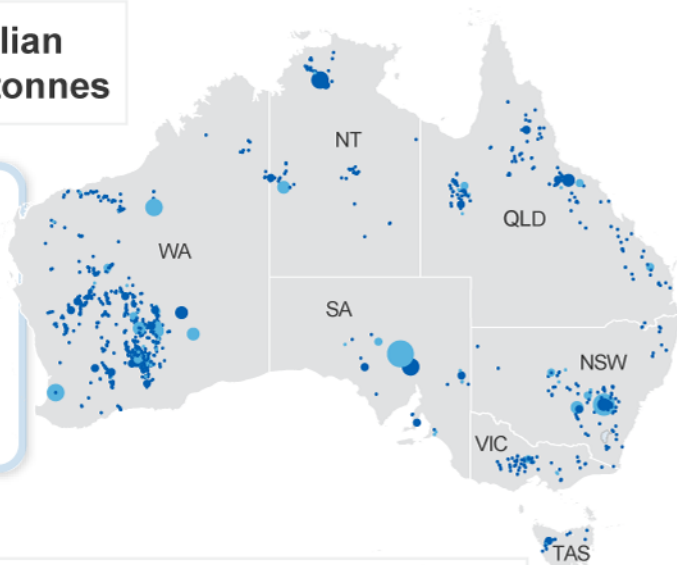
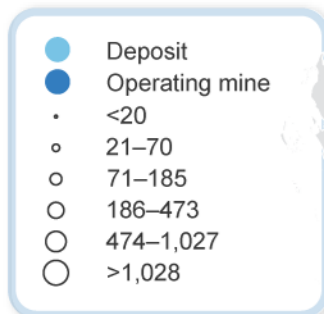
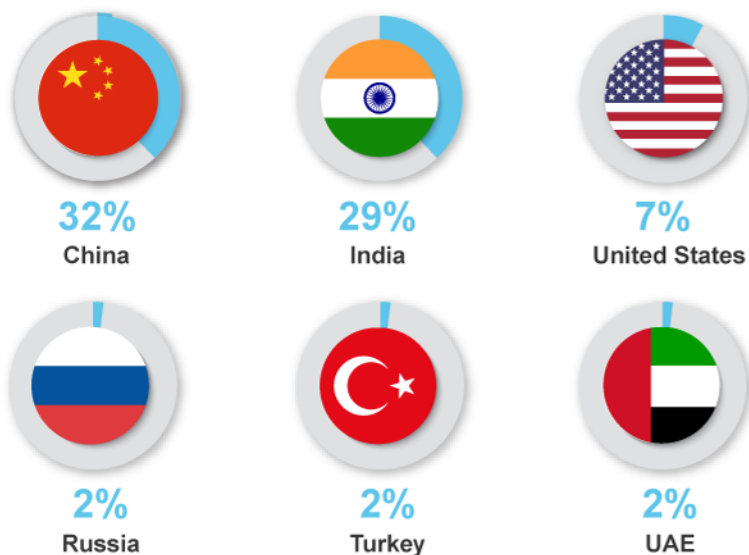


## Major Australian gold deposits, tonnes



## World jewellery consumer markets



## Gold



Gold is a critical component in **COVID-19 diagnostic tests**



The US holds the largest stockpile of gold reserves, at **8,133 tonnes**

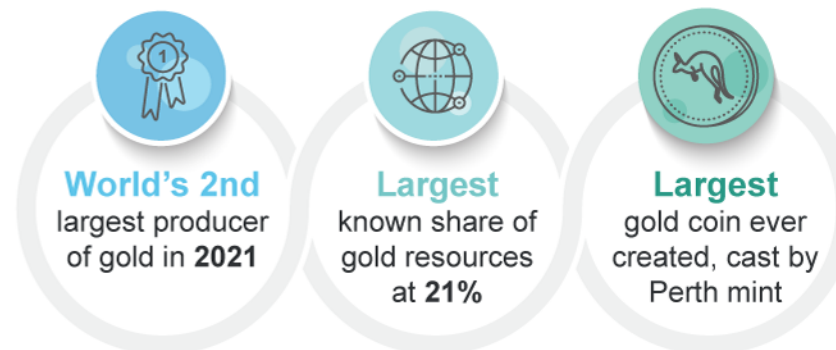


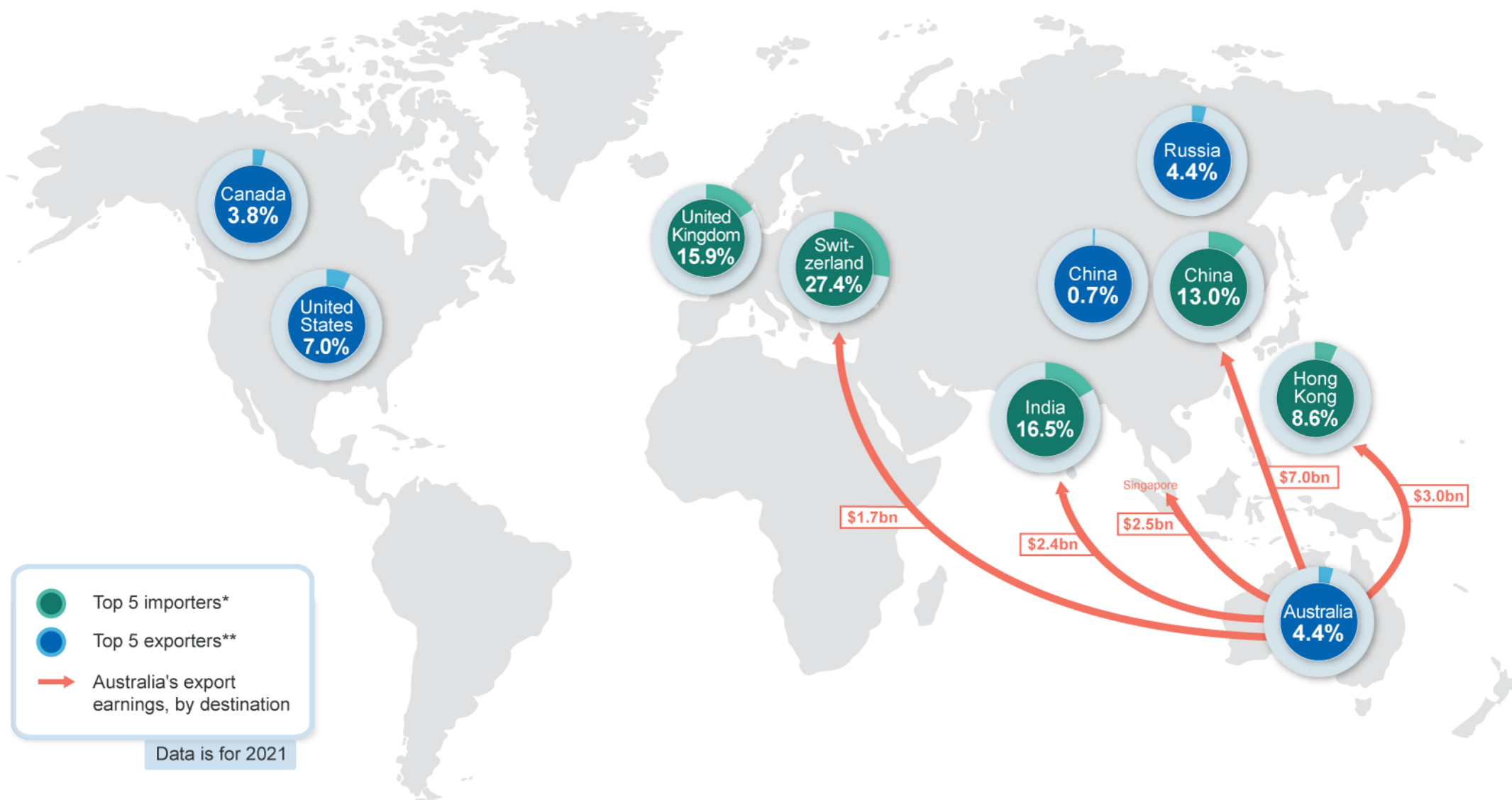
In 2021 jewellery fabrication made up **55% of global gold use**



Gold only makes up **3 parts per billion** of the Earth's outer layer

## Australia's gold





\* % of world imports (including ETFs and other investments)

\*\* % of gold export from top 5 gold producing countries

## 10.1 Summary

- Gold prices averaged US\$1,880 an ounce in the first half of 2022, with prices generally falling from their 2022 peak of US\$2,051 in March. Driving the weakness has been US dollar strength and rising bond yields on the back of market expectations of aggressive US monetary tightening during the remainder of 2022.
- Labour and skill shortages affected Australian gold mine production in the March quarter 2022, however production still rose by 3.8% year-on-year (see Australia section).
- Gold earnings are forecast to rise from \$23.5 billion in 2021–22 to \$25.5 billion in 2023–24, as rising gold export volumes outweigh the forecast decline in gold prices.

## 10.2 World consumption

### World gold consumption increased in the March quarter 2022

World gold demand increased by 34% year-on-year to 1,234 tonnes in the March quarter 2022. The increase was driven by strong inflows into gold-backed exchange-traded funds (ETFs), which gained 269 tonnes (worth US\$17 billion) over the quarter, compared with a net outflow of 173 tonnes during 2021. Heightened geopolitical risk, following Russia's invasion of Ukraine, drove investment flows into safe-haven assets (such as gold ETFs). Strong gold prices, weaker equity markets and mounting inflation concerns added to gold's appeal, driving investment demand in the March quarter 2022 to be almost three times higher year-on-year.

Official sector buying (central banks and other government financial institutions) fell by 29% year-on-year to 84 tonnes in the March quarter 2022. According to the World Gold Council, Egypt and Turkey were the largest purchasers, collectively purchasing 81 tonnes of gold during the quarter. Kazakhstan and Uzbekistan accounted for the majority of sales, collectively selling 59 tonnes of gold from their reserves.

Consumer demand for gold (jewellery, gold coins and bars) was significantly weaker during the March quarter 2022, partially offsetting

increases in investment demand. As a result, gold jewellery consumption declined by 7% year-on-year to 424 tonnes in the March quarter 2022, driven largely by weaker demand from China and India in response to the sharp rise in gold prices in late February. Jewellery consumption in India was 26% lower year-on-year, at 94 tonnes. Jewellery consumption in China fell by 8% year-on-year to 178 tonnes, with demand weakened further in March by the introduction of lockdowns in cities such as Shanghai and Shenzhen.

Retail investment in gold bars and coins was 20% weaker year-on-year during the March quarter 2022, with investors purchasing 282 tonnes of gold. The introduction of lockdown restrictions in China, and historically high local prices in Turkey, drove sharp declines in these countries. However, the significant year-on-year decrease was largely due to base effects, as March quarter 2021 investment was particularly strong.

**Figure 10.1: World gold demand by sector**



Notes: f Forecast. Jewellery fabrication includes jewellery consumption and the change in jewellery inventory. Investment includes ETFs, bars and coins. Technology includes gold used in the electronic, dentistry and other industrial sectors.

Source: World Gold Council (2022); Metals Focus (2022); Department of Industry, Science and Resources (2022)

### Investment demand to push gold consumption higher in 2022

World gold consumption is forecast to increase by 6.1% to 4,265 tonnes in 2022, driven largely by stronger investment demand — rising by 28% year-on-year. Investment demand (gold-backed ETFs or bar & coin holdings) has been revised to 1,284 tonnes in 2022, 30% higher than forecast in the March 2022 *Resources and Energy Quarterly*. Investment demand in 2022 has been revised up as expectations of rising inflation and ongoing geopolitical uncertainty add to gold's appeal.

Jewellery consumption is expected to rise by only 1.2% in 2022 — lower than previously forecast — due to weaker than expected demand in China and India during the first half of 2022. Chinese consumption may be impacted by the ongoing impacts of measures to control the spread of the Omicron variant of the COVID-19 virus in many of the major cities in China.

### Gold consumption expected to fall in 2023 and recover in 2024

World gold consumption is forecast to decrease by 1.9% to 4,183 tonnes in 2023, as investment demand eases from relatively strong levels in 2022. Gains in real bond yields should slow in 2023, as the major central banks largely complete the withdrawal of stimulatory monetary policy.

Jewellery consumption is expected to grow by 6.9% year-on-year in 2023, as lower prices support purchases in key consuming countries such as China and India.

World gold consumption is forecast to increase by 6.9% in 2024 to 4,470 tonnes, driven largely by continued growth in global jewellery consumption. The ongoing economic recovery in developed nations should boost consumption. Rising income growth and the forecast decline in gold prices, are expected to support demand from price-sensitive consumers in China and India.

## 10.3 World production

### World supply increased in March quarter 2022

World gold supply increased by 4.3% year-on-year to 1,156 tonnes in the March quarter 2022. The increased supply was driven by a 2.6% rise in global mine production and a 15% increase in gold recycling. Stronger gold recycling activity in the quarter largely reflected higher US dollar gold prices, with increases achieved despite the introduction of lockdowns in China.

Global mine production rose to 856.5 tonnes during the March quarter 2022, driven primarily by increased production in China and Australia.

Production in China — the world's largest gold producing country — increased by 5% year-on-year as most mines in Shandong province resumed production in the March quarter 2022. Shandong's provincial government halted operations in 2021, as safety inspections took place.

Production in Australia — the world's second-largest gold producing country — increased by 3.8% year-on-year in the March quarter, to 77.0 tonnes (see Section 10.5 Australia's exports and production).

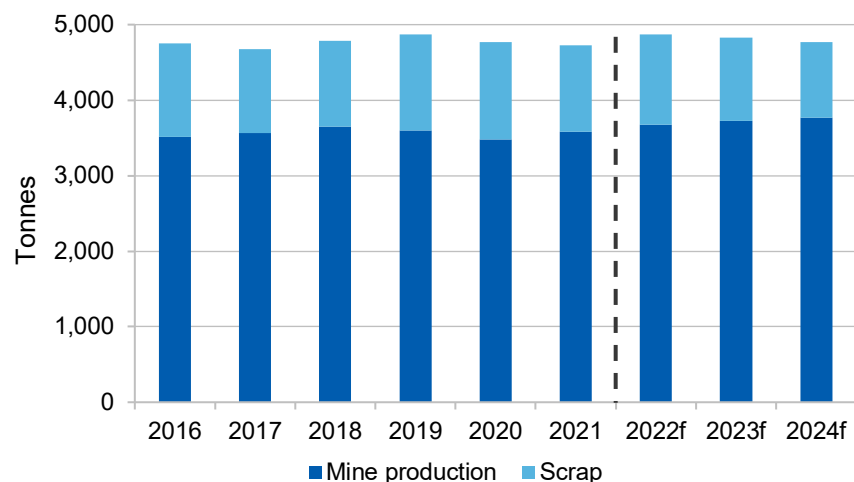
Production in the United States rose by 4% in the March quarter 2022, due to the extraction of higher-grade ores and increased output from the Carlin mines of Nevada. In West Africa, production in Mauritania rose by 54% year-on-year, as the first phase of the Tasiast expansion project was ramping up through the quarter.

### World supply expected to fall as recycling activity eases

In 2022, global gold supply is forecast to increase by 3.5% to 4,868 tonnes, driven mainly by higher gold mine production and gold recycling. World gold mine production is forecast to rise by 2.5% in 2022 to 3,671 tonnes, led by increases in China, Australia, North America and West Africa.

High gold prices are also expected to support greater recycling activity, with recycling volumes forecast to rise by 4.6% to 1,196 tonnes.

**Figure 10.2: World gold supply**



Notes: s Estimate. f Forecast. Net producer hedging is not included.

Source: Department of Industry, Science and Resources (2022); Metals Focus (2022); World Gold Council (2022).

World gold supply is forecast to decline by 0.4% in 2023 and by 1.0% in 2024, as lower recycling activity offsets increases in mine production.

Gold mine production is expected to increase as new projects come online in Canada, Chile, Brazil and Argentina. Production in Australia is forecast to rise during 2023 and 2024, driven by new projects and expansions of existing projects. Continued environmental regulations and industry consolidation in China will see production fall over the medium-term.

## 10.4 Prices

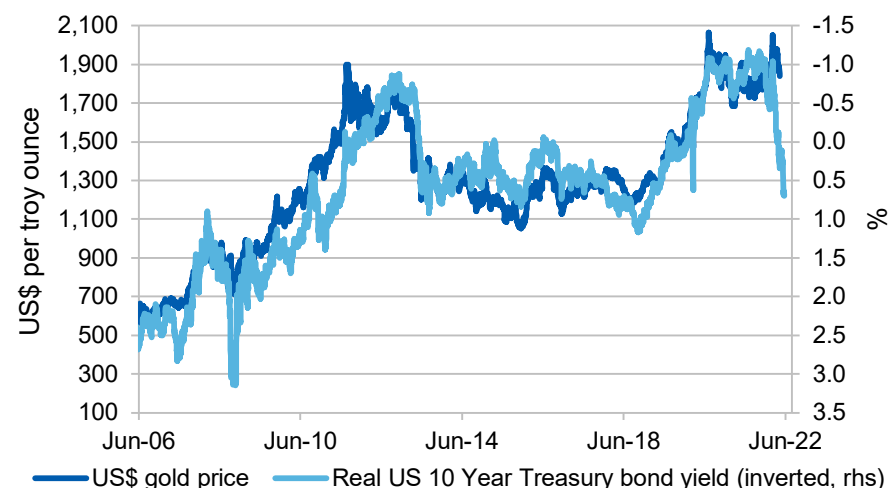
### Gold prices have fallen from their peak in March 2022

The London Bullion Market Association (LBMA) gold price retreated to a low of about US\$1,810 an ounce during the June quarter 2022, driven by rising real bond yields and a strengthening US dollar. The price fall came after gold prices averaged US\$1,945 an ounce over March and April 2022

due to strong safe-haven demand amid the Russian invasion of Ukraine and increasing inflation in advanced economies.

Higher than expected inflation in advanced economies has resulted in most central banks commencing interest rate hikes — and signalling further hikes — during the remainder of the year. On 15 June 2022, the US Federal Reserve lifted the target for the fed funds rate by 75 basis points to 1.50%-1.75%, and markets are now pricing in a Fed Funds rate of about 3.6% by the end of the year — 172 basis points higher than expected at the time of the release of the March 2022 *Resources and Energy Quarterly*.

**Figure 10.3: Gold price and real US 10-Year Treasury yield**



Source: Bloomberg (2022)

As a result of the central bank action, real bond yields have lifted sharply in recent months, now consistently sitting above 0% for the first time since the beginning of the pandemic in 2020. Rising bond yields tend to undermine gold's appeal to institutional and retail investors as a secure asset to hedge against risks or inflation. This is because increases in the yield of a US (or other credible government) Treasury bond raises the so-called market "risk-free rate", and increases the opportunity cost of holding



gold. However, the relationship between gold prices and real bond yields has weakened significantly since the beginning of the Russian invasion of Ukraine, due to additional safe-haven demand for gold.

### Gold prices to fall over the short and medium term

Gold prices are projected to fall at an average annual rate of 3.3% over the outlook period, from about US\$1,850 an ounce in 2022 to US\$1,665 an ounce in 2024. Driving the fall in 2023 will be rising interest rates — as central banks in advanced economies tighten monetary policy in response to surging inflation. Lower safe haven demand will do less to ameliorate the impact of higher interest rates on gold demand.

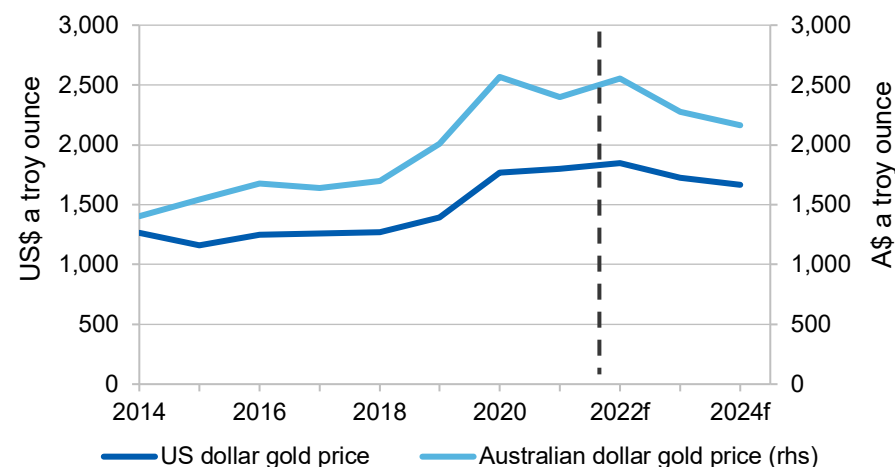
In combination with forecast appreciation in the Australian dollar, the lower US dollar gold price is expected to lower the Australian dollar gold price from A\$2,556 an ounce in 2022 to A\$2,162 an ounce in 2024.

There are several risks to the gold price assessment in the second half of 2022, including the arrival of any new COVID-19 variants and the extent to which COVID-19 lockdowns and control measures persist in China. Persistent outbreaks could dampen future gold demand from one of the largest importers and consumers of gold.

A further risk to the price assessment is the continued fallout from Russia's invasion of Ukraine. Any escalation (or de-escalation) in the conflict is likely to have a pronounced impact on the safe-haven premium of gold over the forecast period.

Finally, the path of official interest rates — and partly by extension, real bond yields — over the forecast period, is highly uncertain and subject to central bank assessments of economic conditions. A faster than expected rise in real bond yields could lead to a steeper than forecast fall in gold prices, as the opportunity cost of holding gold increases. On the other hand, a slower tightening of monetary policy would likely result in a slower than forecast decline in gold prices, as real bond yields could be expected to rise more slowly.

**Figure 10.4: US and Australian dollar gold prices**



Note: f Forecast.

Source: Department of Industry, Science and Resources (2022); LBMA (2022) Gold price PM

In the first two months of the June quarter 2022, global equity markets responded negatively to rising bond yields, strength in the US dollar, and pessimism over the global economic outlook. As a result, weakness in equity markets will support gold's appeal to investors looking for safe-haven assets. However, the extent to which this supports gold prices will also depend on bond yields.

## 10.5 Australia's trade, production and exploration

### Australian gold exports fell in March quarter 2022

Australian gold export earnings fell by 21% year-on-year to \$5.4 billion in the March quarter 2022, driven by lower gold prices (22% lower year-on-year).

Australia exported \$2.5 billion to China (excluding Hong Kong) in March quarter 2022, significantly higher than the \$218 million in gold exports in the March quarter 2021 — which was impacted by bans imposed by Beijing when COVID-19 hit.

Gold exports to India were worth \$243 million in the March quarter 2022, significantly lower than the \$1.2 billion of exports in the March quarter 2021. Indian demand has declined due to the COVID-19 lockdowns.

Australian exports to the financial hubs (United States, United Kingdom, Hong Kong and Singapore) were collectively worth \$1.7 billion in the March quarter, 52% lower year-on-year.

Australia's gold exports are estimated to have fallen by 10% to \$23.5 billion in 2021–22, largely driven by lower Australian dollar gold prices and, to a lesser extent, lower export volumes.

#### Australian gold exports to increase in 2022–23 and 2023–24

Australian gold export earnings in 2022–23 are forecast to increase by 10% to \$26.0 billion in 2022–23, before falling to \$25.5 billion in 2023–24. Increasing gold production is expected to drive higher export volumes over the next two years, while the forecast decline in export values in 2023–24 is expected to be driven by lower US and Australian dollar gold prices (see the *Prices* section).

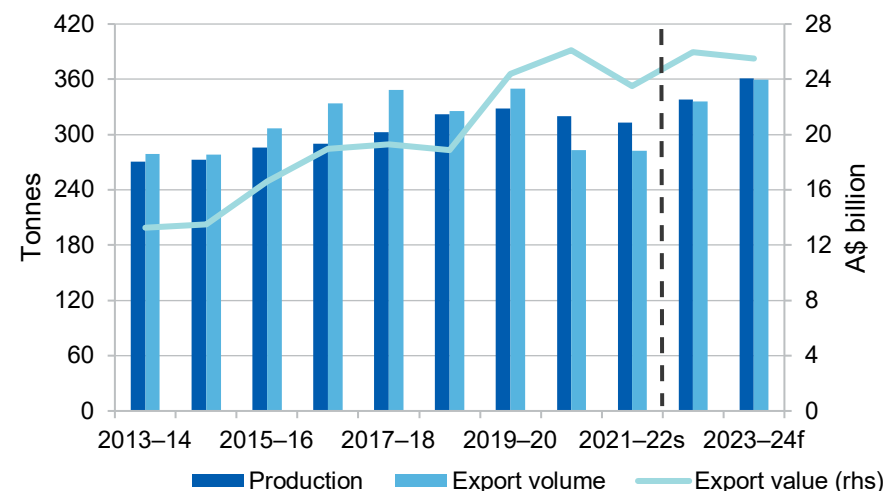
#### Australian gold mine production rose in March quarter 2022

Australia's gold production rose by 3.8% year-on-year in the March quarter 2022 to 77.0 tonnes, despite the ongoing impacts of state border closures and COVID-19 related labour shortages. Several miners cited wet weather impacts in Western Australia (WA) and New South Wales (NSW) as having an impact on production over the quarter, while others pointed to supply chain delays — road haulage, for example — and pressures from input prices.

Australian gold output is estimated to have fallen by 2.1% to 313 tonnes in 2021–22, due to the impacts of COVID-19 related labour shortages and supply chain issues.

Production at Newcrest's Cadia mine in NSW decreased by 17% year-on-year in the March quarter 2022. However, production was 30% higher compared with December quarter 2021, as the SAG mill returned to full capacity after its replacement and upgrade.

**Figure 10.5: Australian gold exports**



Notes: s Estimate. f Forecast. Export volume contains ash, waste and scrap gold, of which the gold content is unknown.

Sources: ABS (2022); Department of Industry, Science and Resources (2022).

Production at Agnico Eagle's Fosterville gold operation in Victoria rose by 17% year-on-year. The company stated that while mine production was affected by lower workforce availability (related to COVID-19), lower than forecast ore tonnage was offset by a higher than anticipated grade.

Production at Northern Star's Super Pit gold operations in WA in the March quarter was 8.3% higher year-on-year, due to increased ore tonnage from underground and open-pit mining. Ore processed was lower than in December quarter 2021 due to a planned shutdown. However, this was offset by increased head grade and recovery efficiency. Production from Northern Star's Kalgoorlie operations was 35% lower year-on-year, due to a significant mill downtime event impacting available milling time in South Kalgoorlie.

#### Australian gold mine production to increase in 2022–23 and 2023–24

Australian gold production is forecast to rise at an average annual rate of 7.7% during 2022–23 and 2023–24.

Production is forecast to reach 338 tonnes in 2022–23, propelled by production from new mines and existing mine expansions. Red 5's 6.2 tonnes per year King of the Hills gold project in WA should start production in the September quarter 2022. First gold is expected from Calidus Resources' 4.3 tonnes per year Warrawoona gold project in WA in May 2022. Heritage Minerals plans to open the 1.6 tonnes per year Mount Morgan tailings project in Queensland in 2023.

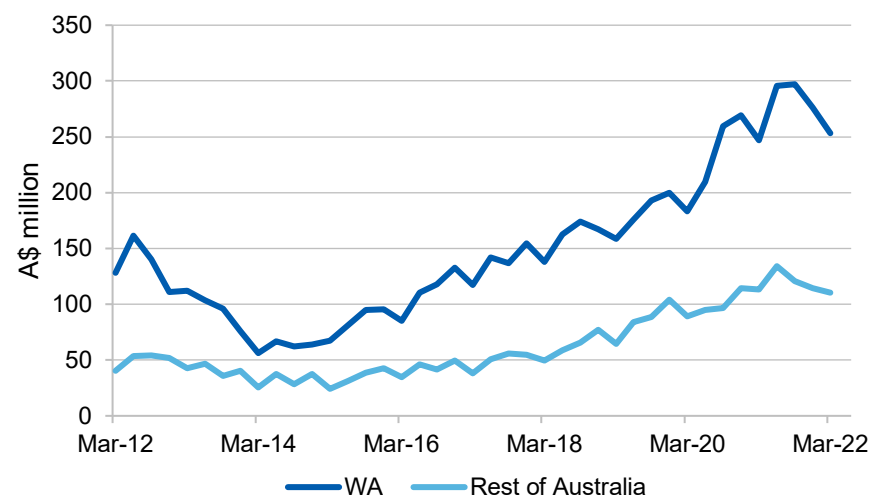
Production is then forecast to reach 361 tonnes in 2023–24, as Newmont's Tanami Expansion 2 is completed in early 2024, Bellevue Gold's 5.7 tonnes per year Bellevue gold mine in WA comes online in June quarter 2023, and Vista Gold's 11 tonnes per year Mt Todd project in the Northern Territory comes online in March quarter 2024.

The primary risk to the Australian gold production forecast is the extent to which supply chain issues and labour or skills shortages continue in the short term for Australian gold producers. For example, Silver Lake Resources withdrew their 2021–22 production guidance after the March quarter 2022, due to COVID-19 related labour shortages and supply chain interruptions.

#### Australian gold exploration expenditure has continued to rise

In the March quarter 2022, Australia's gold exploration expenditure was \$363.5 million, down by 7.0% from \$390.8 million in the December quarter 2021. Western Australia continued to be the focus of gold exploration activity in Australia, accounting for about 70% of total Australian gold exploration expenditure. Gold's share of exploration expenditure across all minerals fell to 42.8% in March quarter 2022, down from 49.0% in March quarter 2021. This was largely due to higher expenditure in base metals and iron ore exploration, as gold exploration growth was flat year-on-year.

**Figure 10.6: Australian gold exploration expenditure**



Source: ABS (2022)

#### Revisions to the outlook

Australia's estimated gold export earnings for 2021–22 have been revised down to \$23.5 billion — a fall of 3.8% from the March 2022 *Resources and Energy Quarterly*, mostly reflecting lower than expected export unit values in March quarter 2022. Forecasts for Australian gold exports in 2022–23 and 2023–24 have been revised up by 6.5% and 1.7%, respectively, reflecting an upward revision to export volumes and an upward revision made to US dollar and Australian dollar gold prices in those years.



**Table 10.1: Gold outlook**

World	Unit	2021	2022 <sup>f</sup>	2023 <sup>f</sup>	2024 <sup>f</sup>	Annual percentage change		
						2022 <sup>f</sup>	2023 <sup>f</sup>	2024 <sup>f</sup>
Total demand	tonnes	4,022	4,265	4,183	4,470	6.1	-1.9	6.9
Fabrication consumption <sup>b</sup>	tonnes	2,560	2,540	2,652	2,890	-0.7	4.4	9.0
Mine production	tonnes	3,581	3,671	3,729	3,767	2.5	1.6	1.0
Price <sup>c</sup>								
– nominal	US\$/oz	1,800	1,847	1,724	1,665	2.6	-6.7	-3.4
– real <sup>d</sup>	US\$/oz	1,939	1,847	1,676	1,583	-4.7	-9.3	-5.6
Australia	Unit	2020–21	2021–22 <sup>s</sup>	2022–23 <sup>f</sup>	2023–24 <sup>f</sup>	2021–22 <sup>s</sup>	2022–23 <sup>f</sup>	2023–24 <sup>f</sup>
Mine production	tonnes	320	313	338	361	-2.3	8.0	6.9
Exports								
– volume	tonnes	283	282	336	359	-0.3	19.1	6.9
– nominal value	A\$m	26,105	23,503	25,960	25,518	-10.0	10.5	-1.7
– real value <sup>e</sup>	A\$m	27,236	23,503	24,799	23,599	-13.7	5.5	-4.8
Price								
– nominal	A\$/oz	2,481	2,521	2,421	2,224	1.6	-4.0	-8.1
– real <sup>g</sup>	A\$/oz	2,589	2,521	2,312	2,057	-2.6	-8.3	-11.0

Notes: <sup>b</sup> includes jewellery consumption and industrial applications; <sup>c</sup> London Bullion Market Association PM price; <sup>d</sup> In 2022 US dollars; <sup>e</sup> In 2021–22 Australian dollars; <sup>s</sup> Estimate; <sup>f</sup> Forecast. Gold export volume contains ash, waste and scrap gold, of which the metal content is unknown.

Source: ABS (2022) International Trade, 5464.0; London Bullion Market Association (2022) gold price PM; World Gold Council (2022); S&P Market Intelligence (2022); Department of Industry, Science and Resources (2022).