Gold Demand Trends
Full Year and Q4 2023

High gold price reflects strong demand

Another year of blistering central bank buying, together with resilient jewellery consumption, offset sizable ETF outflows.

Annual gold demand (excluding OTC) of 4,448t was 5% below a very strong 2022. Inclusive of significant OTC and stock flows (398t), total gold demand in 2023 was the highest on record at 4,899t.

Central bank buying maintained a breakneck pace. Annual net purchases of 1,037t almost matched the 2022 record, falling just 45t short.

Global gold ETFs saw a third consecutive annual outflow, losing 244t. The pace of outflows slowed markedly into year-end, but October's hefty outflows dominated the Q4 picture.

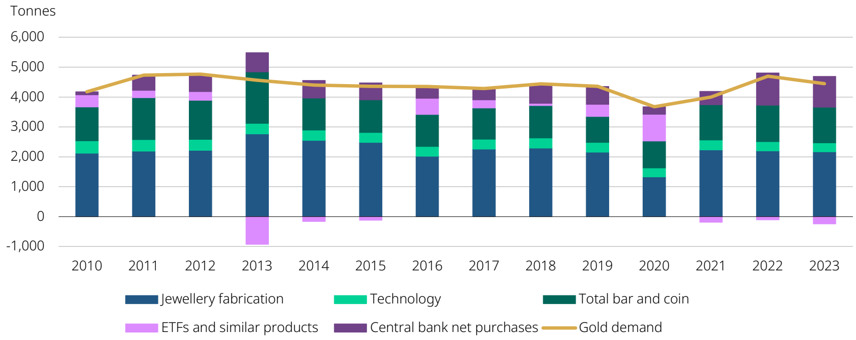
Annual bar and coin investment saw a mild contraction (-3% y/y) as divergent trends in key Western and Eastern markets offset one another.

Annual jewellery consumption held steady at 2,093t, even in the very high gold price environment. China's recovery supported the robust global total.

Despite a Q4 recovery in electronics, the annual volume of gold used in technology fell below 300t for the first time in our data series.

Chart 1: Gold demand (ex-OTC) dipped 5% from a strong 2022*

Annual gold demand by sector, tonnes



* Data as of 31 December 2023

Source: Metals Focus, Refinitiv GFMS, World Gold Council

Highlights

The LBMA (PM) gold price ended 2023 at US$2,078.4/oz – a record high year-end close – generating an annual return of 15%. The average 2023 gold price of US$1,940.54 /oz – also a record – was 8% higher than 2022.

Q4 gold demand of 1,150t (excluding OTC and stock flows) was 8% above the five-year average. But this is 12% weaker y/y when compared with the record quarter of 1,303t in Q4'22. Positive y/y comparisons in Technology and ETFs were outweighed by the y/y decline in central bank buying.

OTC investment was reflected in gold price strength during 2023. This source of gold demand, while opaque, was clearly evident again in Q4 as the gold price rallied despite continued ETF outflows.

Annual mine production increased 1% y/y to 3,644t, but fell short of the 2018 record. Full year recycling responded to high gold prices, rising to 1,237t (+9% y/y). Total gold supply was 3% higher y/y as a result.

For more information please contact: research@gold.org

Gold supply and demand

	2022	2023		Annual y/y % change	Q4'22	Q4'23		Quarterly y/y % change
Supply								
Mine production	3,624.8	3,644.4	▲	1	946.7	930.8	▼	-2
Net producer hedging	-13.1	17.0	▲	-	-13.6	-22.3	▲	-
Recycled gold	1,140.1	1,237.3	▲	9	290.7	312.9	▲	8
Total supply	**4,751.9**	**4,898.8**	▲	**3**	**1,223.8**	**1,221.4**	▼	**0**
Demand								
Jewellery fabrication	2,195.4	2,168.0	▼	-1	601.9	581.5	▼	-3
Jewellery consumption	2,088.9	2,092.6	▲	0	627.9	621.6	▼	-1
Jewellery inventory	106.5	75.4	▼	-29	-26.1	-40.0	▲	-
Technology	308.7	297.8	▼	-4	72.1	80.6	▲	12
Electronics	252.0	241.3	▼	-4	57.9	65.9	▲	14
Other industrial	46.5	47.1	▲	1	11.7	12.3	▲	5
Dentistry	10.3	9.5	▼	-8	2.4	2.4	▼	-3
Investment	1,113.0	945.1	▼	-15	247.4	258.3	▲	4
Total bar and coin	1,222.6	1,189.5	▼	-3	336.6	313.8	▼	-7
Bars	802.7	775.9	▼	-3	222.2	221.1	▼	0
Official coins	320.9	297.1	▼	-7	85.5	60.3	▼	-30
Medals/Imitation coins	98.9	116.5	▲	18	28.9	32.4	▲	12
ETFs & similar products	-109.5	-244.4	▼	-	-89.2	-55.6	▲	-
Central banks & other inst.	1,081.9	1,037.4	▼	-4	382.1	229.4	▼	-40
Gold demand	**4,699.0**	**4,448.4**	▼	**-5**	**1,303.4**	**1,149.8**	▼	**-12**
OTC and other	52.8	450.4	▲	753	-79.7	71.5	▲	-
Total demand	**4,751.9**	**4,898.8**	▲	**3**	**1,223.8**	**1,221.4**	▼	**0**
LBMA Gold Price (US$/oz)	1,800.09	1,940.54	▲	8	1,725.9	1,971.5	▲	14

Source: ICE Benchmark Administration, Metals Focus, World Gold Council

Outlook

Central banks, OTC may offset softer demand elsewhere

In 2024 we expect:

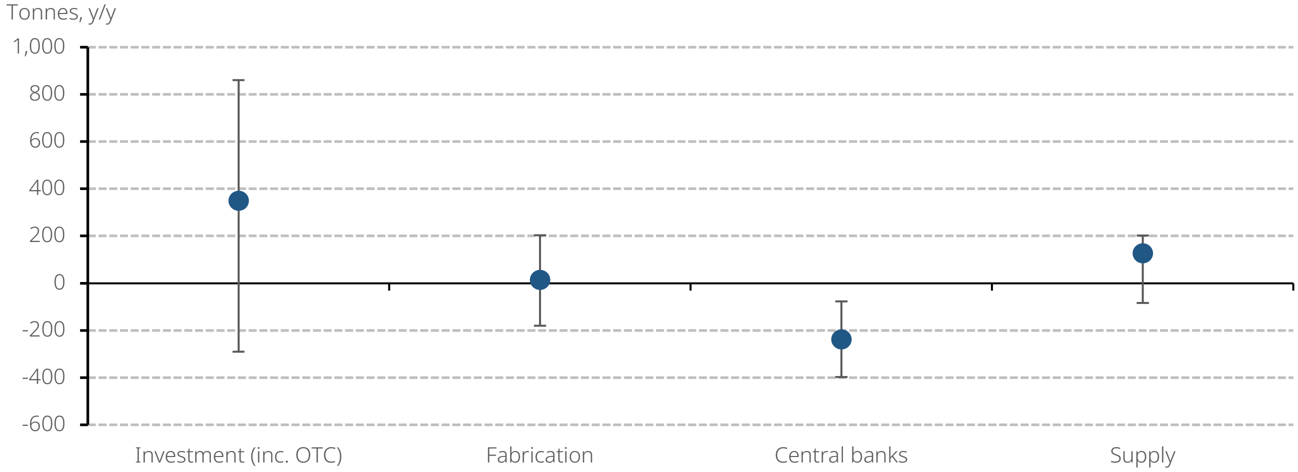
- Total investment (including OTC) likely to be higher in 2024 but, akin to the market behaviour last year, much of this demand could come from the less visible OTC segment – which adds a level of uncertainty. Early continued weakness in global gold ETFs is likely to see a turnaround by mid-year, aided by anticipated rate cuts and continued geopolitical risk. European ETF outflows are likely to continue until longer-maturity interest rates are on a firm path lower, but even here regional politics, alongside geopolitics, could shake things up. Bar and coin demand is likely to stay healthy and in line with the 10-year average, as Chinese and Indian demand strength offsets European weakness
- Central banks to keep buying at an impressive rate, likely in excess of the pre-2022 annual average of around 500t. They almost matched their 2022 total last year and we believe that a longer-term strategy is at play here and err on being more open-minded to another solid year of buying, albeit somewhat lower than this year
- Jewellery demand may struggle to remain lofty, as economic slowdowns and high gold prices start to bite. However, should inflation drop significantly consumers might start to feel wealthier in real terms, which could mitigate some of the drop in demand. Technology demand is expected to benefit from strong positive guidance on semiconductors and from AI fever
- Total supply to rise with planned expansions and higher-grades taking primary production to new highs, although a downside risk from disruptions remains a factor, as always. Recycling is expected to rise, but not materially, as an economic recovery helped by stimulus measures in China could stymie overall recycling activity there. Elsewhere, economic resilience and a possible geopolitical premium should help contain volumes. This status quo is on somewhat thin ice, however, as many economies are set to slow further. In addition, the bar to recycle, given elevated geopolitical tensions, is likely higher even in the face of high prices.

Full year outlook

2023 provided some positive surprises to our last full-year outlook: central banks almost repeated their 2022 feat; jewellery and retail investment stayed lofty against the odds, and recycling was muted. On the flipside, ETFs failed to shake off persistent negativity. The net outcome of a double-digit gold price return (USD) suggests that hidden within the opaque OTC and Other category was some healthy demand from investors. The main themes underlying these developments were the avoidance of a US recession, continued weakness and asset volatility in China, as well as no let-up in global geopolitical tension.

Chart 2: Economic and geopolitical scenario expected to be investment-positive overall in 2024*

Expected change in annual gold demand and supply, tonnage, 2024 v 2023



* Data to 31 December 2023. Fabrication combines global jewellery and technology demand. Investment includes ETFs, bar and coin and OTC demand. Supply includes mine production and recycling. We have omitted hedging and assume it to be unchanged.
Source: World Gold Council

For 2024, the consensus view of a soft economic landing in the US (at least) remains on track for now. To recap, we see the effects of a soft landing as neutral to mildly positive for gold, driven by:

- slightly lower but still elevated long term interest rates: neutral to positive for gold
- a flattish US dollar: neutral to positive for gold
- below trend economic growth: mildly negative for gold
- lower inflation: mildly negative for gold
- elevated geopolitical risks: positive for gold.

Yet we believe recession risk remains quite high even as, in the short-term, economic strength and inflation data points the other way.

Investment: visible weak, invisible strong

Global gold ETFs started the year on the backfoot with outflows similar to October 2023, although so far in January North American funds have been more actively selling than European funds. This could be a feature of rebalancing; hence we don't view this as the start of a trend. Our models suggest that we are likely to see continued small outflows due to strong equity markets and constrictive policy conditions. Equity sentiment appears toppy, however, so a consolidation may not be far off. In addition, policy rates are expected to come down and quantitative tightening is expected to slow – or perhaps even cease – before year-end, both of which could be positive for ETF demand.

OTC activity can, in part, be mirrored by futures positioning. Managed money net longs climbed close to a three-year high in Q4. Alongside central banks and some OTC demand, this sector has helped prices push higher in the absence of global gold ETF inflows but are perhaps in need of some short-term consolidation (Chart 2). Furthermore, recent US election years have seen a pattern of reduction in net longs – perhaps to reduce event-risk exposure. However, we believe speculative interest will be positive in 2024, given that on an average annual basis net longs are by no means extended and overall sentiment is far from frothy. In addition, the tense geopolitical and political environment, alongside possible rate cuts in Q2, should help the cause.

Like jewellery, much emerging market bar and coin demand is price sensitive and record high prices look set to constrain 2024 growth in this sector. And like jewellery, bar and coin demand has been more resilient than expected. This is particularly true in China, where a lack of alternatives and a hedge against currency volatility, along with continued purchases by the People's Bank of China (PBOC), have been prominent drivers. But price is only one factor. While an economic slowdown is likely to dampen affordability in nominal terms, mitigation may come in the form of falling if inflation, especially if – in countries where inflation has been rife – it falls enough for buyers to feel wealthier in real terms.

US coin demand may get a boost from both election uncertainty and outcome, based on the quite consistent historical record. A Democrat win has typically elicited considerably stronger buying post-election, but we believe the stakes are so high that demand is likely to benefit regardless of outcome. Our analysis suggests coin demand is most politically sensitive, followed by speculative futures, bar demand and ETF demand last.

Fabrication demand: jewellery hanging on in there, AI to the rescue for tech

2023 was marked by surprising resilience in jewellery and technology demand. We consider it likely that last year's levels will be repeated in 2024. Indian jewellery demand should continue to benefit from the purring of a healthy economic engine, although high prices will potentially present a greater headwind.[1] China's gold jewellery demand is likely to remain stable: supported by consumers searching for value preservation, but challenged by an expected fall in wedding numbers, an elevated gold price and consumer preference for light-weighted products, all of which will present headwinds.

Western demand is at risk of succumbing to the cost-of-living crisis as well as a higher gold price. But there is some potential for real incomes to play a role in reviving demand towards the end of the year, should inflation continue to abate. Middle Eastern demand is also likely to slow somewhat and we expect to see a continued preference for investment products over jewellery.

Technology demand proved another surprising element in 2023, churning out stellar growth in Q4, albeit from a low base. Guidance from major chip manufacturers suggests 2024 will be a bumper year for semiconductors, with the AI sector a major contributor. As such, technology demand is likely to be somewhat insulated from high prices and a slowing global economy.

1 Our models for jewellery demand suggest a long run elasticity of 1 between jewellery demand and economic growth (GNI per capita) and an elasticity of -0.65 with log price changes. With GDP growth expected to be flat to down (Source: Oxford Economics baseline scenario, Nov 2023) and gold prices in INR expected to be up (Source: Gold Outlook 2024, World Gold Council), the price effect is likely to dominate the income effect in 2024.

Central banks: the tide marches on

Our previous estimate for central banks proved too cautious. Not only have we seen consistent buying from certain banks, Turkey's turnaround from heavy selling in early 2023 suggests to us that in general, buying plans are more durable in nature than we originally suspected. We therefore expect another year of strong buying overall, and if the price action over the last two years is anything to go by, central bank buying in excess of the longer-term average is very likely to provide solid price support.

Supply: new production highs likely, recycling unresponsive

A healthy slate of new mine start-ups in North America, Asia, and Australia, are poised to add to production estimates for 2024. Higher ore grades will support growth. Miners efficiently containing cost rises in aggregate against a backdrop of rising prices should entice a continuation of high levels of output. In gold mine production, surprises are generally biased to the downside from unexpected disruptions, which we account for in our expectations.

Recycling hasn't responded to higher prices as much as we had expected. While recycling in China has responded to both higher prices and a weakening economic environment, a depletion of near-market stocks in India countered the price impact, particularly at the end of the year. In the Middle East, holders of gold have been reluctant to sell given the uncertain geopolitical environment. With this in mind, we expect prices to have only a moderate impact on recycling in 2024, so long as they don't rise too far. An economic pickup in China could also mitigate higher recycling volumes. All in all a small rise is likely over 2023's total.

Jewellery

Jewellery demand resilient despite record gold prices.

- Global annual gold jewellery consumption was little changed in 2023; in fact, it was fractionally higher y/y even though the gold price set new records[2]
- China was the main engine of growth as demand recovered from a relatively weak 2022, but there were other pockets of growth – most notably in Turkey.
- Demand in India was impacted by gold price strength, generating a notable tonnage decline y/y.

Tonnes	2022	2023		Y/y % change
World total	2,088.9	2,092.6	▲	0
India	600.6	562.3	▼	-6
China, P.R.: Mainland	570.8	630.2	▲	10

Source: Metals Focus, World Gold Council

In a year of record high gold prices (in the US dollar as well as many other currencies), global gold jewellery demand managed to secure marginal gains – from 2,089t to 2,093t. In value terms, this translates to 8% growth and a record US$131bn.

China was the main contributor to growth despite the comparison with a weak, COVID-hit 2022. But Turkey and one or two smaller markets also saw y/y gains, helped by the investment motive that often drives high-carat jewellery purchases. Weakness was otherwise fairly widespread, although the magnitude of losses was generally modest given the scale of gold's price rise.

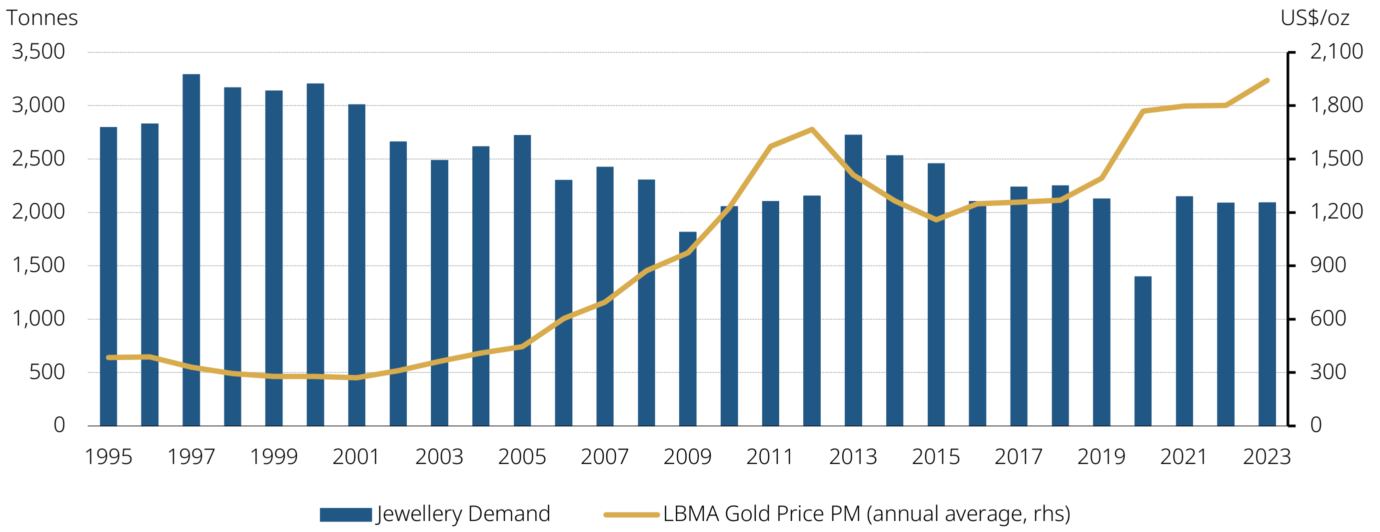
China

China's gold jewellery consumption reached 148t in Q4 (+17% y/y), lifting the full-year total to 630t (+10% y/y). The Q4 performance – smack in line with China's five-year quarterly average – could be considered disappointing as the strong y/y rise was partly due to base effects from a very weak Q4'22.

The removal of COVID restrictions in late 2022 laid the foundations for a 2023 revival in China's gold jewellery consumption. Gold also benefited from its increasing appeal to consumers as they sought value preservation. Surveys from the People's Bank of China (PBoC) show that the saving intentions of households hovered around record highs in 2023 and this benefited gold, given its long-held status as a store of value.

Chart 3: Jewellery demand firm in the face of record gold prices*

Annual gold jewellery demand, tonnes



* Data as of 31 December 2023

Source: Metals Focus, Refinitiv GFMS, World Gold Council

2 LBMA PM US$ gold price reached a record high, both in absolute terms as well as on an annual average basis; the gold price in various other currencies also reached record highs.

The strong 2023 local gold price performance further underlined this view and gold jewellery was one of the best performing retail categories during the year.

Additional support came from improved demand for wedding jewellery in the year, amid a rebound in marriages as pandemic restrictions ended.

However, the 2023 total remained below its long-term average and 1% lower than 2019's pre-pandemic level. And the fourth quarter – typically a strong period for gold jewellery sales – was relatively disappointing according to the trade. The elevated gold price and consumer preference for spending on travel and other forms of entertainment contributed to the somewhat soft fourth quarter. And 2024's late Chinese New Year holiday also delayed the traditional sales boost associated with this occasion.[3]

Products with lighter weights and cheaper unit-total prices were the most popular during the year, in part encouraged by the strong gold price. Our 2023 Chinese jewellery retail market insights found that products lighter than 10 grams, or cheaper than RMB2,000 contributed the most to retail sales. And our conversations with industry participants indicated similar trends: light-weight 24K hard pure gold jewellery and smaller products (with more modest labour charges) outperformed others.

Meanwhile, we have noticed the emergence of the "wholesaler to consumer" sales model, where consumers purchase gold jewellery products direct from wholesalers, thus avoiding additional charges and benefiting from attractive pricing.

Looking ahead, gold jewellery demand in China may face challenges in 2024. While the first quarter is likely to see robust performance, thanks to the traditional Chinese New Year sales boost, the elevated gold price and a potential slowdown in economic growth may exert pressure on gold jewellery demand after this initial lift. Furthermore, 2024 is a less auspicious year for marriages, potentially hurting demand for wedding jewellery. We believe consumers will continue their hunt for products with low labour charges, motivated by value preservation, the high gold price.

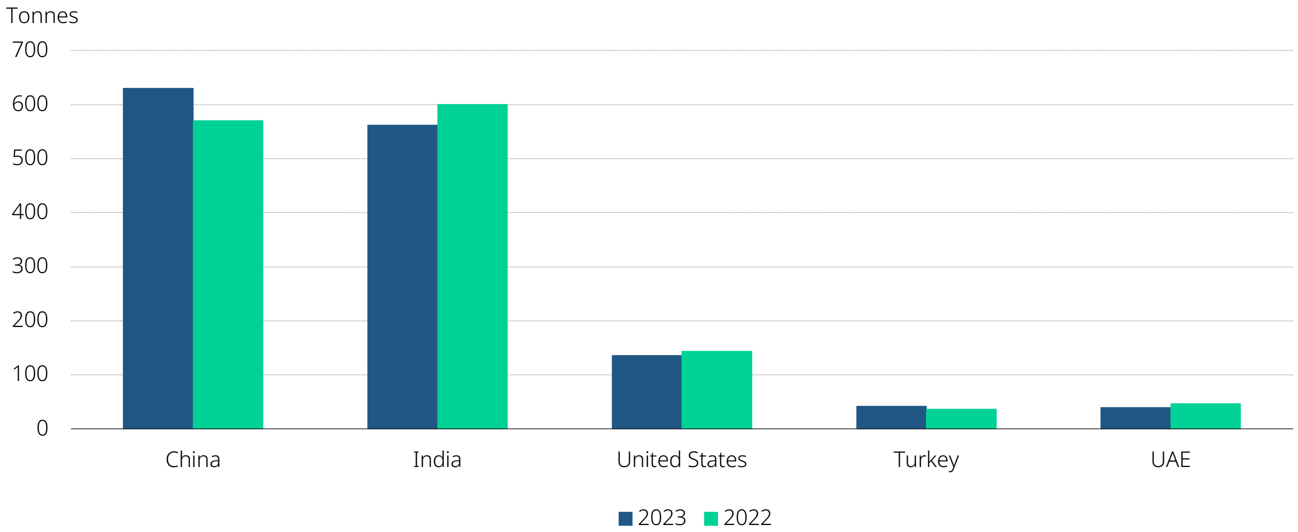
India

Fourth quarter demand in India was down 9% y/y, from a relatively elevated Q4'22 base; this contributed to an overall decline in 2023 demand, down 6% y/y to 562t. Arguably, the 6% y/y annual could be seen as robust given the local gold price trend: it price set a number of new record highs throughout the year.

The price strength of 2023 encouraged a trend for lighter-weight or lower-carat items, as well as simply reducing the volume of gold jewellery purchased. The higher margins charged on gem-set and 18k jewellery further encouraged this shift.

Chart 4: India and China traded the top spot in 2023*

Top five countries' annual gold jewellery demand, tonnes



* Data as of 31 December 2023

Source: Metals Focus, World Gold Council

3 Chinese New Year often falls in late January, but in 2024 the lunar new year falls in the second week of February.

During Q4 the October price correction, which coincided with Navratri, encouraged a strong consumer response.[4] And Diwali purchases boosted sales in November. But this dried up in December as the price resumed its sharp upward trend, and some reports suggest demand was close to a standstill in the closing weeks of the year.

Indian gold jewellery demand is likely to be subdued in Q1 if prevailing price levels are sustained: retailers are not optimistic for any meaningful return in demand in the absence of a price correction. Moreover, wedding jewellery demand is likely to be tempered given the fewer number of auspicious wedding days in Q1 (16 versus 28 in Q1 2023). There could be pockets of demand in the run up to the general elections (April-May) during which time government spending generally tends to increase, but the outlook is relatively cautious.

Middle East and Turkey

Turkey's jewellery demand continued to extend its upward trend from the lows seen in 2020: annual demand reached an eight-year high of 42t (+14% y/y). Q4 demand of 11t was 7% higher y/y, the seventh consecutive quarter of y/y growth.

Investment motives remained a key driver of jewellery demand in Turkey, although the new record high prices of Q4 emerged as something of a headwind to jewellery demand, contributing to the q/q decline from Q3.

Nonetheless, the investment case for gold stayed compelling: consumer inflation remained exceptionally high; domestic investors had a lack of viable investment alternatives; and heightened geopolitical tensions shone a spotlight on gold's safe haven attributes.

Annual jewellery consumption in the Middle East fell 9% in 2023, to 171t. Saudi Arabia outperformed the rest of the region, registering a marginal y/y increase to 38t (+1%y/y). Nevertheless, demand remained relatively subdued as pent-up post-COVID demand was exhausted and the high gold price environment posed a challenge.

Elsewhere, the biggest losses were seen in the UAE (-15%) and Egypt (-17%). The drop in the UAE was mainly due to the high base of 2022, which had been boosted by the post-COVID return of tourism. Egypt, however, was hit by continued domestic economic challenges, notably depreciation of the local currency affecting domestic consumers. Geopolitical tensions and falling tourism also had a detrimental impact.

US and Europe

Annual jewellery consumption in the US continued its downward trend, following two consecutive years of relatively strong demand. Full year demand was 5% lower at 136t, while Q4 demand was down 4% – the seventh consecutive quarterly y/y decline.

Throughout 2021 and 2022 demand was boosted by higher disposable income levels generated by COVID lockdowns and government support measures, but this impact wore off in 2023. Instead, consumers focused their spending on travel, entertainment and experiences. The higher gold price also contributed to lower levels of demand, as did the return to more 'normal' marriage numbers, as the post-COVID backlog of weddings cleared.

That said, annual demand was still comfortably in excess of typical pre-COVID levels: the average for 2015-2019 was 124t.

Jewellery demand saw widespread weakness across Europe during 2023; demand at the regional level was down 3% at 70t. Although Q4 saw the traditional seasonal q/q jump, the y/y comparison was less robust, with a 5% drop to 30t. Similar to the US, the decline in consumption was partly a reflection of a post-COVID 'normalisation' in demand. While demand at the top end of the market remains more robust, field trip conversations suggest that strength in this segment is not quite as broad-based as previously.

ASEAN markets

A Q4 recovery in Thailand's gold jewellery demand failed to prevent a full-year decline. Annual demand slipped 2% to 9t, despite a surge in demand during October and November in response to the price dip.

During the fourth quarter higher agricultural prices reportedly sparked an improvement in rural demand, which had lagged the performance of urban demand throughout much of the year. However, jewellery recycling volumes in Thailand climbed during 2023 as the rising gold price drew out existing holdings.

Vietnamese jewellery demand suffered a steep drop in 2023: down 16% to 15t. Four consecutive quarterly y/y declines were a consequence of slowing economic growth and relatively high inflation.

Gold jewellery demand in Indonesia suffered a 12% decline in 2023, bringing an end to the two-year recovery streak. Higher gold prices and pressures from the broader inflationary environment were the main reasons for weaker demand.

4 Navratri is an auspicious Hindu festival dedicated to the worship of Goddess Durga and lasts for a period of nine days.

Rest of Asia

Japan was one of the more resilient jewellery markets in 2023: demand grew 6% y/y to 16t. Demand was consistently strong throughout the year, with each quarter posting y/y increases. The main area of growth was the quasi-investment 'kihei' segment, which benefited from the rising gold price.[5] In contrast, lighter-weight and lower-carat 'every day' designs suffered as a result of rising prices.

South Korean gold jewellery consumption resumed its long-term downtrend: annual demand fell 21% to 12t. Buying during the peak Q4 season generated a healthy q/q recovery from Q3's paltry levels, but the longer term downward trend remained firmly in place as record local gold prices inevitably weighed on demand.

Australia

Annual Australian jewellery demand posted a 6% decline in 2023. Consumers face pressure from a punishing cost of living and this, combined with gold price strength, generated a y/y drop in demand for gold jewellery. But demand remained comfortably above the 2021 total.

5 'Kihei' chains are plain, simple gold chains, often bought as an investment as they have a lower mark-up than more creatively designed gold jewellery

Investment

ETF outflows, together with a modest decline in bar and coin demand, saw total annual gold investment sink to a 10-year low of 945t.

- Global gold ETFs registered a third consecutive year of net negative tonnage demand; global holdings dropped by 244t (-US$15bn)
- Annual bar and coin investment totalled 1,190t, down by a modest 3% y/y, in part reflecting base effects of a very strong H2'22
- A steep drop in European gold investment in 2023 was, to a large degree, countered by strength in China.

Tonnes	2022	2023		Y/y % change
Investment	1,113.0	945.1	▼	-15
Bar & Coin	1,222.6	1,189.5	▼	-3
India	173.6	185.2	▲	7
China, P.R.: Mainland	218.2	279.5	▲	28
Gold-backed ETFs	-109.5	-244.4	▼	-

Source: Bloomberg, Company filings, Metals Focus, World Gold Council

Full-year global investment demand (the sum of bars, coins and ETFs) was the lowest since 2014. Gold ETFs contributed to much of the decline, as global outflows continued. It should be noted however – thanks to a positive gold price performance – that global assets under management (AUM) in these products grew by 6% in US dollar terms. Bar and coin investment moderated as a sharp decline in Europe (largely due to rising interest rates and the cost of living crisis) outweighed strong growth in China and Turkey.

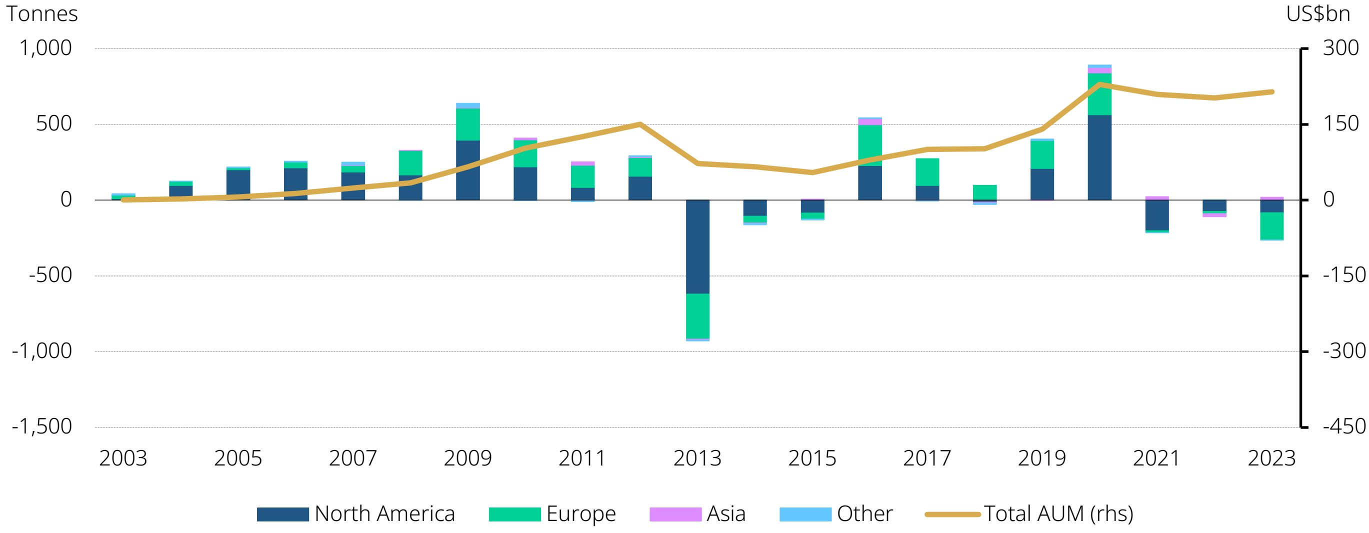
But the investment picture is incomplete without the 'OTC investment and Other' category, which was a significant component of gold demand in 2023: it added 450t to demand. The opacity of this element of the market presents challenges in estimating and attributing, but we can say with certainty that much of this annual total came through in Q2, when sizable stock build was seen in several markets – most notably Turkey; this stock build continued in the third and fourth quarters.

Changes in inventories at commodity exchanges mirrored the positive Q4 OTC number, as did the rebound in net managed money positions, which ended 2023 near the year's highs. In addition, the fact that gold prices reached record levels in Q4, at a time of continued outflows from global ETFs, lends further support to the view that investment demand not captured elsewhere was a major contributor to the positive OTC number.

ETFs

Holdings of global gold ETFs fell by 244t in 2023 (-7%) with outflows of US$15bn. When allowing for the 15% price gain over the year, total assets under management (AUM) in these products rose 6% to US$214.4bn

Chart 5: Holdings of gold ETFs down 244t, led by Europe*
Annual change in gold-backed ETFs by region, tonnes



* Data as of 31 December 2023

Source: Bloomberg, Company Filings, ICE Benchmark Administration, World Gold Council

From a regional perspective, losses were most marked in Europe, where holdings fell by 180t – the worst annual performance since 2013. Aside from a brief interlude in March, when the US mini-banking crisis sparked a surge of safe-haven demand, the region saw persistent monthly losses throughout the year. Rocketing interest rates, the hawkish stance of local central banks, strong currencies and surging living costs were among the likely factors driving profit-taking.

North American funds declined by 82t in 2023. Outflows were mainly associated with the surging opportunity cost of holding gold – in the form of higher Treasury yields and a stronger dollar. Outflows were concentrated between June and October, reflecting the sideways/lower gold price trend at that time. They were partially offset by inflows during much of H1 – supported by banking sector turmoil and strong gold price rises – and towards the end of the year when geopolitical concerns heightened and both yields and the dollar fell on intensifying rate cut expectations.

Asia was the only region to see growth in holdings of gold-backed ETFs during 2023: holdings grew by 19t. China was the strongest performer: an increase of 10t exceeded the combined growth of Japan (5t) and India (4t). Global geopolitical tensions, local economic uncertainties, as well as the eye-catching performance of gold in different currencies fueled positive gold ETF demand in these markets. "Other regions" saw a marginal decline in holdings of just 1t. In Turkey, rampant inflationary pressures and a weaker local currency drove strong interest (+3t), but these gains were wiped out by declines in Australia and South Africa, each of which lost 2t.

Outflows from European funds have continued in the opening weeks of 2024 and North American-listed funds have resumed their decline after a two-month respite in November and December. Strong equity performance and continually shifting expectations surrounding the likely path and timing of rate cuts are the likely drivers. Asian funds, meanwhile, have seen a return to modest inflows.

For a more detailed review of regional activity in global gold-backed ETFs in December and 2023 as a whole, see our latest monthly Gold ETF commentary.

Bar and coin

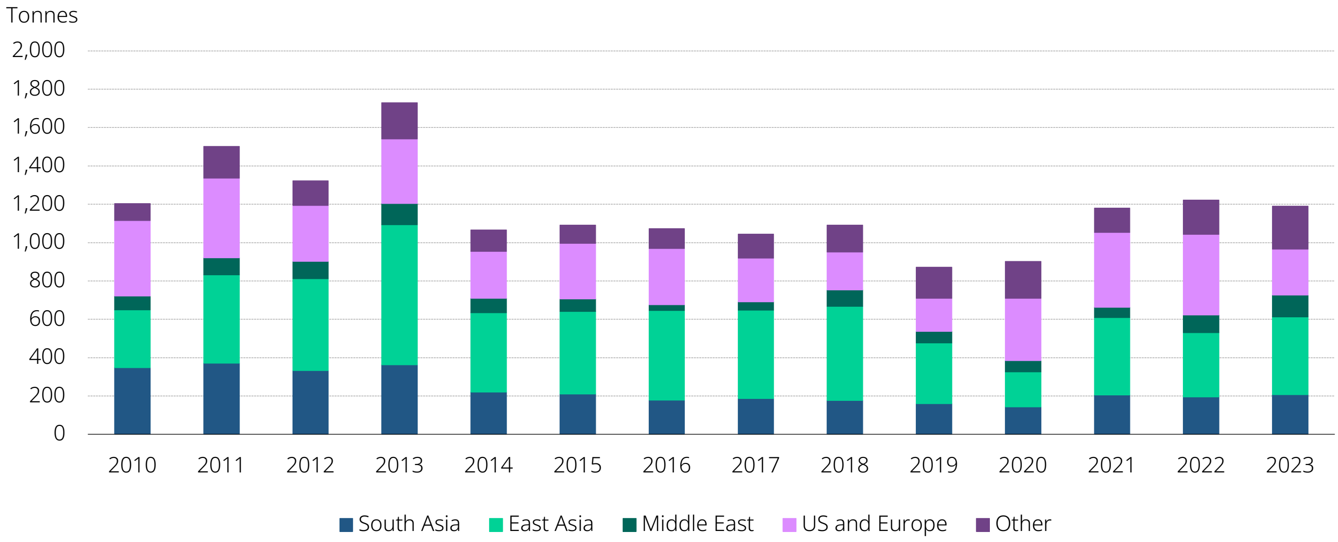
Bar and coin demand softened by 3% in 2023, to 1,190t. Growth in the first half was erased by a y/y decline in H2, largely due to base effects: H2'22 was the strongest second half for a decade. This sector of demand has been remarkably steady over that time, explained in part by offsetting Eastern and Western investment motives/trends. And 2023 was no exception: European investment demand fell sharply while key markets in Asia saw growth.

China

Annual gold bar/coin investment in China reached 280t, a strong 28% recovery from COVID-hit 2022. Full-year demand was boosted by a 35% jump in Q4 to 83t; in fact, H2 demand of 164t was a record for a second half-year in China.

Chart 6: Opposing West v East shifts in bar and coin investment*

Annual gold bar and coin demand by region, tonnes



* Data as of 31 December 2023

Source: Metals Focus, Refinitiv GFMS, World Gold Council

Investment demand was elevated throughout the year and gold remained in the limelight during the fourth quarter. The strong performance of the local gold price attracted investors throughout 2023 – particularly as the local price outperformed relative to the international gold price, thanks to a depreciating yuan. This gold price strength was especially appealing given the disappointing performance of other domestic investments, notably property and equities: local stock markets generated negative annual returns, with the Shanghai Composite index dipping to a one-year low in October.

Meanwhile, the PBoC's continued run of 14 consecutive monthly additions cemented public opinion around the value of gold as an investment asset.

Extensive coverage by local media, sparked by the above factors, also contributed to the rising popularity of gold bars and coins during the year, while year-end gifting demand likely provided an additional boost in Q4.

Looking ahead, individual gold investment should remain robust this year, but may not repeat 2023's strength. Central banks globally are likely to further add to their gold reserves, which will continue to draw the attention of gold bar and coin investors. And the environment of elevated geopolitical tension, together with a fragile domestic economic scenario, should further lift safe-haven demand.

But any slowdown in China's economic growth may limit households' budgets for gold, particularly if accompanied by continued strength in the local gold price, which is a potential scenario in our Annual outlook. In such an eventuality, investors may choose to wait on the sidelines for a better entry opportunity.

India

Indian bar and coin investment grew 7% y/y, reversing the prior year's losses and reaching 185t. Fourth quarter demand of 67t was 64% above the five-year quarterly average.

The downward correction in the gold price elicited a strong investment response in the third and fourth quarters, particularly as the October dip was followed by a sharp rebound that re-affirmed expectations of a positive investment performance. This was matched by interest among physically-backed gold ETF investors, who lifted total holdings in Indian-listed products to a record of 42t by year-end. Similarly, sovereign gold bonds saw increased investment, with the December tranche attracting record high subscriptions.

India's domestic economy continues to perform well and higher growth forecasts bode well for household spending. Gold bar and coin demand should benefit, particularly as investor sentiment remains positive. That said, any further sharp rises in the gold price could present a short-term headwind, by sparking profit-taking and/or encouraging investors to sit on the sidelines and wait for an opportunity to invest at lower – or at least more stable – levels.

Middle East and Turkey

A strong fourth quarter set the seal on a record year for Turkish gold bar and coin investment. Full-year demand surged to 160t, almost double the total from 2022 – which was itself a very strong year.

The drivers of this rampant gold demand were consistent throughout the year: unrelenting consumer inflation (with unofficial estimates of over 100%), together with the corollary of deeply negative real interest rates, as well as the very limited range of available alternative investment options. Geopolitical tensions, already heightened, played a bigger role in the fourth quarter with the eruption of hostilities much closer to home.

The trend for HNW interest in gold, which was anecdotally reported throughout Q2 and Q3, continued into the fourth quarter, driven by very similar factors. This element of demand falls within the OTC and Other category, but is worth noting as a feature of Turkey's gold investment landscape in 2023.

The domestic price premium on gold, already persistently high for much of the year, rocketed in Q4 as new regulations were introduced designed to limit the continued inward flood of imported bullion.[6]

Continued strength is expected in Turkish investment demand – notwithstanding the persistently eyewatering local gold price levels – as the country faces municipal elections at the end of March, adding to the atmosphere of risk and uncertainty. Similarly, premiums are expected to remain elevated at least until the end of Q1, by which time elections will have concluded.

Investment demand for the Middle Eastern region jumped to a record yearly total of 114t in 2023. Demand was 23% up on an already strong 2022 total. Egypt generated the lion's share of that growth, with bar and coin demand surging to 30t and obliterating 2022's previous 19t record. Surging investment demand was primarily a response to parlous domestic economic conditions, notably the sharp

6 Turkey announced various regulatory developments in December designed to prevent companies from circumventing the 12t bullion import quota: KMTSUYGULAMASINAILISKINUSULESASLAR.pdf (hmb.gov.tr); Dahilde İşleme İzni Kapsamında Kıymetli Maden İthali Hakkında.pdf (ticaret.gov.tr); www.borsaistanbul.com/files/duyuru-22177-TR.pdf

depreciation in the domestic pound, which hit consumers hard. The fourth quarter brought added impetus from domestic Presidential elections and the outbreak of war in the region, although H2 demand was fractionally lower y/y, slightly curtailed by the introduction of a sales tax on small gold bars at the end of Q2.

Elsewhere across the region, Iran and the UAE further contributed to the increase in annual investment demand. The UAE saw consistent y/y growth throughout the year, taking annual demand to a 10-year high of 11t (+34% y/y). Safe-haven motives kept demand elevated in Q4, although the price rise tempered this somewhat as some investors held off, waiting for a correction.

Iran saw more muted growth: bar and coin demand in 2023 grew 6% to 44t. Nevertheless, this was a healthy annual total and firmly above the annual averages of the last five and ten years. The main driver of demand in 2023 was continued inflationary pressure, with safe-haven demand also emerging as a factor in the fourth quarter. The surging price reined in demand towards year-end, and this was reflected in lower local price premiums. But demand is likely to remain elevated thanks to the persistent backdrop of high inflation and heightened geopolitical risk.

The West

2023 was the third highest year of gold bar and coin investment in the US: demand gained 5% to 113t. Q4 saw a return to y/y growth, with much of the quarter's buying interest concentrated in October and November on surging geopolitical tensions and shifting rate cut expectations before a marked rise in profit-taking kicked in during December's price rally. This was reflected in a fairly sudden drop in premiums towards year-end.

Demand remains healthy on a longer-term basis, with individual investors showing continued buying interest, particularly as they become more accustomed to prices at recent higher levels. But the year also saw a notable pick-up in selling activity, marking a return to more 'normal' levels of two-way activity after two or three years of more dedicated buying.

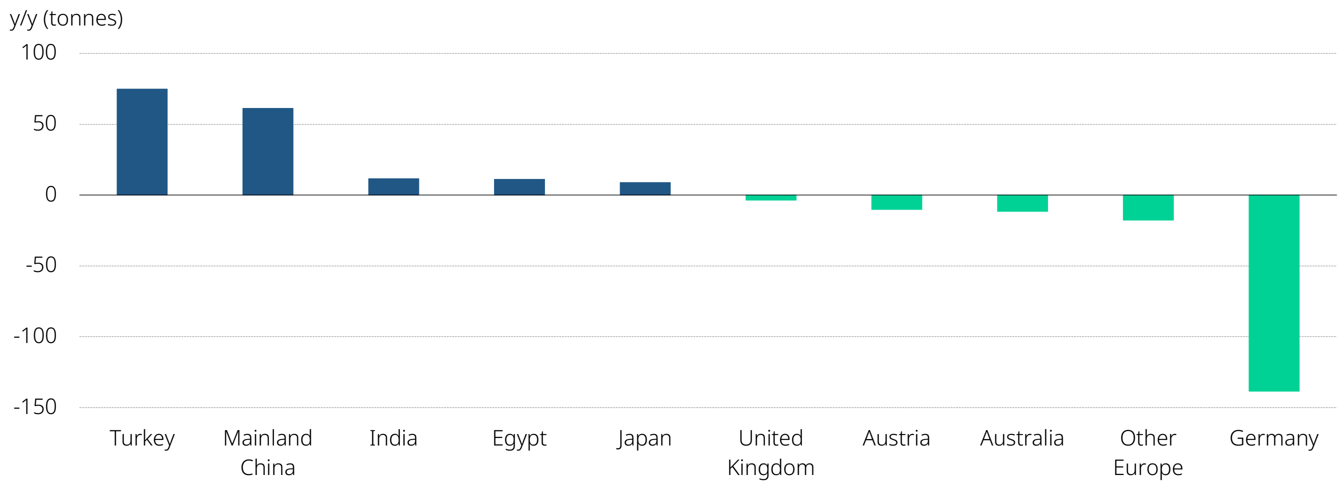
January figures released by the US Mint show that sales of gold Eagles have had a relatively healthy start to the year, with sales of 182,000 in the first four weeks compared with full-month sales of 163,500 ounces in January 2023.[7]

Bar and coin investment in Europe seemingly fell off a cliff in 2023: demand fell 59% to 127t – a 16-year low. The reasons for the decline were consistent throughout the year: higher interest rates, making savings a more competitive option and mortgage payments more burdensome; the cost of living crisis squeezing funds available for investment; and high/record gold prices encouraging selling back.

Germany, as always, dominated the regional picture. Demand slumped to 47t as sentiment tumbled in response to the domestic economic downturn and persistent pressure on household finances, including energy costs. A short-lived increase in concerns over geopolitical tensions/risk events during Q4 had no meaningful impact on demand.

Chart 7: Germany dominated Europe's steep decline*

Top and bottom five y/y changes in bar and coin demand, tonnes



* Data as of 31 December 2023
Source: Metals Focus, World Gold Council

7 As of 26 January 2024

ASEAN markets

Among the ASEAN markets covered in this report, Thailand had the strongest 2023 growth performance, albeit with demand remaining historically relatively subdued. Bar and coin investment in Thailand was up 13% in 2023, at 33t. Compared with average pre-COVID demand, however, this is fairly weak: annual investment for 2015-2019 averaged 63t.

The steady decline in the value of the local currency for much of 2023 supported demand, particularly against a fragile economic backdrop. But part of the explanation for lower levels of demand in recent years may lie in the increased popularity of online investment platforms, which allow for greater short-term gold trading activity, at the expense of a 'buy and hold' approach.

Demand in both Indonesia and Vietnam saw modest y/y declines in 2023, down to 20t (-5%) and 40t (-2%) respectively. Investment in Vietnam picked up in Q4, as investors responded to the price correction. However, the rise in demand – combined with limited availability of gold investment products – reportedly pushed premiums on official SJC tael bars even higher, to around US$600-700/oz.

Rest of Asia

Bar and coin demand in Japan was modestly negative in 2023 at -2t. Continued profit-taking met with healthy buying interest. The fact that net selling was so trivial at a time when the local gold price reached a new record high is a positive development. Buying interest was stimulated by inflation and the rising local gold price, with demand emerging among a younger cohort of investors.

Demand in South Korea saw a 10% decline in 2023 to 15t. However, Q4 saw a strong upsurge, with investors buying into the sharp correction in the gold price at the start of the quarter.

Australia

Gold investment demand in Australia dropped by almost half, reaching just 14t in 2023. An environment in which rising interest rates and high inflation created cost of living pressures was the likely main drivers of this decline.

Central Banks

Central bank gold reserves swell by more than 1,000t for the second successive year.

- Central bank demand totalled 229t in Q4, 35% lower q/q
- This lifted full year central bank net purchases to 1,037t, below 2022's record haul
- Reported gross buying and selling were both higher in 2023. The People's Bank of China and the National Bank of Poland added the most, while the Central Bank of Uzbekistan and the National Bank of Kazakhstan were the biggest sellers.[8]

Tonnes	2022	2023		Y/y % change
Central banks and other institutions	1,081.9	1,037.4	▼	-4

Source: Metals Focus, World Gold Council

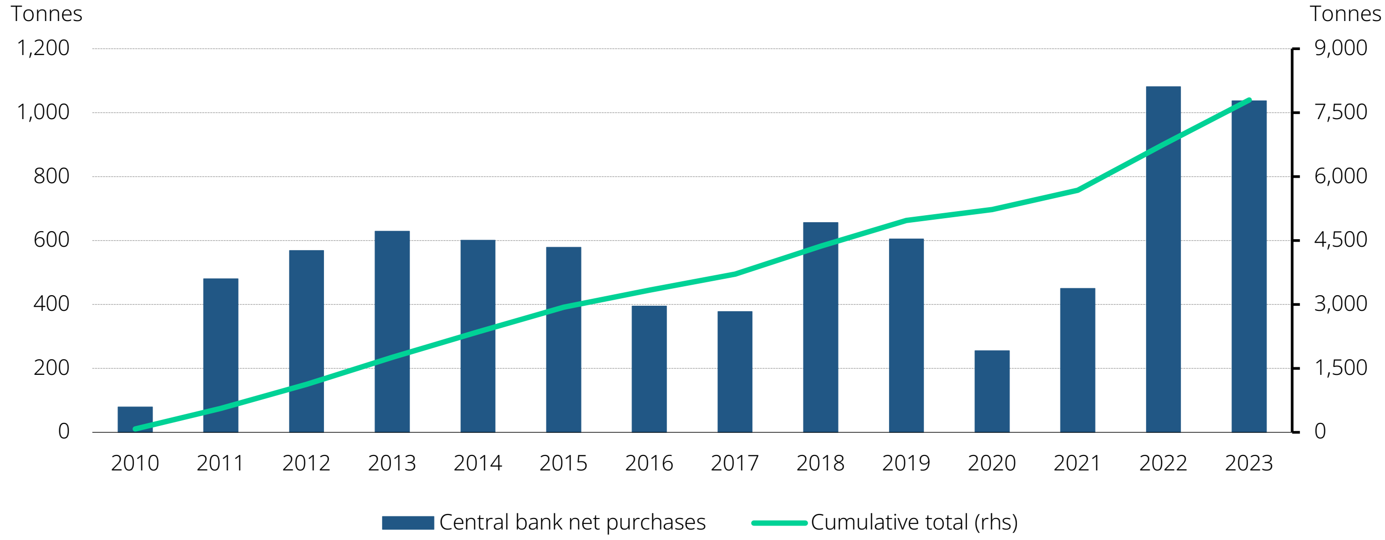
Central bank demand, a key driver of gold in recent years, maintained its momentum in Q4 as a further 229t was added to global official gold reserves. This lifted annual (net) demand to 1,037t, just short of the record set in 2022 of 1,082t. Global official sector gold reserves are now estimated to total 36,700t.

Two successive years of over 1,000t of buying is testament to the recent strength in central bank demand for gold. Central banks have been consistent net buyers on an annual basis since 2010, accumulating over 7,800t in that time, of which more than a quarter was bought in the last two years. Findings from our 2022 and 2023 Central Bank Gold Survey show that gold's performance during times of crisis and its role as a long term store of value are key reasons for central banks to hold gold.

As well as extending the buying trend to 14 consecutive years, the breadth of reported buying among central banks remained healthy in 2023. The vast majority of purchases continued to come from emerging market central banks, many of whom have been regular buyers in recent years.

The People's Bank of China (PBoC) regained the crown for the largest single gold buyer; it reported a total rise of 225t in its gold reserves over the year. This makes 2023 the

Chart 8: Colossal central bank buying continued in 2023*
Annual and cumulative net gold demand from central banks, tonnes



* Data as of 31 December 2023
Source: Metals Focus, Refinitiv GFMS, World Gold Council

8 As publicly reported at the time of writing. For purposes of Gold Demand Trends, central bank demand is defined as 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 and sovereign wealth funds where applicable. Our quarterly central bank demand data is sourced from Metals Focus, whose proprietary estimates of official sector activity incorporate various sources, including IMF IFS reports, international trade data, and others. As such, publicly reported data is a subset of what is included in Gold Demand Trends. Both data sets are subject to revision as new information is made available and/or to accommodate late or updated reported data.

country's highest single year of reported additions since at least 1977.[9] As a result, PBoC gold reserves now stand at 2,235t, although this still represents only 4% of China's vast international reserves.

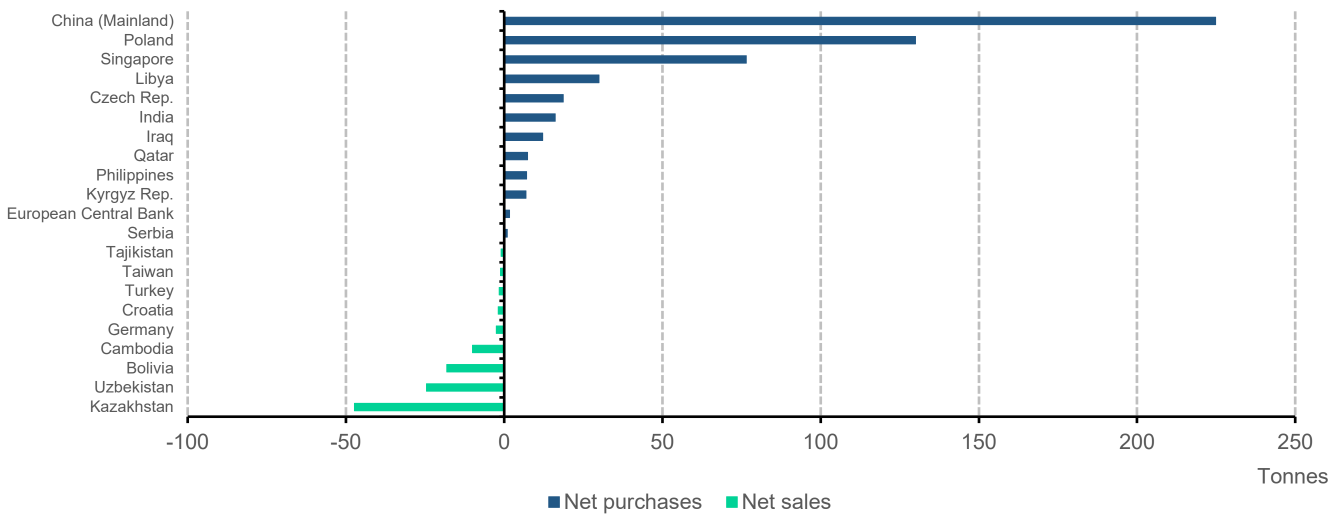
The National Bank of Poland was the second largest buyer in 2023. Between April and November, the central bank bought 130t of gold, increasing its gold holdings by 57%, to 359t. As with the PBoC, this was the highest level of annual buying from the NBP on record[10] and exceeded the previously stated target of 100t.[11] In October, NBP President, Adam Glapiński, indicated that he would like to see gold accounting for 20% of Poland's international reserves (gold's current share is 12%).[12]

Buying beyond these two banks was relatively modest by comparison, but no less important. The Monetary Authority of Singapore was once again the sole developed market buyer, adding a further 77t to its gold reserves, lifting them to 230t. The Central Bank of Libya added to its gold reserves for the first time since 1998/9, buying 30t in June; its gold reserves now total 147t. The Czech National Bank's purchase of 19t of gold was its highest annual addition on record back to 1993; the Czech Republic's gold reserves now stand at 31t.

The Reserve Bank of India and the Central Bank of Iraq were among the other banks that added a tonne or more to their reserves. The European Central Bank also saw its gold reserves rise by almost 2t in January, but this was a transfer of gold from Croatia as the country joined the eurozone.

Reported gross purchases were so strong that they comfortably outweighed higher gross sales in 2023. The National Bank of Kazakhstan (47t, as of November) and the Central Bank of Uzbekistan (25t) were the two largest sellers of gold. Both banks buy gold domestically – as both nations are significant gold producers – and actively manage a portion of their substantial official gold reserves. Therefore the swings between buying and selling we have seen in recent years are not wholly surprising. In statements to Bloomberg in July, the National Bank of Kazakhstan was clear that its aim is to cut gold's share of its international reserves to 50-55% (from 58% in November, the latest data available).[13]

Chart 9: Reported central bank buying was broad-based*
Annual net gold purchases/sales by country, tonnes



* Data to 31 December 2023 where available.
Source: IMF IFS, respective central banks, World Gold Council

9 Based on data reported via IMF IFS back to 1977. The PBoC's purchase of 454 tonnes of gold, announced in April 2009, took place over a six-year period from 2003 to 2009, while the purchase of 604 tonnes of gold, announced in June 2016, took place over a six-year period from 2009 to 2015.

10 Based on data reported via IMF IFS back to 1979.

11 www.biznes.interia.pl/gospodarka/news-adam-glapinski-prezes-nbp-bede-namawiac-rpp-do-kolejnej-podw,nId,5823037

12 www.i.pl/szef-nbp-adam-glapinski-marzeniem-jest-zeby-zloto-w-rezerwach-nbp-osiagnelo-poziom-20-proc/ar/c1-17954959

13 www.bloomberg.com/news/articles/2023-07-31/one-big-gold-seller-among-central-banks-has-even-more-to-offload

The Central Bank of Bolivia reported that its gold holdings fell by 18t between May and August (latest data available). This followed the passing of a bill in May, which allowed for the monetisation of official gold reserves.[14] This 43% decline in official gold reserves since end-April leaves gold holdings totalling just over 24 tonnes. According to reports, the central bank must keep a minimum of 22 tonnes of gold reserves.[15]

The Central Bank of Turkey was also a net seller in 2023 – but only just.[16] Having sold 159t between March and May to help satisfy very strong domestic demand during a temporary partial ban on gold bullion imports,[17] official gold reserves finished the year just 2t lower than at the end of 2022. A resumption in strategic buying since May has helped official gold reserves recover to 540t.

Looking ahead into 2024, making predictions for this sector is as challenging as ever. But the buying trend that has been in place since 2010 shows little sign of abating, even if a third consecutive year of ~1,000t net purchases may be unlikely. This reinforces our belief that global central banks will remain net buyers again this year. For more on this, please see the Outlook section.

14 www.reuters.com/world/americas/bolivian-senate-approves-gold-law-aimed-bolstering-foreign-reserves-2023-05-05/

15 www.telesurenglish.net/news/Bolivia-Approves-the-Law-to-Enhance-its-Gold-Monetary-Reserves-20230505-0013.html

16 Turkey official sector gold reserves are the sum of central bank owned gold and Treasury gold holdings. This is equivalent to gross gold reserves less all gold held at the central bank in relation to commercial sector gold policies, such as the Reserve Option Mechanism (ROM), collateral, deposits and swaps. Please follow this link for information on this methodology: https://www.gold.org/goldhub/data/gold-reserves-by-country

17 www.reuters.com/markets/commodities/turkey-suspend-some-gold-imports-after-earthquake-bloomberg-news-2023-02-14/

Technology

A promising recovery in Q4 saw demand reach a seven-quarter high of 81t; but 2023 was a weak year for the sector and annual demand fell below 300t for the first time.

- Gold demand in the technology sector rose by 12% y/y to 81t during Q4, driven by a recovery in electronics (+14% y/y to 66t)
- Full-year demand was down 4% to 298t – the lowest annual total in our data series
- Consumer electronics demand has suffered throughout the year but there is optimism that the late recovery will continue into 2024.

Tonnes	2022	2023		Y/y % change
Technology	308.7	297.8	▼	-4
Electronics	252.0	241.3	▼	-4
Other Industrial	46.5	47.1	▲	1
Dentistry	10.3	9.5	▼	-8

Source: Metals Focus, World Gold Council

Gold used in industrial applications recorded a 12% y/y rise in Q4, a reversal from the y/y falls seen during the previous three quarters. This resulted in total annual demand of 298t in the sector, a 4% fall compared to 2022.

Electronics, the dominant category of industrial gold demand, was weak throughout the year in a challenging economic environment. This was also reflected in the performance of the major chip manufacturers: Samsung, for example, expects to post a 35% drop in operating profit during Q4,[18] while the world's largest manufacturer – Taiwan Semiconductor Manufacturing Co Ltd – is expected to report a 23% drop over the same period.[19]

Consumer electronics demand was notably weak throughout much of 2023. Smartphone shipments, for example, declined by ~3% y/y to 1.17bn units in 2023 – the lowest full-year volume in a decade.[20] However, the sector seemed to experience some recovery during the latter part of the year: consumer demand picked up and the elevated inventory levels of Q1 were run down, to the extent that stocks had to be replenished in the final quarter. There is optimism that 2024 will see a further recovery.[21]

Electronics

Gold used in the electronics sector rose by 14% y/y to 66t during Q4. While this was comfortably the best quarter of 2023, the figure is flattered by comparison with Q4'22, which was notably weak in what is traditionally this sector's strong demand quarter.

The wireless sector was a major driver in recovering demand during Q4. Factory utilisation rates reportedly improved, rising from 20% to 30% during Q4'22 to between 60% and 70% in Q4'23. This was driven by smartphone demand as new devices were launched during the quarter, with particular strength in demand for low- and mid-range models. Huawei, for example, has reported strong demand for its Mate 60 Pro device in China.[22] 5G smartphones also continue to gain in popularity around the world, with penetration rates increasing from 48% in 2022 to 59% in 2023, with a similar rate of increase forecast for 2024. Two areas of promise for the future are the recently launched Wi-Fi 7,[23] which is predicted to significantly boost the speed and stability of wireless connections, and increasing demand for Low Earth Orbit Satellites (LEOS),[24] which some manufacturers expect to increase in number from 7,500 to 12,500 by 2027. Both applications require reliable high-end wireless infrastructure, making gold a crucial component.

The Light Emitting Diode (LED) sector continued to experience challenges during Q4. Demand for lighting – continuing the trend from recent quarters – remained weak and is unlikely to see any level of recovery before the second quarter of 2024. Backlight applications showed some improvement, with output increasing slightly. Demand for high-end 3D sensors, which have generally been a positive component of the LED sector in recent quarters, was also hit by the ongoing malaise in consumer electronics demand and

18 www.cnbc.com/2024/01/09/samsung-issues-guidance-for-q4-2023-expects-35percent-profit-drop.html

19 www.reuters.com/technology/tsmcs-q4-profit-slide-23-focus-rebounding-demand-this-year-2024-01-16/

20 www.idc.com/getdoc.jsp?containerId=prUS51776424

21 ibselectronics.com/resources/news/semiconductor-industry-forecasts-strong-rebound-in-2024-after-challenging-2023/

22 www.silicon.co.uk/mobility/smartphones/huawei-5g-production-539093

23 www.wired.com/story/what-is-wi-fi-7/

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

was weaker than expected. New technologies, such as mini- and micro-LEDs (which generally require less gold than traditional LEDs and in some cases contain no gold) continued to make inroads across various applications, although uptake has been slower than originally forecast because of production challenges and increased costs.

Gold demand in the memory sector recovered during the quarter. DRAM manufacturers have continued their strategy of controlling utilisation and output to avoid an excessive build-up in inventories. Micron, for example, reportedly reduced its inventory to a standard eight-week holding and increased its chip output by 14% during the quarter. Demand was supported by the launch of new smartphone models during the quarter, as well as healthy demand from AI and cloud computing applications. Indeed, the supply chain in the PC and smartphone markets is reportedly back to healthy levels, all of which bodes well for 2024.

Gold used in Printed Circuit Boards (PCBs) saw y/y decreases during the sector's traditional low season. Demand in automobile and mobile industries, along with memory modules, all saw quarterly growth but remained below Q4'22 levels. However, there were areas of relative strength, including in AI servers and LEOS applications, which will likely drive some growth in the coming quarters. 2024 is expected to be a year of change within the sector as manufacturers make large investments into South East Asian facilities such as Thailand and Korea.[25] This is unlikely to impact gold demand directly, but it does represent a considerable logistical change for many of the world's largest PCB manufacturers.

Despite another challenging year in the electronics industry 2023 closed on a few positive notes. While the most recent World Semiconductor Trade Statistics Inc (WSTS) figures suggest that the semiconductor industry will have contracted by approximately 10% in 2023, they also forecast a fairly rapid recovery of ~13% in 2024 as the memory sector rebounds.[26]

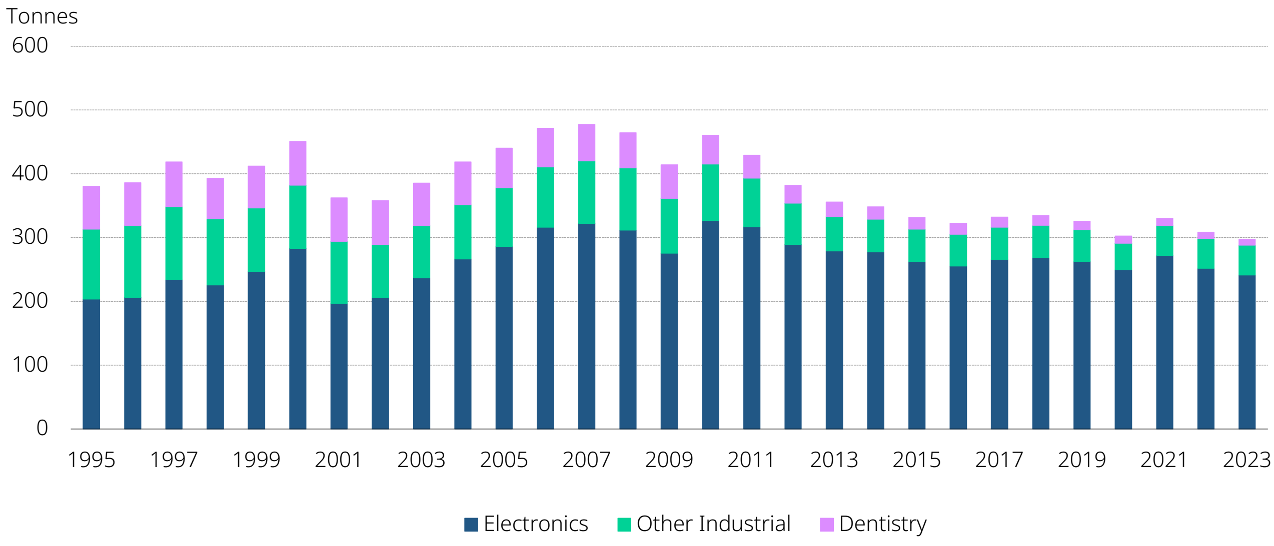
At the aggregate level, all four major electronics fabrication hubs around the world recorded increases in gold demand during Q4 (albeit against notably low Q4'22 data): Mainland China and Hong Kong SAR - 17.5t (48%); South Korea - 6.4t (3.8%); Japan – 18.6t (9.4%), and the US17.4t (7.2%)

Other industrial and dentistry

Other industrial and decorative demand in Q4 increased by 5% y/y, mainly thanks to the ongoing recovery in China. However, demand in Italy fell as the accessories sector shifted to different plating options. India saw a flat quarter as high gold prices impacted gifting demand, which in turn limited demand for plating. Dental demand fell by 3% – slower than in the past and chiefly reflecting resilience in Japan, where a slump in palladium prices boosted demand for specialist dental alloys.

Chart 10: Despite Q4 recovery, technology demand slipped below 300t*

Annual gold volumes used in technology by sector, tonnes



* Data as of 31 December 2023

Source: Metals Focus, Refinitiv GFMS, World Gold Council

25 www.pcbaaa.com/pcb-industry-shifted-to-southeast-asia/

26 www.wsts.org/76/Recent-News-Release

Supply

Total gold supply in 2023 increased 3% y/y as mine supply and recycling both posted growth.

- Annual mine production increased 1% y/y although remained just below 2018's record high
- The global hedge book increased slightly during 2023 to 190t
- Full-year recycled gold supply rose 9% but remains approximately 30% below the all-time high seen in 2009, despite 2023's record annual average gold price.

Tonnes	2022	2023		Y/y % change
Total supply	4,751.9	4,898.8	▲	3
Mine production	3,624.8	3,644.4	▲	1
Net producer hedging	-13.1	17.0	▲	-
Recycled gold	1,140.1	1,237.3	▲	9

Source: Metals Focus, World Gold Council

Total supply in 2023 increased by 3% y/y, the second successive year of modest increases. Annual production of 3,644t was the highest since 2018 as major production disruptions were generally absent. Higher gold prices prompted a 9% gain in recycling, to 1,237t. Preliminary estimates suggest a small increase in outstanding producer hedge books but the large amount of positions due to mature in Q4 mean there is lower than usual confidence about the end-of-year position for the gold mining industry.

Mine production

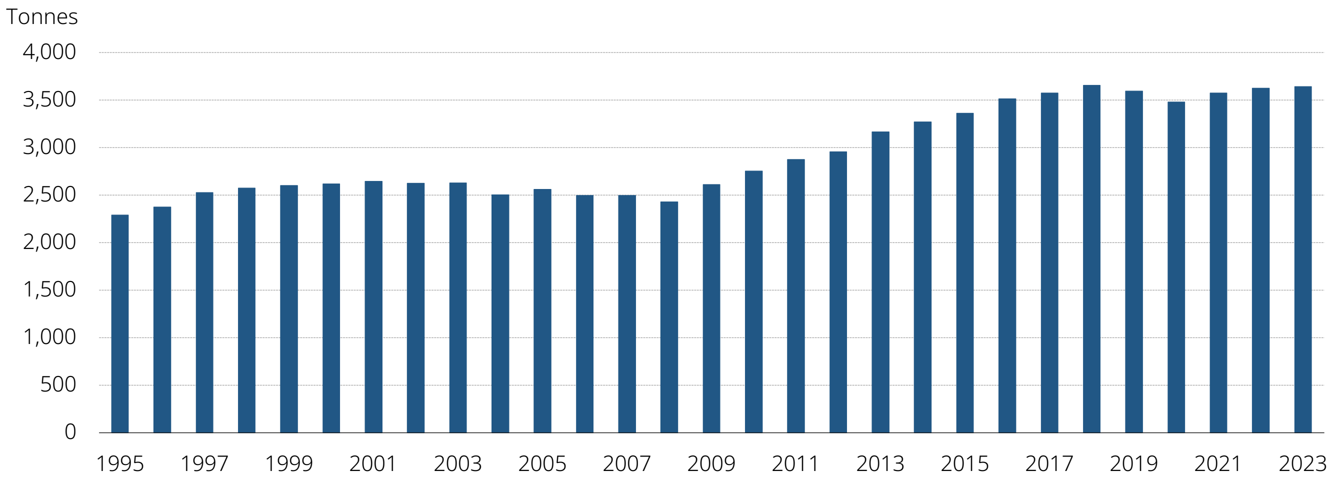
Mine production posted another gain in 2023, up 1% to 3,644t, although this total fell just short of the 3,656t record set in 2018. After a strong first half we had expected 2023 to mark a new high for the global gold mining industry, but the growth rates seen in the first two quarters were not replicated in the second half of the year. Mine production in Q4'23 fell 2% y/y to 931t, resulting in a weaker H2 than expected. This, together with some minor downward revisions to H1'23, left global mine production a fraction lower than in 2018.

Higher annual output was seen from South Africa (+14t or 15% y/y), where production recovered following protracted industrial action in 2022; Russia (+6t or 2% y/y); Mali (+5t or +4% y/y,); Brazil (+4t or 4% y/y) and Burkina Faso (+3t or 3% y/y).

Lower yearly production was seen in Sudan (-8t or -10% y/y), where domestic conflict disrupted artisanal production; Indonesia (-8t or -6% y/y); Mexico (-7t or -6% y/y) and Australia (-7t or -2% y/y).

Chart 11: 2023 mine production fell just short of the 2018 record*

Annual gold mine production, tonnes



* Data as of 31 December 2023
Source: Metals Focus, Refinitiv GFMS, World Gold Council

In Q4 2023 mine production from four countries drove the decline in global output:

- Mexican mine production fell 21% y/y, attributed largely to a strike at Peñasquito. Although the industrial action ended in October, production for the quarter was heavily affected
- Mine production fell 5% y/y in Russia due to lower forecast production from both Olimpiada, where production was weighted towards H1'23, and from Kupol
- Mali saw a 3% y/y decline in output during the fourth quarter as the Fekola mine moves into Phase 6 of the open pit.
- In the US mine production is estimated to have fallen 3% y/y as declines from Bald Mountain, Carlin and the Fort Knox mines were greater than increases from Cortez, Turquoise Ridge and the Rochester expansion.

Increases from mines in four countries failed to offset the declines above:

- In Turkey production increased 21% y/y as operations at the Öksüt mine continue to ramp up and the operator, Centerra, raised production guidance for 2023 accordingly
- Papua New Guinea (PNG) saw 14% y/y higher mine production as the Phase 14A expansion at Lihir ramps up and operations recover from a plant shutdown in Q3'23
- Increases from Brucejack, Macassa and Meadowbank, together with the ramp up of the Magino mine, all contributed to an increase of 12% y/y in Canada
- Burkina Faso is expected to see production increase by 12% y/y due to improvements at the Bomboré and Mana mines.

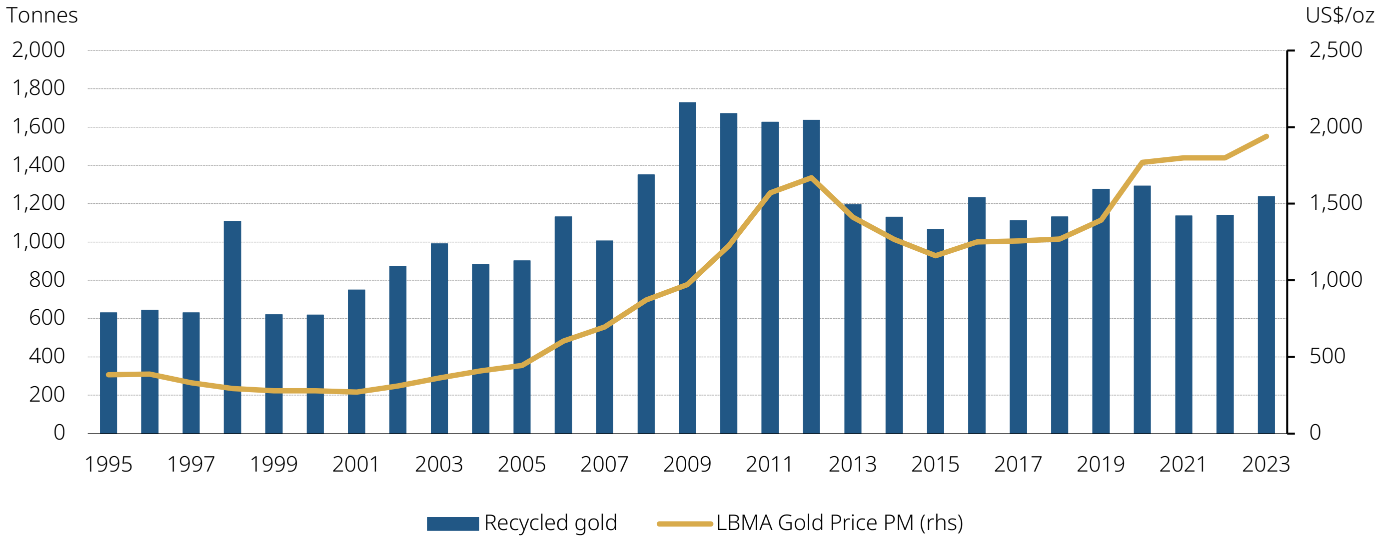
Oceania was the only region to post y/y growth in the fourth quarter, and of only 1t. This was driven by slightly better production from PNG (Lihir) and New Zealand (Wahi). All other regions are expected to record y/y declines in Q4'23 with Africa and Central & South America falling the most, at 6t and 5t y/y respectively.

Four mine start-ups (a combination of new and re-started operations), with a combined annual capacity of over 13t, have recently begun production. Sleeping Giant in Canada will have an average annual output of about 1t; the Bau Gold Project in Malaysia will have output of about 3.6t per annum and Tuvatu in Fiji will produce about 2.4t annually. The most important new mine is Bellevue Gold in Australia, which will have an annual average output of 6.2t.

Gold mining costs continued to increase in Q3'23 (the latest quarter for which data is available) but further signs of slowing cost growth were evident. The average All-In Sustaining Cost (AISC) hit US$1,343/oz in Q3, another record high. While this was +5% y/y, the industry managed to keep the rise in AISC to 3% q/q. General inflation increased mining costs in all areas, with fuel, energy, labour and consumables all up y/y, although this was slightly offset by weaker local producer currencies against the US dollar. Gold producer margins increased by 9% in Q3'23 due largely to the higher gold price, averaging US$1,977oz in the third quarter.

Chart 12: Record gold price lifted recycling volumes*

Annual gold recycling volumes, tonnes, and the annual average gold price



* Data as of 31 December 2023
Source: Metals Focus, Refinitiv GFMS, World Gold Council

Net producer hedging

The industry aggregate producer hedge book is estimated to have increased 17t to 190t in 2023. We will have more clarity once mining companies report their positions following the release of this report. We are aware of about 50t of maturing forward sales and options positions in the fourth quarter: if none of these have been replaced, the aggregate hedge book will have contracted by about 10t for the year; however, we expect that around half will be replaced, which would result in a modest increase in the global book.

The past year has been a useful test of the presumption that gold mining companies are reluctant to expand their hedging activities. Record high spot gold prices and attractive forward premiums for gold (due to much higher interest rates around the world) have made forward selling appear much more attractive than has been the case over the past decade when interest rates were essentially zero. Of course, this does not rule out a return to more widespread hedging should gold head lower and mining companies start to worry about maintaining profitability.

Recycling

The supply of recycled gold increased 9% y/y to 1,237t in 2023 as gold moved to record highs in almost every currency. Recycling rose y/y in all four quarters, with the largest increase (+13% y/y) in Q2'23 when the US dollar gold price surged to a new quarterly average high.

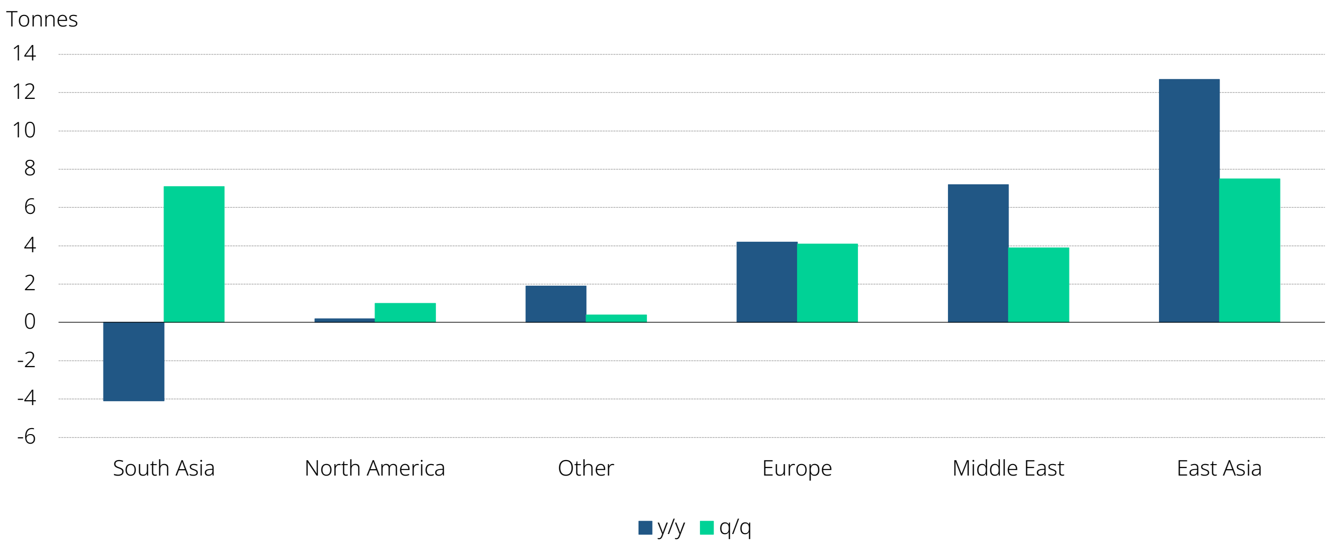
Recycling increased 8% y/y to 313t in Q4. All regions saw both q/q and y/y increases in recycling volumes, with the exception of South Asia, which saw a roughly 4% y/y decline.

We often highlight that quarterly recycling is more sensitive to shorter-term increases in the gold price and there was evidence that this continued to be the case in 2023. The q/q change in recycling in each quarter mirrored the direction of the q/q change in the quarterly average gold price, as consumers looked to cash in when the price rose. Q3'23 was the only quarter to register a q/q decline in recycling, when the quarterly average gold price fell by 2% q/q.

It is notable that full year recycled gold supply was almost 30% lower than the record high set in 2009, despite 2023's record average gold price. We believe there are two major reasons for this lower recycling supply. First, there were very few references to distress selling of old jewellery, a sharp contrast to the situation during the Global Financial and eurozone crises. Extensive fiscal support for consumers and businesses during the pandemic protected employment while energy subsidies in Europe following the Russian invasion of Ukraine helped insulate the public from surging energy prices. Second, we believe that the build-up of old/broken/unwanted jewellery by consumers has been limited, as it is only a decade since gold prices reached their last all-time high and many of those stocks of gold were flushed out in the wave of very elevated recycling between 2008 and 2012.

Chart 13: Regional variations in Q4'23 gold recycling*

Changes in Q4'23 gold recycling volumes by region, tonnes



*Data as of 31 December 2023

Source: Metals Focus, World Gold Council

Other factors have also played a role in limiting the supply of jewellery for recycling. Volumes from the Middle East have remained subdued. In rich Middle Eastern countries there appears to be no incentive or need to sell gold when the price is performing well. And in countries experiencing economic difficulties, such as Egypt and Iran, anecdotal evidence suggests that gold is the last asset holders want to sell when there are shortages of hard currency alternatives and few attractive local investments. Similar behaviour is also true for Turkish consumers.

The other factor that should be remembered is that while gold prices may be at record highs in nominal terms, the recent burst of global inflation means spot US dollar gold prices are some way below all-time high real prices. Inflation has been so low for so long it's easy to overlook the impact that two years of high inflation have had on real gold prices.

But if some countries did not see recycling supply respond as much as might have been expected, China and India both did. Chinese recycling volumes in 2023 hit an all-time high and Q4'23 almost matched the previous single quarter high. As well as wholesale scrapping from jewellery fabricators and retailers, the simple fact that Chinese jewellery demand has been so high means that the stock of gold jewellery owned by individuals has risen rapidly; the more they own, the more they are able to recycle when prices go up. In the case of India, the reasons were more prosaic: higher prices saw an increase in recycling although also led to a rise in gold loans.

With gold holding above US$2,000/oz in early 2024, we are hearing reports of good recycling supply. But as we have seen in the past, recycling volumes are highly sensitive to gold prices and the economic environment, the latter of which remains uncertain. For more details, please see the Outlook.

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 https://www.gold.org/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.

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 https://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: https://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: https://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 https://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.

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).

World Gold Council

We are a membership organisation that champions the role gold plays as a strategic asset, shaping the future of a responsible and accessible gold supply chain. Our team of experts builds understanding of the use case and possibilities of gold through trusted research, analysis, commentary and insights.

We drive industry progress, shaping policy and setting the standards for a perpetual and sustainable gold market.

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