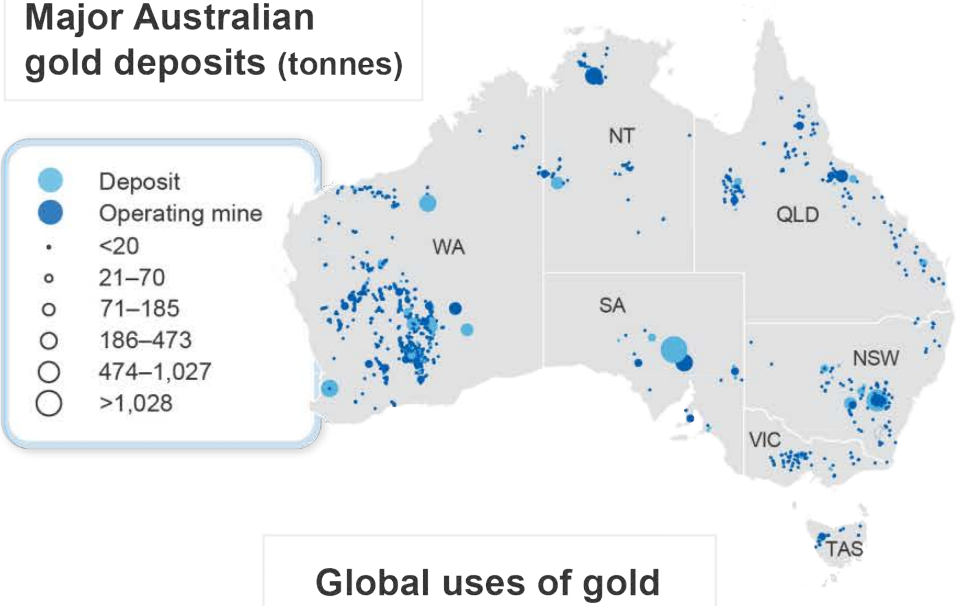
79
Au
196.967

Gold

Major Australian gold deposits (tonnes)



Gold

Approx 187,200 tonnes of gold mined since the **beginning of civilisation**

The US Federal Reserve holds **6,700 tonnes of gold**

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

Global uses of gold

37%
Jewellery

24%
Coins and bars

23%
Gold-backed exchange traded funds

8%
Electronics, industrial, dental and medical

8%
Central bank reserves

Australia’s gold

World’s no. 1 producer of gold in first-half of **2021**

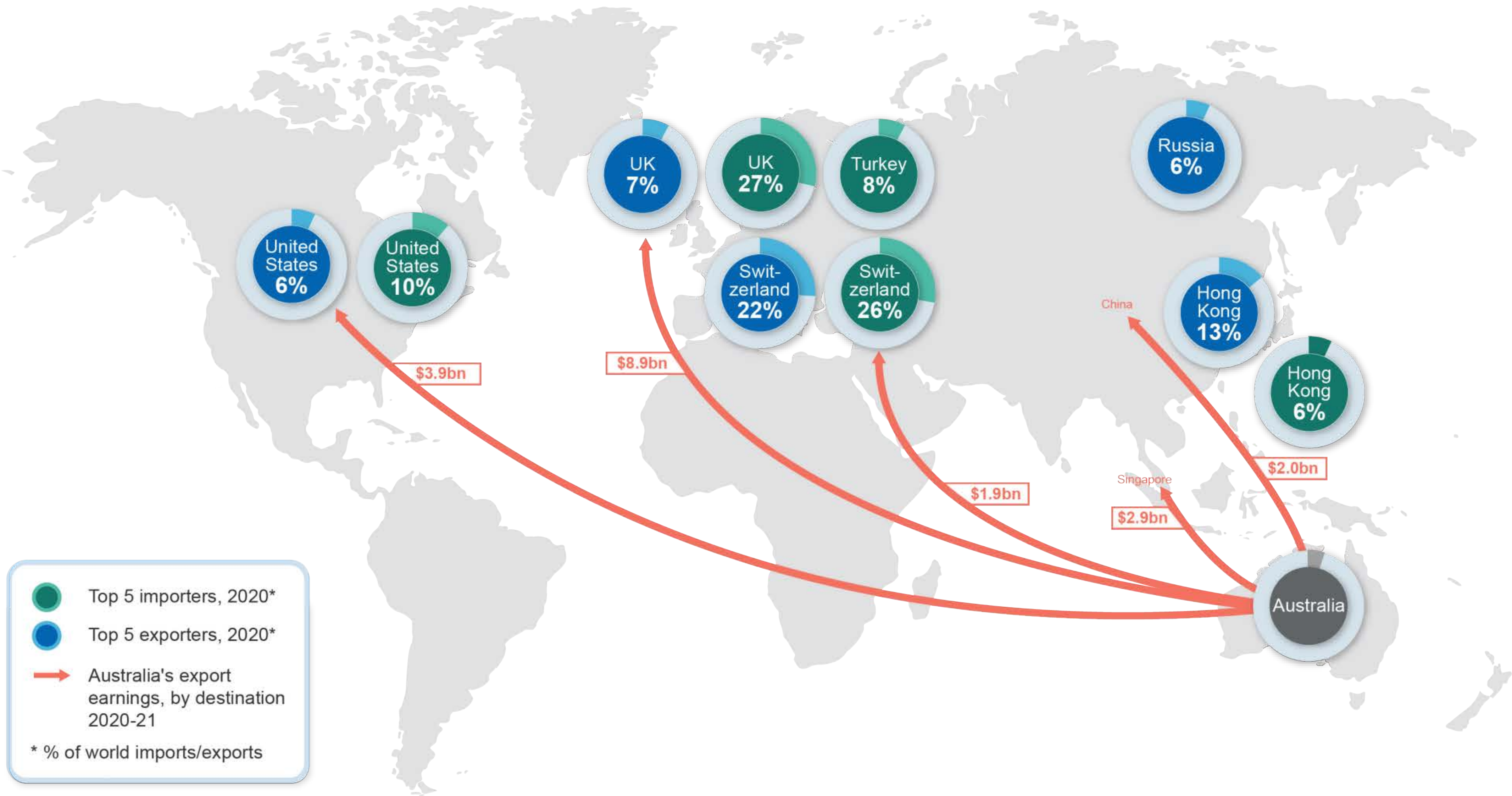
World’s largest reserves of gold

World record holder for **largest gold nugget** 72kg

Gold

79 Au 196.967

Trade map | December 2021



10.1 Summary

- The gold price is estimated to have increased by 1.8% in 2021 to US$1,800 an ounce. A higher real interest rate environment is likely to see the gold price slide to around US$1,700 an ounce in 2023.
- Labour and skills shortages are affecting Australian gold mine production, which is forecast to reach 362 tonnes in 2021–22. Production from new mines and existing mine expansions is expected to boost gold mine production to 374 tonnes in 2022–23 (see Australia section).
- Australia's gold export earnings are forecast to increase from $28.3 billion in 2021–22 to $28.4 billion in 2022–23, driven by higher export volumes (to 377 tonnes in 2022–23).

10.2 Consumption

World gold consumption decreased in the September quarter 2021

World gold demand decreased by 7.0% year-on-year to 831 tonnes in the September quarter 2021, led by a strong outflow from gold-backed exchange traded funds (ETFs). Over this period, investors pulled out 27 tonnes (worth US$1.6 billion) of gold from gold-backed ETFs. An improvement in the global economy and the COVID-19 vaccine roll-out led to an exodus of institutional investors' funds from safe haven assets (such as gold ETFs) to riskier assets. Global stock markets continued to reach record highs in the September quarter 2021, attracting investment funds.

Offsetting the fall in gold-backed ETFs in the September quarter 2021 was a modest addition (69 tonnes) of official gold buying (that is, from central banks and other government financial institutions) (Figure 10.1). A desire to diversify reserves, growing debt levels and rising inflation were the catalyst for central banks' growing appetite towards gold. According to the World Gold Council, India and Brazil were the largest gold buyers in the September quarter 2021, purchasing 50 tonnes of gold. Turkey and Qatar were the largest gold sellers in the September quarter 2021, selling 16 tonnes of gold.

Over the year to the September quarter, jewellery demand rose by 33% year-on-year to 443 tonnes, led by a 32% (or 157 tonnes) rise in consumption in China (excluding Hong Kong) and a 58% (or 96 tonnes) rise in consumption in India — the world's two largest gold jewellery consuming nations. The recovery of the Chinese and Indian economies were the main contributing factor to China and India increasing jewellery demand in the September quarter 2021.

In the US, led by the economic recovery and improved consumer sentiment, jewellery consumption increased by 12% year-on-year to 32 tonnes in the September quarter 2021.

Jewellery consumption in several Asian countries was disrupted by extended COVID-19 lockdowns, including Vietnam (down by 50% year-on-year to 0.9 tonnes in the September quarter) and Malaysia (down by 48% year-on-year to 1.3 tonnes in the September quarter).

Figure 10.1: World gold consumption by sector

Note: Total fabricated includes jewellery consumption and industrial applications
Source: World Gold Council (2021) Gold Demand Trends; Department of Industry, Science, Energy and Resources (2021)

Demand for gold bars and coins also grew strongly in the year to the September quarter 2021 (up 19% or 41 tonnes year-on-year). Growth in gold bar and coin retail investment was propelled by a 12% (or 6.9 tonnes) year-on-year rise in China's bar and coin demand. Encouraged by lower gold prices and rising incomes, Chinese retail investors stepped up their purchases in anticipation of short to medium term gains.

World gold consumption forecast to rise in 2021

World gold consumption is estimated to increase by 4.0% to 3,880 tonnes in 2021 (Figure 10.1), as the ongoing economic recovery provides some support for jewellery demand.

In 2021, jewellery demand is estimated to have rebounded strongly from the heavy reduction in 2020, up 34% year-on-year, to 1,885 tonnes. China and India are expected to have contributed the most to this recovery. Lower and more stable gold prices, rising personal income, and the Indian wedding season from November to February are expected to have lifted gold demand as 2021 ended.

In the US, gold jewellery consumption grew by 12% in the September quarter 2021, and is expected to have remained strong over the rest of 2021, driven by the COVID-19 vaccine rollout, improved consumer sentiment and high household savings. In Europe, jewellery consumption is expected to have recovered, supported by stronger gifting demand during the festive season.

The risk to China's jewellery consumption is the debt issues in China's property sector, with Evergrande (China's second largest real estate developer) struggling to pay its debt of US$300 billion. The impact on consumer confidence could hurt jewellery demand.

Gold consumption expected to rise in 2022 and 2023

World gold consumption is forecast to grow at an average annual rate of 8.1% in 2022 and 2023, to 4,534 tonnes in 2023 (Figure 10.1). The growth is expected to be largely driven by jewellery consumption, which is forecast to rise by 9.6% a year in 2022 and 2023, to 2,263 tonnes in 2023.

Jewellery demand from China is expected to remain strong, supported by rising consumer sentiment and income. Chinese jewellery retailers are increasingly using private and social media channels to attract young Chinese consumers.

Demand from India is expected to recover in 2022 and 2023, as more people are vaccinated against COVID-19 and the economy recovers.

In the US, jewellery demand is expected to be lower than 2021, as consumer discretionary spending is expected to move towards leisure activities as COVID-19 restrictions and economic activity return to normality.

Gold retail investment is expected to help global gold consumption, with demand for gold bars and coins forecast to rise at an average annual rate of 1.0% to reach 1,231 tonnes by 2023. This is supported by a forecast pull-back in gold prices (see *Section 10.4 prices*).

The official sector is expected to add to gold demand in 2022 and 2023, as bond prices fall. As a result, central bank gold buying is forecast to rise by an average 14% a year over the outlook period, reaching 620 tonnes in 2023.

In October 2021, the National Bank of Poland (Poland's central bank) announced its plan to purchase 100 tonnes of gold in 2022. The central bank has said this planned addition aims to increase Poland's financial security by boosting the country's gold reserve to 330 tonnes putting Poland ahead of other major gold holders such as the UK, Saudi Arabia and Austria.

10.3 Production

World gold supply decreased in the September quarter 2021

World gold supply decreased by 3.2% year-on-year to 1,239 tonnes in the September quarter 2021. Driving the decline was a 22% year-on-year fall in gold scrap supply. Lower US dollar gold prices, improved economic activity and employment opportunities reduced the sale of gold from consumers to jewellery retailers in many parts of the world.

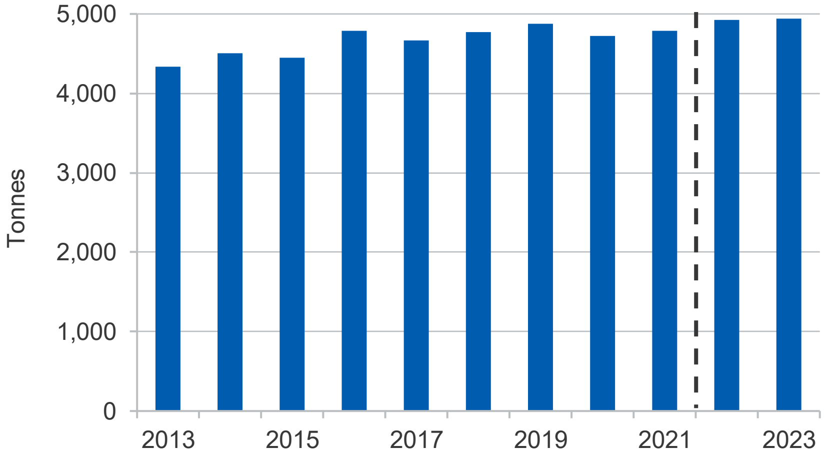
Offsetting the decline in gold scrap supply was an estimated 4.4% year-on-year rise in world gold mine production to 959 tonnes, as the COVID-19 containment measures impacted less on production.

Gold mine production in Canada rose by 23% year-on-year in the September quarter 2021, propelled by the ramp-up of production from new mines and the return to full production at the Musselwhite gold mine (following a fire incident in the March quarter 2019).

Over this period, gold mine production in Peru and South Africa rose by 25% and 18% year-on-year, respectively, driven by the easing of COVID-19 containment measures and improved ore grades.

China produced 84 tonnes of gold in the September quarter 2021. Stricter environmental regulation and safety checks led to a 10% year-on-year decline in China's gold mine production in the first three quarters of 2021, to 237 tonnes. Production at Shandong Gold Mining's gold mines in Shandong province fell by 45% year-on-year in the first nine months of 2021, impacted by safety inspection activities.

Figure 10.2: World gold supply



Source: World Gold Council (2021) Gold Demand Trends; Department of Industry, Science, Energy and Resources (2021)

Production in Australia decreased by 0.9% year-on-year to 80 tonnes in the September quarter 2021 (see *Section 10.5 Australia's exports and production*).

World gold supply estimated to rise in 2021

In 2021, world gold supply is estimated to have increased by 1.4% to 4,788 tonnes, driven by higher gold mine production in Canada and Latin America (Figure 10.2).

Production in Canada and the US in 2021 is estimated to rise by 12% and 17% to 224 and 212 tonnes, respectively, as production recovers from the disruption of the COVID-19 pandemic.

Canada's newest gold mine, Pure Gold, located in Ontario, started commercial operation on 1 August 2021. The mine is expected to add 3.1 tonnes of gold a year to Canadian gold output. Hudbay Minerals' New Britannia gold mine produced first gold on 11 August 2021, and is expected to add 5.6 tonnes a year to Canadian gold output.

Gold mine production in Latin America is recovered in 2021, following heavy losses in 2020. Production is estimated to increase in Mexico (by 15% in 2021 to 121 tonnes), Peru (up 14% to 100 tonnes) and Brazil (up 3.6% to 90 tonnes).

Chinese gold mine output is estimated to have fallen by 11% in 2021, to 335 tonnes, as power shortages and stricter environmental and safety regulations are expected to lead to production cuts and mine closures.

Gold recycling activity was subdued in 2021, as improved economic activity and increased personal income reduced the need to sell gold from consumers to jewellery retailers. As a result, world gold recycling supply is estimated to have fallen by 10% to 1,166 tonnes in 2021.

World gold supply expected to rise further in 2022 and 2023

Propelled by higher gold mine production, world gold supply is forecast to rise at an average annual rate of 1.6% in 2022 and 2023, reaching 4,944 tonnes by the end of the outlook period (Figure 10.2).

World gold mine production is forecast to increase by 3.0% (to 3,756 tonnes) in 2022 and by 2.0% (to 3,831 tonnes) in 2023, driven by increased production in Australia, Canada, Chile and the US.

In Australia, a solid pipeline of projects is expected to bring the country's gold mine production to 395 tonnes in 2023.

In Canada, gold mine production is forecast to rise to 258 tonnes in 2023. Sabina Gold and Silver's Back River gold mine in Nunavut province is expected to start operation in 2023, adding 4.7 tonnes of gold a year to Canadian gold output.

In Chile, Gold Fields' 8.8 tonnes a year Salares Norte gold project in the Atacama region is expected to come online in 2023.

In the US, Equinox is advancing an expansion at its Castle Mountain gold mine in California from 1.2 tonnes in 2021 to 6.2 tonnes a year in 2023.

In 2022 and 2023, lower gold prices and improving economic situations of many households are likely to discourage the sale of gold jewellery. Gold scrap supply is forecast to fall by 2.0% in 2022 (to 1,143 tonnes) and 7.0% in 2023 (to 1,063 tonnes).

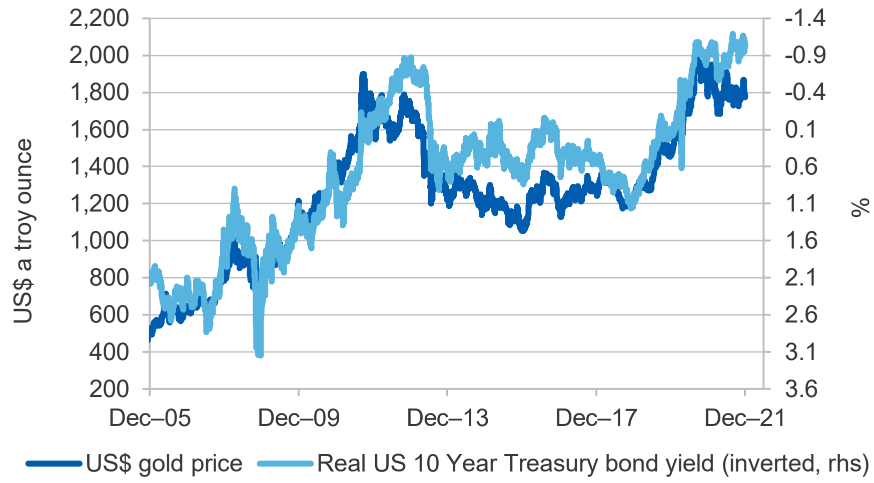
10.4 Prices

Gold prices expected to finish the year on a positive note

The gold price is estimated to average US$1,800 an ounce in 2021 (Figure 10.4), up from US$1,770 an ounce in 2020. The gold price is finishing the year strongly, as investors seek inflation hedges. The inflation has surged in many countries, as strong demand combines with supply chain problems. In the US, the annual inflation rate reached a three-decade high of 6.2% in October 2021. In Germany, the annual inflation rate reached a 29-year high of 5.2% in November 2021.

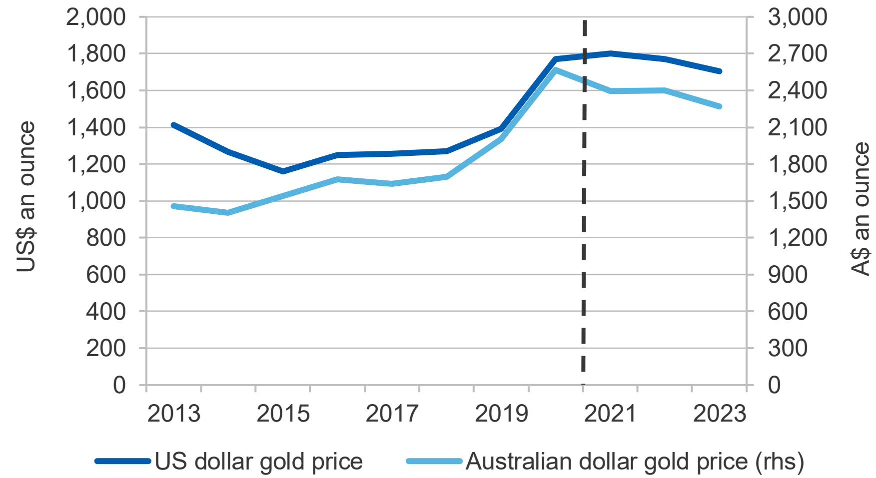
On 3 November 2021, the US Federal Reserve decided to take an incremental step to ease monetary stimulus by reducing its asset purchases to US$15 billion a month, starting from mid-November 2021.

Figure 10.3: US dollar gold price and real US 10-Year Treasury yield



Source: Bloomberg (2021)

Figure 10.4: US and Australian dollar gold prices



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

Gold prices expected to fall in 2022 and 2023

Gold prices are forecast to fall by an average 2.7% a year, to US$1,700 an ounce in 2023, as the global economic recovery sees a higher interest rate environment (Figure 10.4). The US Federal Reserve's stance may help raise real bond yields, a major factor driving institutional investment demand for gold. With (real) interest rates increasing, the opportunity cost of holding gold is high, lowering its attractiveness as an investment asset.

There are several risks to the gold price assessment, including the rising cases of the new COVID-19 variant (namely Omicron) in many parts of the world. The World Health Organisation has declared the Omicron variant as a COVID-19 "variant of concern".

Another risk to the price assessment is a potential correction in global stock markets. A correction in the US' major stock markets may lift the demand for gold as a safe haven asset.

10.5 Australia's exports and production

Export values decreased in the September quarter 2021

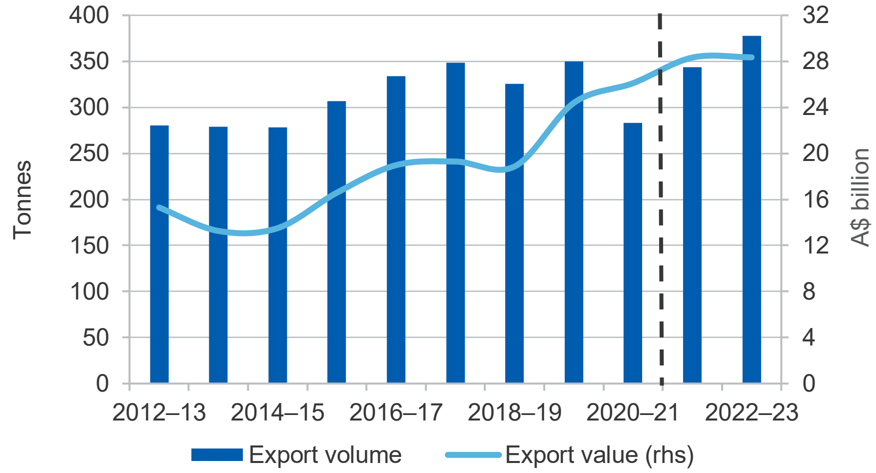
The value of Australia's gold exports decreased by 22% year-on-year to $5.4 billion in the September quarter 2021, due to a 95% year-on-year fall in exports to the UK, and a 94% year-on-year fall in exports to the US. Flows to the UK and US in the September quarter 2020 were driven by a strong inflow of global gold-backed ETFs.

Australia exported $2.2 billion of gold to China in the September quarter 2021. China did not import any gold from Australia in the September quarter 2020. Exports are volatile, often reflecting ETF flows.

Australian gold exports increase in 2021–22 and 2022–23

Australia's gold export earnings are forecast to increase at an average annual rate of 4.3% between 2021–22 and 2022–23, to $28.4 billion in 2022–23 (Figure 10.5). The growth in export earnings is expected to be driven by higher export volumes (to 377 tonnes in 2022–23).

Figure 10.5: Australia's gold exports



Notes: Export volume contains ash, waste and scrap gold, of which the gold content is unknown
Source: ABS (2021) International Trade, 5464.0; Department of Industry, Science, Energy and Resources (2021).

On 4 November 2021, the Papua New Guinea (PNG) Government has indicated that all gold mined in PNG will need to be refined in the country by 2025. The decision is expected to impact Newcrest's Lihir gold operations in the PNG, where the gold ore is shipped to the Perth Mint in WA for further refining. Newcrest is also in the process of negotiation with the PNG Government to build the Wafi-Golpu copper and gold mine in the PNG highlands, which is expected to be commissioned in 2026.

Australian gold mine production decreased in the September quarter 2021

Australia's gold mine production fell by 4.6% year-on-year to 77 tonnes in the September quarter 2021, impacted by labour shortages, plant maintenance, and lower ore grades.

Lower ore grades impacted output at a number of mines in the September quarter 2021. This included Kirkland Lake Gold's Fosterville gold mine in

Victoria (down by 17% year-on-year to 4.2 tonnes in the September quarter 2021), and AngloGold Ashanti's Sunrise Dam in WA (down by 22% year-on-year to 1.8 tonnes in the September quarter 2021).

Production at Newmont's Boddington operation in WA decreased by 6.1% to 5.1 tonnes in the September quarter 2021, due to lower throughput and ore grades. Output at Newcrest's Cadia mine in New South Wales declined by 45% year-on-year to nearly 3.4 tonnes in the September quarter 2021, due to planned maintenance, which included replacement and upgrade of the mill motor.

In the September quarter 2021, labour shortages affected gold output at several gold mines in WA. Production at Regis Resources' Duketon gold mine fell by 10% year-on-year, to 2.3 tonnes. Production at AngloGold Ashanti and Regis Resources' joint-venture Tropicana gold mine decreased by 10% year-on-year to nearly 3.0 tonnes.

Over the same period, a number of gold mines recorded a rise in gold output. Production at Newcrest's Telfer gold mine in WA rose by 17% year-on-year to 3.1 tonnes, propelled by higher gold recoveries.

Production at Northern Star Resources' Carosue Dam gold mine increased by 19% year-on-year to 2.0 tonnes, driven by higher ore grades.

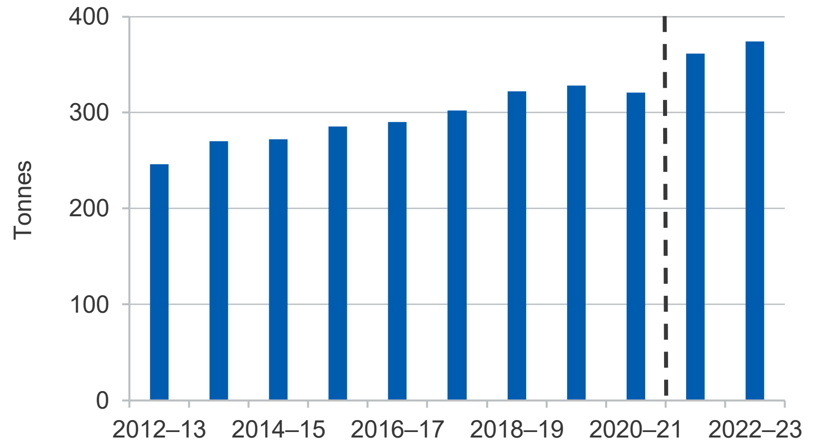
Production at Silver Lake Resources' Deflector gold mine in WA increased by 12% year-on-year to nearly 1.0 tonne, driven by higher ore grades.

Higher production in the short term

Australian gold mine production is forecast to rise at an average annual rate of 8.0% between 2020–21 and 2022–23. Production of 374 tonnes by 2022–23 will be propelled by both production from new mines and existing mine expansions (Figure 10.6).

Red 5's 6.2 tonnes a year King of the Hills gold project in WA is on track to start production in mid-2022, with construction activities accelerating on multiple fronts. Ramelius Resources started mining at its Tampia mine in WA on 18 June 2021. It is expected that the mine will add 3.2 tonnes of gold to the Australian gold output from 2021–22 and onwards.

Figure 10.6: Australia's gold production



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

Newcrest has proceeded with the $246 million West Dome Stage 5 Cutback project to extend the life of its Telfer mine in WA. The first ore from the cutback is expected in the first half of 2022.

Resources and Energy Group poured the first gold at its Granny Venn gold mine in WA in October 2021 after operations 23 years ago. It is expected to produce 0.3 tonne of gold a year.

Calidus' 4.3 tonnes of gold a year Warrawoona gold mine in WA is expected to commence production in the June quarter 2022.

Newmont Mining commissioned the autonomous haulage system for its Boddington gold mine in WA in October 2021. With a fully autonomous haulage fleet of 36 trucks, the mine's safety and productivity are expected to improve after 2021.

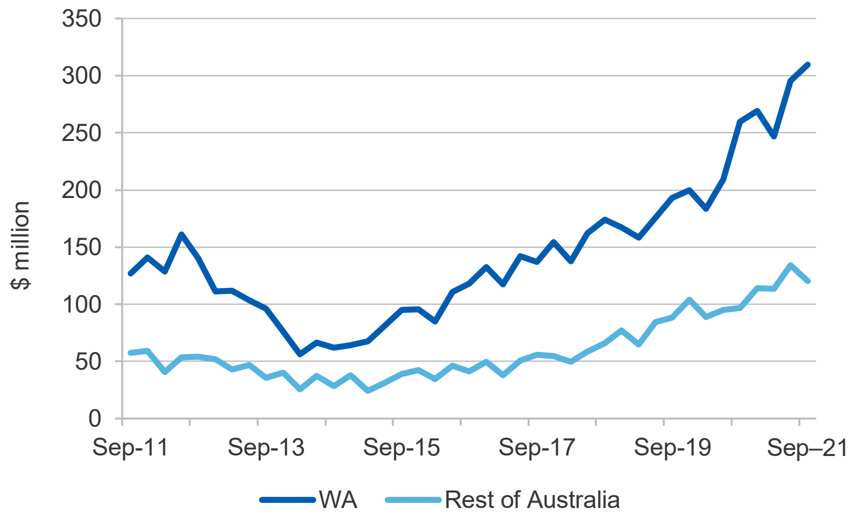
Gold Fields' St Ives gold operations in WA is the first Australian gold mine to use the new Sandvik battery electric vehicle underground loaders. As part of a production study over a two-year period, the electric battery technology used in each loader is expected to eliminate underground emissions, and reduce heat and noise compared to diesel loaders.

The risk to the outlook is the potential impacts of labour and skills shortages on Australian gold miners. Some parts of Australia are still implementing COVID-19 containment measures. In WA, unvaccinated workers have been banned from working in WA mines. It is mandatory for anyone visiting a mine site after 1 December 2021 to have had one jab, and two jabs will be required after 1 January 2022. These measures may cause a postponement of new projects and a production cut from existing gold mines.

Gold exploration expenditure rose in the September quarter 2021

Australia's gold exploration expenditure rose by 21% year-on-year to nearly $430 million in the September quarter 2021, incentivised by high US and Australian dollar gold prices. Western Australia remained the centre of gold exploration activity in Australia, accounting for 72% (or $310 million) of total gold exploration expenditure (Figure 10.7).

Figure 10.7: Australian gold exploration expenditure



Source: ABS (2021) Mineral and Petroleum Exploration, Australia, 8412.0

Revisions to the outlook

The estimate for the US dollar gold price has been revised up by 0.9% (or US$15 an ounce to about US$1,800 an ounce) in 2021, 4.1% (or US$70 an ounce to US$1,771 an ounce) in 2022, and 4.2% (or US$66 an ounce to about US$1,700 an ounce) in 2023, due to a larger than expected increase in gold prices in the December quarter 2021.

The forecast for Australian gold mine production in 2021–22 and 2022–23 has been revised down by 2.7% and 1.3%, to 362 and 374 tonnes, respectively, due to a larger than expected decline in output of some major gold mines in the September quarter 2021.

The forecast for Australian gold exports in 2021–22 has been revised down by $436 million to $28.3 billion, reflecting a larger than expected fall in export volumes in the September quarter 2021.

Export earnings in 2022–23 have been revised up by nearly $1.1 billion to $28.4 billion from the forecast in the September 2021 *Resources and Energy Quarterly*, reflecting an upward revision in the forecast gold prices.

Table 10.1: Gold outlook

World	Unit	2020	2021[s]	2022[f]	2023[f]	Annual percentage change 2021[s]	2022[f]	2023[f]
Total demand	tonnes	3,732	3,880	4,212	4,534	4.0	8.6	7.6
Fabrication consumption[b]	tonnes	1,703	2,220	2,344	2,615	30.3	5.6	11.5
Mine production	tonnes	3,473	3,647	3,756	3,831	5.0	3.0	2.0
Price[c]								
Nominal	US$/oz	1,770	1,801	1,771	1,703	1.8	-1.7	-3.8
Real[d]	US$/oz	1,835	1,801	1,712	1,604	-1.8	-5.0	-6.3
Australia	**Unit**	**2019–20**	**2020–21**	**2021–22[f]**	**2022–23[f]**	**2020–21**	**2021–22[f]**	**2022–23[f]**
Mine production	tonnes	329	321	362	374	-2.2	12.6	3.4
Export volumes	tonnes	350	283	344	377	-19.0	21.5	9.7
Export value - Nominal	A$m	24,394	26,105	28,329	28,350	7.0	8.5	0.1
Export value - Real[e]	A$m	25,390	26,737	28,329	27,751	5.3	6.0	-2.0
Price								
Nominal	A$/oz	2,338	2,481	2,470	2,337	6.1	-0.4	-5.4
Real[e]	A$/oz	2,434	2,542	2,470	2,288	4.4	-2.8	-7.4

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

Source: ABS (2021) International Trade, 5464.0; London Bullion Market Association (2021) gold price PM; World Gold Council (2021); Department of Industry, Science, Energy and Resources (2021).