

Overview

Australia's mining sector



Contributes to around **10% of GDP**

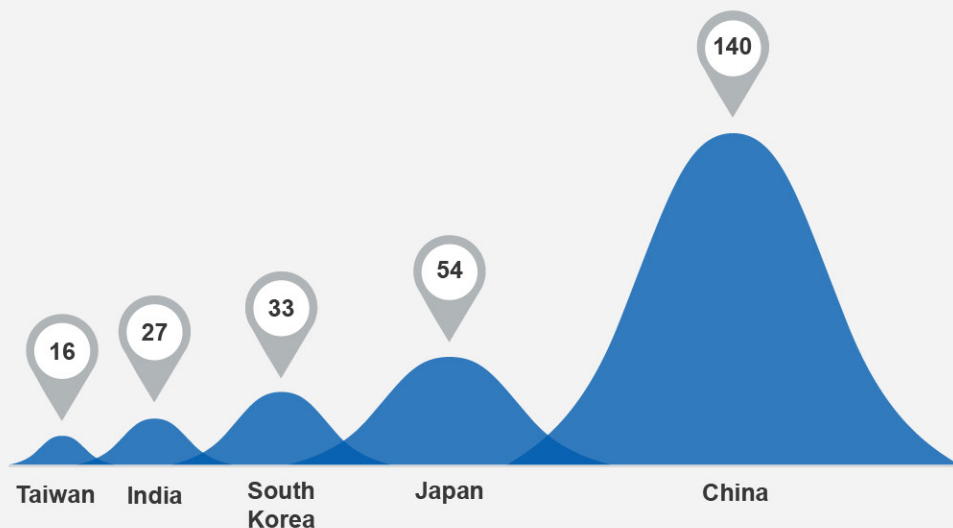


Over **two-thirds** of Australia's total goods and services exports

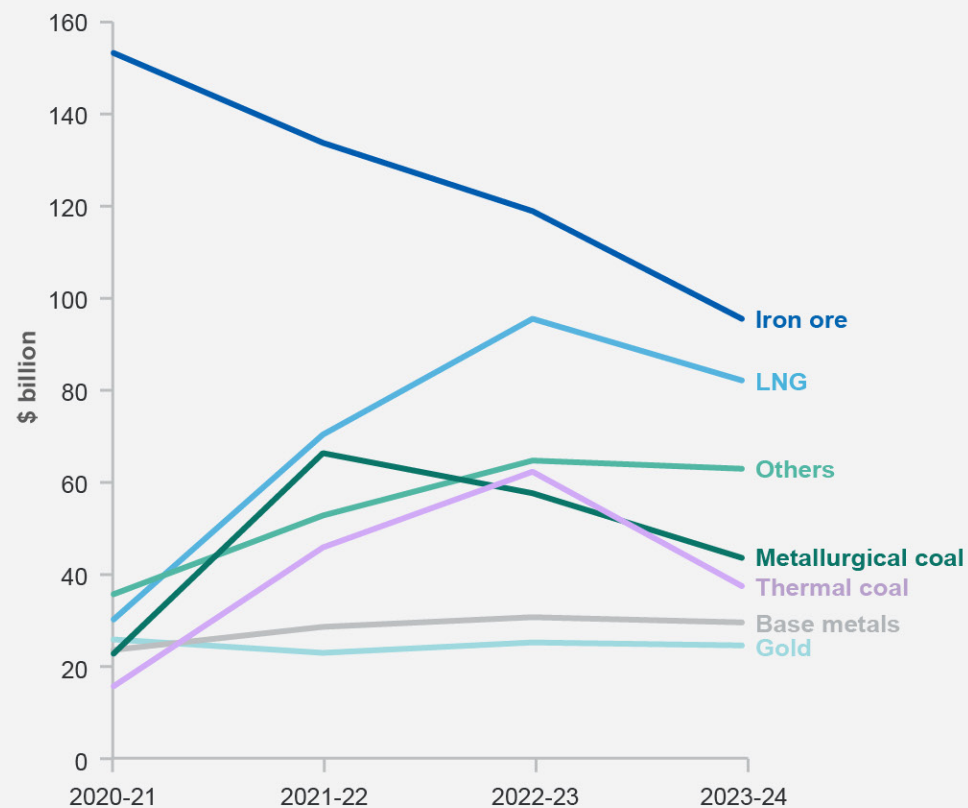


Directly employs **more than a quarter of a million people**

Major markets for Australia's resources and energy exports in 2021-22, A\$billion



Australia's resources and energy exports



1.1 Summary

- Energy prices remain elevated, as the fallout from the Russian invasion of Ukraine exacerbates existing energy shortages. Energy prices (other than gas) will likely fall back in 2023 and 2024, as gains in world supply combine with soft demand.
- High energy prices and a weak Australian dollar against the US dollar are driving a surge in export earnings. After a record \$422 billion in 2021–22, resource and energy export earnings are expected to increase to \$450 billion in 2022–23, before falling back to \$375 billion in 2023–24.
- Metals central to the global energy transition (copper, nickel, lithium) are set to earn \$33 billion in 2022–23, double what they earned in 2020–21.

1.2 Export values

Australia's export values are forecast at \$450 billion in 2022–23

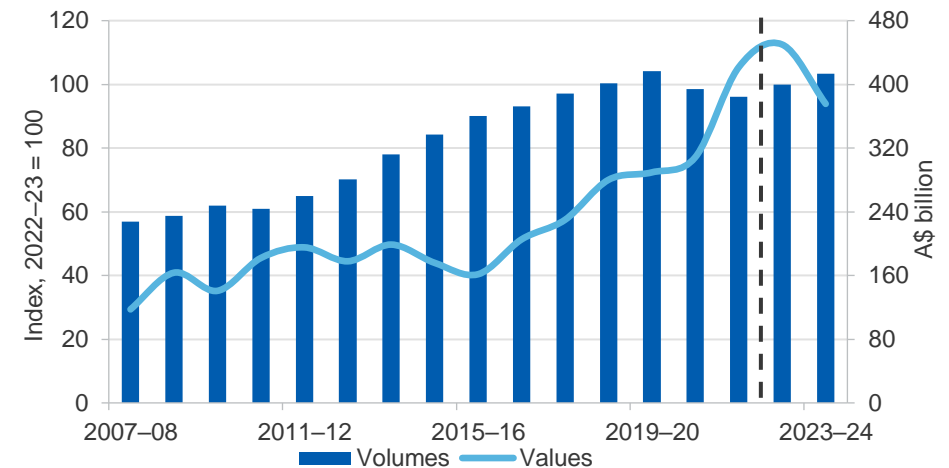
In the September quarter 2022, the Office of the Chief Economist's (OCE) Resources and Energy Export Values Index rose 25% from the September quarter 2021; a tiny rise in volumes added to a 24% gain in prices.

After a record \$422 billion in resource and energy exports in 2021–22, this financial year is likely to be even stronger, at \$450 billion (Figure 1.1). Exports are forecast to fall to \$375 billion in 2023–24, as the loss of some Russian fossil fuels and base metals from world markets is filled by other suppliers, cutting prices. Price, rather than volume-changes are forecast to (continue to) drive most of the move in future earnings (Figure 1.2).

Energy shortages and the lower exchange rate are boosting earnings

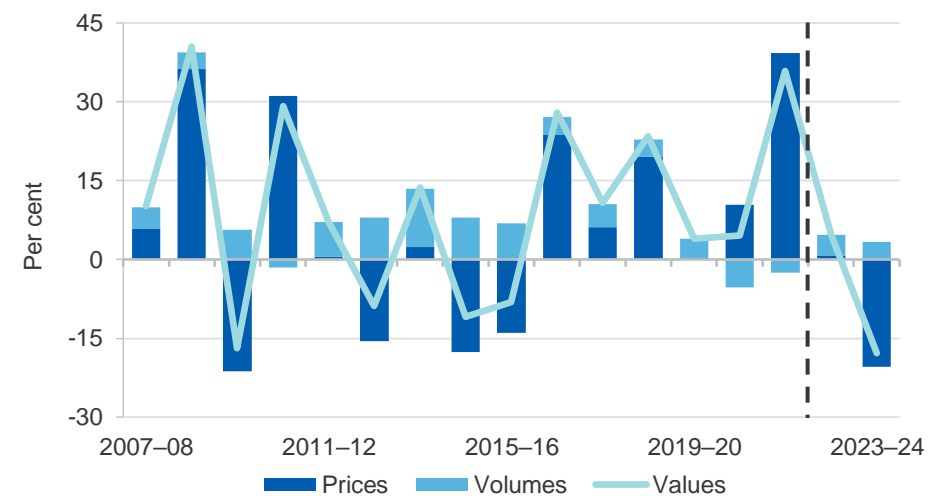
In Australian dollar terms, the OCE's Resources and Energy Commodity Price Index fell by 9% (preliminary estimate) in the September quarter 2022, but was up 19% on a year ago. In US dollar terms, the index fell by 12% in the quarter, but was 12% higher than a year ago. The index of prices for resource commodity exports (Australian dollar terms) fell by 24% in the year to the September quarter 2022. Energy commodity prices rose by 91% (Figure 1.3) from the September quarter 2021, as the looming loss of some Russian supply intensified existing market shortages.

Figure 1.1: Australia's resource and energy export values/volumes



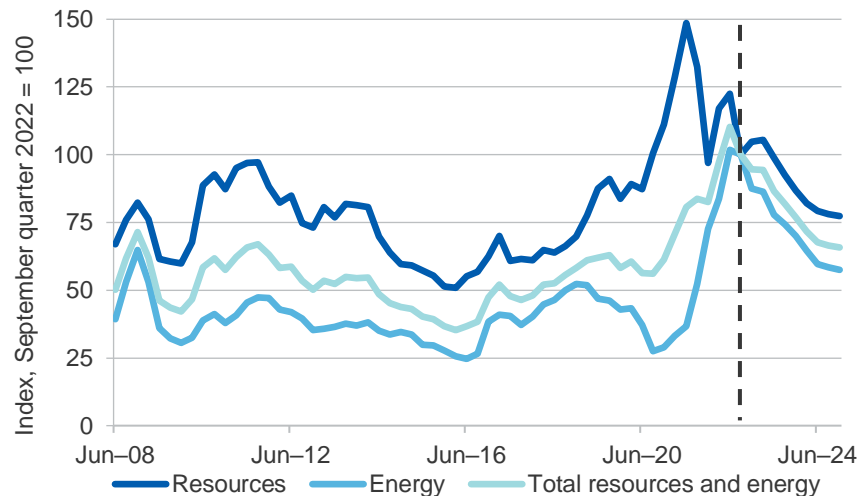
Source: ABS (2022) International Trade in Goods and Services, 5368.0; Department of Industry, Science and Resources (2022)

Figure 1.2: Annual growth in Australia's resources and energy export values, contributions from prices and volumes



Source: ABS (2022) International Trade in Goods and Services, 5368.0; Department of Industry, Science and Resources (2022)

Figure 1.3: Resource and energy export prices, AUD terms



Notes: The export price index is based on Australian dollar export unit values (EUVs, export values divided by volumes); the export price index is a Fisher price Index, which weights each commodity's EUV by its share of total export values.

Source: ABS (2022) International Trade in Goods and Services, 5368.0; Department of Industry, Science and Resources (2022)

1.3 Macroeconomic, policy, trade and other factors

Growth in world economic activity has slowed considerably in recent months. A multitude of factors have hurt growth: the ongoing fallout from Russia's invasion of Ukraine and new COVID outbreaks have damaged confidence and pushed food/energy prices higher, and macroeconomic policy has become much less stimulatory in the major economies.

China's economy is being badly affected by COVID-19 lockdowns, a weakening property market, and drought conditions in southern China. As a result, officials have increased policy support, resulting in an easing of financial conditions — in contrast to most of the rest of the world. In mid-August, China's central bank cut the policy rate by 10 basis points to try to support economic activity. Further measures to support growth are likely ahead of the Chinese Communist Party's 20th National Congress in mid October. These would help support resource/energy commodity prices.

A severe drought in Europe has exacerbated the adverse impact of high energy prices on European economic growth. Numerous metal refineries and smelters have ceased operating because of high power prices, adding to market shortages. Very low water levels on key European rivers have inhibited hydro and French nuclear power generation, and made it difficult to transport diesel, coal and other commodities about the continent.

Since the June 2022 REQ, the US Federal Reserve has continued to raise official interest rates, in an effort to contain US inflation. With US growth slowing, and inflation likely peaking in H2 2022, bond markets now suggest the bulk of the US Federal Reserve's tightening is likely done.

In July, the IMF (further) lowered its forecast of world economic growth in 2022 and 2023. The IMF forecasts world GDP growth of 3.2% in 2022 and 2.9% in 2023, with Chinese growth of 3.3% in 2022 and 4.6% in 2023.

As the Northern Hemisphere winter looms, some nations are scrambling to fill the supply gap for energy (for heating) left by bans on Russian energy exports. Thermal coal usage is likely to lift in Western nations unable to procure the necessary LNG/gas. Producers of metallurgical coal are likely to continue to divert some supply to thermal coal users if the current price spread persists. Global resource and energy commodity trade is re-organising, as Western sanctions imposed on Russia ramp up further. China and India are taking heavily discounted cargoes shunned by the West. As a result, China and India are now buying fewer cargoes of non-Russian energy commodities. If adopted, a plan to cap the price of Russian oil exports should lower world oil prices: an effective cap would diminish the likelihood of some Russian oil production being stranded. Russian coal exports will likely fall, keeping coal prices higher than they would otherwise have been. Stronger US LNG exports over the next few years will only partly compensate for lost Russian gas/LNG exports.

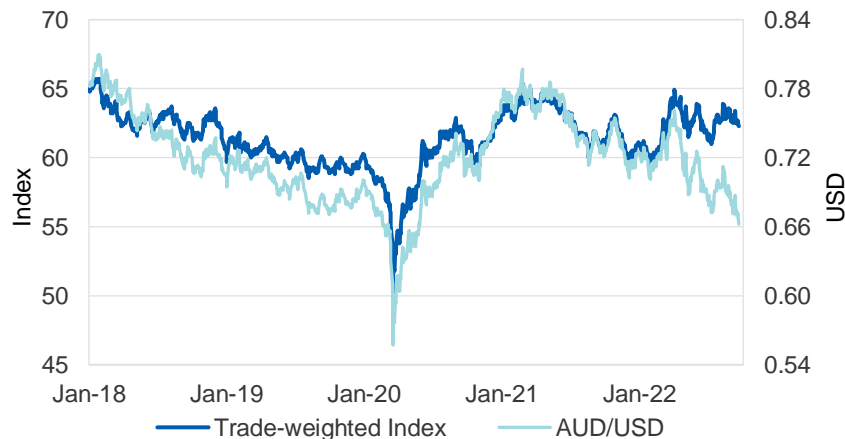
Over the forecast period, Australian coal and LNG exports should achieve relatively high prices, as the stranding of some Russian coal and gas production sees global energy shortages persist. Against a tepid demand backdrop, as global coal and gas/LNG supply lifts, price falls are forecast.

The transition to low emission technologies will add significantly to the demand for non-ferrous exports over the outlook period. Notably, lithium exports are now forecast to rise by over 180% to \$13.8 billion in 2022–23 but then drop to \$12.9 billion in 2023–24, as prices ease. Lithium exports in 2021–22 were almost \$5 billion, up from \$1.1 billion in 2020–21.

EV and EV battery manufacturing is currently dominated by China (see Figure 15.8 Lithium chapter). With many nations looking to reduce their reliance on Chinese (and Russian) supply chains, Australia’s resource exports are likely to become more diversified over the long term.

Resource and energy export earnings are forecast to reach \$450 billion in 2022–23. The weak AUD/USD (actual and forecast) will play a significant part in this surge. With commodity prices set in US dollars, Australia is set to benefit noticeably from the surge in the US dollar since March (Figure 1.4). Earnings are forecast to fall back to \$375 billion in 2023–24 — still the 3rd highest ever. Higher global interest rates — in response to high inflation — pose a downside risk to global economic activity and hence to mineral exports. Heightened geopolitical tensions also pose a threat to growth. US mid-term elections in November will add to uncertainty in financial markets.

Figure 1.4: Australian dollar, TWI vs AUD/USD



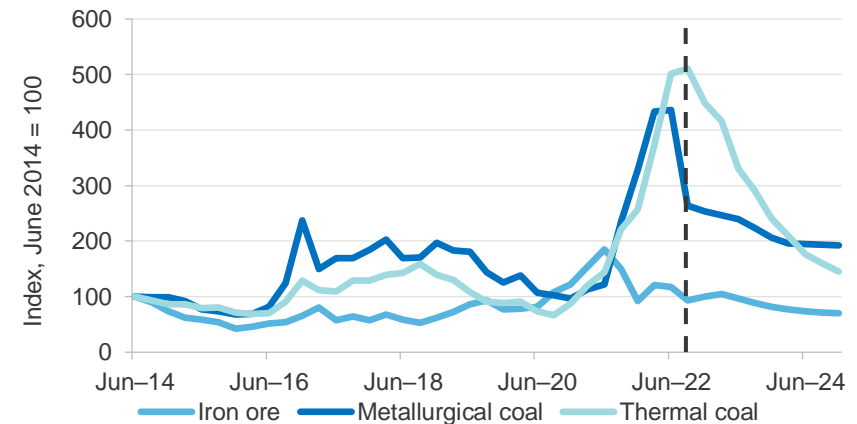
Source: Reserve Bank of Australia (2022)

1.4 Prices

Since the June 2022 *Resources and Energy Quarterly*, the iron ore price has edged lower, but remains well above the November 2021 cycle low. Weak Chinese demand has added to the impact of improved supply in major exporting nations (Figure 1.5). Prices are likely to ease further over the outlook period, as world supply gains faster than demand.

Australian thermal coal prices remain extremely high. European nations are scrambling to build stockpiles ahead of the Northern Hemisphere winter, as sanctions on Russian exports take effect. Some Russian coal production will likely be stranded from export markets. Bad weather in Australia and COVID-19 workforce impacts threaten global supply (Figure 1.5). Prices are expected to ease over the outlook period, as trade flows re-organise and export supply lifts. Metallurgical coal prices have declined as steel markets weaken; some producers are diverting some of their production to thermal coal markets, which should keep metallurgical coal prices higher than they might otherwise have been. Prices are likely to drift down but average relatively high levels over the next year, as more Russian supply becomes stranded.

Figure 1.5: Bulk commodity prices

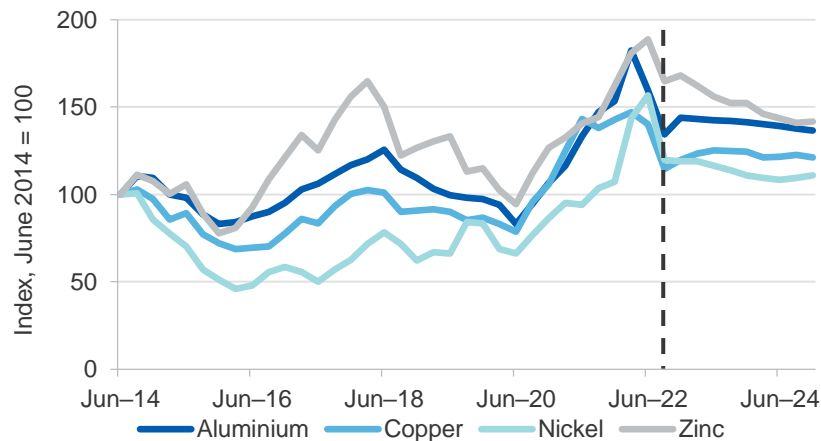


Notes: Prices are in US dollars, and are the international benchmark prices
Source: Bloomberg (2022); Department of Industry, Science and Resources (2022)

Oil prices recently surged to their highest level in a decade, as the market reacts to looming sanctions on exports of Russian oil/oil products by the EU. OPEC+ has lifted supply modestly, but most of the group’s members have limited scope to raise supply noticeably. The oil price is likely to weaken, as a reorganisation of global supply combines with a slowing global demand. Contract LNG prices are forecast to ease from high levels, as oil prices drift down. Spot LNG is likely to be very high for some time, as the world struggles to replace reduced Russian gas/LNG exports.

The price of gold has fallen to under US\$1,700 an ounce, hurt by US dollar strength and rising bond yields. As geopolitical tensions flare, safe haven demand appears to have prevented sharper falls. The price is likely to fall modestly in the next two years, as the withdrawal of widespread central bank stimulus supports real bond yields. Base metal prices have stopped falling, helped by the prospect of stronger demand from China and the likely loss of some Russian supply (especially nickel and aluminium) from world markets (Figure 1.6). Inventories generally remain low. Prices should be flat to modestly weaker over the outlook period, as supply slowly catches up with demand and stockpiles stop falling.

Figure 1.6: Base metal prices



Notes: Prices are in US dollars, and are the international benchmark prices
 Source: Bloomberg (2021); Department of Industry, Science and Resources (2022)

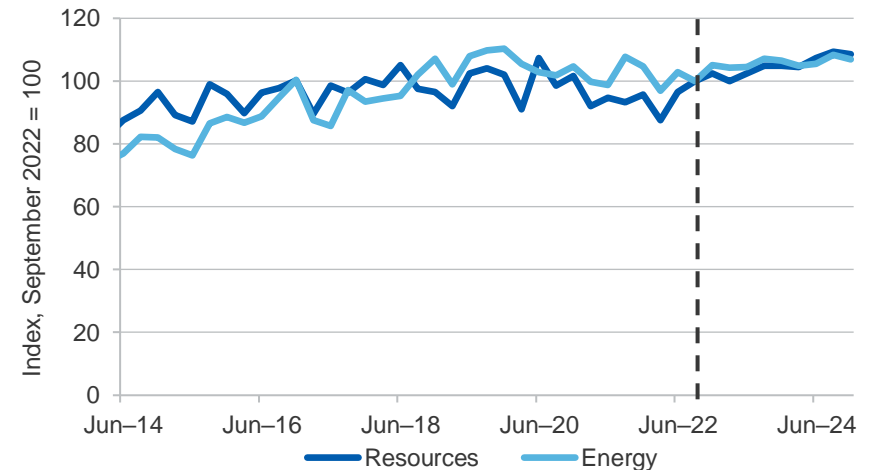
1.5 Export volumes

September quarter export volumes rose, driven by resource exports

The OCE’s Resources and Energy Export Volumes Index (preliminary estimate) was unchanged in the September quarter 2022 from the June quarter, and was 1% lower than a year before. Within this total, resource commodity volumes rose by 7% in the year to the September quarter 2022, while energy commodity volumes fell 7% (Figure 1.7). Energy exports were impacted by production problems: operational, weather and COVID-19 related workforce issues were central to these problems.

In volume terms, resource exports are likely to show further significant growth over the outlook period. GDP and industrial production will grow modestly, increasing the demand for Australia’s ferrous and non-ferrous metals. The increased production of EVs and low emission technologies will see growing demand for metals such as copper, aluminium, lithium and nickel. The volume of energy exports is forecast to show similar growth, but surging prices will cause some demand destruction.

Figure 1.7: Resource and energy export volumes



Source: Department of Industry, Science and Resources (2022)

1.6 Contribution to growth and investment

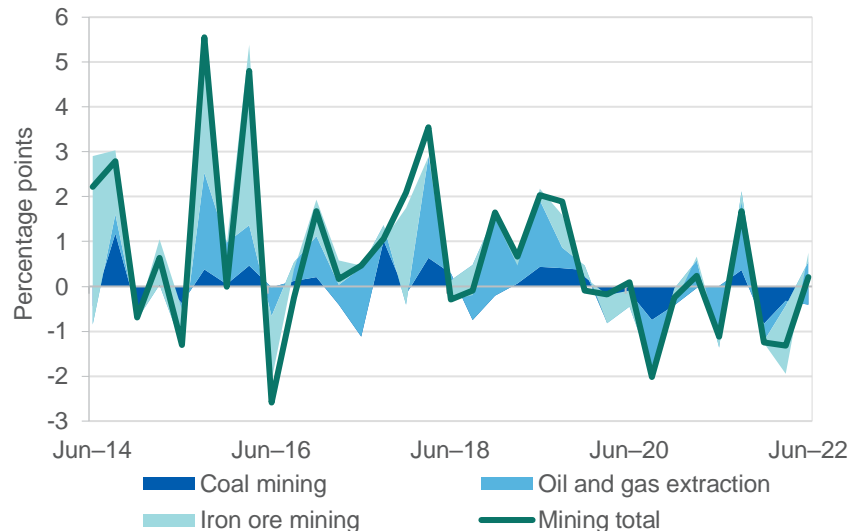
Mining industry contracted while the overall economy expanded

Australia's real Gross Domestic Product rose by 0.9% in the June quarter 2022, and was up 3.6% over the year since the June quarter 2021.

Mining value-added fell by 0.2% in the June quarter, and was down 0.7% over the previous twelve months (Figure 1.8). COVID-19-related labour shortages impacted most sectors to some extent, and coal mining was also impacted by flooding.

In the coming two years, it is likely that the resource and energy sectors will make a significant contribution to real GDP growth. Coal producers will seek to lift output and exports, in response to record high prices and margins. Non-ferrous metal production should experience healthy growth; Northern Hemisphere smelters are closing/cutting back because of high energy prices, allowing Australian producers to pick up market share.

Figure 1.8: Contribution to quarterly growth, by sector

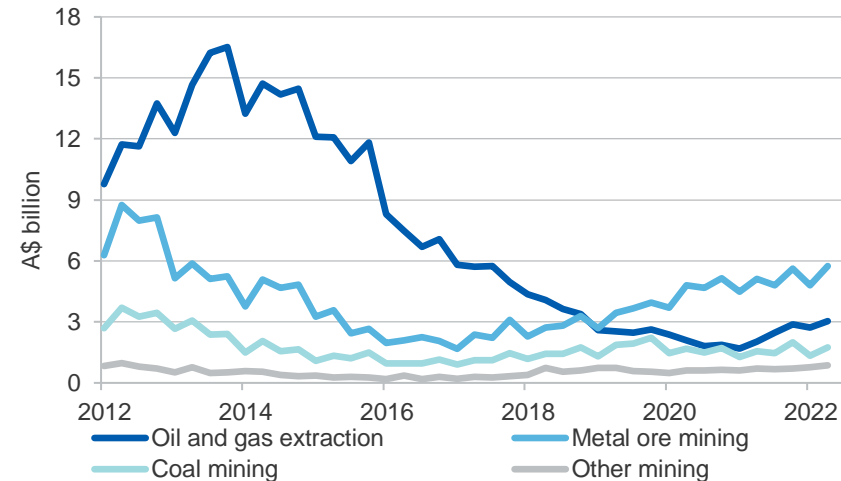


Source: ABS (2022) Australian National Accounts, 5206.0

Mining investment is picking up

The ABS Private New Capital Expenditure and Expected Expenditure survey for the June quarter 2022 shows that Australia's mining industry invested \$11.4 billion in the quarter. This was up 21% from the June quarter 2021. In quarterly terms, investment by the metal ore sector increased despite a slight softening in iron ore prices. Investment among energy commodity sectors also increased (Figure 1.9).

Figure 1.9: Mining capex by commodity, not seasonally adjusted

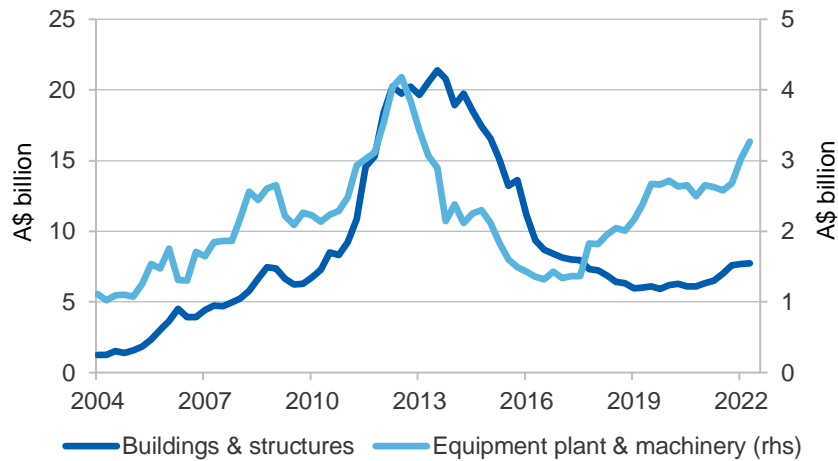


Notes: Other mining includes non-metallic mineral mining and quarrying and exploration and other mining support services; chart data is in nominal, original terms

Source: ABS (2022) Private New Capital Expenditure and Expected Expenditure, 5625.0

In the June quarter 2022, expenditure on equipment plant and machinery lifted strongly, while expenditure on buildings and structures levelled out (Figure 1.10). Spending in both categories has risen in recent quarters, and forward expectations suggest that investment in 2021–22 and 2022–23 will be slightly higher than in 2020–21 (Figure 1.11). Strong prices for gold and various minerals used in low-emissions energy generation are leading to new investment plans, including the re-opening of mines.

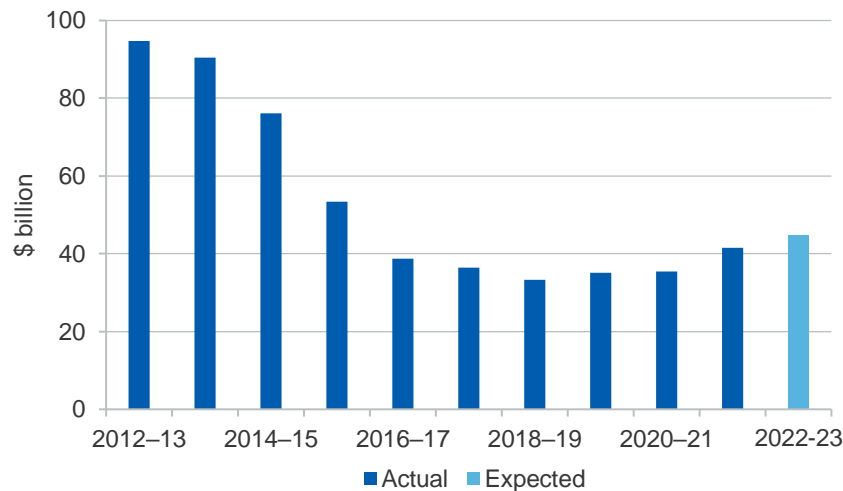
Figure 1.10: Mining industry capital expenditure by type, quarterly



Notes: Chart data is in nominal terms, seasonally adjusted.

Source: ABS (2022) Private New Capital Expenditure and Expected Expenditure, 5625.0

Figure 1.11: Mining industry capital expenditure, fiscal year

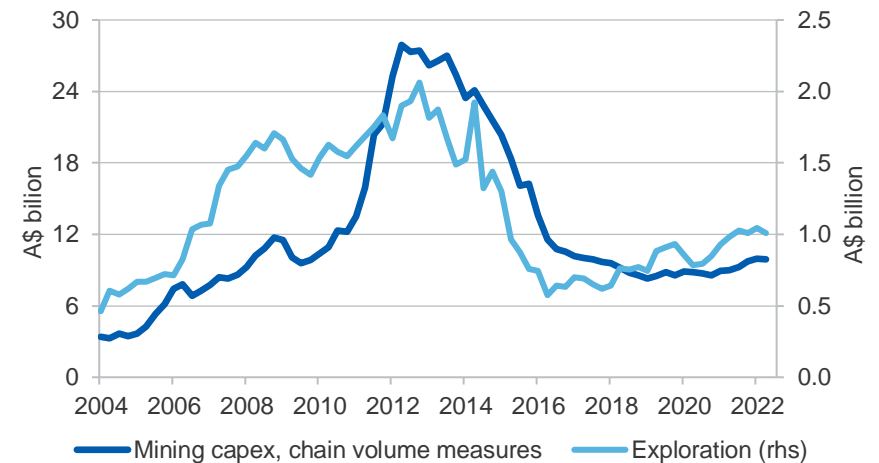


Notes: Chart data is in nominal terms

Source: ABS (2022) Private New Capital Expenditure and Expected Expenditure, 5625.0

Exploration expenditure (adjusted for inflation) edged down to \$1.0 billion in the June quarter. However, this is still significantly higher than the recent low of \$783 million in the June quarter 2020. The positive trend is consistent with growth in capital expenditure since 2018–19 (Figure 1.12). The strength appears to reflect a strong long term outlook for minerals, especially for those used in low emission technologies.

Figure 1.12: Mining capital expenditure vs exploration (real, quarterly)



Source: ABS (2022) Private Capital Expenditure Survey, Chain Volume measure, 5625.0

1.7 Revisions to the outlook

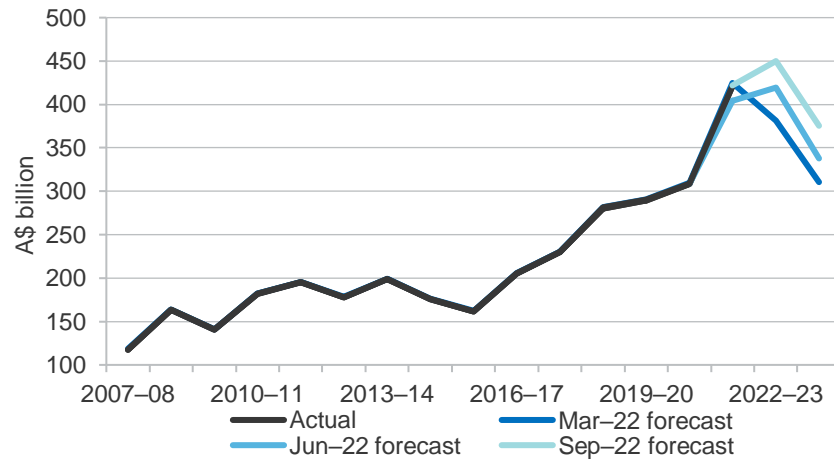
At \$450 billion, the estimate for Australia’s resources and energy exports in 2022–23 is \$31 billion higher than the forecast contained in the June quarter 2022 *Resources and Energy Quarterly*. The forecast for 2023–24 is up by \$38 billion from the June 2022 REQ (Figure 1.13).

The surge in energy prices and a weaker than expected exchange rate against the US dollar (AUD/USD) have driven the revisions. Many Western nations are having to pay substantially more for energy, on the high chance that sanctions on Russia will see some Russian production become stranded from world markets.

LNG earnings in 2022–23 and 2023–24 have been revised up by \$6 billion and \$13 billion, respectively. The revisions reflect the impact of forecast higher LNG prices. Gas/LNG shortages are causing some nations to seek thermal coal to generate power for heating for the forthcoming winter. Thermal coal earnings in 2022–23 and 2023–24 have been revised up by \$18 and \$7 billion, respectively.

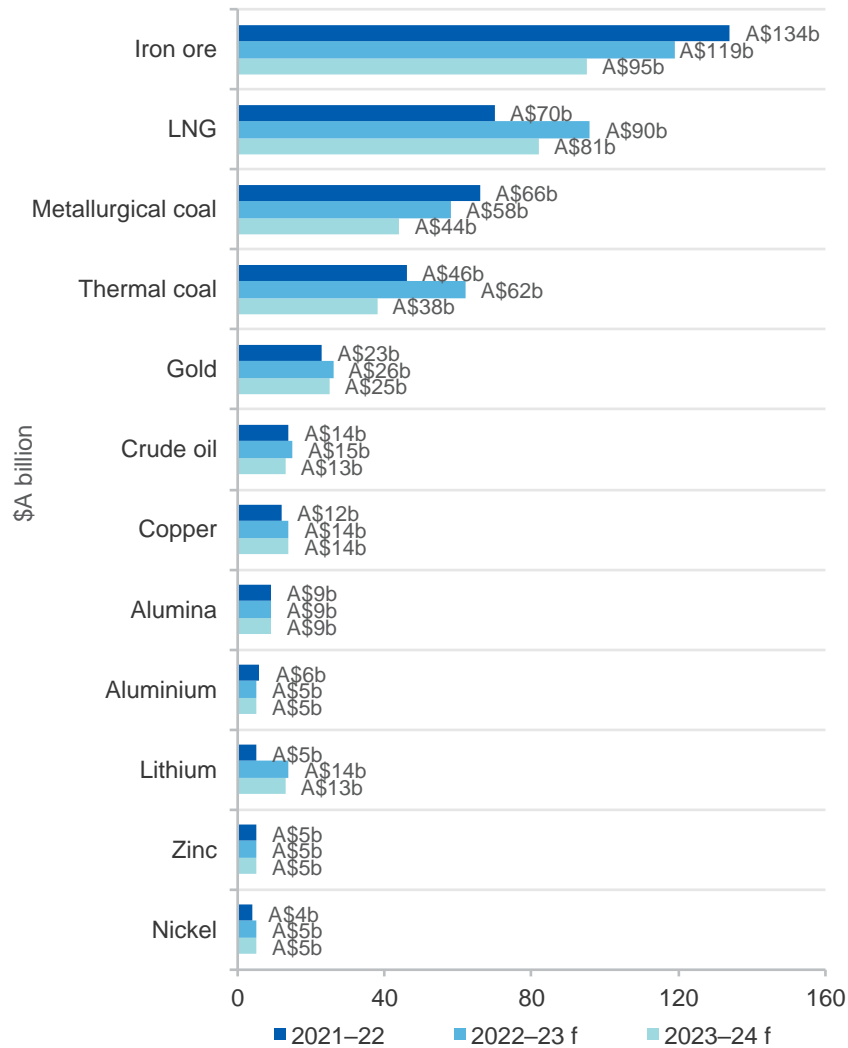
Iron ore earnings in 2023–24 have been revised up by \$10 billion. The revisions reflect the weaker AUD/USD and higher costs in iron ore mining. Chinese iron ore demand is likely to strengthen as Beijing looks to support the weak residential property sector.

Figure 1.13: Resource and energy exports, by forecast release



Source: Department of Industry, Science and Resources (2022)

Figure 1.14: Australia's major resources and energy commodity exports, nominal



Annual per cent change

	2022-23 f			2023-24 f		
	volume	EUV	value	volume	EUV	value
Iron ore	▲ 3	▼ -14	▼ -11	▲ 4	▼ -23	▼ -20
LNG	▼ -4	▲ 41	▲ 27	▲ 1	▼ -15	▼ -10
Metallurgical coal	▲ 7	▼ -19	▼ -13	▲ 3	▼ -27	▼ -24
Thermal coal	➔ 0	▲ 36	▲ 36	▲ 3	▼ -41	▼ -39
Gold	▲ 36	▼ -19	▲ 10	▲ 5	▼ -8	▼ -3
Crude oil	▼ -8	▲ 16	▲ 7	▲ 6	▼ -15	▼ -11
Copper	▲ 14	▼ -3	▲ 10	▲ 7	▼ -4	▲ 2
Alumina	▲ 3	▼ -2	➔ 0	▲ 1	➔ 0	▲ 1
Aluminium	▲ 6	▼ -13	▼ -8	➔ 0	▼ -5	▼ -6
Lithium	▲ 15	▲ 145	▲ 182	▲ 21	▼ -23	▼ -7
Zinc	▲ 15	▲ 1	▲ 17	▲ 4	▼ -14	▼ -10
Nickel	▲ 24	▼ -8	▲ 15	▲ 4	▼ -12	▼ -9

Notes: f forecast. EUV is export unit value.

Source: ABS (2022) International Trade in Goods and Services, 5368.0; Department of Industry, Science and Resources (2022)

Table 1.1: Outlook for Australia's resources and energy exports in nominal and real terms

Exports (A\$m)	2020–21	2021–22	2022–23 ^f	2023–24 ^f	Percentage change			
					2020–21	2021–22	2022–23 ^f	2023–24 ^f
Resources and energy	308,589	421,563	449,963	375,486	6.6	36.6	6.7	–16.6
– real ^b	344,850	451,046	449,963	360,274	4.9	30.8	–0.2	–19.9
Energy	81,229	202,527	231,078	181,150	–29.7	149.3	14.1	–21.6
– real ^b	90,774	216,691	231,078	173,811	–30.8	138.7	6.6	–24.8
Resources	227,360	219,037	218,885	194,336	30.7	–3.7	–0.1	–11.2
– real ^b	254,076	234,355	218,885	186,463	28.6	–7.8	–6.6	–14.8

Notes: **b** In 2022–23 Australian dollars; **f** forecast.

Source: ABS (2022) International Trade in Goods and Services, 5368.0; Department of Industry, Science and Resources (2022)

Table 1.2: Australia's resource and energy exports, selected commodities

	Unit	Prices			Unit	Export volumes			Export values, A\$b		
		2021–22	2022–23 ^f	2023–24 ^f		2021–22	2022–23 ^f	2023–24 ^f	2021–22	2022–23 ^f	2023–24 ^f
Iron ore	US\$/t	119	97	79	Mt	875	903	937	134	119	95
LNG	A\$/GJ	16.0	22.6	19.2	Mt	83	80	81	70	90	81
Metallurgical coal	US\$/t	404	283	231	Mt	162	174	180	66	58	44
Thermal Coal	US\$/t	245	309	167	Mt	197	197	203	46	62	38
Gold	US\$/oz	1,832	1,682	1,633	t	242	330	347	23	26	25
Crude oil	US\$/bbl	91	99	87	kb/d	292	267	286	14	15	13
Copper	US\$/t	9,645	8,199	8,352	kt	802	916	977	12	14	14
Alumina	US\$/t	381	345	339	kt	17,736	18,188	18,280	9.0	9.0	9.1
Aluminium	US\$/t	2,891	2,536	2,531	kt	1,369	1,449	1,443	5.7	5.3	5.0
Lithium	US\$/t	1,470	3,528	2,745	kt	2,264	2,609	3,166	4.9	13.8	12.9
Zinc	US\$/t	3,506	3,376	3,082	kt	1,249	1,442	1,500	4.5	5.3	4.7
Nickel	US\$/t	23,594	21,900	20,438	kt	157	195	202	4.4	5.1	4.6
Uranium	US\$/lb	45	54	59	t	4,933	5,840	5,855	0.6	0.8	0.9

Notes: **a** Export data covers both crude oil and condensate; **f** forecast. **Price information:** Iron ore fob (free-on-board) at 62 per cent iron content estimated netback from Western Australia to Qingdao China; Metallurgical coal premium hard coking coal fob East Coast Australia; Thermal coal fob Newcastle 6000 kc (calorific content); LNG fob Australia's export unit values; Gold LBMA PM; Alumina fob Australia; Copper LME cash; Crude oil Brent; Aluminum LME cash; Zinc LME cash; Nickel LME cash; Lithium spodumene ore.

Source: ABS (2022) International Trade in Goods and Services, Australia, Cat. No. 5368.0; LME; London Bullion Market Association; The Ux Consulting Company; US Department of Energy; Metal Bulletin; Japan Ministry of Economy, Trade and Industry; Department of Industry, Science and Resources (2022)