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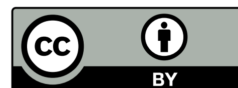

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Executive Summary

The continued fallout from the Russian invasion of Ukraine and strength of the US dollar has helped deliver an estimated record $460 billion in earnings for Australian exports of resource and energy commodities in 2022–23. But resources earnings are expected to fall over the next two years, after two years of record earnings.

Export earnings are forecast to fall to $390 billion in 2023–24 and then to $344 billion in 2024–25, as energy prices go back toward levels traded prior to the Russian invasion of Ukraine. The outlook is broadly unchanged from the March 2023 *Resources and Energy Quarterly*.

Australian energy export earnings are set to fall noticeably. LNG earnings are forecast to fall by $24 billion to $68 billion in 2023–24, as LNG prices ease from the record high levels reached in 2022. A further fall of $8 billion is forecast in 2024–25. Thermal coal exports are also forecast to drop sharply, down from $64 billion in 2022–23 to around $38 billion in 2023–24 and $30 billion in 2024–25. Exports of metals used heavily in the energy transition are expected to remain over $40 billion, having doubled since 2021–22.

Slower world economic growth and improving supply conditions are driving most commodity prices lower. Tighter monetary policy is causing a slowdown in economic growth in the major Western economies, where labour markets have been tight. Falling energy prices will take some of the pressure off central banks to keep tightening monetary policy.

The Chinese economy is slowly gathering pace with the cessation of COVID lockdowns. The savings buffer built by Chinese households during the pandemic is estimated to have been much smaller than those built in the Western economies. This suggests that the recovery will be relatively less robust than seen elsewhere, but also less likely to lead to a rise in inflation as experienced in Western economies.

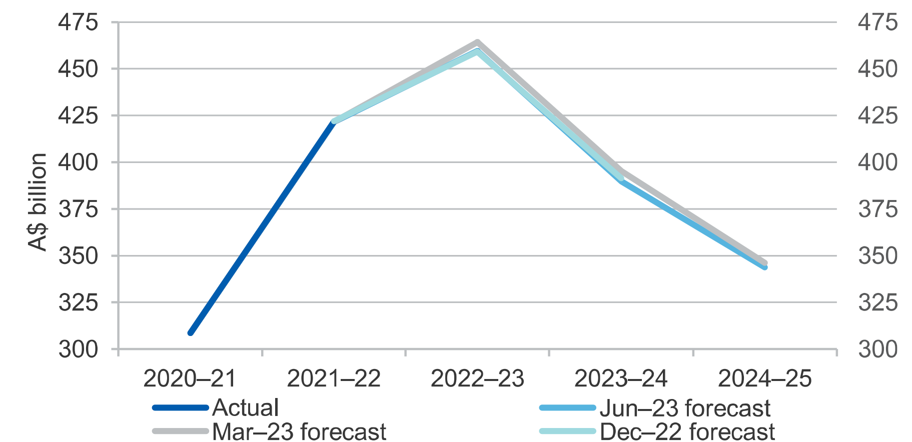
Transport and infrastructure constraints remain a huge obstacle to the full diversion of Russian energy exports to nations with no sanctions. The net result is a fall in world energy supply, as some Russian output is stranded. Energy prices are therefore likely to remain relatively high over the outlook period.

Australian thermal coal exports to China are picking up strongly but are not yet back to levels reached in 2019–20 — before trade impediments were imposed by Beijing in 2020. Chinese buying adds significant competitive pressure to the market for Australian thermal and metallurgical coal, offsetting some of the impact on prices of weaker world economic growth and/or lower energy demand.

Geopolitical tensions continue to escalate the drive for secure supply chain of metals and low emission technologies used to meet 'net zero' climate ambitions. The US Inflation Reduction Act (IRA) passed last August will influence the pace of development and location of future supply of key metals. Australia is well placed to seize the opportunities from the IRA and the broader energy transition, given our rich geological reserves, expertise at extracting minerals and track record as a reliable producer and exporter of energy and resources.

A Special Topic chapter examines some metals used in batteries that are central to the global energy transition.

Resource and energy exports, by forecast release

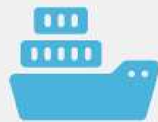


Source: Department of Industry, Science and Resources (2022-2023)

Overview

Australia’s mining sector

Contributes to around **13.6% of GDP**



Makes up more than **two-thirds** of Australia's total merchandise exports

The resources sector directly employs **more than 250,000** people

Outlook

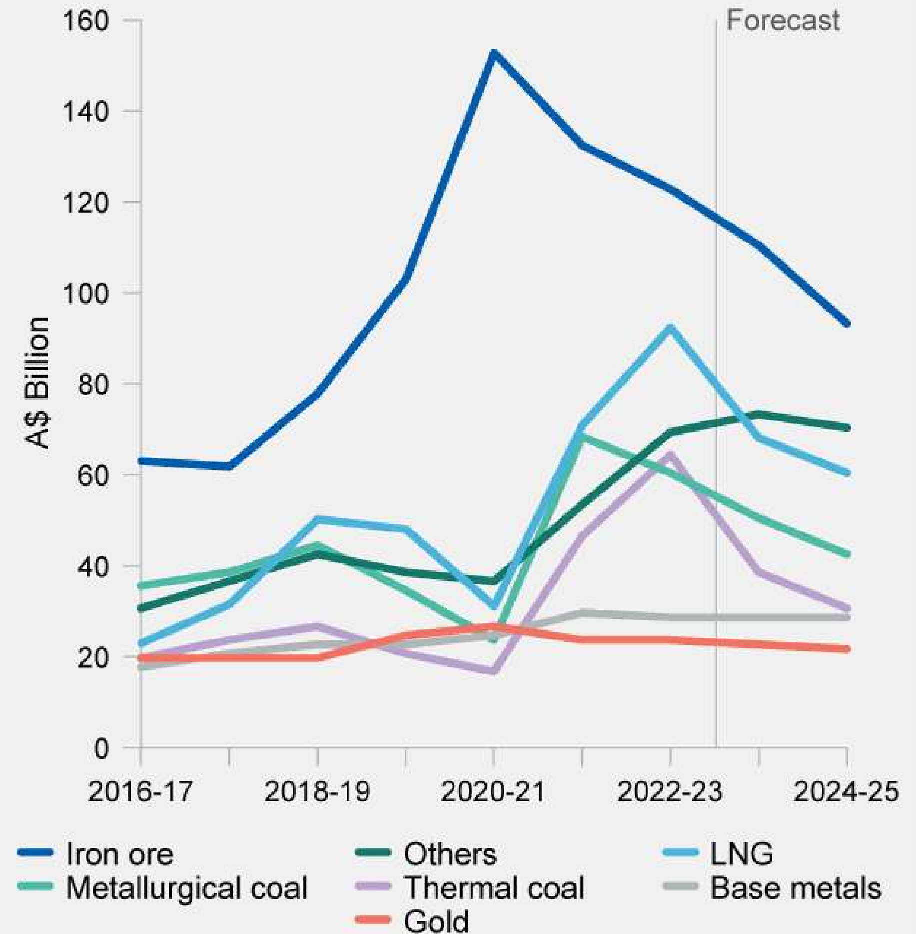
Commodity export earnings are on track for a new record: **$460 billion** in 2022-23

Earnings record reflects **energy price spikes and a strong US$**, which are now unwinding.

Prices are likely to ease as the global economy slows, but the volume outlook remains solid

Exploration spending grew to **$1.3 billion** in the March quarter

Australia's resource and energy exports



SOURCE: ABS; DISR; OCE

1.1 Summary

- Resource and energy commodity prices fell further in the June quarter 2023, as the world economy slowed under the impact of tighter monetary conditions in major Western economies.
- Australia's resources and energy export earnings during the outlook period are expected to be broadly in line with projections in the March quarter *Resources and Energy Quarterly*. After a record $460 billion in 2022–23, weaker world demand, lower energy prices and improving world commodity supply will cut earnings to $390 billion in 2023–24, with another significant fall likely in 2024–25.
- The incentives provided for low emission technologies under the US Inflation Reduction Act (IRA) will shape investment and trade in coming years, especially in commodities important to the global energy transition. With high critical mineral reserves, Australia is well placed to benefit from the IRA and other US incentives, and from the increased focus on supply chain security in the current geopolitical climate.

1.2 Macroeconomic, geopolitical and policy factors

World growth continues to soften

The global macroeconomic backdrop, as presented in the most recent IMF World Economic Outlook, is marginally softer than that presented in the March 2023 *Resources and Energy Quarterly*. The key trend remains a slowing in the global economy. The rebound in Chinese economic activity post-Covid has been weaker than expected, leading the IMF to marginally downgrade their expectations of global economic growth. The impact of higher interest rates in major Western economies is slowing growth, and persistent inflation continues to pose a risk of further monetary tightening.

World economic growth steadied at relatively low levels in the June quarter 2023. The IMF now forecasts world GDP growth of 2.8% in 2023 and 3.0% in 2024, down from growth of 3.4% in 2022. Growth in developed economies is expected to more than halve from 2.7% in 2022 to 1.3% in 2023. China is forecast to grow by 5.2% in 2023 and 4.5% in 2024.

The end of China's dynamic zero-COVID policy in December 2022 has, so far, not seen the strong rebound most expected. Savings accumulated by households in China during the pandemic were nowhere near as large as in many Western nations. Youth unemployment in China has hit a record rate of over 20%, putting pressure on the Government to announce new measures to boost growth. The Chinese authorities are gradually rolling out measures to boost economic activity. While inflation is not as much of a concern as in other major economies, high local government debt remains a major concern. It is likely to take some quarters before China grows strongly enough to give resource and energy commodity prices a meaningful boost. China's economy will likely also continue to be impacted by slow economic growth in the West.

Monetary policy has been tightened further in the major Western economies, as central banks take further measures to address inflation. Labour markets are starting to lose their extreme tightness as economic growth slows, reducing upward pressure on wages. Recent falls in energy prices will also help lower inflation. However, consuming nations' efforts to replenish/fill strategic oil reserves, and output cuts by energy producers, will act to support oil prices.

Risks appear weighted to the downside. Geopolitical tensions are likely to remain an ongoing risk to household and business confidence, and hence the macroeconomic outlook and resource and energy commodity demand. Sanctions on Russian energy exports will see the markets for some energy commodities remain more vulnerable to weather-related demand surges and supply outages. China and India will likely continue to import more Russian fossil fuel products than before the war; as transport constraints ease, Russian supply is likely to account for a larger part of their imports over the forecast period. As a result of the invasion of Ukraine, Russia's dependence on China and India for investment in new/existing mines/wells and associated infrastructure is intensifying.

The AUD/USD has traded in a relatively tight band around US$0.66 since March. Over the outlook period, the consensus forecast adopted is for the AUD/USD to lift modestly.

Overseas and domestic policy developments affecting Australian exports

The US IRA is causing a noticeable reaction in the resource and energy commodity sectors, and likely to have a large impact on trade in various commodities going forward. The US Administration's decision to ask the US Congress to place Australia on par with Canada/US suppliers will benefit investment in parts of the supply chain of low emission technologies (mainly EVs) where Australia has potential.

As trade impediments imposed by the Chinese Government in 2020 are lifted, Australian thermal coal exports to China are picking up strongly. However, they are not yet back to levels reached in 2019–20. Chinese buying is increasing demand in the market for Australian coals, offsetting some of the impact of weaker world economic growth and energy demand.

Box 1.1 gives details of changes to the Safeguard Mechanism commencing on 1 July 2023, after the Safeguard Mechanism (Crediting) Amendment Bill 2023 passed Commonwealth Parliament on 30 March 2023, following the finalisation of the March 2023 *Resources and Energy Quarterly*. The forecasts in this update take account of these changes.

In June 2023, the Australian Government released its Critical Minerals Strategy, outlining the Government's plan to grow the critical minerals industry — particularly downstream processing — to maximise the national benefits from Australia's critical minerals endowments. The Strategy outlines the Government's commitment to ask the Northern Australia Infrastructure Facility (NAIF) to earmark $500 million for projects that align with the Strategy. This is in addition to the funding for critical minerals under the National Reconstruction Fund, including $1 billion for value-add in resources and $3 billion for renewables and low emissions technologies.

In June 2023, the Australian Government announced it had completed the design of the Mandatory Gas Code of Conduct (the proposed Code) which is expected to commence shortly. The proposed Code is intended to support adequate domestic supplies of natural gas at reasonable prices and on reasonable terms to gas buyers in the Australian east coast gas market. Any impacts on the outlook for LNG exports will be considered in future REQ forecasts following the implementation of the proposed Code.

Box 1.1: Safeguard Mechanism reform and the resources sector

The Safeguard Mechanism, in place since 2016, is the policy for reducing emissions at Australia's largest industrial facilities. It applies to facilities which emit more than 100,000 tonnes of carbon dioxide equivalent per year and covers around 28 per cent of national emissions. The majority of the facilities covered by the Safeguard Mechanism are related to the resources sector. Facilities covered under the Mechanism are required to keep their net emissions under a baseline. The affected emissions correspond to the facility's scope 1 emissions[a] less any Australian Carbon Credit Units[b] (ACCUs) surrendered. The baseline is calculated using emission intensity (emissions per unit of output), but also considers site specific factors and arrangements.

Reforms to the Safeguard Mechanism commenced on 1 July 2023 and will ensure that covered facilities contribute to meeting these targets, while strengthening their competitiveness as the world moves to net zero. The reforms lower the baseline emissions of all facilities by 4.9 per cent per year. Baselines will be weighted towards site-specific emission intensity at commencement, and transition to industry-average benchmarks by 2030. A reserve is built into the baseline decline, in order to account for higher-than-expected production growth and higher-than-expected use of trade-exposed baseline adjustments.

The July 2023 reforms introduce the Safeguard Mechanism Credit, issued to facilities emitting below their baselines, with some exceptions. These credits can be sold to, and used by, other facilities to reduce their net emissions. Reducing net emissions using ACCUs will continue to be available. To limit price risk, the government will initially sell ACCUs to facilities for compliance purposes at A$75 per tonne of abatement in 2023–24, increasing with the CPI plus 2 per cent each year.

Other flexible arrangements available to reduce compliance costs include five-year monitoring periods for facilities with a credible plan in place to reduce cumulative emissions.

To manage carbon leakage, where production activity is transferred to other countries, rather than avoiding the emissions, facilities in trade-exposed sectors meeting eligibility requirements may apply for a lower baseline decline rate.

The reforms have been widely anticipated within Australian industry. In the *December 2022 Quarterly Carbon Market Report*, the Clean Energy Regulator reported that “on the back of low trade volumes and some speculative behaviour the ACCU generic spot price reached an all-time high of $57.50 in late January 2022“. ACCU prices traded at around A$35 in the month following the 2022 Australian Federal election, and in the first five months of 2023, ACCUs have generally traded in the range between A$35 to A$40.

As the reforms had been anticipated ahead of implementation — and in line with changing investor and customer expectations — many resource companies operating in Australia have pledged to achieve voluntary emission reduction targets prior to the reforms taking legislative effect. To ensure their investment strategies are aligned with these targets, companies have incorporated a range of emissions reduction or offset strategies for new projects to be considered viable. These strategies include electrification, carbon capture and storage, or nature-based carbon offset projects.

The production and exports forecasts presented in the *Resources and Energy Quarterly* incorporate known investment plans of firms in the resources sector, and therefore aligns with how firms in the sector plan to implement voluntary emissions targets and compliance with the safeguard mechanism.

Notes: a Scope 1 greenhouse gas emissions are the emissions released to the atmosphere as a direct result of an activity, or series of activities at a facility level; b The Clean Energy Regulator issues ACCUs for greenhouse gas abatement activities undertaken under the Carbon Credits (Carbon Farming Initiative) Act 2011. Each ACCU issued represents one tonne of carbon dioxide equivalent stored or avoided by a project.

Source: Department of Climate Change, Energy, the Environment and Water (2023), Clean Energy Regulator (2023)

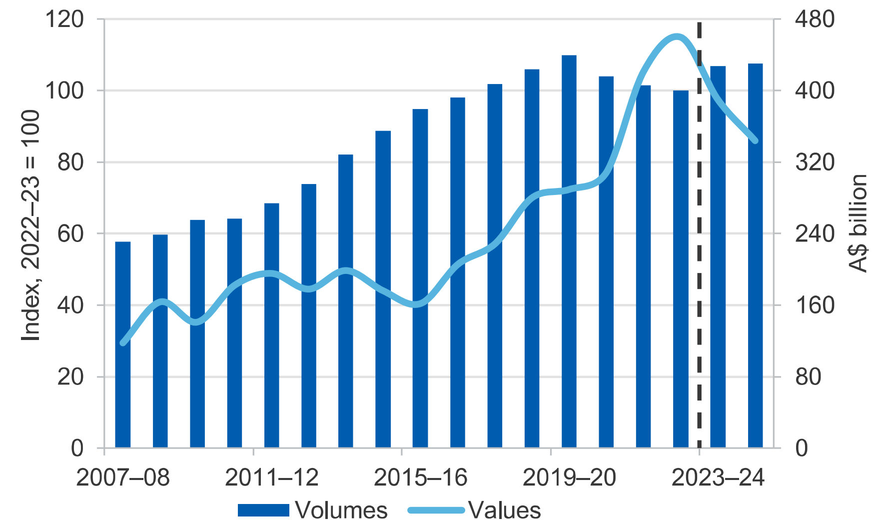
1.3 Export values

Australia’s export values are forecast to be $390 billion in 2023–24

The slowdown in the world economy and the re-organisation and improvement in energy commodity supply has generally reduced commodity prices over the past quarter. The Resources and Energy Export Values Index fell 20% from the June quarter 2022: a small rise in volumes partly offset the impact of a sharp fall in prices.

Resource and energy exports are forecast at $390 billion in 2023–24, down from an estimated record of $460 billion in 2022–23 (Figure 1.1). Within this result, weaker demand and improved global supply of resource and energy commodities is likely to depress prices. Forecast growth (of 7%) in export volumes will be too small to offset the impact of sharply weaker prices (Figure 1.2). Exports are forecast to fall by 12% to $344 billion in 2024–25; volumes will be little changed, with lower prices driving the decline in values.

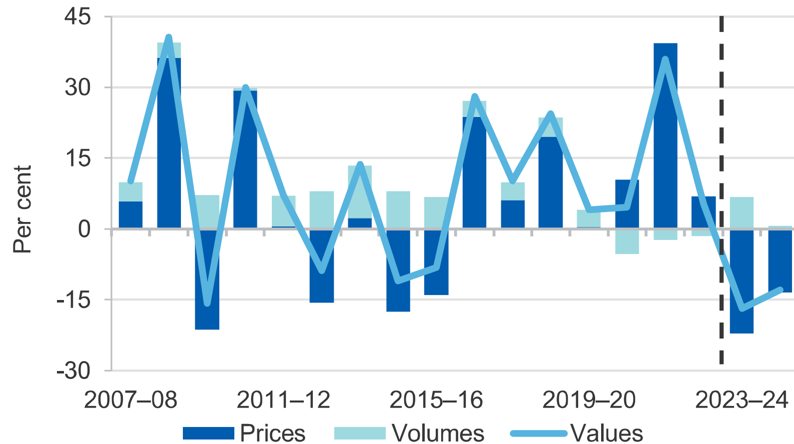
Figure 1.1: Australia’s resource and energy export values/volumes



Source: ABS (2023) International Trade in Goods and Services, 5368.0; Department of Industry, Science and Resources (2023)

In particular, Australian energy export earnings are set to fall sharply. LNG earnings are forecast to fall by $24 billion to $68 billion in 2023–24, as prices settle well below 2022 levels. A further fall of $8 billion is forecast in 2024–25. Thermal coal exports are forecast to fall even more sharply, from $64 billion in 2022–23 to $38 billion in 2023–24 and $30 billion in 2024–25.

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



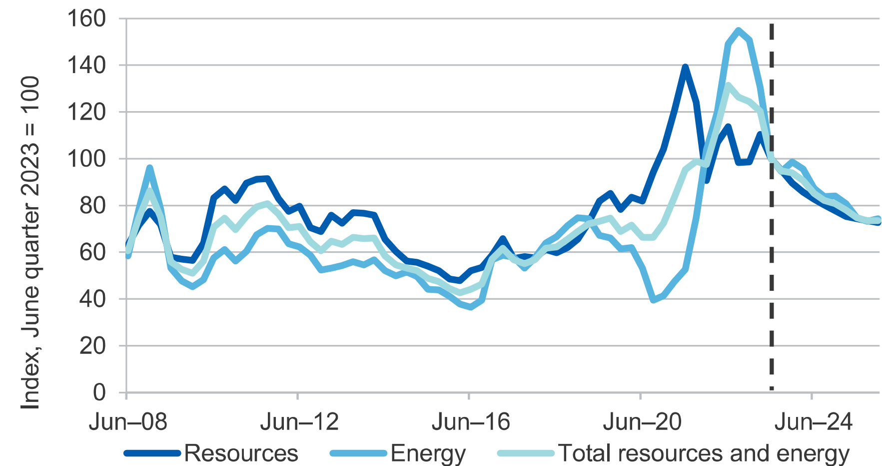
Source: ABS (2023) International Trade in Goods and Services, 5368.0; Department of Industry, Science and Resources (2023)

1.4 Prices

Since the March 2023 *Resources and Energy Quarterly*, resource and energy prices have fallen, as fears grow of a deeper world economic slowdown. The fall in prices was broadly in line with expectations in the March REQ. In general, prices are likely to fall further over the outlook period, as growth in world supply lifts faster than growth in world demand.

In Australian dollar terms, the Resources and Energy Commodity Price Index fell by 17% (preliminary estimate) in the June quarter 2023, to be down 24% on a year ago. In US dollar terms, the index fell by 18% in the quarter, to be down 28% on a year ago. Resource export prices (in A$ terms) fell by 12% in the year to the June quarter 2023, while energy prices fell by 33% (Figure 1.3).

Figure 1.3: Resource and energy export prices, A$ 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 (2023) International Trade in Goods and Services, 5368.0; Department of Industry, Science and Resources (2023)

The **iron ore** price has steadied at about US$100 a tonne, still well above the November 2021 cycle low. Demand from Chinese steel mills in the June quarter was not as strong as expected (Figure 1.4). **Metallurgical coal** prices have also fallen on low demand from Asian steel makers. But prices remain above pre-war levels, as some Russian supply is stranded from world markets. Weaker demand and improved supply have recently pushed down **thermal coal** prices, though they are still high historically. Global demand has softened, due to slowing world economic growth and favourable Northern Hemisphere weather. Prices are forecast to fall over the outlook period, as trade flows re-organise further and supply lifts.

Oil prices have recently steadied in a US$70-90 a barrel range. Weaker world demand is being offset by supply cutbacks by OPEC. The US Administration has flagged replenishing the Strategic Petroleum Reserve, which will help underpin prices. Chinese demand hit an all-time high in April, as transport activity recovered after the end of COVID lockdowns. Spot Asian **LNG** prices have dropped below levels traded before the

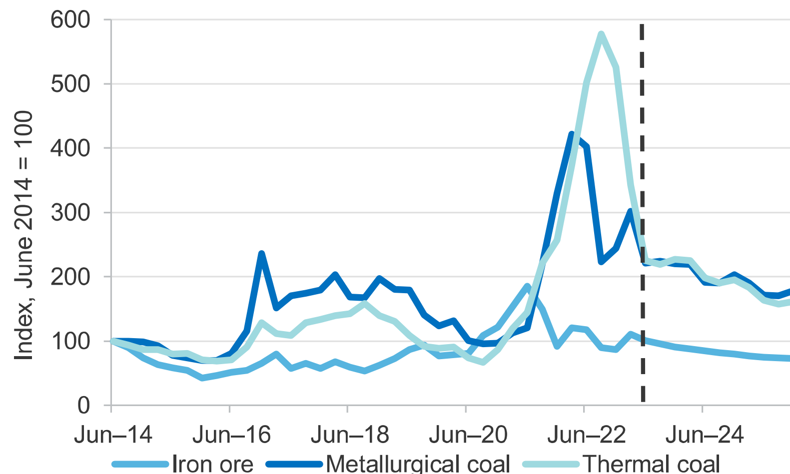
Russian invasion of Ukraine. The risk is for prices to rebound in the outlook period, as Chinese demand lifts and global storage is refilled and/or kept relatively high as a precautionary measure.

The **gold** price briefly pushed above US$2,000 an ounce after the last REQ, on worries over whether the US Congress will raise the US debt ceiling. The price will likely fall, as high interest rates divert funds from non-interest-bearing financial assets.

Base metal prices have softened, as softening growth in world economic activity — particularly the sluggish rebound in the Chinese economy — adds to the impact of improved supply (Figure 1.5). Prices are expected to be soft over the rest of 2023 but could pick up once growth in the global economy stops weakening.

Lithium (spodumene and lithium hydroxide) prices have given up some more of the large gains of recent years. Market deficits (as indicated by anecdotes of declining stockpiles) are steadily being eliminated, largely due to improving supply.

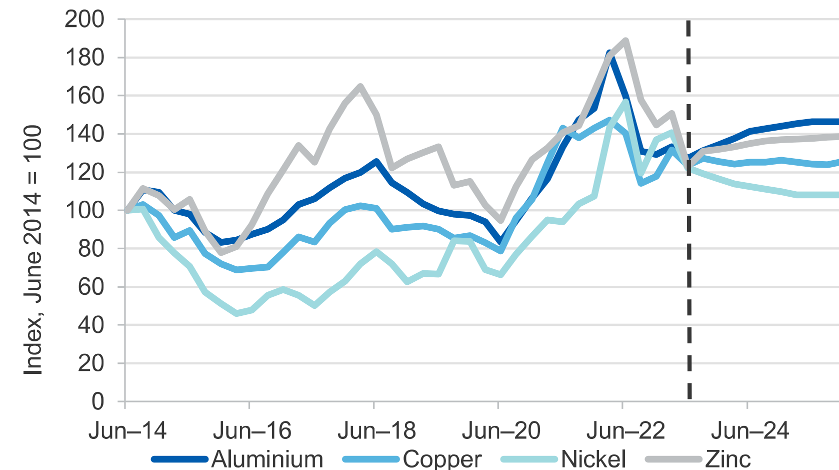
Figure 1.4: Bulk commodity prices



Notes: Prices are in US dollars, and are the international benchmark prices

Source: Bloomberg (2023); Department of Industry, Science and Resources (2023)

Figure 1.5: Base metal prices



Notes: Prices are in US dollars, and are the international benchmark prices

Source: Bloomberg (2023); Department of Industry, Science and Resources (2023)

1.5 Export volumes

June quarter export volumes rose noticeably

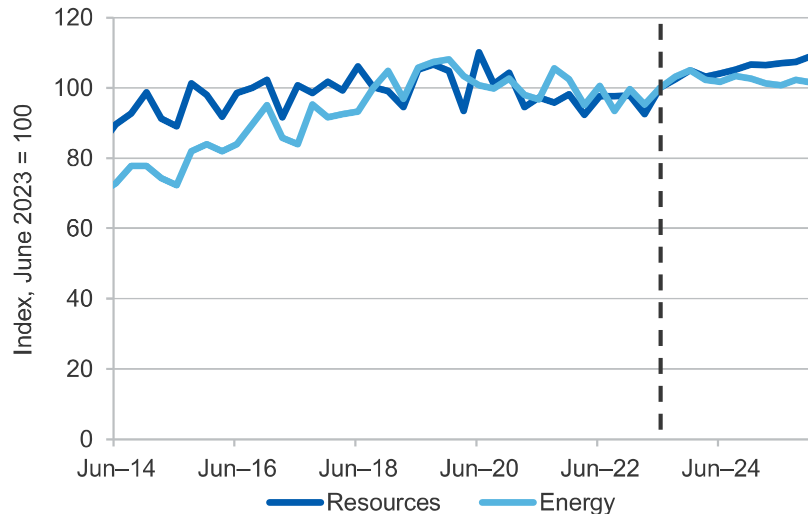
The Resources and Energy Export Volumes Index (preliminary estimate) rose 7.6% in the June quarter 2023 from the March quarter, to be 2% higher than a year ago. Within this total, resource commodity volumes rose by 2.5% in the year to the June quarter 2023, while energy export volumes rose by 1.3% (Figure 1.6). Energy exports were impacted by production and transport problems in the June quarter 2022, lowering the base: operational, weather and COVID-19 related workforce issues were central to these disruptions.

In volume terms, most resource exports are likely to show further significant growth over the outlook period, as the global energy transition accelerates. The volume of energy exports will level out in 2024, in response to the sharp price falls seen over the past year.

Weather risks to mine supply have receded sharply over recent months. Weather forecasters now believe there are above average odds of an El Niño climate episode developing in the coming twelve months. This

dramatically reduces the chance of the type of weather disruptions that have hampered the production and transportation of Australian mining products in the past two years.

Figure 1.6: Resource and energy export volumes



Source: Department of Industry, Science and Resources (2023)

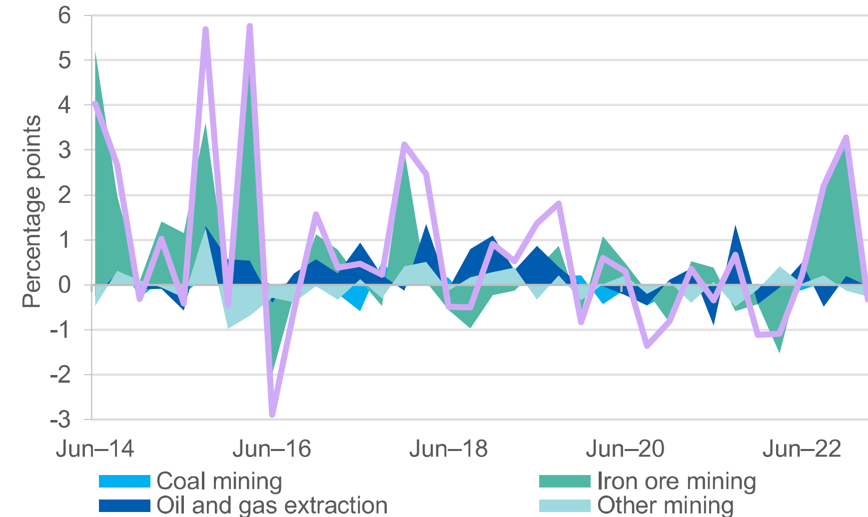
1.6 Contribution to growth and investment

Mining output fell slightly while the overall economy grew marginally

Australia's real GDP rose by 0.2% in the March quarter 2023, to be up 2.3% from a year before. Mining value-added fell by 0.3% in the March quarter but was still 5.4% higher than in March 2022 (Figure 1.7). The quarterly fall was driven by weaker Iron Ore Mining (down by 0.5%), Oil/Gas Extraction (down by 0.2%) and Other Mining (down by 2.6%). The falls were partly offset by a rise in Exploration and Mining Support Services (up by 4.4%) and Coal Mining (up by 0.6%) — the latter less affected by wet weather and flooding on the East Coast. In the coming two years, while the resource sector will likely contribute to real GDP growth, the energy sector's contribution will be minor (Figure 1.6).

The production disruptions of the past few years — arising from the COVID-19 pandemic and weather-related issues — are likely set to ease further. Metal production (ferrous and non-ferrous) should experience continued growth. Coal and gas producers will benefit from prices that are still high in historical terms, although volumes will remain steady.

Figure 1.7: Contribution to quarterly growth, by sector



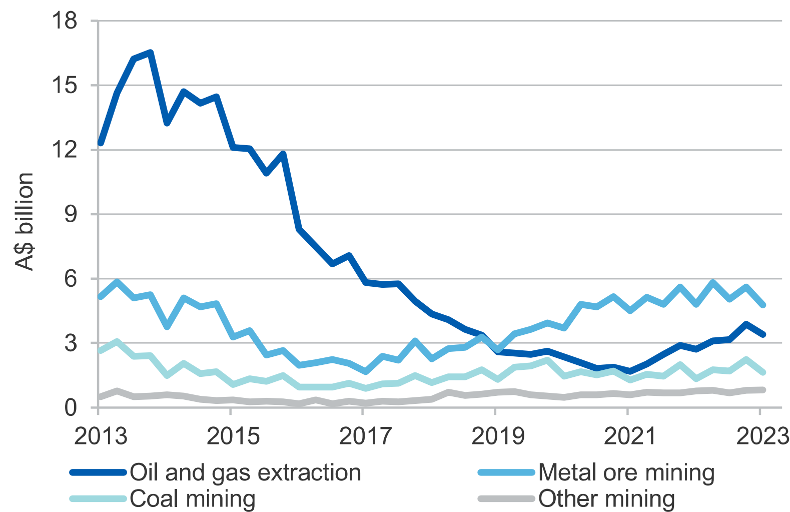
Source: ABS (2023) Australian National Accounts, 5206.0

Mining investment is picking up year-on-year

The latest ABS Private New Capital Expenditure and Expected Expenditure survey shows that Australia's resources industry invested $11.8 billion in the March quarter 2023. This was up 10.7% from the March quarter 2022. In quarterly terms, investment edged down in most categories, growing only in 'other mining' (Figure 1.8).

Expenditure for buildings and structures edged up (1%) in the March quarter, while investment in equipment, plant and machinery rose by 6% (Figure 1.9). Spending on plant and machinery has been steadily growing since 2017, while spending on buildings and structures has grown more slowly and more recently.

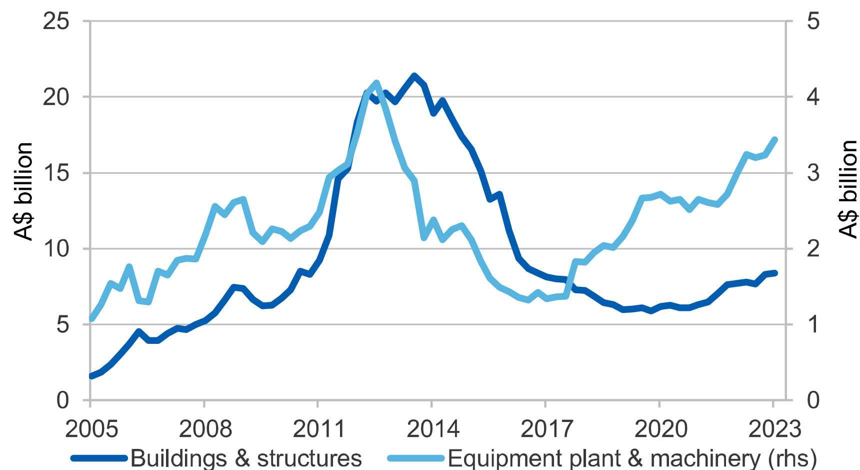
Figure 1.8: Mining capex by commodity, not seasonally adjusted



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 (2023) Private New Capital Expenditure and Expected Expenditure, 5625.0

Figure 1.9: Mining industry capital expenditure by type, quarterly



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

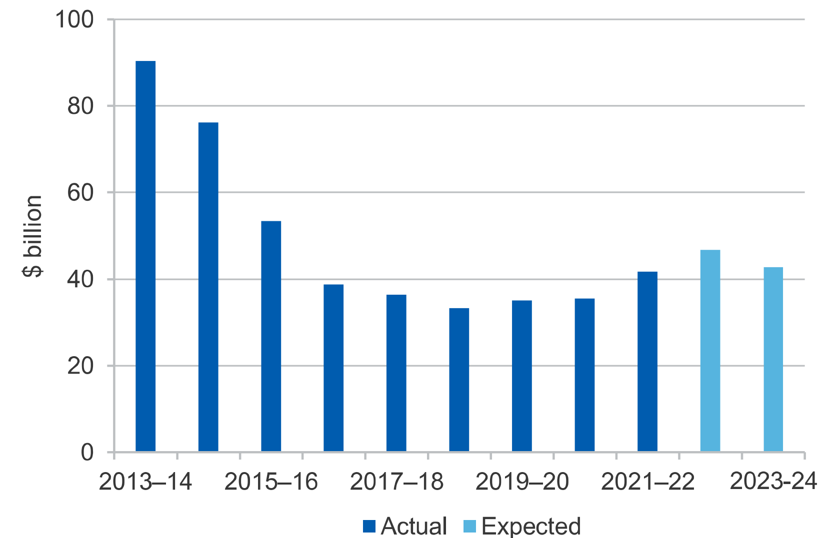
Source: ABS (2023) Private New Capital Expenditure and Expected Expenditure, 5625.0

Forward expectations suggest that total mining industry investment in 2023–24 will be lower than in 2022–23 (Figure 1.10). The second estimate for 2023–24 suggests the industry will invest $42 billion for the year. This is around the same as the equivalent estimate for 2022–23.

Workforce shortages, rising interest rates and construction costs may be impacting on investment. The US Administration has pledged to ask the US Congress to put Australian firms on an equal footing to their Canadian and US counterparts for incentives worth US$750 million (A$1.13 billion) available for critical minerals and low emission technologies under the US Defence Production Act. If the Congress approves legislation to meet this pledge, a boost in investment in the Australian sectors is expected.

Record Australian dollar gold prices will encourage investment in the Australian gold sector. A feature of 2022–23 was consolidation in the sector, and Newcrest's takeover by Canada's Newmont.

Figure 1.10: Mining industry capital expenditure, fiscal year

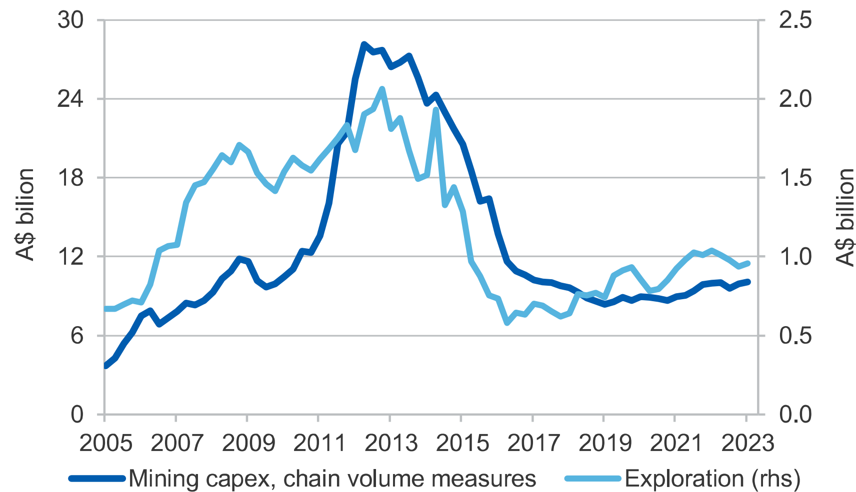


Notes: Chart data is in nominal terms

Source: ABS (2023) Private New Capital Expenditure and Expected Expenditure, 5625.0

Exploration expenditure (adjusted for inflation) edged up to $957 million in the March quarter 2023. In trend terms, exploration is rising, encouraged by relatively high commodity prices and the need for minerals vital to the global energy transition (Figure 1.11). Given the typical lags involved, we could expect capital spending by resource and energy companies to continue to lift over the next few years.

Figure 1.11: Mining capital expenditure vs exploration (real, quarterly)



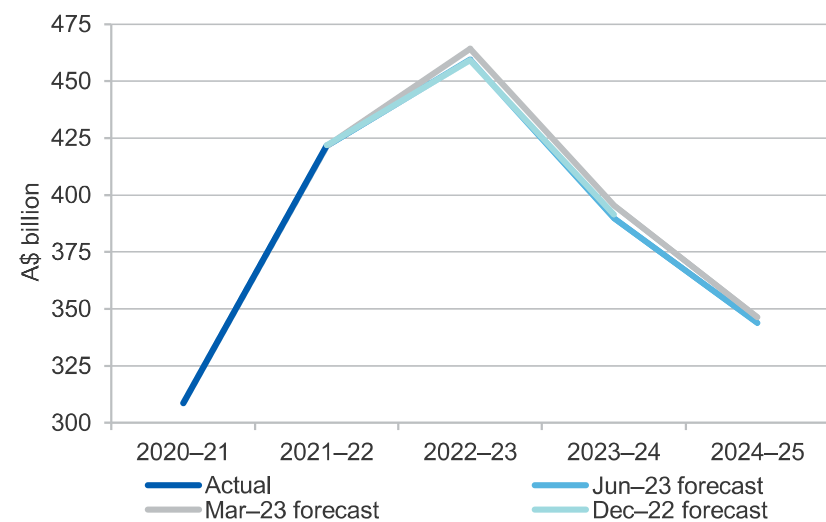
Source: ABS (2023) Private Capital Expenditure Survey, Chain Volume measure, 5625.0

1.7 Revisions to the outlook

The estimate for Australia's resources and energy exports in 2022–23 is $5 billion lower than the forecast contained in the March quarter 2023 *Resources and Energy Quarterly*. The forecast for 2023–24 (nominal prices) is $6 billion lower, while 2024–25 is $2 billion lower from the same report (Figure 1.12). These downward revisions have been driven by weaker than expected prices for most commodities, which have more than offset the impact of a weaker than expected exchange rate against the US dollar (AUD/USD).

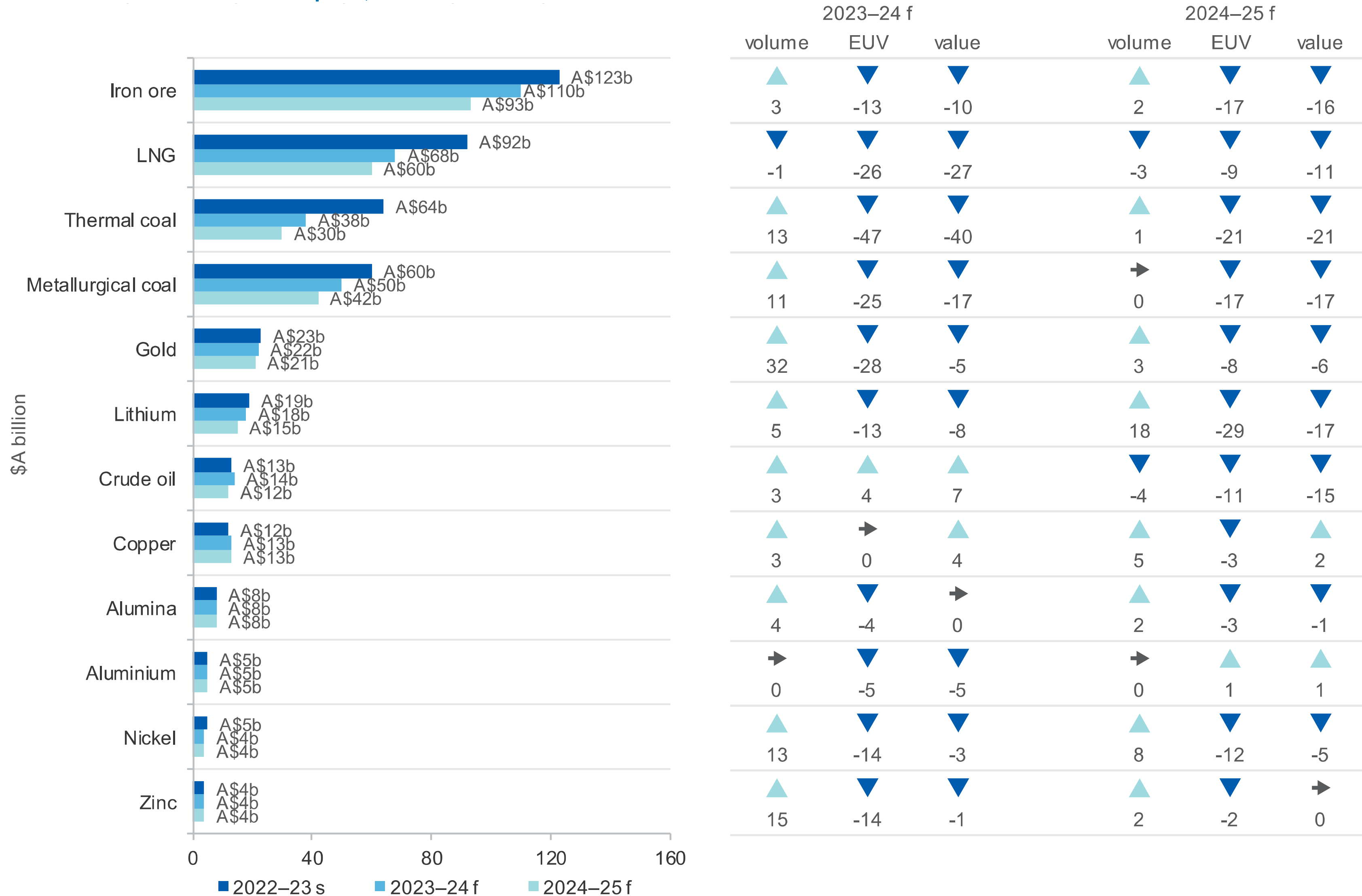
Iron ore earnings in 2023–24 have been revised up by $8 billion, and by $5 billion in 2024–25. The revisions mainly reflect higher prices and forecasts of a shallower recovery in the AUD/USD than envisioned in the March 2023 REQ. More than offsetting this, energy exports (notably thermal coal and LNG) have been revised down significantly in the outlook period.

Figure 1.12: Resource and energy exports, by forecast release



Source: Department of Industry, Science and Resources (2023)

Figure 1.13: Australia's major resources and energy commodity exports, nominal



Annual per cent change

	2023–24 f			2024–25 f		
	volume	EUV	value	volume	EUV	value
Iron ore	3	-13	-10	2	-17	-16
LNG	-1	-26	-27	-3	-9	-11
Thermal coal	13	-47	-40	1	-21	-21
Metallurgical coal	11	-25	-17	0	-17	-17
Gold	32	-28	-5	3	-8	-6
Lithium	5	-13	-8	18	-29	-17
Crude oil	3	4	7	-4	-11	-15
Copper	3	0	4	5	-3	2
Alumina	4	-4	0	2	-3	-1
Aluminium	0	-5	-5	0	1	1
Nickel	13	-14	-3	8	-12	-5
Zinc	15	-14	-1	2	-2	0

Notes: f forecast; s estimate. EUV is export unit value.
Source: ABS (2023) International Trade in Goods and Services, 5368.0; Department of Industry, Science and Resources (2023)

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

Exports (A$m)	2021–22	2022–23[s]	2023–24[f]	2024–25[f]	2021–22	2022–23[s]	2023–24[f]	2024–25[f]
Resources and energy	421,691	459,523	389,736	343,997	36.6	9.0	–15.2	–11.7
– real[b]	451,616	459,523	373,502	319,530	30.8	1.8	–18.7	–14.5
Energy	204,056	235,440	176,169	149,954	151.2	15.4	–25.2	–14.9
– real[b]	218,537	235,440	168,831	139,288	140.5	7.7	–28.3	–17.5
Resources	217,635	224,083	213,567	194,043	–4.3	3.0	–4.7	–9.1
– real[b]	233,080	224,083	204,671	180,242	–8.4	–3.9	–8.7	–11.9

Notes: **b** In 2022–23 Australian dollars; **f** forecast; **g** growth rate on 2022-23 levels.
Source: ABS (2023) International Trade in Goods and Services, 5368.0; Department of Industry, Science and Resources (2023)

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

	Prices				Export volumes				Export values, A$b		
	Unit	2022–23[s]	2023–24[f]	2024–25[f]	Unit	2022–23[s]	2023–24[f]	2024–25[f]	2022–23[s]	2023–24[f]	2024–25[f]
Iron ore	US$/t	96	89	78	Mt	892	918	933	123	110	93
LNG	A$/GJ	21.4	15.9	14.4	Mt	82	81	79	92	68	60
Thermal coal	US$/t	303	158	133	Mt	178	201	202	64	38	30
Metallurgical coal	US$/t	279	241	213	Mt	157	174	175	60	50	42
Gold	US$/oz	1,827	1,871	1,806	t	247	326	334	23	22	21
Lithium	US$/t	5,173	3,378	2,360	kt	3,252	3,420	4,021	19	18	15
Crude oil	US$/bbl	87	87	81	kb/d	272	280	269	13	14	12
Copper	US$/t	8,264	8,522	8,503	kt	836	865	906	12	13	13
Alumina	US$/t	343	338	348	kt	16,751	17,494	17,788	8.4	8.4	8.3
Aluminium	US$/t	2,341	2,449	2,601	kt	1,422	1,418	1,419	5.2	4.9	5.0
Nickel	US$/t	23,972	21,313	20,188	kt	154	174	188	4.5	4.4	4.2
Zinc	US$/t	2,986	2,754	2,842	kt	1,269	1,456	1,487	4.3	4.3	4.3
Uranium	US$/lb	51	59	61	t	5,560	5,855	6,060	0.8	0.9	0.9

Notes: **a** Export data covers both crude oil and condensate; **f** forecast; **s** estimate. **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 (2023) 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 (2023)

Macroeconomic Outlook

Global GDP and economic change in 2022

Country	China	US	EU	India	ASEAN	Japan	S Korea	Taiwan	**Australia**
Per cent share of global GDP (PPP)	19	16	15	7	6	4	2	1	1
Yearly change	▲ 3.0%	▲ 2.0%	▲ 3.2%	▲ 6.8%	▲ 5.3%	▲ 1.4%	▲ 2.6%	▲ 3.3%	▲ **3.6%**
Share of Australia's two-way trade	30%	6%	9%	4%	10%	12%	7%	4%	–

Global overview

- In 2022, global economic activity increased by **3.4%**. Growth is expected to slow to **2.8%** in 2023 and **3.0%** in 2024.
- **Tighter fiscal and monetary conditions** in most major economies are expected to **slow global economic growth** over 2023 and early 2024.

Global risks

The world macroeconomic environment improved slightly in early 2023, but there are risks to the outlook:

- **Tighter monetary policy for longer** if inflationary pressures, particularly in services, persist
- The **potential for further financial sector vulnerabilities**, tightening global financial conditions.

SOURCE: IMF; ABS; OCE

2.1 Summary

- Global macroeconomic conditions improved by less than expected in early 2023, as tightening monetary policy — aimed at curbing still-high inflation — weakened global demand.
- Tight fiscal and monetary conditions in most major economies are expected to slow global economic growth over H2 2023 and early 2024.
- The outlook for Australia's major trading partners remains weak, with their GDP growth in 2023 forecast by the RBA to be around 3.75%, well below its pre-pandemic decade average.

2.2 World economic outlook

Tighter fiscal and monetary conditions weighing on global growth.

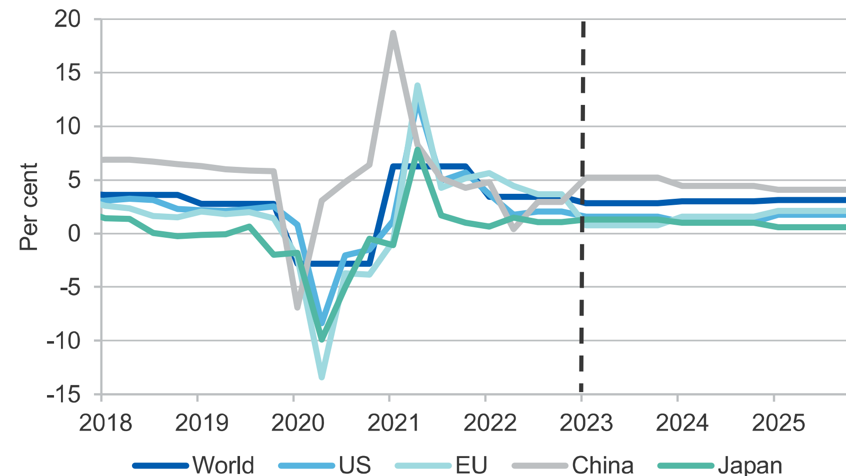
The International Monetary Fund (IMF) forecasts the world economy to grow by 2.8% in 2023, rising to 3.0% in 2024 and 3.2% in 2025 (Figure 2.1). Compared to the January 2023 World Economic Outlook, this represents a downward revision of 0.1 percentage points in 2023 and 2024, and 0.2 percentage points in 2025.

The IMF expects a substantial divergence to emerge between the performance of advanced and emerging economies over the next two years. After recording growth below the global average last year — for the first time in more than 40 years — China's economy is expected to exceed 5% growth this year. However, the US and European economies are expected to slow in 2023, under the weight of tighter monetary policy.

China's rebounding economy offers a boost to the growth prospects of its trade partners, but additional risks to the global outlook have emerged in recent months. While headline inflation has continued to moderate in most economies this year — due to lower energy and food prices — there has not been a sufficient decline in core inflation.

Labour markets remain resilient, with near full employment conditions persisting in many major advanced and emerging economies. Labour market tightness has been reflected in decade-high wage growth across advanced economies. However, job vacancy-to-unemployment ratios have moderated across several advanced economies in recent months, pointing to a modest easing in labour demand across economies.

Figure 2.1: GDP growth forecasts



Source: IMF (2023)

Despite these tight labour markets, reduced consumption across advanced economies — due to inflation and tighter monetary policy — is driving expectations for further slowing of growth over the remainder of the year. Weaker consumer demand for goods relative to services in the US and Europe will also weigh on the economic growth of manufacturing exporters — including China, Japan and Korea.

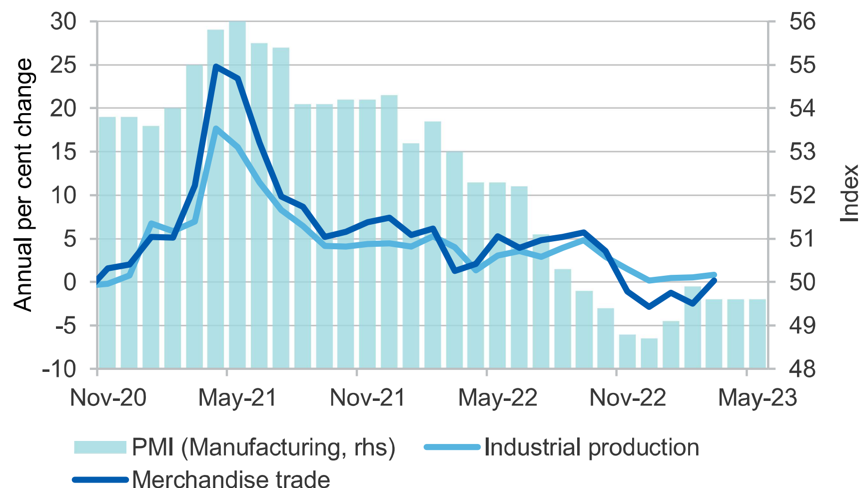
The IMF notes that tighter monetary policy is a key risk to the outlook if inflation pressures, particularly in services, prove more persistent than expected. Another source of global economic vulnerability stems from the possibility of the war in Ukraine escalating, and the potential for further geopolitical fragmentation. An additional risk for the global outlook is the uncertainty surrounding the emergence of further financial sector vulnerabilities, tightening global financial conditions. The IMF's baseline economic forecasts assume recent financial sector stresses are contained.

Global industrial production and trade weaken as orders drop

Global industrial production increased by 1.1% in the March quarter 2023 to be 0.6% higher year-on-year, as the Chinese economy emerged from COVID lockdowns. Industrial production in advanced economies declined, while quarterly growth was 3.3% in emerging Asian economies (excluding China). On the other hand, global trade declined in the March quarter 2023 (Figure 2.2). Weaker demand for goods in advanced economies, especially electronic equipment, has seen exports from Japan, South Korea, and emerging Asian economies fall in recent months.

Forward indicators of manufacturing activity indicate a contraction so far in 2023. The JP Morgan Global Manufacturing Purchasing Managers Index (PMI) tracked flat month-on-month at 49.6 in May 2023 and has remained in contractionary territory (less than 50) for 9 consecutive months. Global manufacturing orders declined in May, signalling a further deterioration in the demand for goods — linked to inflation pressures and a post-pandemic preference for services consumption. Results for individual nations are discussed below. Despite the contractionary reading, positive signs include a fourth consecutive month of output growth, reduced supply chain pressures and a decline in input prices.

Figure 2.2: World industrial production, trade and PMI



Notes: PMI data is up to May 2023; IP and trade data only available to March 2023.
Source: IHS Markit (2023); CPB Netherlands Bureau for Economic Policy Analysis (2023)

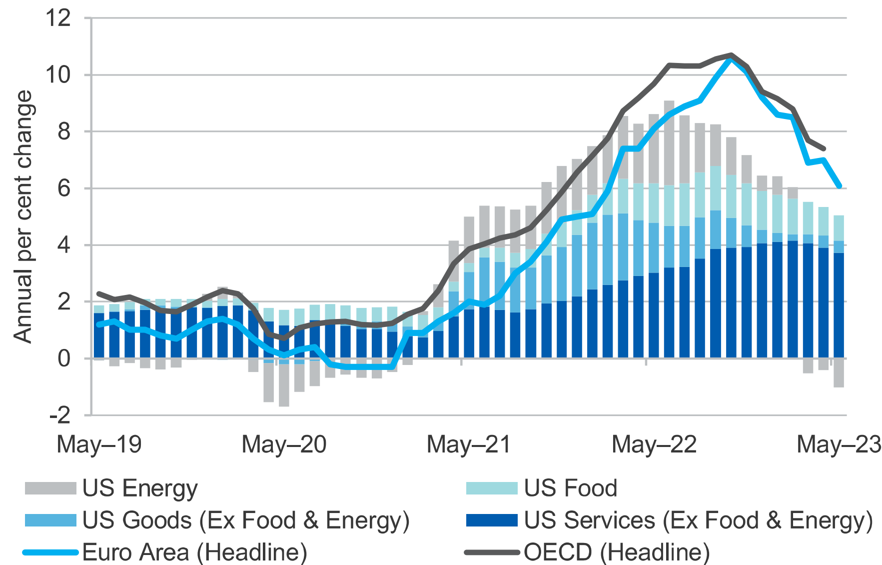
As headline inflation pressures ease, the focus shifts to core inflation

Headline inflation has been falling in major economies, due to reductions in energy and food prices and an easing of supply chain bottlenecks. In April 2023, the IMF forecast global inflation to fall from 8.7% in 2022 to 7.0% in 2023 and 4.9% in 2024 — both upward revisions from forecasts published in January 2023. As inflation continues to be well above central bank targets in most economies, reining it in remains a primary concern for policymakers. While global price pressures are expected to fall further over the year, persistent core inflation is raising uncertainty about the pace of inflation slowdown. Financial markets have had to adjust expectations over how soon central banks will be able to cut policy rates to spur economic activity.

US inflation, for example, has fallen for eleven consecutive months to 4.0% in May from a peak of 9.1% in June 2022. US core inflation — which excludes food and energy — has been much slower to decline as housing and consumer service inflation have mostly remained elevated (Figure 2.3). Eurozone inflation, while still high, has declined notably from its peak in October 2022 due largely to falling energy prices this year. Eurozone core inflation in May was only 0.4% below its peak of 5.7% in March.

There has been a relatively rapid pace and scale of interest rate hikes throughout this tightening cycle (US +500 basis points, EU +400 basis points, UK +490 basis points). Central banks are thus now facing difficult decisions on how much more tightening, if any, will be needed to bring both headline and core inflation back into target ranges in an acceptable timeframe. The US, UK and European central banks each raised their policy rates further by 25 basis points in May. Following the US Federal Reserve's policy decision in June, the committee revised up its expectations for real GDP growth and core PCE inflation in 2023, signalling further increases to the federal funds rate. Market pricing is broadly centred on the expectations that policy rates have peaked or will peak in mid-2023 and then decline later in the year.

Figure 2.3: Consumer Price Indices — US, Europe and OECD



Source: Bloomberg (2023); Board of Governors of the Federal Reserve System (2023); U.S. Bureau of Economic Analysis (2023); OECD (2023)

2.3 Major trading partners' economic outlook

The outlook for Australia's major trading partners remains weak, with their GDP growth in 2023 forecast by the RBA to be around 3.75%, well below its pre-pandemic decade average.[1]

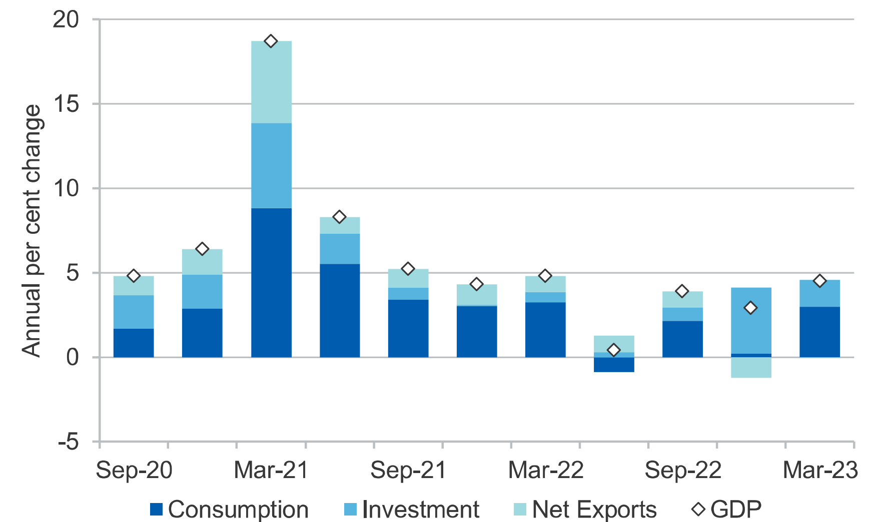
Slower growth in Australia's major trading partners is expected to reduce demand for Australia's exports. With that said, recovery in China's economy and ongoing development in India are expected by the IMF to contribute about half of global economic growth this year. Growth from these key markets should support growth in their trade partners, particularly Australian resource and energy export earnings over the outlook period.

China's growth slows over the June quarter, but further support likely

China's economy grew by 2.2% in the March quarter 2023, with GDP 4.5% higher year-on-year (Figure 2.4). The result was driven by a recovery in household services consumption following the removal of COVID-related restrictions on activity. Fixed asset investment increased by 5.1% over the quarter, due to strong growth in infrastructure spending supported by accommodative fiscal policy.

To date in the June quarter 2023, economic activity has been positive in year-on-year terms, but weaker than anticipated. China's industrial production declined in May to be 3.5% higher year-on-year. While growth was positive, it was the lowest since February as manufacturing output

Figure 2.4: China contributions to quarterly real GDP



Notes: Consumption is made up of both household and government sectors.
Source: Bloomberg (2023); National Bureau of Statistics of China (2023)

[1] *RBA Statement on Monetary Policy* — May 2023.

growth slowed to 4.1%, down from 6.5% in April. China's Caixin General Manufacturing PMI rose to 50.9 in May, indicating the sector returned to expansion for the first time in three months. Output growth lifted to its highest rate in almost a year, supported by growth in new business and new orders. Input prices declined for a second month. Despite these positive signals, business sentiment dropped to a 7-month low, due to concerns over the economic outlook, particularly overseas.

Contrary to signals from the Caixin PMI, the official manufacturing PMI measure declined in May to 48.8, below market expectations of 49.5. The official PMI, which is more oriented towards larger businesses, cited declines in output and new orders. Notably, the official PMI reading for construction activity weakened from 63.9 in April to 58.2 in May. While still expansionary, this reduction could reflect further weakening in residential construction, offsetting strong infrastructure construction activity.

Following policy support for China's property sector in late 2022, and positive signs in the March quarter 2023, momentum again appears to be waning. Year-to-date fixed asset investment growth slowed to 4.0% in May 2023, driven by a 7.2% year-on-year decline in property investment. Floor space of newly started residential property declined by 31% year-on-year in May 2023, after falling by 29% year-on-year in April. Financial stability concerns still hang over the indebted property development sector.

Retail sales also fell short of expectations in May, increasing by 0.4% over the month to be 13% higher year-on-year. Consumer confidence has rebounded strongly following the end of COVID lockdowns, but it remains substantially below early 2022 levels (before lockdowns started in earnest). Adding to this, consumer credit growth has remained subdued, in line with the historically weak levels seen throughout 2022. This may indicate tight household balance sheets, posing a downside risk to continued strength in household consumption.

Following efforts to support the economy throughout 2022 and in the March quarter 2023 (see March 2023 *Resources and Energy Quarterly*), the Chinese authorities have signalled a willingness to lend further support to the economy to meet the announced 2023 GDP growth target of 5%.

Facing little pressure from domestic inflation (0.1% in April 2023), Chinese authorities have more monetary policy room to work with than most advanced economies should further stimulus be needed. The People's Bank of China (PBoC) surprised markets with a 10 basis point cut to its official one week rate on 13 June 2023, followed by a 10 basis point cut to its key one-year medium-term lending facility rate on 15 June 2023. This signals a willingness by Chinese authorities to combat slowing economic growth.

The IMF forecasts Chinese GDP growth of 5.2% in 2023, reflecting improved mobility compared with COVID-related disruptions in 2022. While external demand may cause China's industrial exports to decline, it is anticipated that growth will be powered by continued infrastructure investment and further supportive fiscal and monetary policy measures. The IMF forecasts growth to decline to 4.5% in 2024, in line with a long-term trend towards structurally lower growth.

Japan and South Korea facing weaker external demand

Japan's GDP increased by 0.4% in the March quarter 2023, resulting in 1.3% growth year-on-year. Year-on-year growth was higher than in the December quarter, due in part to base effects — Japan's GDP contracted by 0.5% in March quarter 2022.

Private consumption contributed strongly to economic growth over the quarter, rising by 0.6% as the country's reopening drove a rebound in services consumption. On the other hand, net exports detracted from growth, with exports increasing by much less than imports over the year. Notably, exports fell by 4.2% over the quarter, signalling weaker demand from the nation's major trading partners.

Slowing growth in Japan's major trading partners is a key issue for its economy, particularly industrial production. Japanese industrial production grew by 0.4% year-on-year in April 2023, following 5 months of declines. In addition, machinery orders have, on average, decreased at an annual rate of 6.3% since October 2022 (Figure 2.5).

The Jibun Bank Japanese Manufacturing PMI returned to positive

Figure 2.5: Japan industrial production and machinery orders

Source: Bloomberg (2023)

(expansionary) territory in May, following 6 consecutive months of contraction. The first expansion in manufacturing activity since October was driven by growth in both new orders and output. Input costs also grew at their slowest rate since February 2021, while output cost inflation declined to a 4-month low. While business confidence fell in the month, it remained in positive territory, with firms expecting inflationary pressures to soon ease.

Japan's core inflation — which excludes fresh food but includes fuel costs — was 3.4% in April 2023, exceeding the Bank of Japan (BoJ) inflation target of 2%, but down markedly from 4.2% in January.

The BoJ has maintained its accommodative monetary policy and continues to hold the 10-year Japanese Government bond yield at 0%.

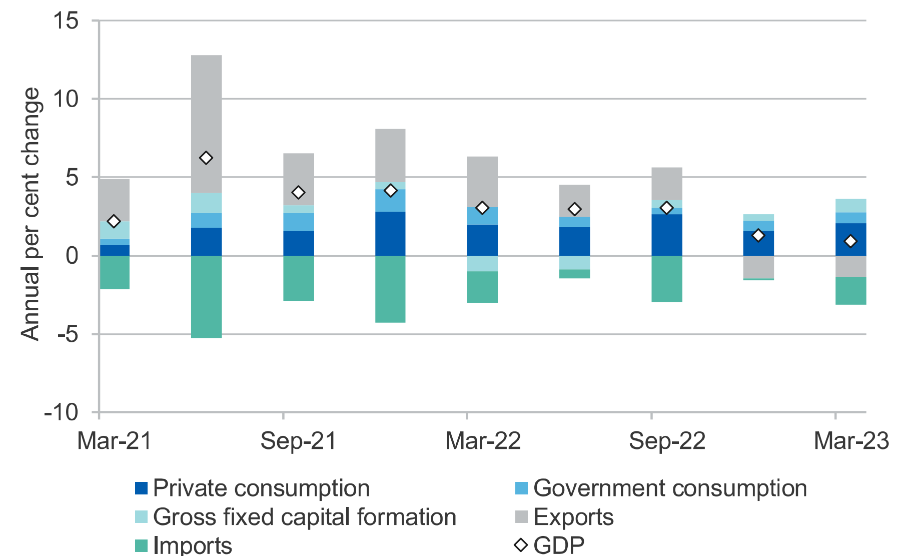
Looking ahead, the IMF forecasts Japan's economic growth to rise to 1.3% in 2023, on the back of continued monetary and fiscal policy support. This forecast represents a downgrade of 0.5% from its January forecasts, driven by weaker external demand and disappointing growth towards the end of 2022.

As the effects of past stimulus efforts fade, Japan's economic growth is expected to slow to 1.0% in 2024, before slowing further to 0.6% in 2025.

South Korea's GDP increased by 0.8% year-on-year in the March quarter 2023, its lowest annual growth rate since December quarter 2020. Growth was supported by positive contributions from both private and government consumption. Net exports were a key dampener on growth, with weaker exports and strong imports driving a 39% year-on-year decline in the country's trade balance (Figure 2.6).

South Korea's industrial production declined month-on-month in April 2023, to be 8.9% lower year-on-year. Exports of semiconductors declined by over 36% year-on-year in May, due to declining global demand. South Korea's manufacturing PMI improved slightly in May but remained in contraction for the eleventh consecutive month. The negative May

Figure 2.6: South Korea contributions to quarterly real GDP



Source: Bloomberg (2023)

result was due to declines in output and new orders, due to weak demand in domestic and export markets.

In April, the IMF forecast South Korean real economic growth of 1.5% in 2023 and 2.4% in 2024, representing downward revisions of 0.2 percentage points in each year. The IMF noted that the downturn in the technology cycle is expected to erode the nation's growth momentum. Growth is then forecast to stabilise at around 2.3% from 2025 onwards, a downward revision of 0.3 percentage points.

US labour market resilience continues

In year-on-year terms, the US economy grew by 1.6% in the March quarter 2023. This growth was primarily driven by personal consumption of both goods and services, although there are signs that goods consumption is now easing. Net exports contributed positively to US GDP growth, as exports increased while imports decreased (Figure 2.7).

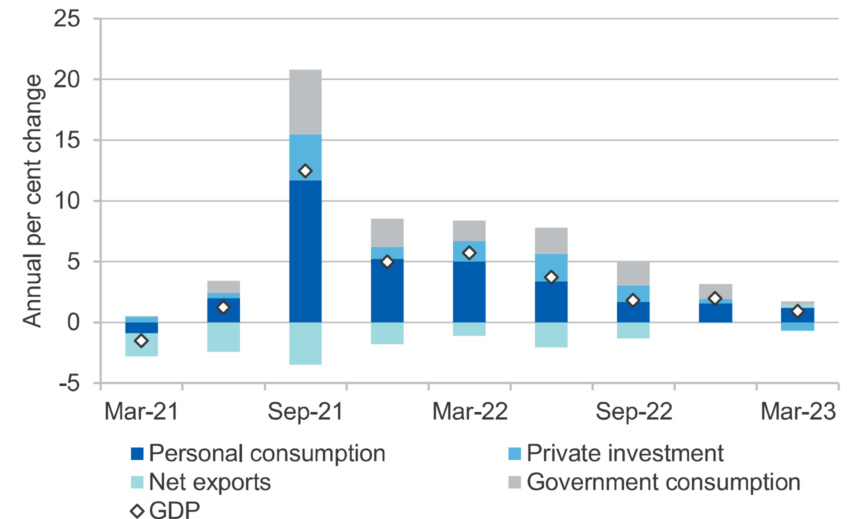
US labour market resilience continues, with nonfarm payroll employment rising by 339,000 in May 2023. The unemployment rate rose slightly to 3.7% in May, the highest since October 2022 but still historically low.

The resilient labour market continues to support spending; however, growth appears to be slowing. Total inflation-adjusted spending on goods and services was flat month-on-month in March 2023, following a small monthly decline in February. Advance indicators for inflation-adjusted retail sales in April suggest retail trade was flat over the month, and 3.2% lower when compared year-on-year.

US industrial production increased by 0.2% year-on-year in April, rising from a 2-year low of 0.1% in March. The US Manufacturing PMI declined to 46.9 in May from 47.1 in April. This result brought the contraction in the US manufacturing sector to a 7th consecutive month. The deterioration in manufacturers' operating conditions reflects sharp falls in new orders, as domestic demand weakens.

In April 2023, the IMF upgraded its forecast for US economic growth in 2023 by 0.2 percentage points to 1.6% and up slightly to 1.1% in 2024.

Figure 2.7: US contributions to quarterly real GDP



Source: Bloomberg (2023)

Tightening monetary and financial conditions in the US are expected to reduce growth in private consumption and investment. This slowing in demand is expected to translate to increasing unemployment, leading to reduced labour market tightness and moderation in wage growth.

Eurozone economies face slower growth

Eurozone GDP growth rose to 0.1% over the March quarter 2023, after zero growth in the December quarter 2022 (Figure 2.8). This brought annual GDP growth to 1.3%, buoyed by quarterly growth of 0.9% in the June quarter 2022. Among the larger economies, France grew by 0.2% over the quarter, while Italy and Spain both grew by 0.5%. Germany's economy did not grow over the quarter, bringing annual growth down to -0.1%.

Despite the moderation in energy prices in recent months, European manufacturers — in particular energy-intensive metal smelting, refining and fabrication operations — remain very exposed to high energy prices.

Industrial production in the Eurozone rose by 0.2% year-on-year in April 2023, up from a 1.4% decline in February.

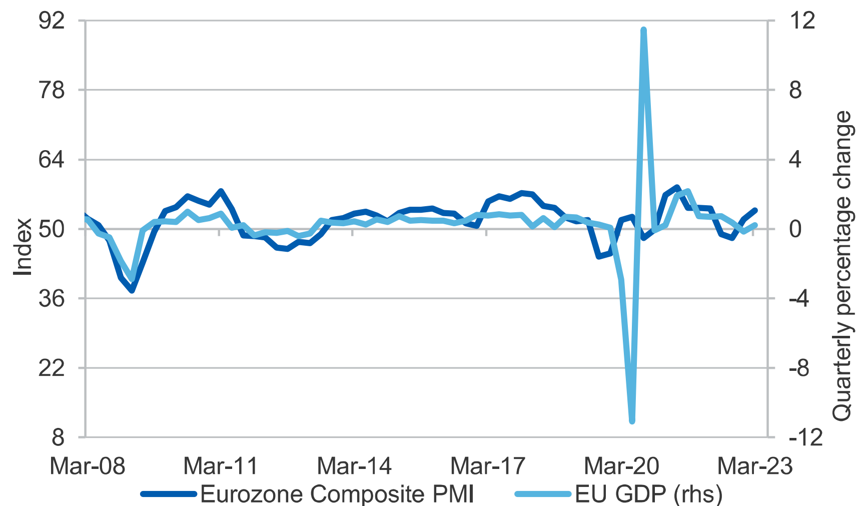
In May 2023, the Eurozone Composite PMI Index decreased to 52.8, down from an eleven month high in April. The improvement reflected strong growth in service sector activity and demand for services, while both manufacturing output and new orders declined.

The Eurozone manufacturing PMI fell to 44.8 — the sharpest contraction in three years — with output declining and new factory orders falling at their sharpest pace in 6 months. This reflected a deterioration in demand conditions, bringing new orders to a twelfth consecutive monthly decline.

Despite the worsening business environment, manufacturers remained optimistic about the year-ahead outlook, and input prices declined at their fastest pace since February 2016.

The IMF forecasts European growth to be 0.8% in 2023, and 1.4% in 2024. Similar to the United States, persistent core inflation and tightening monetary policy are expected to translate to weakening consumption and investment. Economic activity is expected to improve as inflation eases, real incomes start recovering and financial conditions ease.

Figure 2.8: Eurozone GDP and Composite PMI (quarterly)



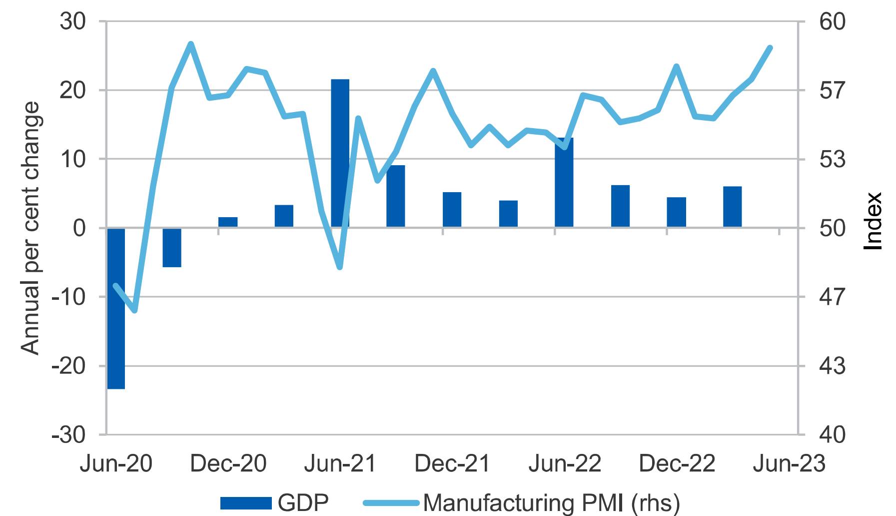
Source: Bloomberg (2023)

India's GDP growth to be relatively resilient

India's GDP growth increased to 6.1% year-on-year in the March quarter 2023, up from 4.5% in the December quarter (Figure 2.9). This annual growth figure was well above market expectations (5.0%) and was supported by growth in fixed capital formation, consumption expenditure and net exports.

India's manufacturing PMI rose in May to 58.7, marking almost two years of consecutive monthly expansions and remained above the long-run average. Growth in both output and new orders rose above 2-year highs, with manufacturers citing strong demand conditions. Easing supply chain conditions contributed to record accumulation in input inventories and slowing growth in input prices.

Figure 2.9: India GDP growth and manufacturing PMI



Notes: GDP growth is quarterly data, the most recent is March quarter 2023. Manufacturing PMI is monthly, the most recent is May 2023.

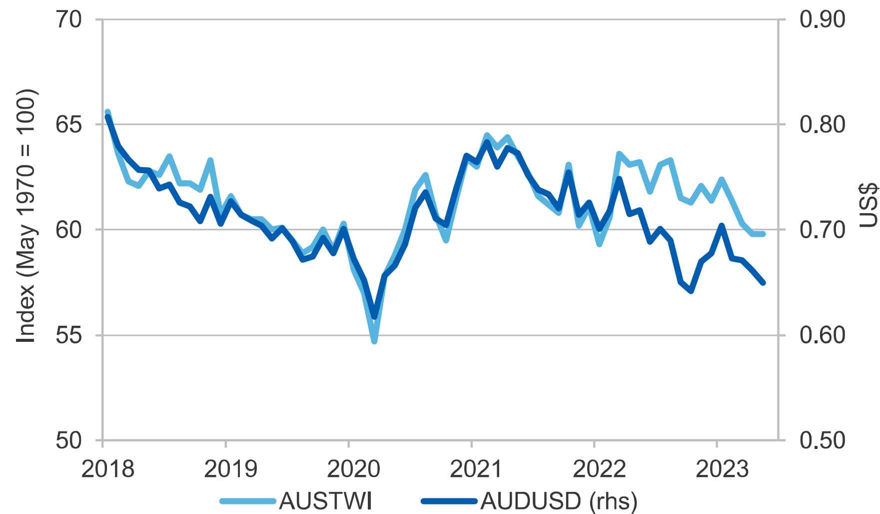
Source: Bloomberg (2023)

The IMF forecasts India's economic growth to slow to 5.9% in 2023, revised down from 6.1% in January. Growth is expected to be slower in 2023 as domestic demand is pressured by tighter monetary policy and pick up to 6.3% in 2024 (down from 6.8% in January). From 2024 onwards, household spending is expected to pick up as pressures from inflation and monetary policy ease.

Exchange rate assumption revised lower

Over the past quarter, the Australian dollar has fallen slightly relative to the US dollar but held constant on trade-weighted terms (Figure 2.10).

Figure 2.10: Australian trade-weighted index and AUD/USD



Source: Bloomberg (2023)

The AUD/USD exchange rate assumption has been revised lower by US$0.02 in 2023 and 2024 compared with the March 2023 *Resources and Energy Quarterly*, in line with changes in market consensus (surveyed by Bloomberg) on the outlook for the exchange rate. The median consensus on 14 June 2023 for the AUD/USD exchange rate was an average of US$0.69 during the second half of 2023, US$0.72 in 2024 and US$0.76 in 2025.

Table 2.1: IMF annual GDP growth projections for major trading partners

	2022	2023[a]	2024[a]	2025[a]
World [b]	3.4	2.8	3.0	3.2
China [c]	3.0	5.2	4.5	4.1
Japan	1.1	1.3	1.0	0.6
South Korea	2.6	1.5	2.4	2.3
India[d]	6.8	5.9	6.3	6.2
ASEAN-5[e]	5.3	4.9	5.3	5.2
Eurozone	3.7	0.8	1.6	2.2
United States	2.1	1.6	1.1	1.8

Notes: **a** Assumption. **b** Calculated by the IMF using purchasing power parity (PPP) weights for nominal country gross domestic product. **c** Excludes Hong Kong. **d** Based on fiscal years, starting in April; **e** Indonesia, Malaysia, Philippines, Thailand and Vietnam.
Sources: IMF (2023) World Economic Outlook; Bloomberg (2023).

Table 2.2: Exchange rate and inflation assumptions

	2022	2023[a]	2024[a]	2025[a]
AUD/USD exchange rate	0.69	0.69	0.73	0.75
Inflation rate[b]				
United States	8.0	3.5	2.2	2.0
	2021–22	**2022–23[a]**	**2023–24[a]**	**2024–25[a]**
Australia	7.2	4.6	3.2	2.7

Notes: **a** Assumption; **b** Average CPI growth over the specified year (fiscal or calendar).
Sources: ABS (2023) Consumer Price Index, 6401.0; Bloomberg (2023); Department of Industry, Science and Resources; RBA (2023); IMF (2023).