Investment Update

Why should Japanese investors own gold?

July 2022 www.gold.org

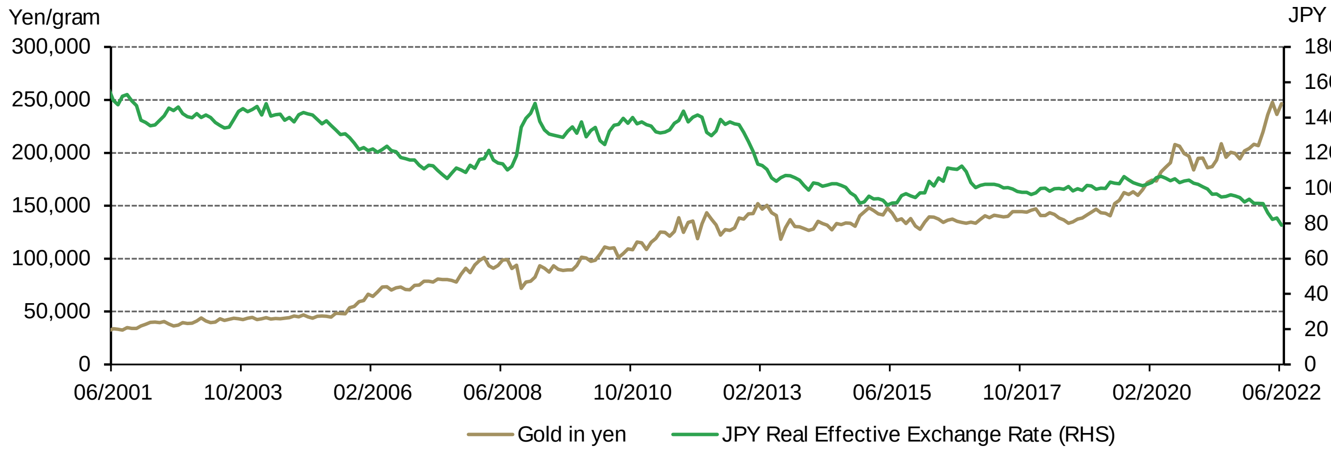
While major Japanese and global assets have witnessed declines in H1, gold delivered a 19% return in local currency over the same period.[1] Gold's performance was driven by a combination of rising inflation, geopolitical risks and a weaker yen (**Chart 1**).

In sharp contrast to other major central banks, the Bank of Japan (BoJ) has maintained its loose monetary policy to support economic recovery.

Limited local bond yield movements may weaken the role of Japanese government bonds (JGB) as a risk hedge, while the gloomy global and domestic economic outlook could present additional challenges to Japanese investors. And, as the risk of global stagflation rises, gold's role as a strategic asset may become more relevant for local portfolios.

Our analysis, based on historical data and hypothetical portfolio compositions, shows that a 5% allocation to gold can help Japanese pension funds improve their returns and reduce risk. Historical analysis also suggests that gold is an effective tool to preserve purchasing power.

Chart 1: Yen gold's strength has mirrored yen's weakness*



*Based on monthly data of LBMA Gold Price PM in yen and Citi Real Effective Exchange Rate of JPY. As of June 2022.

Source: Bloomberg, World Gold Council

1 Based on the LBMA Gold Price PM in JPY between 31 December 2021 and 30 June 2022

H1 2022: yen weakness, financial market turmoil and gold strength

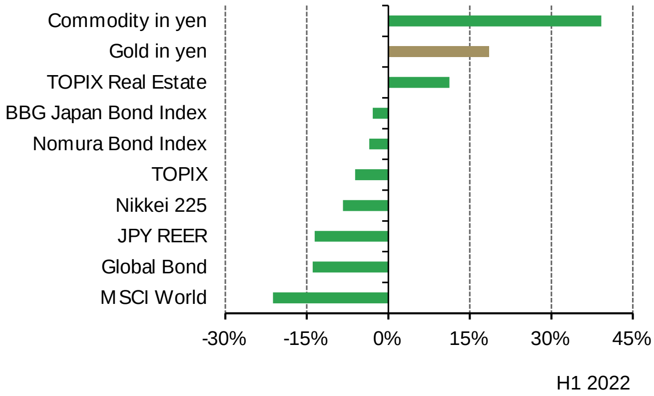
The Japanese yen (JPY) has weakened markedly in recent months, depreciating by 18% against the dollar in H1 2022.[2] A key driver lies in the divergence between monetary policy in Japan and other markets, such as the US. While the US Federal Reserve (Fed) is aggressively hiking rates to battle intensifying inflationary pressures, the BoJ is continuing its qualitative and quantitative easing (QQE) and yield curve control (YCC) programs.[3]

As a result, the US-Japan interest rate spread has widened, weighing on the Japanese currency. Alongside this, a deteriorating trade account balance amid higher importing costs has contributed to a weaker yen.[4]

Financial markets have also been unsettled. Negative Japanese real economic growth in Q1 – mainly driven by the spread of the Omicron variant and higher import costs[5] – combined with yen weakness and global geopolitical risks have pressured local equities this year. At the same time, global bond markets, an important component of Japanese investor portfolios, have been volatile amid higher interest rates and escalating inflation in key regions.

But gold in yen has done well, driven by demand for hedges and partially buoyed by a weak JPY (**Chart 2)**. Even though higher global interest rates have posed challenges, inflationary concerns and geopolitical risks have supported gold.[6] While a stronger dollar limited gold's upside, gold in yen terms rose by 19% during the first half of 2022, fully making up for yen's depreciation against the dollar.

Chart 2: Gold has outperformed major Japanese assets in H1 2022*



*As of30 June 2022 Based on Citi Real Effective Exchange Rate JPY, MSCI World Index, Nikkei 225 Index, Tokyo Stock Exchange Index, Bloomberg Barclay Global Aggregate Index, Bloomberg Commodity Index, Nomura Bond Performance Index JGB, Tokyo Stock Exchange Real Estate Index, LBMA Gold Price PM. All calculations are in yen.

Source: Bloomberg, ICE Benchmark Administration, World Gold Council

Challenges facing Japanese investors

Japanese institutional investors may have felt the pinch from both local and international markets

With the low-yield environment persisting for years, Japanese institutional investors often allocate a significant portion of their assets to international markets in search for growth (**Chart 3**). For instance, the Japanese Government Pension Investment Fund (GPIF)'s exposure to foreign assets reached 50% in Q3 2021. And the average corporate pension fund has a 30% allocation to foreign investment. Furthermore, the 2022 Global Pension Assets Study pointed out that domestic equities and bonds have had a consistently declining share of the total equity and bond exposure of Japan's pension assets.

2 As of June 2022.

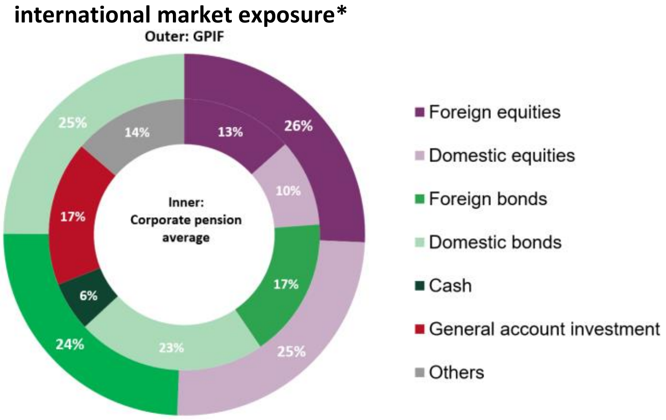
3 For more information, see: Countdown to FOMC: CME FedWatch Tool (cmegroup.com) and Monetary Policy Releases 2022 : 日本銀行 Bank of Japan (boj.or.jp)

4 For more information, see: Japan trade deficit continues for tenth month in May | NHK WORLD-JAPAN News

5 For more information, see: Japan's Economy Shrinks on Trade Drag, Omicron Consumption Hit, by Bloomberg (investing.com)

6 For more information, see: Gold Return Attribution Model | World Gold Council

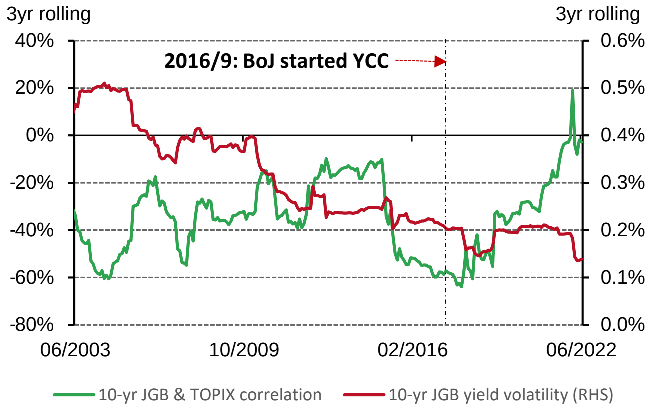
Chart 3: Japanese institutional investors have significant international market exposure*



*Based on GPIF's 2021 Q3 financial report and corporate pension average allocation is based on information from the Pension Fund Association (pfa.or.jp).

Source: GPIF, Pension Fund Association, World Gold Council

Chart 4: Limited bond moves may restrict the BoJ's ability to diversify Japanese equity market risks*



*Based on monthly returns of the TOPIX Index and the BPI JGB Bond Index between June 2002 and June 2022.

Source: Bloomberg, World Gold Council

Bonds, locally and globally, might become less attractive

Bond yields in Japan may remain capped. As Kuroda Haruhiko, the Governor of the BoJ, emphasised during the BoJ's last meeting, the central bank has vowed to keep monetary policy loose to support the country's economic recovery. And the BoJ has recently shown its resolution to keep local bond yields down despite higher inflation expectations and traders' positioning on the possibility of a marginal pivot in the BoJ's policy stance in the future. On 15 June the central bank raised its five-to-10-year JGB purchase offer to 800bn yen from 500bn after the 10-year JGB yield rose above the 0.25% upper tolerance band set by the BoJ. It also announced a surprising offer to buy long-dated bonds on the same day as the 30-year JGB yield surged.[7]

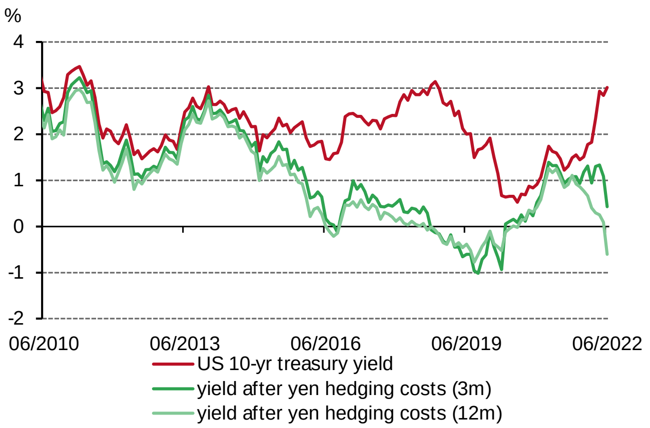
In the third phase of QQE, which was first introduced in September 2016, the YCC program has helped the BoJ keep rates low and accommodate Japanese economic growth. But there are potential side effects, especially for local investors. For one, limited yield moves amid the central bank's control may have been a key contributor to JGBs' diminishing effectiveness in diversifying local equity market risks since 2016 (**Chart 4**).

Also, the BoJ's recent statement indicates that the low-yield environment in Japan may last for a while yet. And we believe the prioritisation of accommodating local economic recovery and achieving demand-pulled core inflation target of 2% in a sustainable manner means the BoJ's dovish monetary policy stance may last for longer. And this will likely drive local investors to search for returns via riskier assets or international markets.

But international bond markets are no heaven for Japanese investors either. While US treasuries could offer higher yields, they have been volatile so far this year. Amid the Fed's aggressive rate hikes the Bloomberg US Treasury Aggregate Index has lost 14% in H1 2022 and its six-month rolling volatility shot up to the highest since 2008.

After accounting for surging currency hedging costs, pushed up by the stark interest rate gap between Japan and the US, rising US treasury yields may not seem so attractive (**Chart 5**).

Chart 5: After hedging, the rapidly climbing US 10-year treasury yield may be around zero for Japanese investors*



*Based on monthly data of the USD/JPY three-month and 12-month hedging costs and the US 10-year treasury yield between June 2010 and June 2022.

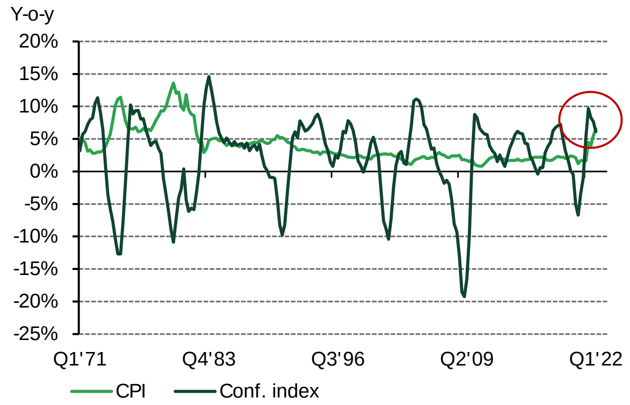
Source: Bloomberg, World Gold Council

7 For more information, see: Market Operations : 日本銀行 Bank of Japan (boj.or.jp)

Growth challenges are mounting domestically and globally
In recent months, fears of a worldwide stagflation risk have mounted. According to the World Bank, the prolonged Russia-Ukraine war has brought significant supply chain shocks, pushing up commodity prices globally. And they may remain elevated for years. The World Bank has also revised its global growth forecast sharply downwards due to uncertainties and geopolitical risks, such as the potential slowdown in China's economic growth.

According to our previous analysis and definition, lower growth – reflected by changes in the US Conference Board Index – coupled with higher inflation, could indicate that stagflation has already arrived (**Chart 6**).

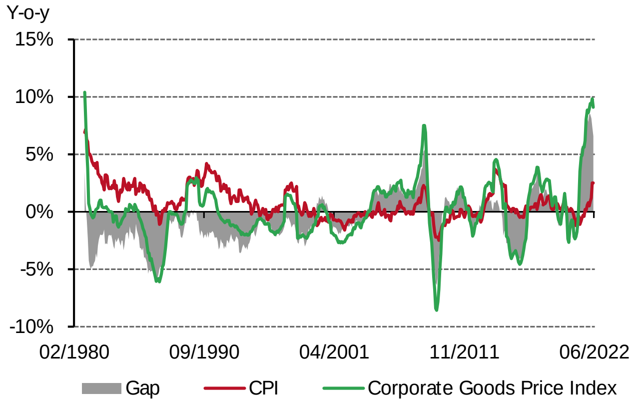
Chart 6: Stagflation in the US may have already arrived
Quarterly y-o-y changes in the US Conference Board Index and core inflation between 1971 Q1 and 2022 Q2



Source: Bloomberg, World Gold Council

And Japan faces its own issues. Raw material prices remain stubbornly high and corporates' profits are being squeezed. Even though their costs are higher, decades-long stagnant wage growth in Japan and the kinked demand curve – a situation where a small price rise leads to a significant reduction in demand – are making local wholesalers cautious about passing on price increases to their customers.[8] This is partially reflected in the widening gap between Japan's wholesale and retail costs (**Chart 7**).

Chart 7: The gap between Japan's wholesale cost and consumer inflation growth has been widening*



*Based on y-o-y growth in Japan's consumer price index (CPI) and corporate goods price index of all commodities monthly). As of June 2022.
Source: Bloomberg, World Gold Council

But the gap will narrow eventually, one way or another. Taking current commodity market dynamics into consideration, rises in retail prices is more likely – even though they will mean heavier burdens for households and a potential reduction in demand.

And Japan's trade deficit poses additional challenges. As a nation that depends on external natural resources such as crude oil,[9] Japan's import costs have risen markedly amid higher commodity prices. This has happened as global growth has showed signs of a slowdown and at a time when China, accounting for a third of Japan's exports in 2021, may also see economic deceleration.[10] Elevated import costs and potentially weaker external demand could mean an outflow of income will continue to bite.

Squeezed profits in upstream sectors, cost pressures on vulnerable retail demand and the inevitable outflow of income, combined with factors we mentioned previously, may be key reasons why the BoJ sets itself apart from the tightening policy of other central banks.

Global growth slowdown and local economic pressure may finally translate into higher financial market volatilities. And, we believe, gold could become an effective tool to enhance the performance of local investor portfolios.

8 For more information, see: The Bank's Thinking on Monetary Policy: Toward Achieving the Price Stability Target in a Sustainable and Stable Manner (boj.or.jp)

9 For more information, see: japan_energy_2021.pdf (meti.go.jp)

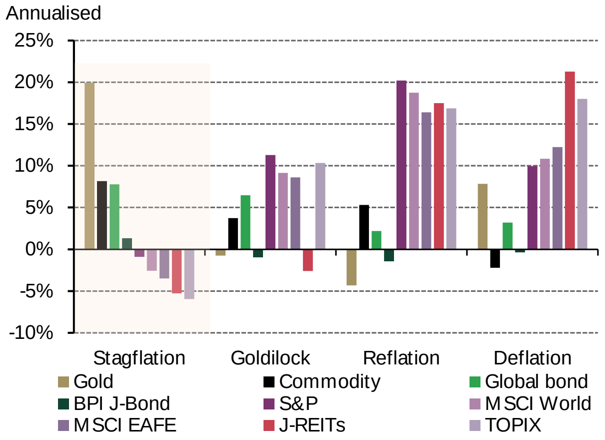
10 For more information, see Global Economic Prospects June 2022 (worldbank.org)

Gold's value to Japanese investors

Gold's recent performance has highlighted its strategic value for Japanese investors amid global uncertainties and yen weakness. And as stagflation risks rise, gold may become even more attractive to investors for its superior performance when measured against other major assets in a stagflation environment (**Chart 8**).

Chart 8: Gold outperformed other major assets in stagflation based on historical data

Assets' annualised average returns in various cycles*



*Based on quarterly returns of LBMA Gold Price PM, Bloomberg Commodity Index, Bloomberg-Barclay Global Bond Index, BPI JGB Bond Index, S&P 500 Index, MSCI World Stock Index, MSCI EAFE Index, TOPIX J REITs Index and TOPIX Index between Q1 1971 and Q2 2022; all calculations are in JPY. For definitions of economic cycles, please visit: **Stagflation rears its ugly head | World Gold Council**

Source: Bloomberg, World Gold Council

Why should Japanese investors consider buying gold?

Gold's role as a strategic asset is best illustrated with an example. Turning to the aforementioned GPIF, our analysis shows that, over the past 20 years, the risk-return profile of a hypothetical GPIF portfolio is improved with a 5% allocation of gold whilst proportionally reducing the weight of other assets (**Table 1**).

Similar enhancement can also be observed when adding 5% gold to an average Japanese corporate pension fund portfolio, as mentioned previously: gold helps lift return and reduce risk (**Table 2**).

Table 1: Gold improves the hypothetical Japanese government pension portfolio performance*

	Government pension	Pension with 5% gold
Return	3.60%	**4.14%**
Annualised volatility	9.86%	**9.34%**
Risk-adjusted return	0.3647	**0.4427**
VaR @ 99%	-22.97%	**-21.76%**

*Based on monthly data of Domestic bonds (Nomura BPI JGB Index), Foreign bonds (FTSE World Government Bond Index), Domestic equity (TOPIX Index), Foreign equity (MSCI All World Index ex-Japan) and LBMA Gold Price PM between June 2002 and June 2022 due to data availability. VaR is calculated by the corresponding Z score times annualised volatility. All calculations are in yen.

Source: Bloomberg, ICE Benchmark Administration, GPIF, World Gold Council

Table 2: Gold also improves an average hypothetical Japanese corporate pension portfolio's performance*

	Corporate pension	Pension with 5% gold
Return	2.81%	**4.27%**
Annualised volatility	7.91%	**7.80%**
Risk-adjusted return	0.3546	**0.5472**
VaR @ 99%	-18.43%	**-18.17%**

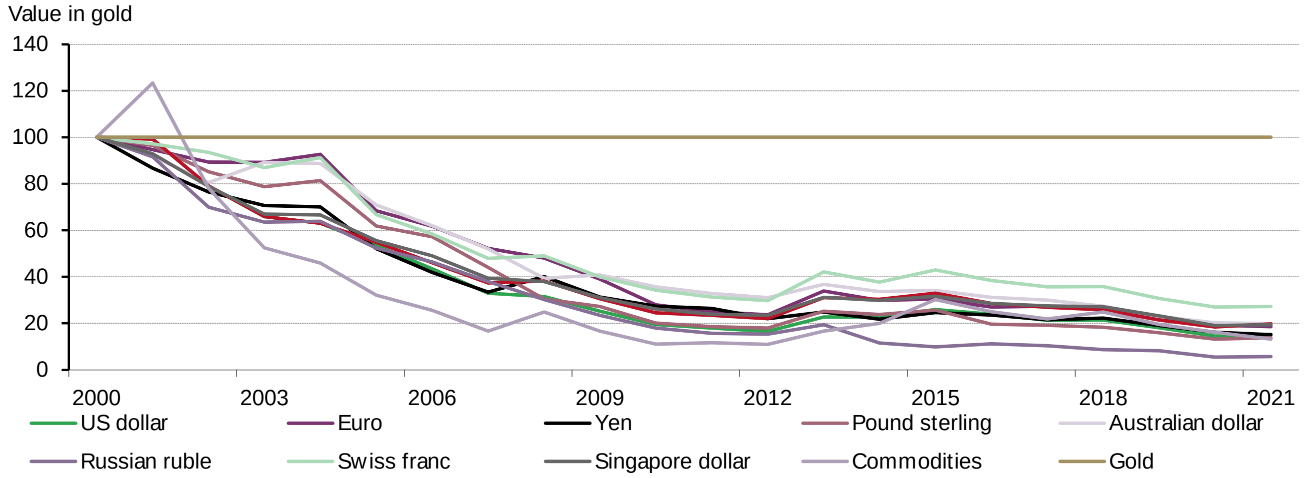
*Based on monthly data of Domestic bonds (Nomura BPI JGB Index), Foreign bonds (FTSE World Government Bond Index), Domestic equity (TOPIX Index), Foreign equity (MSCI All World Index ex-Japan), Cash (based on three-month TIBOR), Others (50% of TOPIX Real Estate Index + 50% of Loans which is based on the average bank loan rate in Japan), General Account (represented by a hypothetical GPIF portfolio as mentioned in **Table 1**) and LBMA Gold Price PM between June 2002 and June 2022. All calculations are in yen.

Source: Bloomberg, ICE Benchmark Administration, World Gold Council

Such improvement mainly stems from gold's ability to provide a long-term return and its negative correlation with Japanese and global equities when they are in distress. Our analysis also shows that gold, in yen, has delivered an annualised return of 6% since 1971, 9% over the past 20 years and 10% over the past five years. And gold enjoys a highly liquid market, which usually translates into lower trading costs and a narrower bid-ask spread – in June 2022 gold's trading volume averaged 16tn yen per day.

Additionally, gold's recent performance in yen has underpinned its role as a means to protect purchasing power. Historical data tells us that due to its limited supply and stable demand, gold has never lost value against fiat currencies (**Chart 9**).

Chart 9: The purchasing power of currencies has eroded significantly compared to gold over past decades*



As of 31 December 2021. Relative value between 'gold': LBMA Gold Price PM, 'commodities': Bloomberg Commodity Index, and major currencies since 2000. Value of commodities and currencies measured in ounces of gold and indexed to 100 in January 2000.

Source: Bloomberg, ICE Benchmark Administration, World Gold Council

Conclusion

Gold has delivered outstanding returns for Japanese investors so far in 2022, outperforming many other JPY assets. Rising inflationary concerns worldwide, intensifying geopolitical risks, and a weaker yen have been the main contributors to JPY gold's strength.

Looking ahead, with the BoJ's QQE and YCC programs remaining in place, the role of local bonds as an equity market diversifier may become less effective. And we believe the BoJ is likely to maintain a dovish policy stance as growth risk remains and keep its local yields low for longer.

And bonds from other markets may be expensive for Japanese investors due to higher currency hedging costs. To make things worse, global and domestic financial markets may remain turbulent amid cloudy growth outlooks.

These risks will not only make investors wary but will likely increase gold's relevance as a strategic asset for Japanese investors. Our performance tests of hypothetical Japanese pension portfolios, based on historical data, have revealed gold's ability to enhance returns and reduce risks. Moreover, gold can also offer purchasing power protection for local households.

About the World Gold Council

We're the global experts on gold.

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

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

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

World Gold Council
15 Fetter Lane, London EC4A 1BW
United Kingdom

T +44 20 7826 4700
W www.gold.org

For more information

Please contact:

Adam Perlaky
adam.perlaky@gold.org
+1 212 317 3824

Louise Street
louise.street@gold.org
+44 20 7826 4765

Johan Palmberg
johan.palmberg@gold.org
+44 20 7826 4786

Mukesh Kumar
mukesh.kumar@gold.org
+91 22 317 3826

Krishan Gopaul
krishan.gopaul@gold.org
+44 20 7826 4704

Ray Jia
ray.jia@gold.org
+86 21 2226 1107

Juan Carlos Artigas
Global Head of Research
juancarlos.artigas@gold.org
+1 212 317 3826

John Reade
Chief Market Strategist
john.reade@gold.org
+44 20 7826 4760