India's gold market suffered in 2016. A raft of regulatory developments, fragile rural sentiment following weak monsoons in 2014 and 2015, and the soaring gold price for most of the year, pushed bar and coin demand down to its lowest level since 2005.

Q4 began positively in India. Demand was good leading up to and during Diwali. Rural incomes had been boosted by a good monsoon – the best in three years – and the price drop in October from Rs30,940/10g at the start of the month to a low of Rs29,710/10g was the opportunity many investors had been hoping for. Festive sales were up around 30% on the previous year, and most retailers expected this momentum to continue through November and December.

But the shock demonetisation announcement on 8th November disrupted the market. The frenetic rush to convert unaccounted money into gold boosted bar and coin demand in the immediate aftermath of the announcement. But it was short lived. The subsequent cash crunch rocked the market, with sales dropping sharply. Many of the factors that hung over India's gold market in 2016 look set to linger into 2017. For deeper analysis of these factors, please see our recent publication India's gold market: evolution & innovation [6].

European bar and coin demand stood at 196t. Despite a fall in demand - down 11% on 2015 – Europe remains the second largest bar and coin market in the world. Investor demand rebounded strongly in Q4, with Germany, Switzerland and Austria driving the gains. Seasonal factors had an effect - there was a sharp pick up in small gold bar sales in Germany in the run up to Christmas, supported by a strong marketing push by Degussa. And the spectre of negative interest rates, the migrant crisis, and the fog of uncertainty surrounding Brexit continued to support investment demand. But the primary catalyst was the price dip in October. There was a strong consumer response, which coincided with a drop in gross selling by bullion investors, too.

Demand in the United States reached 93.2t, its highest level since 2010. The atmosphere of uncertainty created by global monetary policies and shifting expectations for US interest rate rises supported demand in H1. Demand in Q4 was boosted by investors who took advantage of the sharp price dip following Trump's November victory. This was coupled with a healthy degree of interest from family offices motivated by the perceived threat of inflation.

Bar and coin demand in the Middle East fell to its lowest level on record: just 18.1t. Weak currencies, high local prices and an oil price-driven economic slowdown weighed on demand across the region.

There were some interesting country specific issues. Iranian demand has suffered because its central bank has not released any coins since early 2016. The market should receive a boost later this year, when new coins are expected to be launched. These will have secure packaging and a code to monitor sales. In contrast, Turkish retail investment demand rocketed in Q4 following President Erdogan's vocal support for gold and expectations of a weaker currency, which will boost local gold prices.

East Asian bar and coin demand fell 7% in 2016. Demand was weak throughout the year, as high prices weighed on demand. Thailand – the region's largest market in 2016 – saw demand fall 11%. The second half of the year was particularly weak as the nation mourned the death of its much-loved King Bhumibol. At 69.7t, demand was at its lowest level since 2010.

One of the bright spots was Vietnam. While demand was down 10% over the course of the year, it was up 21% y-o-y in Q4. Investors rushed to buy gold as rumours that the government would issue new denomination banknotes to replace the existing VN Dong swept around Ho Chi Minh City and Hanoi. Despite government denials [7], the rumours were sufficient to push demand for the year up to 42.9t.

Central banks and other institutions

With rising pressure on FX reserves, central bank buying slowed to 384t.

- **2016 was the 7th consecutive year of net purchases, albeit the lowest annual total since 2010**
- **Net buying was strongest in Q4, when central banks accumulated over 114t despite a stronger US dollar**
- **Russia, China and Kazakhstan dominated purchases; net sales were again limited**

Tonnes	2015	2016	YoY
Central banks and others	576.5	383.6	▼ -33%

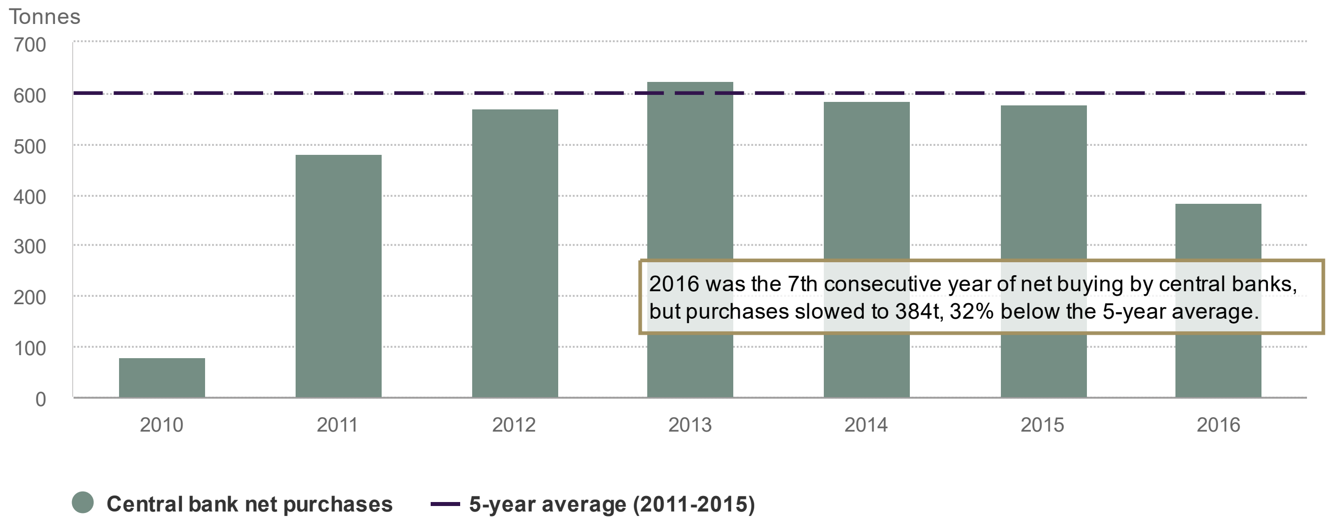
Central banks bought 383.6t on a net basis in 2016, 33% lower than 2015. Quarterly net purchases were strongest at the start and end of the year; Q4 saw the largest net addition to reserves with demand of 114.4t (albeit 32% lower than the same period in 2015).

Buying in 2016 was led by Russia, China and Kazakhstan. Together they accounted for around 80% of the full-year figure. Qatar joined the ranks of central banks adding to gold holdings, increasing its reserves by a net 6.8t between January and October. And many, less active, central banks maintain a firm interest in gold, as highlighted in our previous Gold Demand Trends report. [8]

But central bank buying has slowed from the pace of recent years, recording its lowest annual level since 2010. Purchases were 32% down on the annual average of 566.9t recorded between 2011 and 2015. Purchases by China, despite being one of the biggest buyers during the year, slowed to a halt in November and December. And several central banks have reduced their gold holdings: Venezuela (which is suffering a severe economic crisis), Azerbaijan, Argentina and Jordan all reported a drop in reserves.[9]

The slowdown in purchases and increase in sales can be partly attributed to pressure on FX reserves. Reserves management has become especially challenging. China is a noteworthy example, having seen its FX reserves fall by over US$300bn (-10%)[10] over the course of 2016. Other countries, such as Venezuela (-13%) and Jordan (-13%), have also seen their reserves dwindle.

Central bank net purchases slowed in 2016



Source: Metals Focus; GFMS, Thomson Reuters; World Gold Council

Technology

Gold demand in the technology sector declined 3% in 2016, as Q1 weakness weighed on performance.

- **Electronics demand fell 3% in 2016: first half losses outweighed end-of-year recovery**
- **Annual demand declined in both the 'other industrial' and dental segments; Q4 saw an upturn in other industrial demand**

Tonnes	2015	2016		YoY
Technology	332.0	322.5	▼	-3%
Electronics	262.2	254.5	▼	-3%
Other Industrial	50.9	50.0	▼	-2%
Dentistry	18.9	18.0	▼	-5%

Despite an upturn late in the year, annual demand for gold in technology fell 3% in 2016, from 332.0t to 322.5t. Q1 weakness, caused by global economic uncertainty, higher gold prices and substitution, squeezed the full year total. Q4 was a bright spot, though: quarterly demand hit its highest level since Q2 2015.

Electronics

Gold used in electronics rose 4% y-o-y to 66.9t in Q4, boosted by increased demand for gold bonding wire and Printed Circuit Boards (PCBs). While demand slowed in the LED and wireless sectors, rampant growth in the gold bonding wire and PCB industries lifted the quarterly total to positive territory.

Gold bonding wire benefited hugely from more widespread use of fingerprint and iris sensors. The latest smartphone models released by Samsung and Huawei use biometric data from eye scanning to enhance security and are widely regarded as industry trend setters. As a result, sensor makers in mainland China, Taiwan and South Korea were operating at full capacity and have since increased both prices and lead time to meet demand.

Gold used in PCBs grew in line with increased smartphone shipments in Q4. The impact of the growth in High Density Interconnects (HDIs), which reduce the volume of gold used in PCBs, was outweighed by the growth in shipments.

Demand from the LED and wireless industries paled in comparison. Increasingly, LED manufacturers are adopting more advanced packaging technology in vehicle lighting. Chip Scale Packaging (CSP), which can more easily withstand a vibrating environment, has size reduction and cost saving advantages. This miniaturisation reduced gold volumes. The wireless sector, on the other hand, slowed down largely due to seasonal factors.

More new uses of gold are being uncovered. Researchers from the Israel Institute of Technology have developed sensors made from gold nanoparticles, which can be used to identify different diseases from a simple breath test. [11] Varying amounts of 13 volatile organic compounds are present in illnesses such as lung cancer and Parkinson's disease. The Institute's sensors could identify the specific disease 86% of the time after allowing for factors such as age and gender. Although not yet accurate enough for use in real-life diagnoses, there is genuine potential for this new technology to be an efficient, non-invasive way of detecting early-stage disease.

Supply

Total supply grew 5% in 2016, with pronounced year-on-year growth in recycled gold and net producer hedging.

- **2016 mine production was flat but there are signs of renewed interest in exploration**
- **Full year net producer hedging doubled to 26.3t**
- **Recycling rose 17% in 2016 as consumers responded to the higher price**

Tonnes	2015	2016	YoY
Total supply	4,363.1	4,570.8	▲ 5%
Mine production	3,233.0	3,236.0	▲ 0%
Net producer hedging	13.5	26.3	▲ 95%
Recycled gold	1,116.5	1,308.5	▲ 17%

Mine production

Mined gold totalled 3,236t in 2016, virtually unchanged from 2015. Production peaked in Q3, when 850.4t was brought on to the market, before falling back to 810.9t in Q4 (-2% y-o-y).

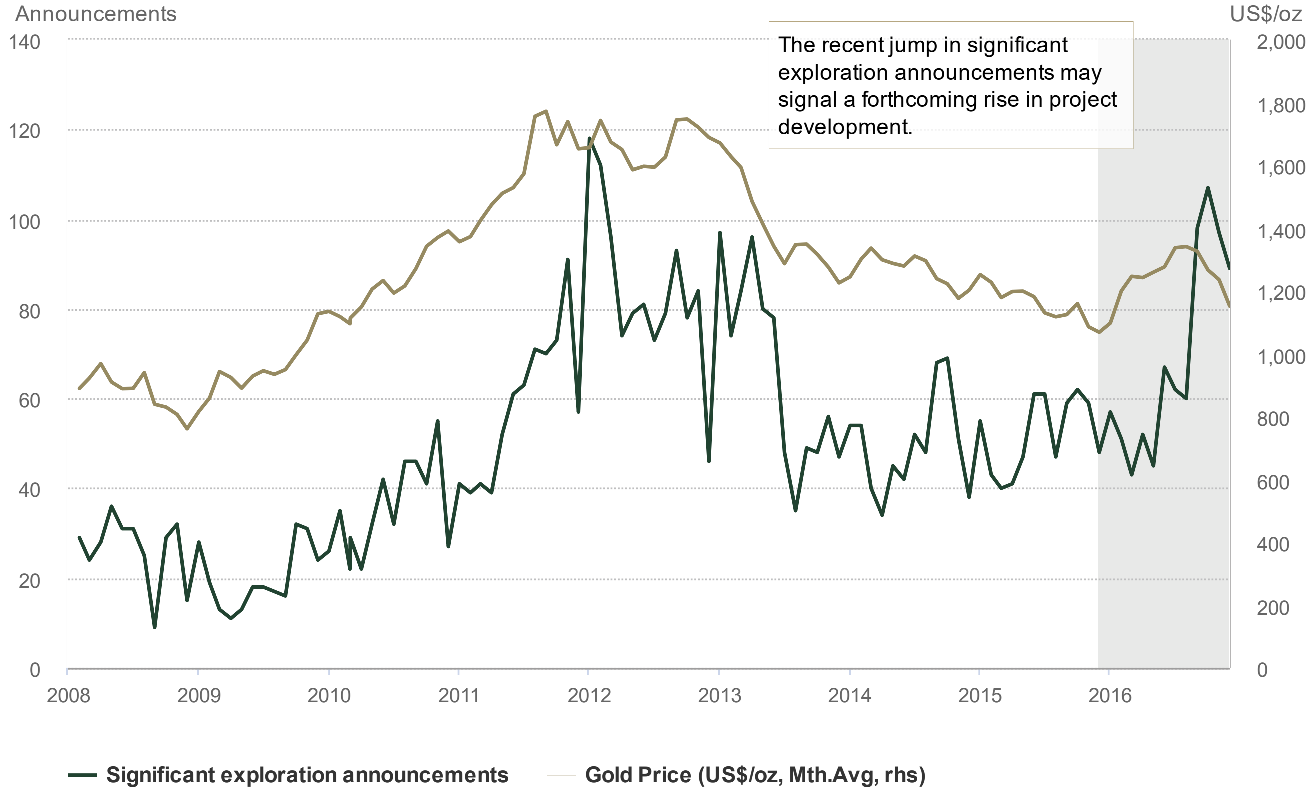
Indonesia saw the largest gains in Q4 (more than 7t y-o-y). This was due to the mining of higher-grade ore – something of a current industry trend – at Grasberg, which promises to boost Indonesian production further in 2017. Production in Suriname also grew in Q4 (3t y-o-y), as Newmont’s Merian mine began commercial production in October.

Russian Q4 production (-6t y-o-y) was hit by flooding at some of the largest operations, while production in Mongolia fell by 5t y-o-y due to the mining of lower grade ore at Oyu Tolgoi. The Q4 decline in Mali (-4t y-o-y) was partly due to a comparison with a high base quarter.

Plateauing production is inevitable given industry cost-cutting since 2013. Gold miners recognise that the capital-intensive nature of the industry is driven by two key factors: the costs of extracting gold from the ground, and the costs associated with replacing those gold reserves. Despite the need for strategic reserve levels to be maintained, the project pipeline is considerably thinner and exploration budgets were cut in recent years.

But 2016 signalled a renewed vigour for exploration; increased project development may be around the corner. Higher local gold prices, coupled with lower costs, allowed producers to reap higher margins. Coffers were boosted, providing opportunities for a pick-up in brownfield and, to a lesser extent, greenfield spending. In November, a Moody's report predicted that the higher average gold price in 2016 will spur an increase in capital spending over the coming year.[12] SNL Metals & Mining, in its recent Gold Mined Supply Report, also highlighted renewed interest in exploration in the latter part of 2016.[13] Acacia Mining is a prime example; it expects its 2017 greenfield budget to be around 15% higher than in 2016[14], with CEO Brad Gordon telling Reuters[15], "This is part of our long-term strategy to invest in exploration when the rest of the industry is walking away from that".

Signs of renewed interest in exploration



Note: A significant exploration announcement refers to reported drill results which are flagged as being of a certain value - based on grade, interval width and the yearly nominal metal prices.

Source: SNL Metals & Mining; ICE Benchmark Administration; World Gold Council

Increased exploration is unlikely to affect mine production anytime soon. A greater focus on project development is understandable. Large-scale discoveries of gold are becoming rarer.[16] But the gold price will continue to dictate the speed of this development. What's more, given the long lead times involved, it is unlikely that new discoveries or major project developments will significantly impact annual production for the foreseeable future.

Net producer hedging

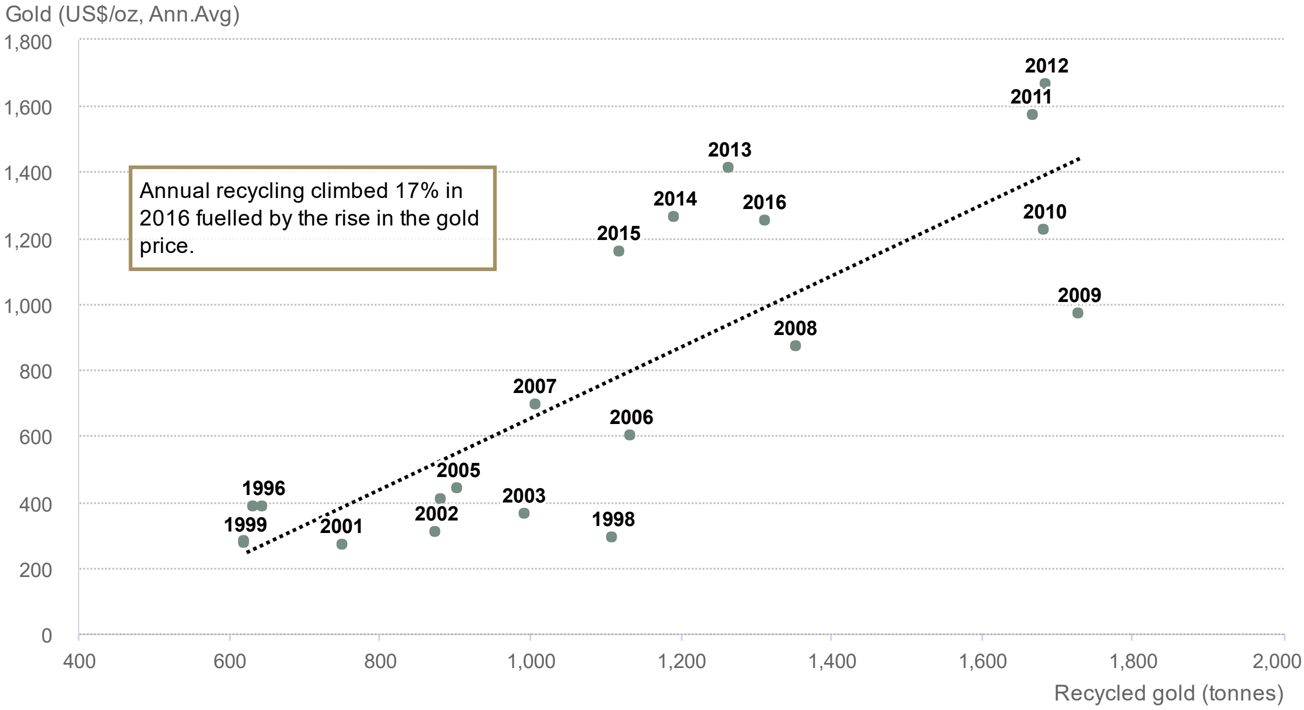
2016 saw a near-doubling of annual net producer hedging, to 26.3t from 13.5t. Gold producers, who have struggled with the falling gold price in recent years, saw an opportunity to secure cash flow at higher prices.

The first and second halves of the year were polar opposites. In the first half, net hedging was a feature of the market (70.4t), as strong price gains – around 25% by mid-year – prompted some miners to act. Currency movements had driven the gold price up to record levels in some key producer currencies. But in the second half of the year the price struggled to hold onto these gains, leading to a shift in tone with producers less keen to hedge in a falling price environment. Net de-hedging (of 44.1t) was a feature of Q3 and Q4.

Recycled gold

The growth in recycling in 2016, up 17% from 1,116.5t to 1,308.5t, was concentrated in the first three quarters. At its peak, gold was almost 30% from end-2015 levels; these higher prices created an environment in which recycling thrived.

Higher prices in 2016 boosted recycled supply



Source: Metals Focus; GFMS, Thomson Reuters; World Gold Council

In Western markets, Q4 recycling volumes were 4% higher than Q4 2015, but 10% lower than Q3 2016. The lower price in Q4 dented US recycling. But European recycling levels were healthier as a weaker euro supported the local gold price. The available pool of near-market supplies was also a factor, with some European markets, such as Spain and Italy, having a greater volume of available stock to recycle.

The Middle East saw a regional rise of 28% in Q4, predominantly due to Egypt, where currency weakness encouraged consumers to sell back. Turkey was a key exception, both regionally and globally: recycling fell in Q4 on the back of a rallying cry by President Erdogan [17] for Turks to forgo holding foreign currencies in favour of gold or the lira.

Recycling in India was hit by the government's shock demonetisation announcement, falling 36% y-o-y and 67% q-o-q in Q4. The liquidity crunch affected jewellers, who struggled to obtain cash to purchase gold from consumers, blocking a key recycling channel and resulting in a surge in gold-for-gold exchange. In East Asia, Q4 recycling was up 7% y-o-y, but down 44% from Q3 as the focus switched to buying gold ahead of the Chinese New Year (28th January).

Footnotes

1. Read more: http://indianexpress.com/article/business/business-others/demonetisation-jewellers-under-i-t-scanner-for-sub-rs-2-lakh-split-of-sales-4375907/
2. Read more: https://www.ft.com/content/c9f7d320-dee7-11e6-9d7c-be108f1c1dce
3. Read more: https://www.ipsos.com/sites/default/files/2016-12/Europe_in_2016.pdf
4. For background information on the consumer response to October's price dip, please see Gold Demand Trends, Third quarter 2016: Focus: Q4 update – impact of prices on consumer demand http://www.gold.org/supply-and-demand/gold-demand-trends/back-issues/gold-demand-trends-q3-2016/focus-q4-consumer-demand.
5. For a definition of Tier 1 and 2 cities, refer to the glossary of 'China: progress and prospects http://www.gold.org/supply-and-demand/chinas-gold-market-progress-prospects', World Gold Council, April 2014
6. Read more: http://www.gold.org/research/india-gold-market
7. Read more: http://vietnamnews.vn/economy/347555/ministry-of-public-security-to-trace-demonetisation-rumour-monger.html#YOiCxyyu44gUjjod.97
8. Read more: http://www.gold.org/supply-and-demand/gold-demand-trends/back-issues/gold-demand-trends-q3-2016/central-banks
9. For Jordan: data is to end-October; for Venezuela: data is to end-September.
10. To end-November.
11. Read more: https://www.engadget.com/2016/12/29/simple-breath-test-can-detect-cancer-and-16-other-diseases/
12. Read more: https://www.moodys.com/research/Moodys-Gold-miners-to-invest-more-in-2017-making-project--PR_358521?WT.mc_id=AM%7eRmluYW56ZW4ubmV0X1JTQl9SYXRpbmdzX05ld3NfTm9fVHJhbnNsYXRpb25z%7e20161123_PR_358521
13. Gold Mined Supply December 2016: Short-term plans, short-sighted benefits, SNL Metals & Mining, December 2016
14. Read more: http://www.acaciamining.com/~/media/Files/A/Acacia/presentations/2016/Exploration%20Roundtablev2%20-%20Nov%202016.pdf
15. Read more: http://uk.reuters.com/article/acacia-mining-exploration-idUKL8N1DV4AT
16. Major Gold Discoveries, 1990-2015, SNL Metals & Mining, June 2016
17. Read more: https://www.bloomberg.com/news/articles/2016-12-16/turks-seek-gold-more-than-liras-in-response-to-erdogan-s-call