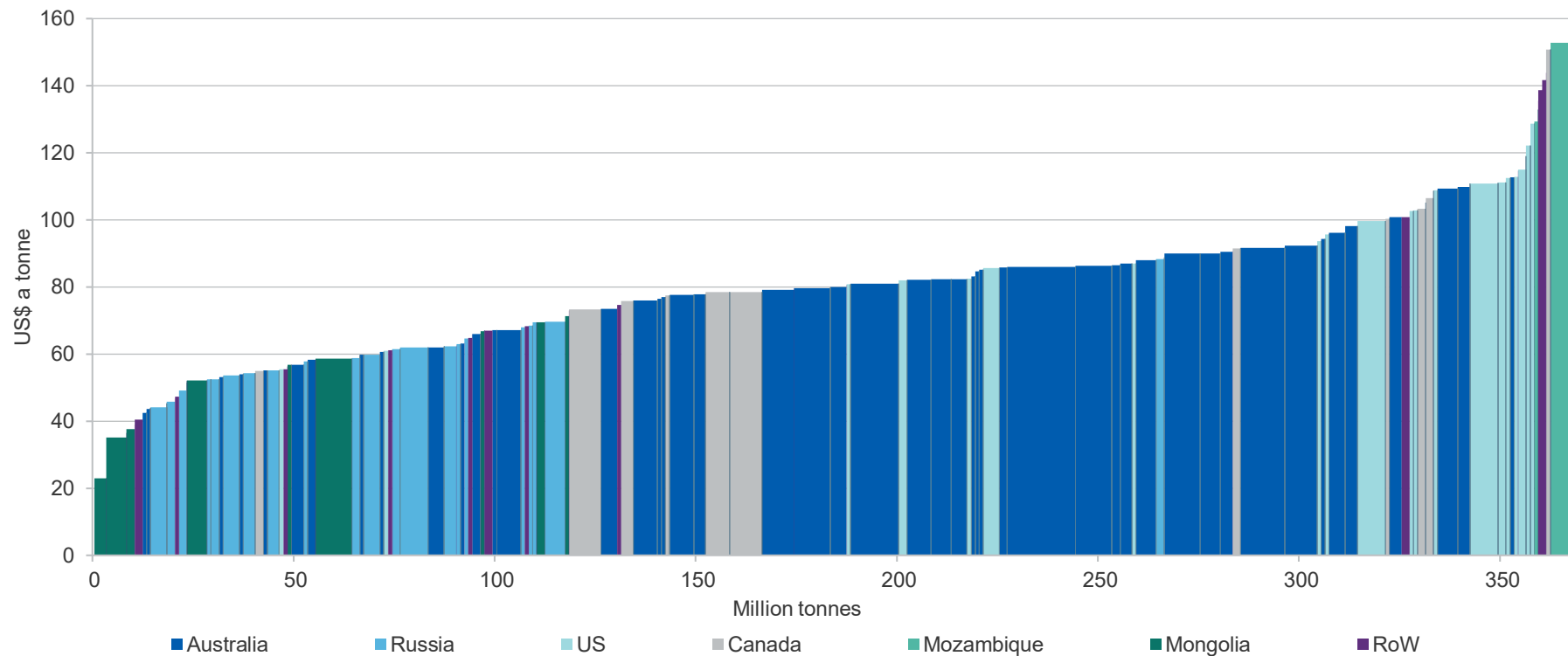
Japanese and South Korean imports are picking up faster

An accelerating economic recovery and successful containment of the COVID-19 outbreak in Japan has provided a solid basis for a rebound in Japanese steelmaking. Manufacturing conditions and consumer goods sales are also rising, but risks remain: most notably, the semiconductor shortage, which risks creating severe difficulties for the manufacturing sector in Japan. Subject to this risk, it is expected that steelmaking will

grow solidly in 2022 after a strong 2021, leading to a rise in Japanese metallurgical coal imports from 42 million tonnes in 2020 to 51 million tonnes by 2023.

South Korea, where steelmaking was relatively less affected by the COVID-19 pandemic, has also largely recovered, with imports expected to edge up slightly to 36 million tonnes by 2023.

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



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

Source: AME Group (2021); Department of Industry, Science, Energy and Resources (2021)

5.4 World exports

US producers are slowly responding to favourable price movements

US supply has been largely stagnant through much of 2021, with some mines affected by labour shortages and disputes (Figure 5.3). This is despite huge growth in prices brought about by strong global steel demand and informal import restrictions imposed by China on Australia, which have led Chinese steelmakers to seek coal elsewhere.

There are prospects for some belated supply responses to the conditions of recent months. A labour strike at Peabody's Shoal Creek mine in the US is ongoing at the time of writing, but resolution would likely bring 2 million tonnes per annum of metallurgical coal supply back to the market. Ben's Creek Group, which owns the closed-down HVA/HVB project in West Virginia, has announced that the mine will restart before the end of 2021, producing around 450,000 tonnes annually by the mid-2020s.

US supply remains subject to high production costs and high transport costs to Asia. The recent surge of prices should support strong profitability for firms able to grow their output, though there are few signs of significant growth thus far (Figure 5.4).

Russia's exports are recovering, supported by new infrastructure

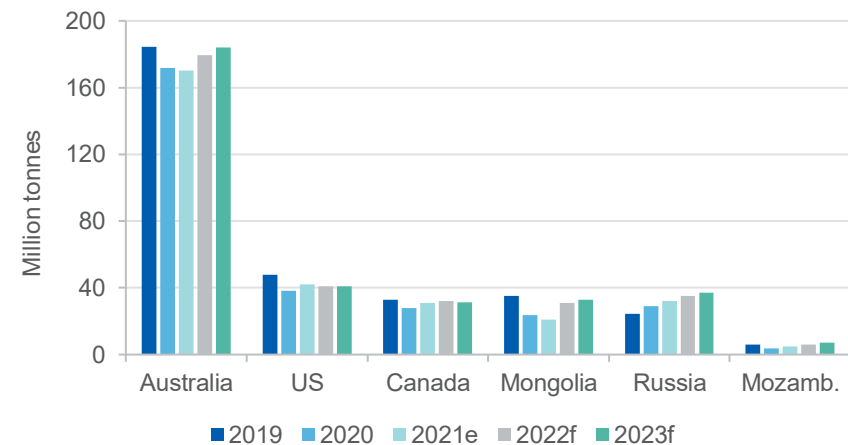
Russian exports edged off slightly in the September quarter, affected by longwall relocations and persistent bottlenecks and rail capacity constraints in Siberia. A large quantity of rail capacity is currently under review or under development, with significant new capacity expected to come online between 2022 and 2024. A new proposal by A-Property for a private rail line to Russia's east coast would further supplement existing rail facilities, though the Russian Government has yet to approve it.

With maintenance largely completed and infrastructure bottlenecks set to ease, Russian exports are expected to recover from a 2020 low of 30 million tonnes to reach 37 million tonnes by 2023 (Figure 5.4). Russian coal is highly suited to markets in northern Asia, being cheap to produce and unusually low in sulphur — a distinct benefit in markets where pollution laws are becoming more stringent.

Mongolia's exports are rising, supported by Chinese demand

Mongolian exports have partially recovered from a sharp fall during 2020, when trade was disrupted by Chinese efforts to contain the COVID-19 pandemic. Exports are expected to increase over the outlook period, from 24 million tonnes in 2020 to 33 million tonnes by 2023. These exports should help to ease pressure in the Chinese domestic market, potentially reducing broader pressure on global seaborne trade in the process. However, some risks remain the form of China's zero-COVID policy. Exports should also be supported by the completion of a key railway connecting mines in Mongolia with buyers in northern China.

Figure 5.4: Metallurgical coal exports



Notes: e estimate f forecast

Source: IHS (2021); Department of Industry, Science, Energy and Resources (2021)

Exports from Canada are set to rise as a new mine ramps up

Canadian metallurgical coal exports are expected to lift slightly in 2022, supported by the restart of Canada Coal's Grand Cache mine, which has historically produced around 2 million tonnes of coal each year. The mine was closed down in 2020, following the outbreak of the COVID-19 pandemic, and while restart may take some time given the eighteen month

period of care and maintenance, it is expected to occur within the outlook period, with most of the production going to the Chinese market.

The return of production at Grand Cache, and generally strong conditions for Canadian exporters, are expected to see exports lift from 28 million tonnes in 2020 to 32 million tonnes by 2023 (Figure 5.4).

Mozambique's exports will take time to recover

Mozambique's exports fell sharply to 4 million tonnes in 2020, as low prices severely affected the country's relatively high cost producers.

Overall exports are forecast to recover to 5 million tonnes in 2021 and to 7 million tonnes by the end of the outlook period, facilitated by rising output from Vale's Moatize mine, where work has finished on a preparation plant upgrade, and by upgrades to the Nacala logistics corridor rail line and port. Higher output at the Moatize site may be temporarily affected by seasonal heavy rainfall, but growth to at least 8 million tonnes of metallurgical coal (annually) is expected over the longer term.

Over the longer term, Mozambique could become a significantly larger exporter of metallurgical coal to Asia.

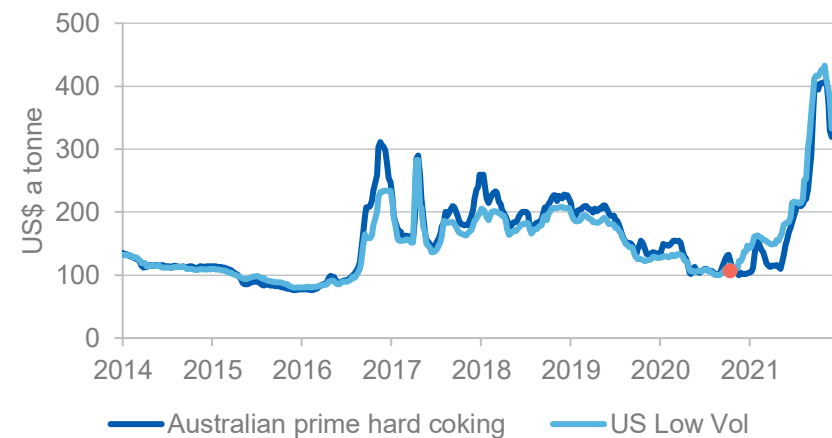
5.5 Prices

Metallurgical coal prices are expected to ease gradually

After surging to historical highs in September, metallurgical coal prices levelled out in October and November (Figure 5.5). Cuts in crude steel production in China did not lead to any easing in prices, but may have curbed further upward momentum. Prices may also have been held in check by some Chinese steel mills to reducing output in order to curb energy use in the face of thermal coal shortages. However, shortages and brownouts in China may also have led to some switching, with low-grade metallurgical coal redirected into thermal coal supplies in order to curb power shortages. Daily steel production and capacity utilisation fell in China in October, and this is expected to continue until the end of the Winter Olympics, creating an additional downward pull on metallurgical coal prices into early 2022.

Some easing in prices is expected during 2022. However, supply is expected to remain tight, with strong steel prices encouraging global production to rise, even as China constrains its output. However, gradual gains in Australian supply, and the withdrawal of remaining global stimulus measures, should help markets to balance, with prices forecast to fall in 2022 and 2023. Informal import restrictions imposed by China on Australia coal could keep prices 'stickier', preventing downward movement and adding to freight costs, forcing global supply chains to continue to adapt.

Figure 5.5: Metallurgical coal prices – Australian Prime Hard vs US Low Vol, FOB



Source: IHS (2021). Low vol = low volatile coking coal. Orange marker indicates approximate timing of informal import restrictions from China.

As supply from Australia and other exporters gradually picks up, prices are expected to ease back from about US\$230 a tonne in 2021 to a still-strong US\$160 a tonne by 2023 (Figure 5.7). Prices could shift higher in the event of severe weather disruptions in Queensland, which often occur in the autumn. Conversely, changes in Chinese steel policy or COVID-related economic disruptions could pull prices down. The worsening shortage of semiconductors could disrupt supply chains, but is more likely to affect steel demand, presenting a downside risk to prices on balance.

5.6 Australia

Metallurgical coal export earnings are on a strong trend

Slower throughput from Queensland ports in September has added to recent price pressures. However, the slowdown does not appear to have been driven by any structural issues, and appears to have reversed in November.

BHP output slowed sharply (by around 25%) over the September quarter. This largely reflected the impact of maintenance at the Peak Downs and Goonyella sites, and a longwall move at the Broadmeadow mine. A recovery in production is expected to have begun in the December quarter, with output expected to fully recover in the first half of 2022.

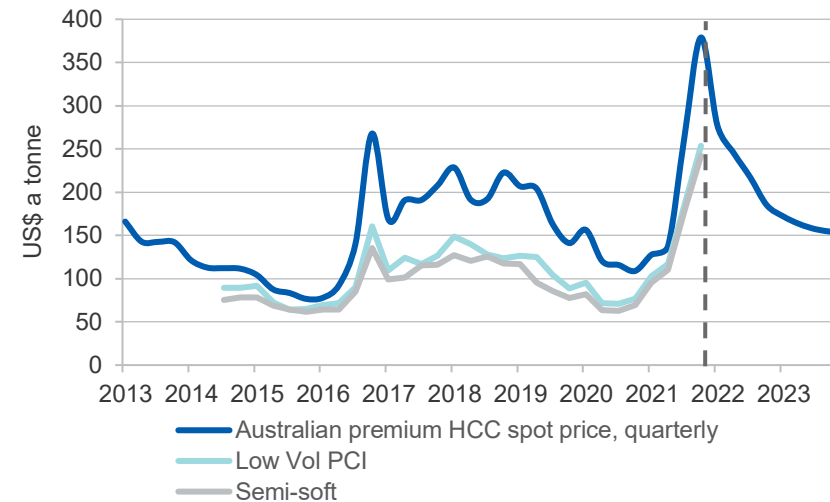
Anglo's Grosvenor mine, which shut down in 2020, is moving closer to reopening. Development has begun at the site, and the final stages of the approval process are now underway, with full commercial operation expected to commence within a few months.

Some projects including Dendrobium, and Appin are planning longwall moves late in 2021 or early in 2022, which may constrain output marginally, though overall production guidance remains relatively solid.

Ownership arrangements of Australian coal mines have shifted in recent months. Stanmore Coal, which is 73% owned by Golden Energy (a Singaporean company) is set to acquire BHP's share in two coking coal mines (at a cost of just over US\$1.2 billion). The acquisition of controlling shares in the Poitrel and South Walker Creek mines will make Stanmore a significant investor in Australian coal assets, while BHP continues to transition out of the domestic coal sector.

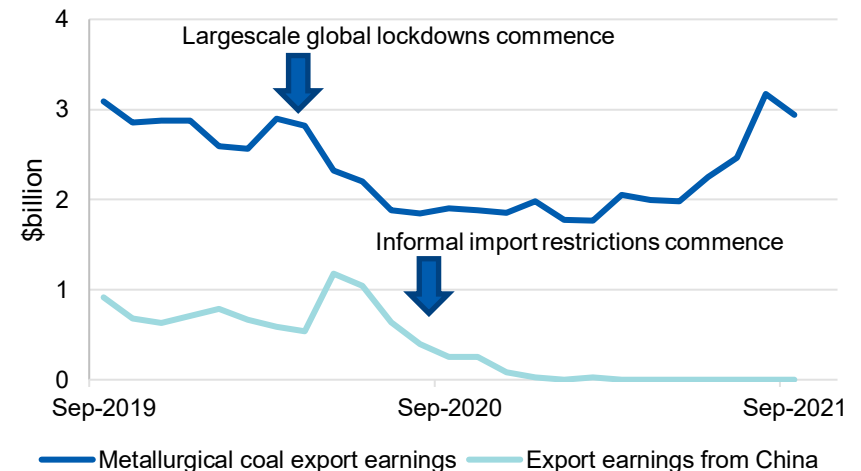
With prices peaking and supply chains now fully adapted to Chinese informal import restrictions, export earnings are well above pre-COVID levels (Figures 5.6 and 5.7), despite some constraint on volumes. Higher demand from India is expected to support Australian exports over the outlook period, with buyers in Japan, South Korea and Taiwan also expressing interest in increased supply.

Figure 5.6: Australian metallurgical coal spot price, quarterly



Source: Platts (2021); Department of Industry, Science, Energy and Resources (2021)

Figure 5.7: Australia's metallurgical coal export values, monthly



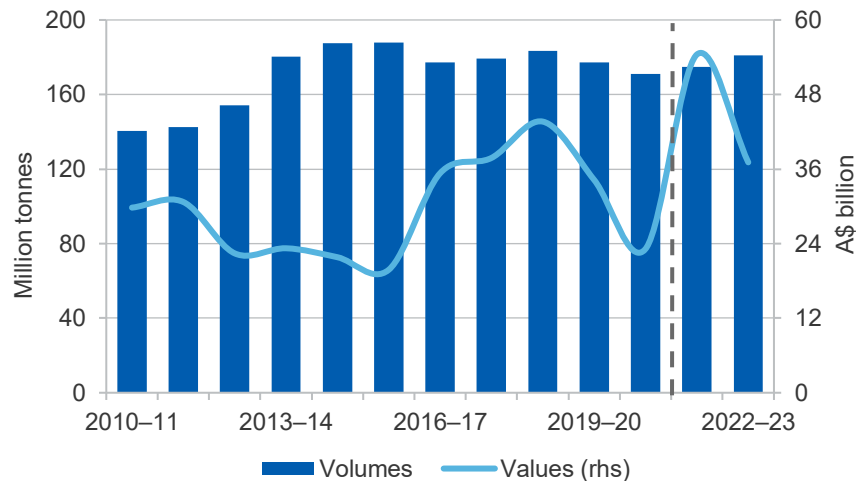
Source: ABS (2021) International Trade, Australia 5454.0

Metallurgical coal export earnings were \$23 billion in 2020–21 (Figure 5.8), with the sector affected by the COVID-19 pandemic and, to a lesser extent, by China’s informal import restrictions. Prices are set to deliver a large windfall to metallurgical coal producers in 2021–22, with export values forecast to rise to over \$50 billion, a new record level. An easing to a still-high \$37 billion is expected in 2022–23. Export volumes are expected to grow modestly over the outlook period, driven by a ramp-up at Grosvenor and the completion of maintenance at several BHP mines.

Coal exploration expenditure has declined

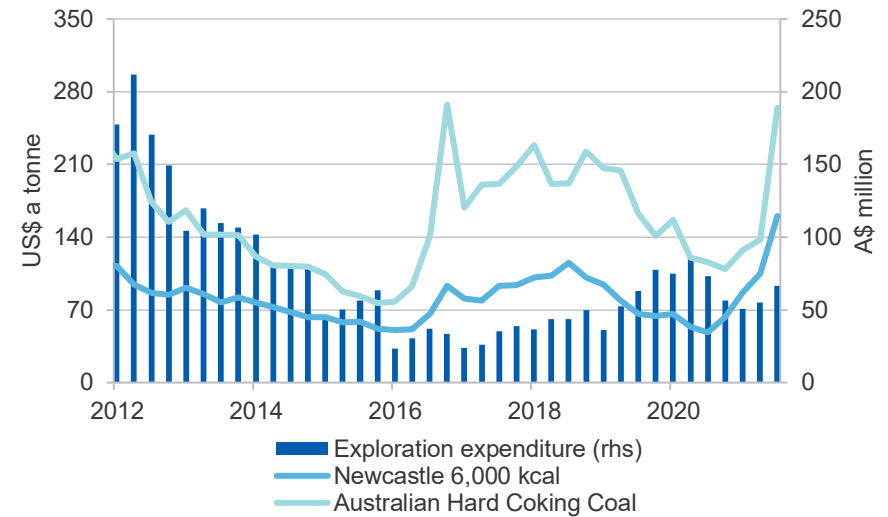
Australia’s coal exploration expenditure increased to \$66 million in the September quarter, but was still down by 9% from the level recorded in September 2020. Prices have risen markedly for Australian coal in recent months, but thermal coal in particular remains subject to significant policy and financial uncertainty. Price increases may improve rates of exploration over coming quarters, most notably for metallurgical coal (Figure 5.9).

Figure 5.8: Australia’s metallurgical coal exports



Source: ABS (2021) International Trade, Australia 5454.0; Department of Industry, Science, Energy and Resources (2021)

Figure 5.9: Australian coal exploration expenditure and prices



Source: ABS (2021); IHS (2021); Platts (2021)

Revisions to the outlook for Australian metallurgical coal exports

Australia’s forecast metallurgical coal export earnings have been revised up noticeably (by over \$15 billion in 2021-22) due to recent sharp price gains. Volume forecasts remain largely unchanged from the September 2021 *Resources and Energy Quarterly*.

Table 5.1: World trade in metallurgical coal

	Unit	2020	2021 ^s	2022 ^f	2023 ^f	Annual percentage change		
						2021 ^s	2022 ^f	2023 ^f
World trade	Mt	309	320	334	344	3.7	4.4	2.8
Metallurgical coal imports								
China	Mt	73	55	62	65	-24.2	12.7	4.8
India	Mt	63	70	68	70	10.9	-2.9	2.9
Japan	Mt	42	48	50	51	13.5	4.2	2.0
European Union 28	Mt	34	35	34	32	4.1	-3.5	-3.9
South Korea	Mt	35	36	36	36	3.4	-1.4	0.0
Metallurgical coal exports								
Australia	Mt	172	170	179	184	-0.9	5.3	2.6
United States	Mt	38	42	41	41	10.5	-2.4	0.0
Canada	Mt	33	31	32	32	-6.1	3.2	-1.6
Russia	Mt	30	32	35	37	6.7	9.4	5.7
Mongolia	Mt	26	21	31	33	-19.2	47.6	6.5
Mozambique	Mt	4	5	6	7	25.0	20.0	16.7

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

Source: IEA (2021) Coal Information; IHS (2021); Department of Industry, Science, Energy and Resources (2021)

Table 5.2: Metallurgical coal outlook

World	Unit	2020	2021 ^s	2022 ^f	2023 ^f	Annual percentage change		
						2021 ^s	2022 ^f	2023 ^f
Contract prices ^e								
– nominal	US\$/t	125	197	238	164	57.3	21.0	-31.0
– real ^d	US\$/t	130	197	230	154	51.7	16.9	-32.8
Spot prices ^g								
– nominal	US\$/t	125	227	222	162	81.3	-2.4	-27.2
– real ^d	US\$/t	130	227	214	152	74.9	-5.7	-29.1
Australia	Unit	2019–20	2020–21	2021–22 ^f	2022–23 ^f	2020–21	2021–22 ^f	2022–23 ^f
Production	Mt	183	170	181	186	-6.8	6.3	3.0
Export volume	Mt	177	171	175	181	-3.4	2.2	3.4
– nominal value	A\$m	34,245	23,170	54,441	37,083	-32.3	135.0	-31.9
– real value ⁱ	A\$m	35,643	23,731	54,441	36,299	-33.4	129.4	-33.3

Notes: **d** In 2021 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. **s** Estimate.
Source: ABS (2021) International Trade in Goods and Services, Australia, 5368.0; Department of Industry, Innovation and Science (2021); Platts (2021)