WORLD GOLD COUNCIL

Gold Demand Trends
Q3 2022

Highlights

The LBMA gold price PM (US$/oz) fell by 8% during the third quarter. The decline was largely a response to US dollar strength as the Fed hiked interest rates to combat high inflation. However, the average gold price in Q3 was only 3% lower y-o-y, more closely aligning with the relative performance of demand (OTC inclusive) and supply during the quarter.

Investment demand diverged on differing priorities. Retail investors bought gold as a store of value amid surging global inflation, while ETF investors reduced their holdings in the face of rising global interest rates.

India generated much of the global recovery in jewellery. Urban consumers were the engine of Indian demand in Q3, encouraged by a return to pre-COVID levels of economic activity. Rural consumers were more cautious as their inflation outpaced that of their urban counterparts.

Chinese retail demand firmed as lockdown restrictions eased. Jewellery consumers benefited from a pullback in the gold price as lockdown restrictions eased in key cities. And retail investors were encouraged by gold's safe-haven appeal amid a depreciating local currency and falling local equity prices.

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Gold demand firmer in Q3

Healthy Q3, driven by stronger consumer and central bank buying, helped year-to-date demand recover to pre-COVID norms.

Gold demand (excluding OTC) in Q3 was 28% higher y-o-y at 1,181 tonnes (t). Year-to-date (y-t-d) demand increased 18% vs the same period in 2021, returning to pre-pandemic levels.

Jewellery consumption reached a robust 523t, increasing 10% y-o-y despite the deteriorating global economic backdrop. Y-t-d demand is slightly firmer (+2%) at 1,454t.

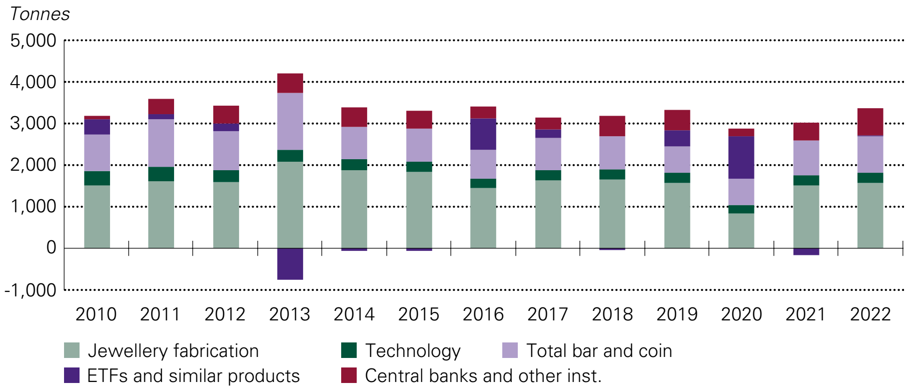
Investment demand (excluding OTC) for Q3 was 47% lower y-o-y at 124t, reflecting weak sentiment among some investor segments. 36% growth in bar and coin investment (to 351t) was insufficient to offset 227t of ETF outflows. OTC demand contracted significantly during the quarter, echoing weak investor sentiment in ETFs and futures markets.

Central banks continued to accumulate gold, with purchases estimated at a quarterly record of nearly 400t.

An 8% y-o-y fall in technology demand reflected a fall in consumer demand for electronics due to the global economic downturn.

Total gold supply increased marginally (+1% y-o-y) to 1,215t. A sixth consecutive quarter of y-o-y growth in mine production was partly offset by lower levels of recycling.

Year-to-date gold demand resumes its pre-pandemic pace*



*Data to 30 September 2022.

Source: Metals Focus, Refinitiv GFMS, World Gold Council

Outlook

Gold's diversity of demand positively surprised in Q3, leading us to revise up our full year 2022 expectations.

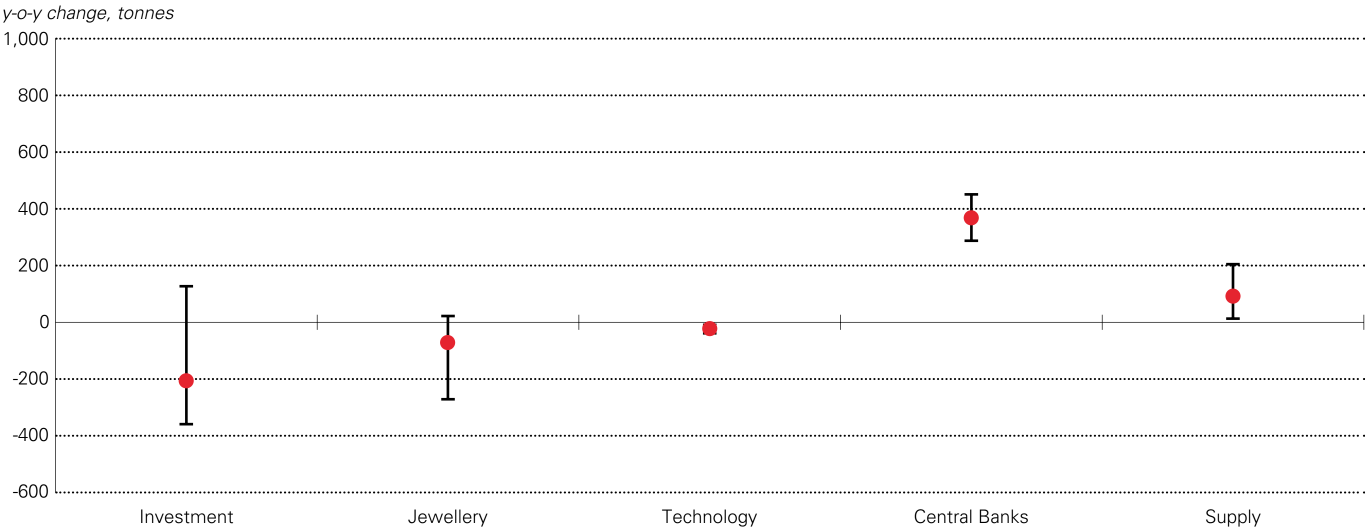
- Investment for full year (FY) 2022 is expected to be down but with continued upside potential from global stagflation risks, fewer upside policy rate surprises and stretched negative sentiment. A strong retail response to a challenging macroeconomic environment is unlikely to offset lower expected OTC and flat y-o-y ETF demand should dollar strength persist.
- Central bank demand continues to outpace expectations, which leads us to factor in further upside potential ahead.
- Jewellery demand has also been more robust than previously thought. Despite lockdowns and other headwinds, Chinese demand has held up. With added support from solid demand in India and other South-East Asian countries, we see jewellery and fabrication demand in aggregate finishing the year more positively than had been anticipated. This is despite a bleak Q4 outlook for technology demand.
- Our view on FY 2022 aggregate supply remains largely unchanged. Mine production has seen a good recovery from previous stoppages but faces some headwinds at the margin. Recycling is likely to be modestly weaker but could increase in the event of further economic slowdown.

Full year outlook

Investment: Revised down on negative Q3 sentiment but macroeconomic risks and short-covering may lure investors back

A very weak Q3 leads us to believe that a good deal of negative sentiment towards gold has been flushed out of investment. The impact of further policy rate hike surprises and US dollar's safe-haven strength may be fading. Furthermore, they have already pushed negative gold price sentiment to historical extremes, paving the way for a reversal in trend as some investors may close short positions in Q4. On the three previous occasions when combined selling of futures and ETFs exceeded 400t, gold rallied during the following three to six months.

Expected change in annual demand, 2022 vs 2021



Source: World Gold Council

Outlook

The y-t-d weakness in over-the-counter (OTC) demand is consistent with lower stocks in COMEX and LBMA vaults. We believe that OTC investment demand is likely to emulate activity in visible demand such as ETFs and futures.

Retail investment has remained solid and with our view that Q4 will hold up well, the FY total is likely to be similar to the exceptionally strong 2021. In particular, Chinese retail investment was better than expected in Q3 and we therefore revise up our Q4 and FY expectations for China. To boot, further upward surprises may materialise with a notable yuan depreciation. But, there is a risk that rural buyers may be more notably absent next quarter.

Indian retail investment is likely to continue to benefit from safe-haven demand amid rising interest rates and a weaking rupee. But as with China, weak rural demand may present some downside risk.

Elsewhere in Asia, Vietnam, Indonesia and Thailand have experienced strong retail investment demand alongside buoyant jewellery buying. The two avenues for demand can typically be viewed as fungible. As with the rest of emerging Asia, the risks lie with further squeezes in household finances.

In Turkey, strong retail investment will likely be a feature of Q4, although unlikely to match the exceptional strength of Q3.

Stagflation risks are a key driving force of bar and coin demand in Western markets. US retail investment is likely to remain solid in absolute terms, albeit marginally weaker in Q4. Positive, but low single digit, y-o-y growth is expected. Outside of the US, we could see some profit taking on local price strength, should the US dollar continue to rally.

Fabrication demand: Upside surprise in Q3 lifts FY 2022 forecast but downside risks still on the table

Jewellery demand has been surprisingly resilient in the first three quarters of the year. This prompts us to revise up expectations in Q4 vs our previous estimate.

A weaker gold price could help usher in more positive demand surprises as could a continuation of stock replenishment in China, as seen in Q3. But downside risks to Chinese jewellery demand stem from the persistence of the zero-COVID policy and the burden of a weakening economy, echoed anecdotally by manufacturers and wholesalers.

As retail investment shined, so did jewellery in the smaller Asian markets. Further recovery in jewellery demand is likely but is at risk from upside inflation surprises that could restricts the ability to buy.

The outlook for technology demand in Q4 is bleak. High inventory levels in Q3, US restrictions on China, falling capacity utilisation and weak semiconductor guidance are all likely to pressure demand for gold in technology usage in the final quarter of 2022.

Central banks: Significantly stronger than expected y-t-d, net purchases will likely continue in Q4

Consistent reported purchases are expected to continue but perhaps at a lower pace in Q4. We can't rule out further unreported buying so have revised our forecast higher for FY 2022.

Supply: Strong mine production growth and mixed recycling leaves our supply forecast unchanged

This year's mine production is inching towards the 2018 record on the back of a strong Q3. Lower outages in China and elsewhere are offsetting the loss of Russian output. But the risk of further downward revisions and production interruptions may prevent 2022 from breaching the record. In addition, rising all-in sustaining costs are putting some pressure on the 90th percentile producers, whose margins turned negative for the first time in three years. De-hedging – albeit small – presents a further marginal impediment to mine supply growth.

The fall in global recycling on the back of a lower US dollar gold price is unlikely to be reversed in Q4. But some upside surprises may come from local price-related selling if US dollar strength continues apace, which is not our core view. In addition, a squeeze on household real incomes as inflation bites and recession risks loom also present a higher probability of distressed selling, particularly for lower income cohorts.

Jewellery

Global gold jewellery consumption recovered to pre-COVID levels.

- Q3 demand benefited benefitted from a pullback in the gold price
- India led the recovery with 17% y-o-y growth in demand to 146t – the strongest third quarter since 2018
- Demand in China saw more muted growth, up 5% y-o-y as sporadic COVID-related restrictions impaired consumer sentiment.

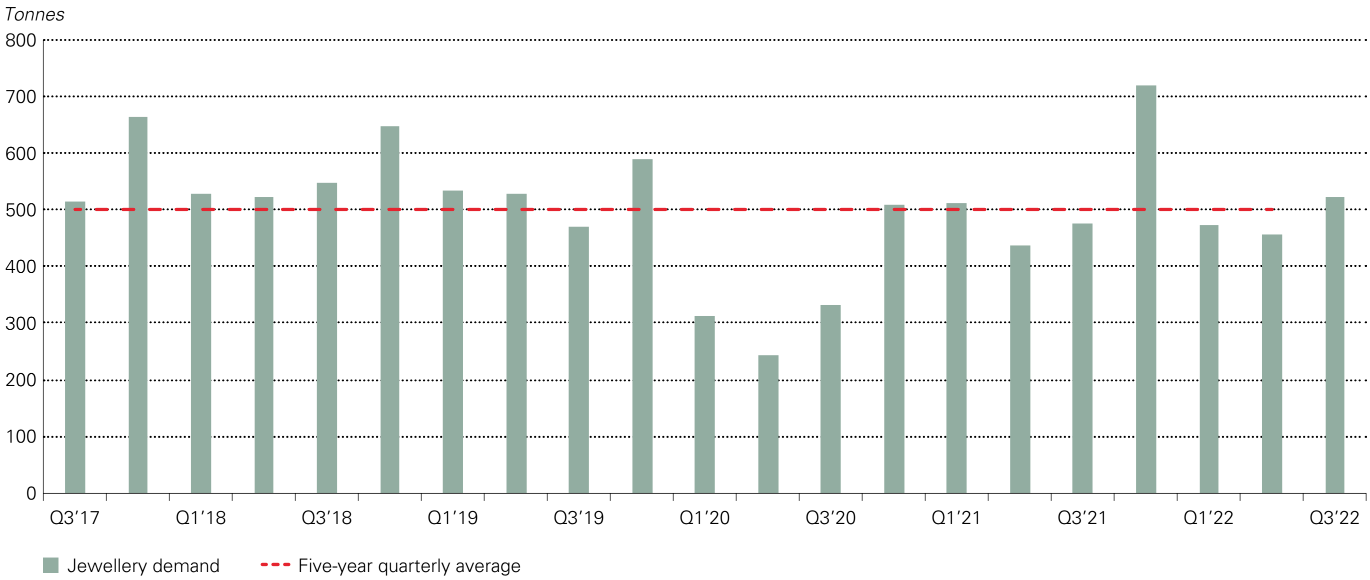
Tonnes	Q3'21	Q3'22	Y-o-y change
World total	476.5	523.1	↑ 10%
India	125.1	146.2	↑ 17%
China, P.R.: Mainland	156.0	163.4	↑ 5%

Source: Metals Focus, World Gold Council

Global gold jewellery consumption of 523t improved 10% y-o-y in Q3, and was up 14% compared with the prior quarter. Demand was also healthy on a longer-term comparison, exceeding its five-year quarterly average (501t). Y-t-d demand reached 1,454t, a 2% improvement on the same period in 2021.

This signals a continued normalisation of the market to pre-COVID levels of activity, aided by a pullback in the gold price in many markets during the quarter. Q3 also saw a further build-up in inventories as growth in fabrication exceeded that of consumption.

Global gold jewellery consumption surpassed its long-term quarterly average*



*Data to 30 September 2022.

Source: Metals Focus, World Gold Council

Jewellery

China

After the disruption of China's widespread Q2 lockdowns, gold jewellery demand staged a comeback in Q3, rallying 58% q-o-q to 163t. The y-o-y comparison shows a more modest 5% increase. Despite sporadic restrictions being imposed throughout the quarter, consumer sentiment in July and August was upbeat, aided by a pullback in the local gold price and the release of pent-up demand from Q2.

Jewellery consumers were driven by investment motives more than usual, given the uncertain environment of continued sudden lockdowns, slowing economic growth and a weaker domestic currency. This boosted sales of plain 24K products, which are increasingly priced according to weight rather than per piece (yielding lower, and more transparent, labour charges). Consequently, retailers continued to focus their promotional efforts on heavier items in order to bolster profits.

Q3 saw continued growth in demand for heritage gold jewellery products, which gained further market share. In particular, plain antique crafted gold bangles were exceptionally popular, underscoring the quasi-investment nature of gold jewellery demand. This is further implied by the falling market share of 18k gold, which offers a less compelling investment proposition to consumers who wish to preserve value through high-carat jewellery.

Looking ahead to demand in Q4, we see more upside potential than downside. Seasonality and the government's priority of stimulating consumption may provide some support for gold jewellery sales in the final quarter, along with a continued preference for quasi-investment gold jewellery products. But challenges from the zero-COVID policy can't be overlooked. The national day holiday early in Q4 saw uneven gold jewellery demand, with retailers in lockdown-stricken cities disappointed.

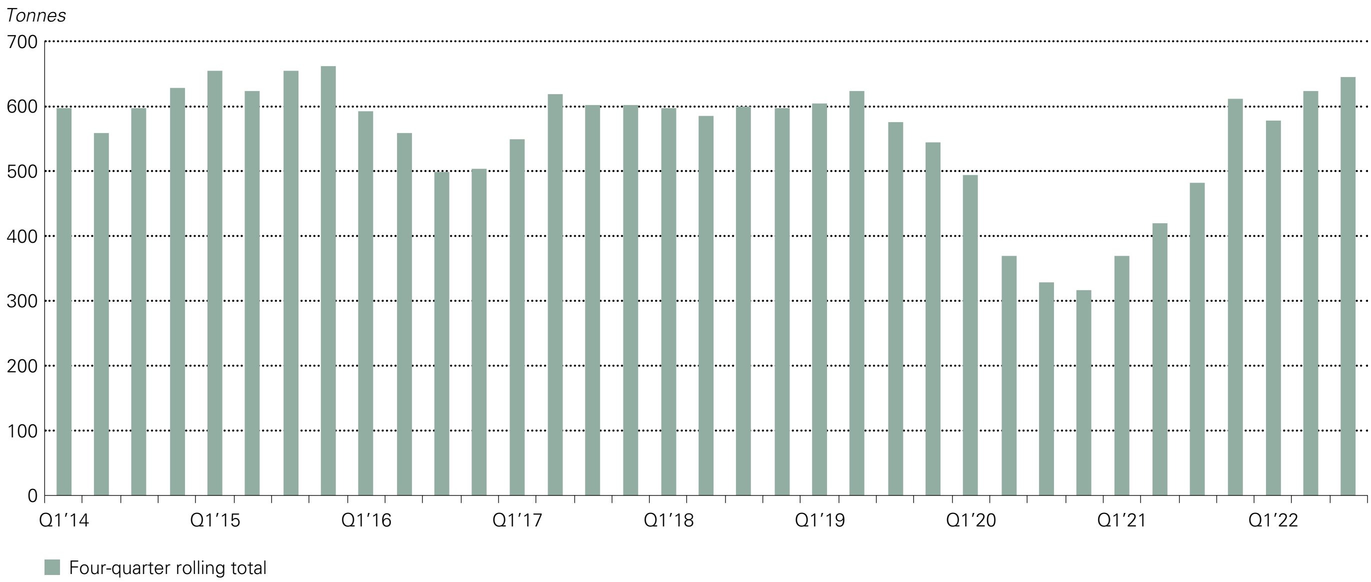
India

A 17% y-o-y increase in Indian jewellery demand – to 146t – was led by strong demand in the South. Q3 demand was 12% above its five-year quarterly average (131t) and took y-t-d demand to 381t, 10% higher than last year and almost equivalent to 2019 pre-COVID levels.

Urban India consumers have driven the recovery in gold jewellery demand, as economic activity in these areas has normalised. Credit expansion has added impetus to this demand, with bank loan growth touching a nine-year high by quarter-end. [1]

We are positive in our outlook for the rest of the year, as festival and wedding demand should be supportive. But demand is not expected to match last year's record-breaking fourth quarter, particularly given that higher inflation relative to urban India may crimp demand in the important rural segment.

Q3 saw continued recovery in Indian gold jewellery demand*



*Data to 30 September 2022.

Source: Metals Focus, Refinitiv GFMS, World Gold Council

1 Refinitiv, Eikon.

Jewellery

Middle East and Turkey

Double digit y-o-y gains in jewellery demand were widespread across the Middle East during Q3. Demand across the region benefited from lower gold prices during the quarter, while higher oil revenues and increased tourism also boosted demand in some markets. Rising inflation underscored the investment motive for some purchases, too.

Gold jewellery demand in Turkey was 19% higher y-o-y at 11t in Q3, the strongest quarterly total since Q4'17. Rocketing inflation helped support demand, underpinning the investment motive for purchase of high-carat pieces.

The West

US consumers slowed their gold jewellery purchases in Q3. Demand again retreated from last year's very healthy COVID-rebound levels; at 30t it was 6% lower y-o-y and 20% down from the previous quarter. On a longer-term basis, however, Q3 demand compares relatively well: average third quarter demand for the five years pre-COVID was 27t.

As spending on services such as travel and entertainment has normalised in the post-COVID era, spending on luxury goods, including gold jewellery, has declined in compensation. And the increasingly challenging economic environment suggests that demand in Q4 will fail to match the very strong final quarter of last year.

European jewellery demand increased 4% y-o-y, reaching its highest Q3 total since 2010. Demand was supported by low unemployment and continued recovery in regional tourism. Y-t-d regional demand of 40t is back in line with pre-COVID norms, in fact exceeding 2019 levels. But we proceed with caution from here as the economic backdrop deteriorates and consumers increasingly have to contend with cost of living pressures and slowing economic growth.

ASEAN markets

Jewellery consumption rose across Southeast Asia in Q3. Demand was buoyed by continued recovery from COVID as most remaining restrictions were lifted, allowing full economic activity to resume. In Vietnam, jewellery consumption more than trebled y-o-y to 4t. The sizable increase is largely due to the comparison with a very weak Q3'21. Nevertheless, the Vietnamese recovery has been particularly robust, with healthy GDP growth, incomes boosted by reversed salary cuts and companies returning to full employment, all of which boosted demand.

Jewellery consumption in Thailand rose for the seventh consecutive quarter, increasing by 35% y-o-y to 3t. This is the longest streak of demand growth in Thailand in our series, aided by a revival in tourism. The drop in local gold prices at the end of Q3 also encouraged gold retailers to replenish their stocks in expectation of continued healthy demand in the fourth quarter as they look ahead to the wedding season and year-end festivities

Indonesian jewellery demand rose by a modest 5% y-o-y. Improved consumer sentiment played a role, but rising inflation is starting to have an impact on discretionary spend in the region's largest economy. Malaysia (69% y-o-y) and Singapore (61% y-o-y) also saw increases in jewellery buying during the quarter.

Rest of Asia

Jewellery demand in Japan was up 10% y-o-y at 5t. Consumers have adjusted swiftly to higher price levels. An improved COVID situation, a resumption of weddings and the continued success of sales via TV and online channels contributed to the growth in demand.

South Korea was an outlier in Q3: jewellery consumption fell 26% y-o-y to 3t on increasing signs of economic stress. The jewellery market is being affected by the domestic economic downturn and the uncertain international backdrop, while rising living costs and interest rates are dampening spending on luxuries.

Australia

Jewellery consumption in Australia increased 71% y-o-y to 2t. While this is a significant increase, the y-o-y comparison is made against a low base in Q3 2021 – a time when quite severe COVID restrictions were still in place. A y-t-d increase of 27% suggests the jewellery market in Australia remains robust, despite the backdrop of economic uncertainty.

Investment

Bar and coin investment jumped, while gold ETFs saw a second consecutive quarter of outflows.

- Global gold-backed ETFs saw outflows of 227t in Q3 – the largest since Q2 2013 – as investors focused on rising rates and a stronger US dollar
- Over the year to end-September, flows in the gold ETF space were virtually flat, having almost fully reversed the January-April inflows
- The bar and coin sector had its strongest Q3 since 2011, with a very healthy 351t of demand.

Tonnes	Q3'21	Q3'22		Y-o-y change
Investment	232.8	123.8	↓	-47%
Bar and Coin	258.9	351.1	↑	36%
India	42.9	45.4	↑	6%
China, P.R.: Mainland	64.7	70.1	↑	8%
Gold-backed ETFs	-26.0	-227.3	–	–

Source: Metals Focus, World Gold Council

The investment environment for gold in Q3 was dominated by widespread, multi-decade high inflation and the resultant impact on interest rates. Bar and coin investors focused on the former and sought the safety of gold as a hedge against inflation. Gold ETF investors, in contrast, reduced their holdings as they focused on gold's rising opportunity cost in the face of hefty rate hikes from central banks globally and a surge in the US dollar. Along with ETF outflows, OTC investment softened and managed money futures positioning on Comex moved temporarily to net short for the first time in three years.

ETFs

Global gold ETFs saw outflows of 227t (US$12bn) during Q3, bringing collective ETF gold holdings to 3,548t (US$191bn) by the end of September.

Five straight months of outflows have almost fully reversed the 316t January-April inflows: over the year to end-September, global inflows into gold ETFs amounted to just 7t. Y-t-d performances have differed markedly across regions, however: European-listed funds saw 41t of net inflows, while those listed in the US and Asia generated net outflows of 21t and 15t respectively. The relatively robust picture in Europe is likely related to proximity to the Russia-Ukraine war and its knock-on economic impact, as well as the stronger performance of gold in euro terms.

The opening weeks of Q4 show continued outflows, a significant portion of which are from funds listed in the the UK, where markets remain unsettled by the volatile political and economic scenario.

Funds listed in North America generated the bulk of global outflows (-149t). This is in part a reflection of the size of the market and outflows were concentrated among the larger, more liquid funds. Sentiment was overshadowed by increasingly hawkish Fed monetary policy: investors adjusted their rate expectations sharply higher and, as the US dollar rallied, gold ETF positions were curtailed accordingly. The Q3 activity took North American-listed funds to a small net outflow (-21t) y-t-d.

Funds listed in Europe lost 78t during Q3. Investors in the region were similarly driven by the outlook for interest rates, with central banks – including the ECB, SNB and Bank of England – all hiking during the quarter. The bulk of the region's outflows (55t) came from UK-listed funds, with Germany, Switzerland and France contributing the remainder.

Asian-listed funds saw marginal inflows (1t). Regional flows are heavily influenced by China, which saw a 1t net inflow during Q3. This was entirely due to inflows in July, when investors added to their holdings on a local gold price pullback. Indian gold ETFs saw equally marginal net outflows in Q3 (<1t) as investors were attracted by the stronger returns generated by local equities and bonds.

Funds in other regions barely changed over the quarter, with outflows of less than 1t. Australia and South Africa dominate the flows as the two largest markets in this category. Australian-listed funds lost 0.4t (around 1% of holdings), which was partially offset by marginal inflows into South African funds.

Bar and coin

Retail investment demand for gold bars and coins jumped to a six-quarter high of 351t, up 36% y-o-y and 41% higher q-o-q. Surging global inflation levels fuelled demand across most markets, with further impetus generated by price pullbacks during the quarter.

Investment

China

Bar and coin demand in China almost doubled to 70t from the previous quarter's COVID lockdown-induced slump. On a y-o-y basis, demand grew by a more moderate 8%. A sharp dip in the local gold price in July prompted bargain-hunting, which was boosted by the release of pent-up demand following strict lockdowns in key cities during much of Q2. Furthermore, commercial banks' promotional activities around physical gold products attracted some investors.

Gold's safe-haven appeal came to the fore during the quarter as the local currency depreciated, magnifying the gold price rebound, and local equity markets fell. By the end of September, the local gold price was 4% higher y-t-d.

Looking ahead, the combination of gold's safe-haven qualities and commercial banks' continued promotional efforts should support bar and coin demand. But there is potential for renewed mobility restrictions due to China's strict zero-COVID policy, which could threaten demand.

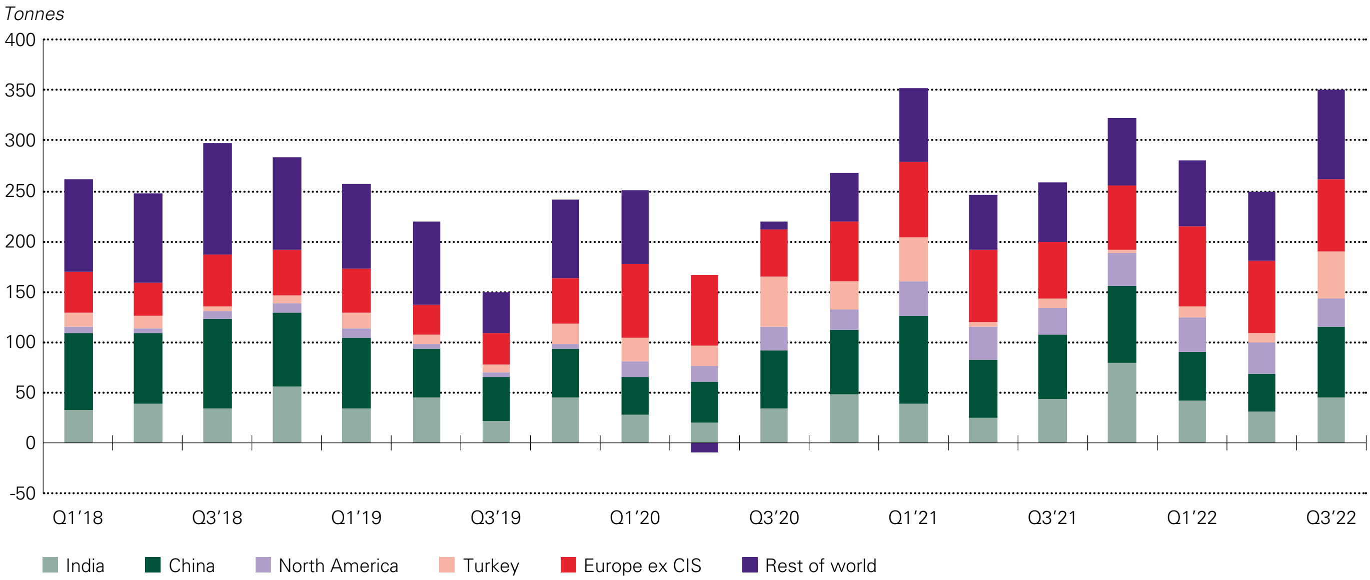
India

In Q3, Indian bar and coin demand saw a 6% y-o-y improvement as retail investors responded to lower local gold prices and weaker equity markets. At 45t, demand was 14% above the five-year quarterly average and took y-t-d demand to 117t, the highest Q1-Q3 total since 2015.

Imports were disrupted during Q3. An increase in gold's custom duty on 1 July encouraged smuggling activity in order to avoid paying the higher rate of tax. But gold imports were subsequently boosted by traders who exploited a loophole that allowed gold to be imported as a platinum alloy at a lower custom duty. This loophole was closed at the beginning of October, but not before an estimated 29-30t of gold was imported via this route during August and September.

Coin demand picked up during the festive period of Navratri and the fourth quarter has, according to discussions with the trade, started on a strong note with the arrival of Diwali and the wedding season. That said, demand as we head into year-end is unlikely to match last year's fourth quarter total of 79t, which was the highest quarterly investment for nine years.

Turkey and Europe spearhead sharp y-o-y growth in bar and coin investment*



*Data to 30 September 2022.

Source: Metals Focus, World Gold Council

Middle East and Turkey

The Middle East generated the highest level of quarterly retail investment for four years, up 64% y-o-y to 26t. In line with the broad global themes, rising inflation and the opportunity to buy on a dip in the price were major factors driving investment during the quarter. Safe haven demand was particularly in evidence in Iran, and a q-o-q doubling of investment combined with tight supplies of official gold coins to drive up premiums.

Retail investment in Turkey was exceptionally strong in Q3, increasing more than fivefold. At 47t, it was the second highest quarter in our data series. Record inflation combined with stable lira prices brought about a surge in demand, and this gained pace on price pullbacks during the quarter.

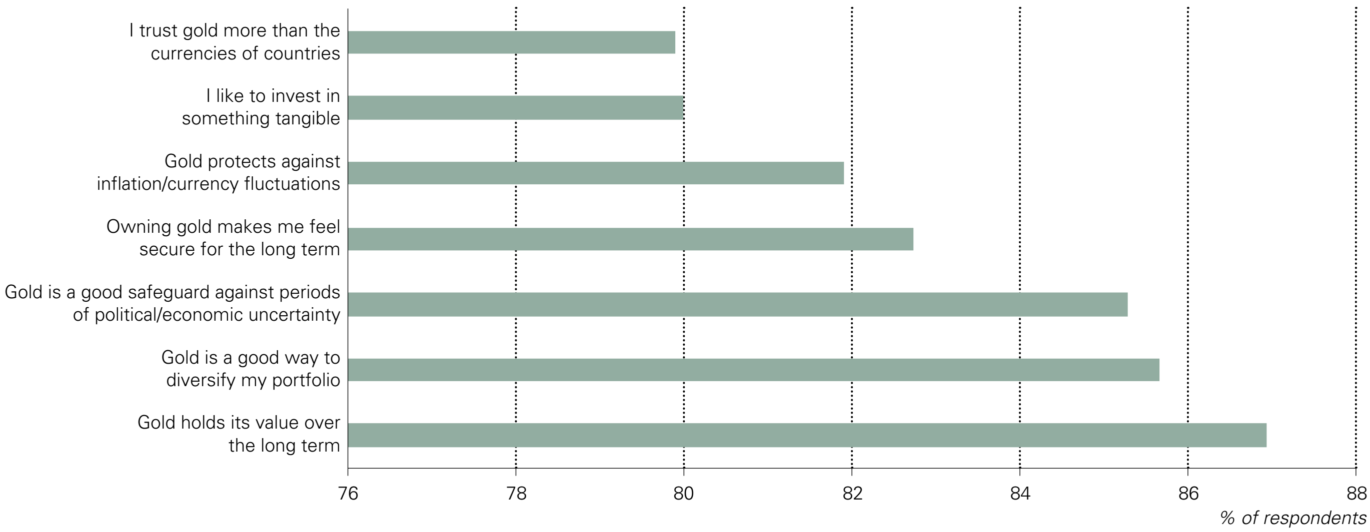
The West

In Western markets, surging inflation, slowing economic growth and persistent geopolitical concerns continued to support demand for gold bars and coins.

Bar and coin investment demand in the US remained elevated – up 3% y-o-y at 25t. Although demand was slightly softer compared with the previous quarter, it remained well above the 15t quarterly average over the last five years.

US mint coin sales y-t-d are the highest since 1999. As consumers express increasing pessimism about the state of the US economy amid increasing inflation, investment demand has been supported by gold's role as an inflation hedge. This is reflected in a consumer survey we ran in September in which 82% of US gold investors agreed that gold offers protection against inflation and/or currency fluctuations and 85% agreed that it is a good safeguard against periods of political/economic uncertainty.[2]

US retail investors see gold as a safe-haven and source of protection



Note: % of respondents who have invested in gold at some point in the past (base: 1,095) who selected either 'Completely agree' or 'Somewhat agree' as a response to each statement.

Source: Appinio, World Gold Council

2 An online survey of 2,000 US retail investors aged 18-75. Fieldwork took place in September.

Investment

And the prospects for the remainder of the year suggest demand will remain healthy. Our survey saw almost 50% of US retail investors say they were 'very likely' to buy gold bars or coins in the next 12 months.

European retail gold investment was 28% higher y-o-y at 72t. Slowing growth across much of the region, war on the doorstep and monetary authorities managing a delicate balance between hiking rates enough to curb inflation without tipping the region into sharp recession, has encouraged continued flows into gold. Demand in Germany gained 25% y-o-y, to reach a y-t-d record of 131t.

Demand in the UK was comparatively underwhelming, unchanged y-o-y at 4t. Nevertheless, bar and coin buying remains historically elevated, 25% above its five year quarterly average. A relatively weak pound meant that sterling gold prices held up during August and September, and the lack of an attractive entry point for investors, along with the sharp spike in the gold price towards the end of September likely encouraged some profit taking. Nevertheless, there are reports of UK investors piling into gold at the beginning of the fourth quarter in reaction to the market turbulence generated by the mini-budget, which may result in a strong finish to the year.

ASEAN markets

Investment demand across Southeast Asian markets was robust on the back of concerns about inflation, local currency depreciations against the US dollar and the sustainability of medium-term economic growth. Vietnam saw a particularly significant y-o-y rise in investment demand. It more than trebled to 8t as local investors again sought refuge in gold, with high demand for chi rings and SJC tael bars. Due to lack of supply and high demand, premiums remain elevated at around US$625/oz. Retail investment in Thailand and Indonesia increased y-o-y, by 42% and 20% respectively, while the smaller gold markets of Malaysia and Singapore also saw sizable increases, albeit negligible in absolute terms.

Rest of Asia

The Japanese market returned to net investment of 3t in Q3, up 56% y-o-y. Absolute price levels remain historically high which slowed selling, particularly among the older generation who have been holding gold for a long time.

Investment demand in South Korea was down 19% y-o-y in Q3, to 4t. Even though the dollar price fell by around 8% during the quarter, the sharp depreciation of the Korean won meant that local prices rose by around 4%. This led to cautious sentiment in the market, with investors waiting for a better entry point.

Australia

Investor appetite for gold remains strong due to concerns about global economic malaise, high inflation and the spectre of rising interest rates in an over-leveraged market. While retail investment demand remained lower than its impressive Q1 levels, it was robust at 5t – a marginal 1% y-o-y increase.

Central banks

Central bank buying hits all-time quarterly record in Q3'22.

- Q3 net demand includes substantial estimate for unreported purchases
- Turkey, Uzbekistan and Qatar amongst the biggest reported buyers during the quarter
- This lifts y-t-d net purchases to 673t, surpassing all annual totals since 1967.

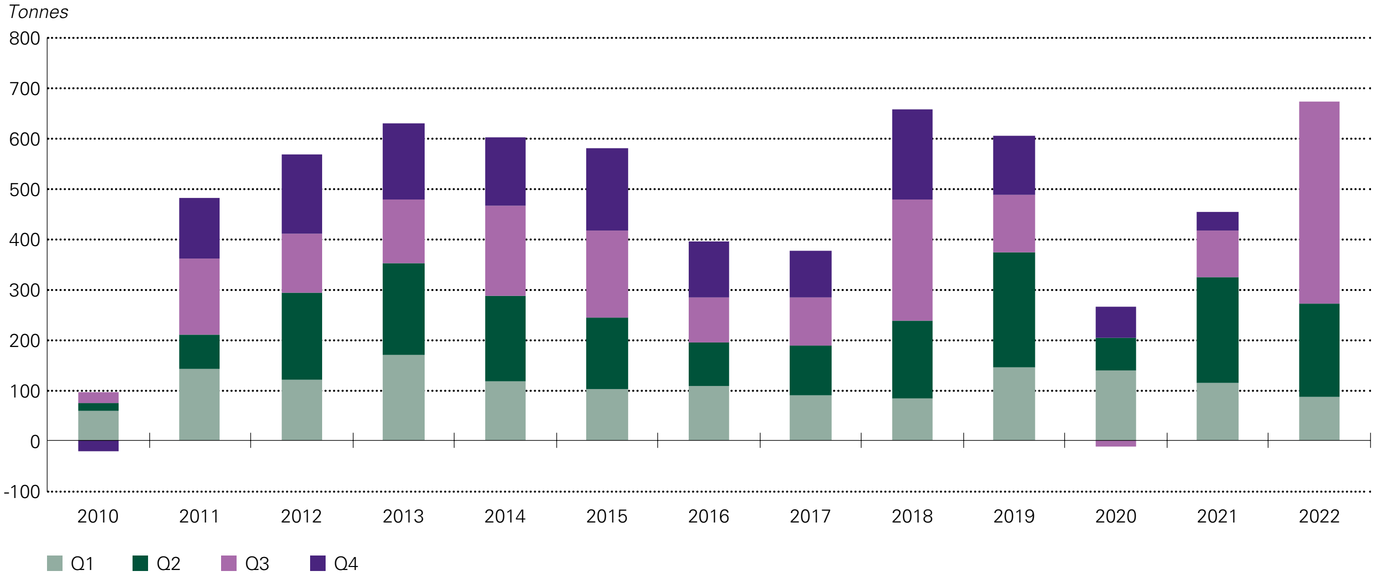
Tonnes	Q3'21	Q3'22	Y-o-y change
Central banks and other institutions	90.6	399.3	↑ >300%

Source: Metals Focus, World Gold Council

Global central bank purchases leapt to almost 400t in Q3 (+115% q-o-q). This is the largest single quarter of demand from this sector in our records back to 2000 and almost double the previous record of 241t in Q3 2018. It also marks the eighth consecutive quarter of net purchases and lifts the y-t-d total to 673t, higher than any other full year total since 1967.[3]

The level of official sector demand in Q3 is the combination of steady reported purchases by central banks and a substantial estimate for unreported buying. This is not uncommon as not all official institutions publicly report their gold holdings or may do so with a lag. It's also worth noting that while Metals Focus suggests purchases occurred during Q3, it's possible they may have started earlier in the year. In turn, this may result in future revisions as more information becomes available.

Central banks bought almost 400t of gold in Q3'22*



*Data to 30 September 2022.

Source: Metals Focus, Refinitiv GFMS, World Gold Council

3 Official sector institutions bought a net 1,404t in 1967, based on GFMS data.

Central banks

Looking at the subset of reported activity at a country level, we see that purchases and sales were again confined to a relatively small number of emerging market banks.[4] Turkey remained the largest reported gold buyer this year. It added 31t in Q3, lifting its gold reserves to 489t (29% of total reserves). Year-to-date it has added 95t to gold reserves.

The Central Bank of Uzbekistan continued to build its gold reserves, buying another 26t in Q3. It has been a consistent buyer of gold over the past two quarters, with y-t-d net purchases now standing at 28t. The Qatar Central Bank was also a significant buyer in Q3. In July, the bank bought 15t of gold, in what appears to be its largest monthly acquisition on record back to 1967 – although early data from the IMF is patchy. Following this, it seemingly added more in both August and September, but we are awaiting IMF data to confirm the exact level of buying. Its total reserves stood at 72t at the end of July, the highest on record.

The Reserve Bank of India continued with its long-standing gold purchasing strategy in Q3. It bought 13t in July and 4t in September, pushing its gold reserves to 785t. Mozambique (2t), the Philippines (2t) and Mongolia (1t) were the other notable buyers during the quarter.

Kazakhstan was the largest net seller during the quarter, reducing its gold reserves by 2t. The bank has sold a net 21t y-t-d, taking its total gold holdings to 381t (63% of total reserves). And in a statement to Bloomberg in August, the bank indicated that there may be more selling to come, however this will depend on market conditions. As we have noted previously, it is not uncommon for central banks who purchase gold from domestic sources to swing between buying and selling. More information on how the National Bank of Kazakhstan manages its gold reserves can be found on the Goldhub blog. The United Arab Emirates was the only other seller of note in Q3, reducing its gold reserves by 1t.

The continued trend of official sector demand for gold corroborates findings from our 2022 annual central bank survey, in which one-quarter of respondents stated their intention to increase gold reserves in the next 12 months (up from one-fifth in in 2021). Read more on our central bank demand expectations for the remainder of the year in the Outlook section.

4 Country-level gross sales and purchases based on the most recent IMF IFS and respective central bank data available at the time of writing. This may not match the net central bank demand figures published in this report as Metals Focus uses additional sources of information to obtain its estimates.

Technology

Rapidly deteriorating consumer confidence hits demand.

- Gold used in industrial applications fell by 8% y-o-y to 77t, the weakest third quarter on record
- The electronics sector, which dominates industrial demand for gold, fell by 9% y-o-y to 63t
- Consumer demand has weakened dramatically during what is typically peak season for the electronics sector.

Tonnes	Q3'21	Q3'22	Y-o-y change
Technology	83.4	76.7	↓ -8%
Electronics	69.0	62.8	↓ -9%
Other industrial	11.6	11.3	↓ -2%
Dentistry	2.8	2.5	↓ -11%

Source: Metals Focus, World Gold Council

Third quarter demand for gold in industrial applications fell sharply, as tightening monetary policies further weighed on consumer confidence. In the electronics sector, falling consumer demand increased pressure on the entire supply chain, leading to falling orders, rapid industrial utilisation cuts and a spate of profit warnings by many major chip manufacturers.[5] Restrictions imposed by the US on semiconductor chip and equipment exports to China are also damaging to supply chains, not just in China but across the East Asian semiconductor market as it scrambles to reorganise its supply infrastructure.[6] This adds further complexity to a sector which is continuing to deal with the aftermath of the COVID-19 pandemic, and ongoing geopolitical challenges around the world.

Electronics

Gold used in the electronics sector fell sharply during Q3, down 9% y-o-y to 63t. This decline, during what is traditionally the strongest quarter of the year, was driven by falling consumer electronics demand. The resulting inventory increases at manufacturers caused them to reduce their orders for chips, which in turn led to falling utilisation rates at semiconductor fabrication plants around the world. The world's largest chip manufacturer, Taiwan Semiconductor Manufacturing Co. (TSMC), reported strong Q3 profits but sounded a warning for Q4, cutting its annual investment budget for 2022 by 10% and predicting near term challenges to revenue as demand slows.[7]

Demand for gold in the Light Emitting Diode (LED) sector continued its rapid decline in the third quarter on weak consumer electronics demand. The laptop and PC sector has been particularly hard hit; according to research firm Gartner, PC shipments in Q3 were down 20% y-o-y to 68 million units. This is the steepest decline reported by Gartner in nearly three decades.[8] Separately, demand for high-end LEDs (e.g. UV-LEDs and IR-LEDs used in healthcare applications like skin sensors and heart rate-tracking in watches and smartphones) cooled as wearable device sales slowed, reversing several quarters of strength. Finally, the ongoing shift to mini-LED technology (which uses less gold) remains a threat, but implementation costs remain relatively high and the broader market challenges may further slow uptake of these devices.

The memory sector witnessed declining demand for gold during Q3, with further falls expected in the coming quarters. The sector was hit by both falling demand for consumer electronics and slowing orders for hyper-scale data centres. The significant drop in crypto mining in recent quarters has also continued to have a negative impact on graphic card demand, causing a surge in inventory at some manufacturers. In response, chip makers have begun cutting output and investment. For example, Kioxia, one of Japan's largest memory chip manufacturers, has announced chip production cuts of ~30% at its Yokkaichi and Kitakami flash memory plants from October.[9] However, given current difficulties in the wider market, migration to miniaturised architectures (which use less gold) are likely to be postponed until mid-late 2023, providing some respite to gold demand in the memory sector in the short term.

5 www.cnbc.com/2022/10/07/samsung-profit-plunges-in-q3-as-chipmakers-feel-bite-.html

6 www.ft.com/content/51f9ec46-ec9e-43a1-ba64-45e0e6e6da71

7 www.theregister.com/2022/10/13/tsmc_q3_2022/

8 www.gartner.com/en/newsroom/press-releases/2022-10-10-gartner-says-worldwide-pc-shipments-declined-19-percent-in-third-quarter-of-2022

9 www.reuters.com/technology/japans-kioxia-says-cut-wafer-start-production-volume-by-30-2-plants-2022-09-30/

Technology

Demand in the wireless sector experienced major declines during Q3. Weak smartphone demand over recent quarters led to ballooning stocks of power amplifiers. With demand predicted to remain weak in key markets, orders have been slashed to run inventory levels down to more manageable levels. As reported in Q2, demand for gold in 5G infrastructure installations remained steady thanks to significant pre-orders from governments and large companies, and this situation is likely to continue in the near future. Other application areas, including uses in low Earth orbit satellites (LEOS)[10] and light detection and ranging (LIDAR),[11] remained steady, but make up a relatively small proportion of demand in the wireless sector so do not offset the falls reported in the consumer electronics segment of the market. However, once the inventory corrections noted above have run their course, the sector is expected to return to more normal operations and high-end chips will continue to drive gold offtake in wireless applications.

Finally, the Printed Circuit Board (PCB) sector remained stable during the quarter. The hangover of the automotive chip shortage provided some support for PCBs, as high-density qualified devices remained in strong demand by car manufacturers. However, faltering consumer electronic demand began to impact the PCB sector during Q3, and it is likely this will worsen during the final quarter of 2022. Longer term, optimism remains as emerging applications such as high-speed computing, LEOS and the ongoing evolution of the automotive electronics market are likely to support demand in the PCB sector.

At the aggregate level, all four major electronics fabrication hubs around the world recorded significant y-o-y declines in gold demand during Q3; South Korea, the US, Japan and Mainland China and Hong Kong SAR registered figures of 7t (-7%), 16t (-2%), 18t (-11%) and 16t (-16%) respectively.

Other Industrial and dentistry

Other industrial applications fell by 2% y-o-y to 11t, primarily as a consequence of disruptions in China. There were small increases recorded in Italy due to growth in plating salt demand and in India thanks a broad economic recovery in the country. Dental demand fell to a new quarterly low, declining 11% y-o-y to 3t on the back of further structural decline in the main Japanese market.

10 LEO satellites operate in a revolving network relatively close to the earth's surface, and can provide internet coverage in remote locations. They require reliable high-end wireless infrastructure to operate. www.weforum.org/agenda/2022/02/explainer-how-low-earth-orbit-satellite-technology-can-connect-the-unconnected/

11 LIDAR sensors uses lasers to bounce off objects and return to the source of the laser, measuring distance by timing the travel, or flight, of the light pulse. They are becoming increasingly common in high-end smartphone applications, and will be critical to the development of autonomous vehicles.

Supply

Total Q3 supply increased by 1% y-o-y as lower recycling offset mine production growth.

- Q3 mine production increased to almost 950t, up 2% y-o-y following the recovery in Chinese output and fewer technical difficulties elsewhere
- Recycled gold supply fell 6% y-o-y, primarily due to lockdowns in China and limited signs of distress selling in other markets
- On a y-t-d basis, total gold supply increased 3% y-o-y.

Tonnes	Q3'21	Q3'22	Y-o-y change
Total supply	1,208.2	1,215.2	↑ 1%
Mine production	927.7	949.4	↑ 2%
Net producer hedging	-12.4	-10.0	– –
Recycled gold	292.8	275.8	↓ -6%

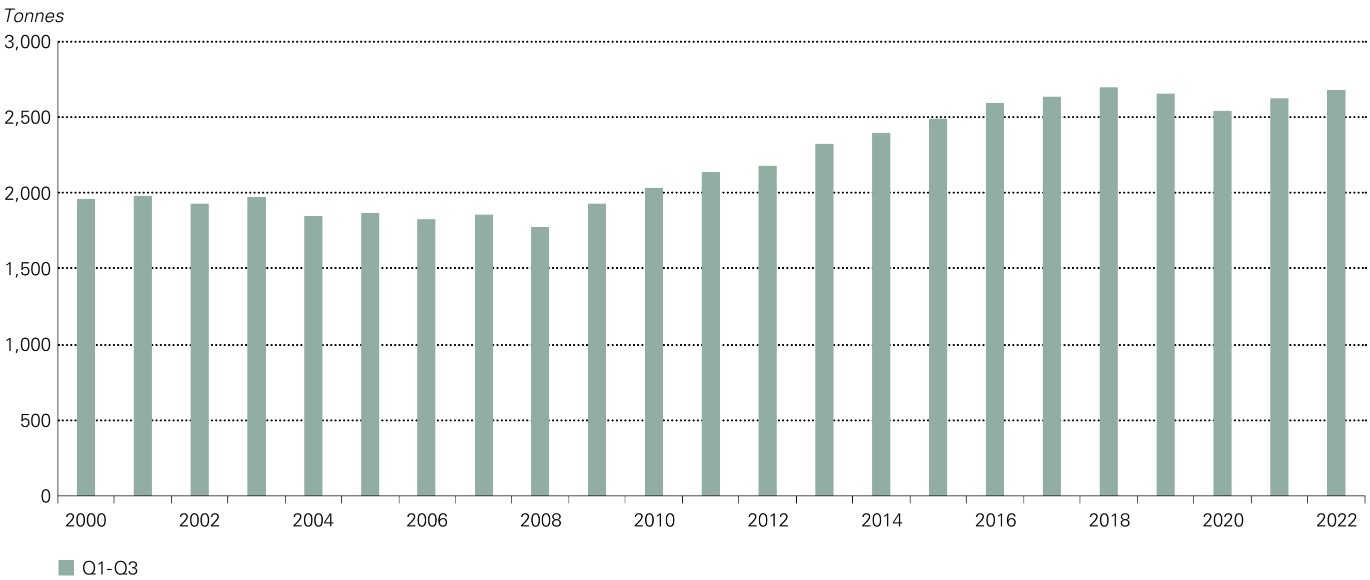
Source: Metals Focus, World Gold Council

Mine production

Third quarter mine production is estimated at 949t, 1% below the strongest ever third quarter mine production seen in Q3'18. Q3'22 mine production was 6% higher q-o-q due to a seasonal increase in output from high latitude alluvial operations, together with more normal operations from mines in many countries that had suffered earlier production interruptions. And following modest downward revisions to the last two quarters, y-t-d production of 2,686t was slightly below the record set in 2018, when mine production reached 2,705t for the first nine months of that year.

Growth in mine supply was seen in all regions except in the Commonwealth of Independent States (CIS) region.[12] Central and South America had the biggest increase, up 10t y-o-y, followed by Asia, which increased by 9t y-o-y. Aside from the 12t y-o-y decline seen in CIS, all other regions saw smaller gains.

Y-t-d mine production nears 2018 record high*



*Data to 30 September 2022.

Source: Metals Focus, Refinitiv GFMS, World Gold Council

12 The Commonwealth of Independent States comprises: Armenia, Azerbaijan, Belarus, Georgia, Kazakhstan, Kyrgyzstan, Moldova, Russia, Tajikistan, Turkmenistan, Ukraine, and Uzbekistan.

Supply

Mauritania saw production increase nearly eight-fold y-o-y after Tasiast, the dominant gold mine, operated at normal production levels compared to almost no production in Q3'21 following a fire in the processing plant. In Colombia, mine production jumped 56% y-o-y, as it recovered from lower production in 2021 resulting from planned maintenance at Sergovia and weather-affected artisanal and small-scale production. Mine production in Ghana increased 18% y-o-y due to rising grades at the Ahafo mine and the ongoing ramp-up of Obuasi; while China's 12% y-o-y increase in mine production was a consequence of operations in Shandong province returning to normal after safety stoppages hit production last year.

Several countries also noted declines in output during the quarter. Mongolia saw a 62% decline y-o-y due to significant declines in gold grades at the giant Oyu Tolgoi copper-gold mine. Two production suspensions in Turkey – Oksut in March after mercury was detected in the gold room and Copler in June following a cyanide spill – saw mine production 24% lower y-o-y. Burkina Faso production fell 13% y-o-y after operations were suspended at Taparko on security concerns, together with lower grades at other mines. And the 11% y-o-y decline in Russia was due to a combination of lower grades at several major mines, including Olimpiada and Blagodatnoye, and lower production at other operations due to rising costs, shortages of equipment and reduced financing due to sanctions.

Gold mining costs continued to increase in Q2'22, the latest available data. The average All-In Sustaining Cost (AISC) hit US$1,289/oz in the second quarter, another record high and up 18% y-o-y. General inflation increased mining costs in all areas with fuel, energy, labour and consumables all up y-o-y. Also, some lower grade mines have (re)started after the increase in the gold price in recent years, contributing to higher average AISC for the industry. With higher costs and the lower gold price, AISC margins eroded further during the quarter and – for the first time since 2019 – turned negative for the 90th percentile of gold mines.

A very strong Q4 will be needed if the FY total is to exceed the previous 2018 record (3,665t), made perhaps more difficult by H1 revisions and other production interruptions. Please see the Outlook section for more details.

Net producer hedging

It is estimated that gold miners reduced their aggregate hedged position by 10t in Q3'22. Initial estimates (subject to revisions once most companies have released quarterly reports) suggest a 10t decline in the global delta-adjusted hedge book in Q3'21. After a smaller than expected contraction of the hedge book of 1t in the second quarter, the y-t-d decline is estimated at less than 1t.

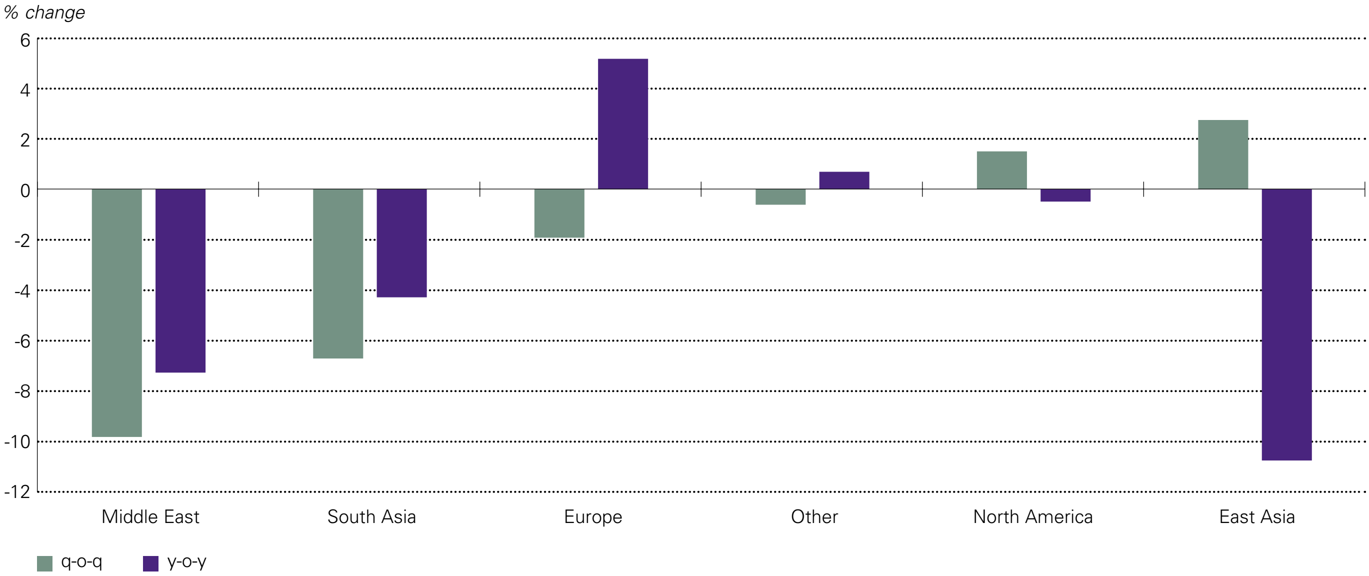
A slightly lower average quarterly gold price, down 1% q-o-q, is not expected to have prompted major new hedging in Q3 as producers appear to prefer to keep production exposed to the spot gold price. The only additions anticipated are from companies needing to add new positions due to debt finance requirements.

Recycled gold

Recycling fell for the second successive quarter in Q3'22, totalling 276t (-6% y-o-y and -5% q-o-q). Year- to-date, recycled gold supply is up by 3% on the same period of 2021, largely due to strength seen at the start of 2022 following the Russian invasion of Ukraine when the international gold price rose to over US$2,000/oz. The shuttering of some markets in 2021 also reduced recycling activities, demonstrating that base effects played a role in the y-t-d increase too.

At first glance the y-o-y and q-o-q fall in recycled gold fits with the lower gold price, which declined by 3% y-o-y and 8% q-o-q, but considerable regional differences are worth highlighting. The strong US dollar resulted in higher local currency gold prices in many counties, especially Japan, the EU and the UK, all of which saw higher recycling flows. In contrast, the Middle East and South Asia saw recycling volumes fall, both y-o-y and q-o-q.

Gold recycling saw regional differences in Q3*



*Data to 30 September 2022.

Source: Metals Focus, World Gold Council

Despite the pickup in inflation in many countries, signs of consumer distress are limited. In markets where this is evident, various factors have encouraged consumers to hold on to their gold if they can; for example the negative real interest savings rates in Turkey, or limited investment alternatives in Iran and Iraq.

In the US, recycling flows were essentially flat, with refineries reporting steady activities and no signs of trade destocking. But pawnbrokers, who generally serve lower income categories, reported stronger activity in the third quarter and this may be a prelude to more broad increases in scrap supply if the US economy tips into recession.

The supply of recycled gold in China was up q-o-q but down compared to Q3'21 as COVID-19 lockdowns in the most recent quarter limited market access for sellers. There were, however, fewer restrictions in Q3'22 compared to earlier this year, which helps to explain the q-o-q increase.

We continue to monitor recycling gold supply closely. Pressures from a weakening global economy, the strong US dollar and the rising cost of living are affecting many markets. These factors, together with the trajectory of the gold price, will be important drivers of recycling over the balance of 2022 and beyond.

Notes and definitions

Notes

Revisions to data

All data is subject to revision in the light of new information.

Historical data series

Demand and supply data from Q1 2014 are provided by Metals Focus. Data between Q1 2010 and Q4 2013 is a synthesis of Metals Focus and GFMS, Thomson Reuters data, which was created using relatively simple statistical techniques. For more information on this process, please see *Creating a consistent data series* by Dr James Abdey.

Definitions

Bars

Net investment (i.e. gross purchases less gross sales) in small gold bars (1kg and below) sold at the retail level. Where identifiable, this also includes gold bought and stored via online vendors.

Central banks

Net purchases (i.e. gross purchases less gross sales) by central banks and other official sector institutions, including supra national entities such as the IMF. Swaps and the effects of delta hedging are excluded.

Comex net long positioning

The Commodity Futures Trading Commission (CFTC) publishes a weekly Commitment of Traders (COT) report that provides information on the positioning of speculative investors in the U.S. futures markets. The report gives the aggregate positions held by traders from the previous Tuesday, including the number of long contracts (that stand to benefit if prices rise) and short contracts (that benefit if they fall). The report is often used as an indicator of market sentiment regarding the price of gold: short positioning reflects bearish sentiment while long positioning reflects bullish sentiment in the gold futures' markets.

Consumer demand

The sum of jewellery consumption and total bar and coin investment occurring within a country i.e. the amount (in fine weight) of gold purchased directly by individuals. Technology demand is not included at the individual country level, as it is measured at the point of fabrication rather than at the point of consumption.

Electronics

The volume of gold bullion or grain fabricated into components used in the production of electronics, including – but not limited to – semiconductors and bonding wire.

Dentistry

The volume of gold bullion or grain fabricated into products destined for dental applications such as dental alloys.

Gold-backed Exchange-Traded Funds (ETFs) and similar

The volume of gold held in physical form by open-ended Exchange Traded Funds (ETFs) and other products such as close-end funds, and mutual funds. Most funds included in this list are fully backed by physical gold. While several funds allow other holdings such as cash, derivatives or other precious metals, we monitor only those funds investing at least 90% in physical gold and appropriately adjust their reported assets to estimate physical holdings only. For funds that include physical holdings of multiple precious metals, the total AUM depicted for such funds is lower than their actual total AUM. Over time, the data set will adapt to most accurately represent the universe of active funds. For a comprehensive list of the funds we track or to subscribe to our monthly update on gold-backed ETF holdings, visit /goldhub/data/global-gold-backed-etf-holdings-and-flows

Fabrication

Fabrication is the first transformation of gold bullion into a semi-finished or finished product.

Gold bullion

Gold, in bar form, refined to a purity of at least 99.5%.

Gold demand

The total of jewellery fabrication, technology fabrication, investment and net purchases by central banks.

Jewellery consumption

End-user (consumer) demand for all newly-made carat jewellery sold at the retail level, by volume of fine gold. Measured on a gross basis (i.e. includes recycled gold). Excludes: purchases funded by the trading-in of existing carat gold jewellery (gold-for-gold exchange); and purchases of second-hand jewellery, other metals plated with gold, and coins and bars used as jewellery. At the global level, it is measured as jewellery fabrication adjusted for changes in inventories held by the trade. At the country level, it is jewellery fabrication adjusted for changes in trade stocks plus imports, less exports.

Notes and definitions

Jewellery fabrication

Jewellery fabrication is the first transformation of gold bullion into semi-finished or finished jewellery. This differs from jewellery consumption as it excludes stock building/de-stocking by manufacturers and distributors. At the individual country level, it also excludes imports or exports.

Jewellery inventory

Changes to the level of jewellery stocks along the jewellery distribution chain, this is the difference between gold fabrication and gold consumption. A negative figure represents a draw-down of stocks when consumption exceeds fabrication. A positive figure represents a build-up of stocks.

LBMA Gold price PM

Unless otherwise specified, gold price values from 20 March 2015 are based on the LBMA Gold price PM administered by ICE Benchmark Administration (IBA), with prior values being based on the London PM Fix. For more information, see www.gold.org/goldhub/research/market-primer/gold-prices

Medals/imitation coins

Fabrication of gold coins without a face value, produced by both private and official/national mints. India dominates this category with, on average, around 75% of the total. 'Medallion' is the name given to unofficial coins in India. Medals of at least 99% purity are also included.

Mine production

The volume (in fine weight) of gold mined globally. This includes an estimate for gold produced by artisanal and small-scale gold mining (ASGM), which is largely informal. For more information, refer to: www.gold.org/goldhub/research/market-primer/mine-production

Net producer hedging

The net impact in the physical market of mining companies' gold forward sales, loans and options positions. Hedging transactions – which release gold to the market from existing above-ground stocks – accelerates the sale of gold. De-hedging – the process of closing out hedged positions – has the opposite impact and will reduce the amount of gold available to the market in any given quarter. Over time, hedging activity does not generate a net change in the supply of gold. For more information, refer to: www.gold.org/goldhub/research/market-primer/mine-production

Official coins

Net investment in gold bullion coins (i.e. gross purchases less gross sales) at the retail level. It is equal to the volume of fine gold in coins fabricated by official/national mints which are, or have been, legal tender in the country of issue. It is measured at the country of consumption rather than at the country of origin (for example, the Perth Mint in Australia, sells most of the coins it produces through its global distribution network). In practice it includes the initial sale of many coins destined ultimately to be considered as numismatic rather than bullion.

OTC and other

This number captures demand in the OTC market (for which data is not readily available), changes to inventories on commodity exchanges, any unobserved changes in fabrication inventories and any statistical residual. It is the difference between total supply and gold demand.

Other industrial

Gold used in the production of compounds, such as Gold Potassium Cyanide, for electro-plating in industrial applications as well as in the production of gold-plated jewellery and other decorative items such as gold thread. India accounts for the bulk of demand in this category.

Over-the-counter (OTC)

Over-the-counter (OTC) transactions (also referred to as 'off exchange' trading) take place directly between two parties, unlike exchange trading which is conducted via an exchange.

Recycled gold

Gold recovered from fabricated products, including unused trade stocks, which is refined back into bullion. This specifically refers to gold sold for cash. It does not include gold traded-in for other gold products (for example, by consumers at jewellery stores) or process scrap (scrap generated during manufacturing, which never becomes part of a fabricated product but instead returns as scrap to a refiner). For more information, refer to www.gold.org/goldhub/research/market-primer/recycling

Technology

This captures all gold used in the fabrication of electronics, dental, medical, decorative and other technological applications, with electronics representing the largest component of this category. It includes gold destined for plating jewellery.

Notes and definitions

Tonne (Metric)

1,000 kg or 32,151 troy oz of fine gold.

Total bar and coin

Total net investment in gold bars, coins and medals/imitation coins.

Total supply

The total of mine production, net producer hedging and recycling.

Year-to-date (y-t-d)

In Gold Demand Trends, year-to-date refers to the period to the end of the quarter being reviewed (i.e. for Gold Demand Trends Q2 2017, 'year-to-date' referred to the period from 31/12/2016 to 30/06/2017).

About the World Gold Council

We're the global experts on gold.

Leveraging our broad knowledge and experience, we work to improve understanding of the gold market and underscore gold's value to individuals, investors, and the world at large.

Collaboration is the cornerstone of our approach. We're an association whose members are the world's most forward-thinking gold mining companies. Combining the insights of our members and other industry partners, we seek to unlock gold's evolving role as a catalyst for advancements that meet societal needs.

We develop standards, expand access to gold, and tackle barriers to adoption to stimulate demand and support a vibrant and sustainable future for the gold market. From our offices in Beijing, London, Mumbai, New York, Shanghai, and Singapore, we deliver positive impact worldwide.

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Further information

For data sets and methodology visit:
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