

# Gold: the most effective commodity investment



**2021**  
EDITION

## About the World Gold Council

The World Gold Council is the market development organisation for the gold industry. Our purpose is to stimulate and sustain demand for gold, provide industry leadership, and be the global authority on the gold market.

We develop gold-backed solutions, services and products, based on authoritative market insight and we work with a range of partners to put our ideas into action. As a result, we create structural shifts in demand for gold across key market sectors. We provide insights into the international gold markets, helping people to understand the wealth preservation qualities of gold and its role in meeting the social and environmental needs of society.

Based in the UK, with operations in India, the Far East and the US, the World Gold Council is an association whose members comprise the world's leading gold mining companies.

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# Reflation is good for commodities and could be even better for gold

The current global economic landscape indicates improving economic conditions, higher inflation and rates expectations, as well as commodity supply shortages which are likely to support commodity performance. This is reinforced by the fact that investors are increasing their allocation to commodities.<sup>1</sup> While broad-based commodity investments are often used as a source of returns and diversification, the benefits tend to be tactical.

**Our analysis suggests that gold is still the most effective commodity investment in a portfolio as it continues to stand apart from the commodities complex. It deserves to be seen as a differentiated asset as it has historically benefited from six key characteristics:**

- It has delivered superior absolute and risk-adjusted returns to other commodities over multiple time horizons
- It is a more effective diversifier than other commodities
- It outperforms commodities in low inflation periods
- It has lower volatility
- It is a proven store of value
- It is highly liquid.

## 2021 key developments

Gold is a commodity that has always stood apart, but there have been recent market developments that build on its existing differentiators while illustrating the importance of its role in a portfolio.

- **The commodity reflation trade is in full effect, which can negatively impact risk-on assets and could suggest a larger allocation to gold**
- **Gold's weight in commodity indices is increasing, and should continue to increase for a strategic allocation**
- **Gold's volatility has been stable despite the variability in equities, bonds, and alternative assets.**

.....

Commodities can be tactically relevant investments, but a strategic gold allocation on its own can supplement or replace a broad-based commodities investment.

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<sup>1</sup> *"Rethink, Rebalance, Reset: Institutional Portfolio Strategies for the Post-Pandemic Period"*, July 2021, Coalition Greenwich (formerly Greenwich Associates).

## Real assets have tended to do well in reflationary periods

Understanding historical asset performance during reflationary periods is relevant for understanding how assets could perform during the current period. We examine the performance of various assets during the last two periods of reflation, i.e. Consumer Price Index (CPI) trough to peak, and compare this to the current environment.<sup>2</sup>

The results confirm the idea that assets like Real Estate Investment Trusts (REITs) and Treasury Inflation-Protected Securities (TIPS) were solid performers, with commodities and gold performing well. Additionally, it confirms gold's meaningful outperformance over equities and bonds.

But what it also suggests is the potential upside in gold compared to how broad commodities have performed during the recent reflationary period. In the previous two periods, gold outperformed broad commodities. However, in the current environment, gold is down 10% compared to commodities, which are up substantially.<sup>3</sup>

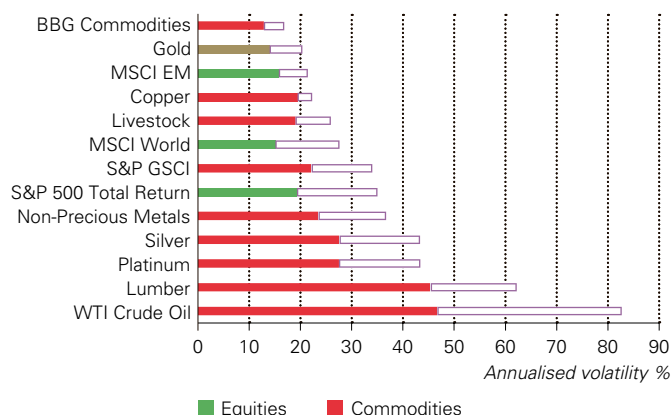
Gold lagged other commodities beginning in May 2020, and has continued through the first half of 2021, but this is not unusual in commodity-led reflationary periods historically, as we addressed in our recent publication, *Gold, commodities and reflation*. Historically, gold lags initially, but catches up to most major commodity groups by the second and third years of a reflationary period.

## Volatility has increased globally, but less so for gold

Volatility increased across major assets and commodities in 2020, driven by COVID-19-induced uncertainty, but less so for gold comparatively (**Chart 1**). A key reason for gold's relative stability stems from its role as a diversifier in turbulent markets, as well as stronger left-tail correlation between many other commodities and risk-on assets.

## Chart 1: Gold's volatility increased less than equities and many commodities

Annualised volatility of gold and other assets in 2020 vs long-run averages\*



\*Daily annualised volatility of various asset classes in 2020 (hollow colour), versus ten-year average (solid colour). Data from 1 January 2020 to 31 December 2020 for 1-year volatility, and 1 June 2011 to 30 June 2021 for long-run average annualised volatility.

On Goldhub.com see: [Gold volatility](#).

Source: Bloomberg, World Gold Council

It is interesting to note that the increase in the volatility of the broader Bloomberg Commodity Index (BCOM) in 2020 was not as substantial as one may have expected. This is largely a function of the significant dispersion of commodity performance, particularly with oil performing so poorly, and other commodities like gold performing so well, evidenced by overall commodities returns of -24% and -3%, compared to a gold return of 25%.<sup>4</sup> Simply put, commodities as a whole exhibited lower volatility than gold, but they did not protect the portfolio as well as gold (**Chart 2**, p03).

**Table 1: Gold historically lagged in commodity-led reflation periods but outperformed over the long run**

Most recent reflationary periods in the US\*

Start	End	REITs	Value equities	Growth equities	US bonds	BCOM	S&P GSCI	Gold
Nov 2001	Sep 2006	39%	8%	0%	5%	20%	22%	24%
June 2009	April 2012	25%	16%	21%	7%	5%	7%	27%
Aug 2020	June 2021	28%	30%	19%	-1%	29%	45%	-10%

\*As of 30 June 2021.

Source: Bloomberg, World Gold Council

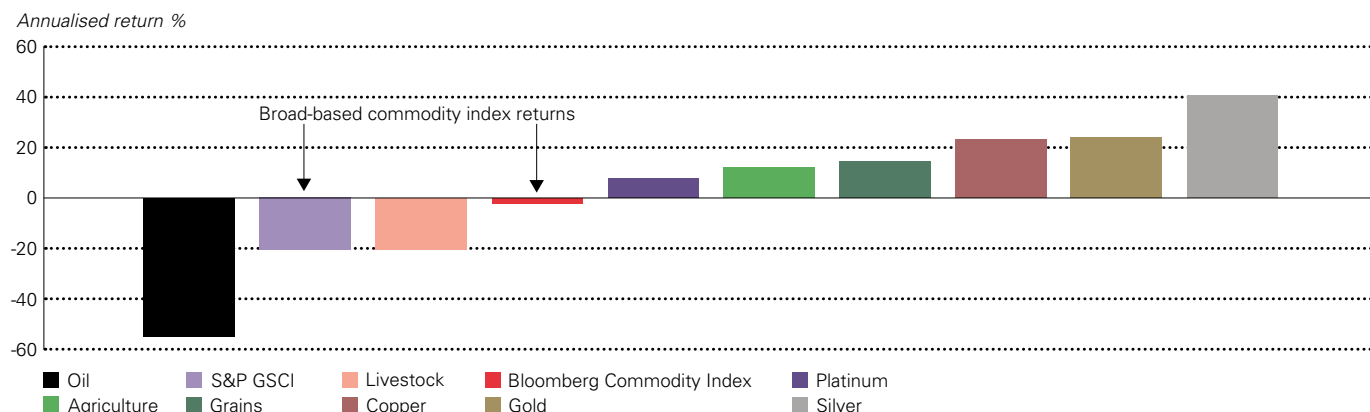
<sup>2</sup> Using National Bureau of Economic Research (NBER) recession index (USRINDEX) via Bloomberg to determine analysis starting points. In our analysis, a reflation begins during the last month of the NBER recession and is loosely characterised as an environment of resurgent economic growth twinned with rising inflation and interest rates.

<sup>3</sup> 31 August 2020 to 30 June 2021.

<sup>4</sup> Total returns for the S&P GSCI and Bloomberg Commodity Index for 2020, respectively.

**Chart 2: Gold outperformed nearly every major commodity last year, also outpacing the negative returns of both major commodity indices**

2020 commodity returns\*



\*Annualised data as of 31 December 2020. Indices include: S&P GSCI Official Close Index, S&P GSCI Agriculture Official Close Index, S&P GSCI Grains Official Close Index, S&P GSCI Livestock Index Spot, LBMA Gold Price PM USD, S&P GSCI Silver Official Close Index, Bloomberg Commodity Index, S&P GSCI Platinum Index, S&P GSCI Crude Oil Official Close Index, S&P GSCI Copper Official Close Index.

On Goldhub.com see: [Gold returns](#).

Source: Bloomberg, World Gold Council

## Focus 1: Commodity index providers have increased their gold weightings

In November 2020, we noted that *major commodity indices would increase gold weightings for a second year in a row*, which is an indication that index providers are, perhaps, acknowledging a greater importance for gold within a portfolio and broad-based commodity index.

Our *2019 report* discussed our belief that gold's weighting in the broader commodity indices was under-represented. Some of the reasons for this include:

- the diversity of gold's liquidity
- the lack of understanding of overall gold trading volume
- capped weights in specific sub-sectors
- gold's economic significance
- the size of the gold market
- its diversification benefits.

Since then, gold's weight in both the S&P GSCI and BCOM has increased two years in a row, with 2021 highlighting gold as the *largest individual commodity weight increase* in the S&P GSCI, as well as its highest weight ever in the BCOM.<sup>5</sup> This also took the precious metals weight of the index to an all-time high. The weight increase in both indices is broadly a function of increasing production and trading volumes. **Focus 3**, p10, provides specific details on the index target weight methodology for both indices.

**Table 2: Gold weights increased in each of the past two years**

Target weight of gold in two major commodity indices\*

	2019	2020	2021
S&P GSCI Index	3.73%	4.08%	6.27%
Bloomberg Commodity Index	12.24%	13.62%	14.65%

\*As of 30 May 2021.

Source: S&P Global, Bloomberg, World Gold Council

While our analysis suggests the ideal weight of gold in an optimised commodity portfolio should range from 20% to 35%, we feel the continued increases are a step in the right direction.<sup>6</sup>

5 S&P GSCI is a world production-weighted commodity index based on the average of the previous five years.

6 Analysis based on New Frontier Advisors Resampled Efficiency, including individual and sub-index commodities. For more information see *Efficient Asset Management: A Practical Guide to Stock Portfolio Optimization and Asset Allocation*, Oxford University Press, January 2008.

# Gold: not your typical commodity

Gold allocations of 2%–10% in average institutional portfolios have provided better risk-adjusted returns than those with broad-based commodity allocations.<sup>7</sup>

Investors have long recognised the benefits of investing in commodities. Over time, they have been shown to improve portfolio risk-adjusted returns, offering diversification, inflation protection, and an element of smoothing across economic cycles.

Most investors access this asset class via commodity indices, which invariably include gold.

But gold's weighting within these indices undervalues its importance as a strategic portfolio component (**Focus 1**, p03, **Table 3** and **Table 4**, p10). Gold is, of course, a raw material used in the production of manufactured goods – the very definition of a commodity. But gold is much more than that. As both an investment and a consumer good, it is a multi-faceted asset that enjoys diverse supply and demand dynamics that play an important role in gold's performance (see **Appendices III** p17 and **IV**, p19). And as mentioned above, there are six main differentiators between gold and the broader commodities complex.

## Better returns, effective diversification

### Outperforming commodities

Gold has performed broadly in line with the S&P 500 over the long term, delivering average annual returns of 10.8% since the elimination of the gold standard in 1971, and a compound annual return of 7.9% (**Chart 16**, p13).

But when compared to commodities, gold has outperformed not only broad-based indices but sub-indices and most individual commodities too. Nearly all sub-indices have fallen over the past five years. But gold has risen during that time. Gold has also outperformed major commodity sub-indices over the past 10 and 20 years (**Chart 3**, p05), and outperformed most individual commodities, many of which have delivered negative returns in recent decades.

### Diversification that counts

Gold has important diversification properties that come into their own during periods of systemic risk.

Gold has little to no correlation with many other assets, including commodities (**Chart 6**, p06, **Chart 20**, **Chart 21**, and **Table 7**, p15), during times of stress. Crucially, however, the correlation is dynamic, changing across economic cycles to the benefit of investors.

Like other commodities, gold is positively correlated to stocks during periods of economic growth when equity markets tend to rise. However, gold is also negatively correlated with other assets during risk-off periods, protecting investors against tail risks (**Chart 4**, p05, and **Chart 5**, p06), and other events that can have a significant negative impact on capital or wealth – a protection not always present in other commodities.

This dynamism reflects gold's dual nature as both a consumer good and an investment. When economic conditions are benign, expenditure tends to increase on items such as jewellery or technological devices, and this works in gold's favour. During times of systemic risk, however, market participants seek high-quality, liquid assets that preserve capital and minimise losses. This can also benefit gold by boosting investment demand and driving up prices. In the Q4 2018 global equity selloff, for example, the S&P 500 fell 15% and commodities fell 9%, yet gold rose 8%. And in the 2020 COVID selloff, the S&P 500 fell 20%, commodities fell 17%, while gold returned 2%. In both recent cases, gold not only protected portfolio assets but also delivered positive returns, while broader commodities behaved more like a risk-on asset.<sup>8</sup>

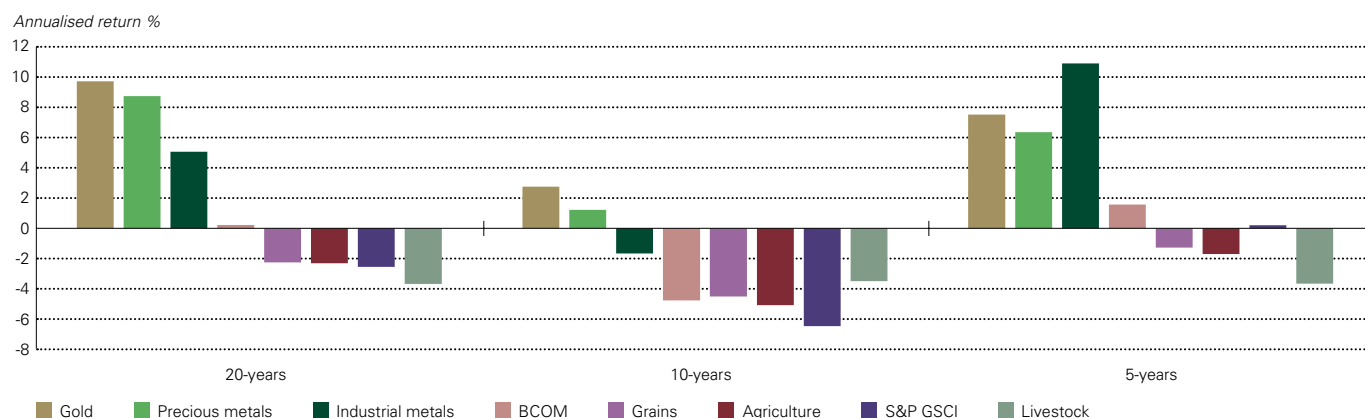
7 The average hypothetical average institutional portfolio is based on market data from JP Morgan Asset Management and Coalition Greenwich (formerly Greenwich Associates). It includes a 58% allocation to stocks (30% Russell 3000, 19% MSCI ACWI ex US, 9% FTSE Nareit REITs Index), 28% allocation to fixed income (20% Bloomberg Barclays US Aggregate, 5% S&P/LSTA Leveraged Loan Index, and 3% Bloomberg Barclays US Corporate High Yield Index), 14% allocation to alternatives (10% S&P Listed Private Equity Index, 4% Hedge Fund HFRI Index).

8 2018 pullback: 1 October 2018–31 December 2018; 2020 pullback: 31 January 2020–31 March 2020.

Gold is also a more effective diversifier than other precious metals. While gold's correlation to silver and platinum has been positive during periods of growth, it has decreased during market downturns as these other metals depend,

to a greater extent, on industrial demand. Also, when compared to other metals, gold is much less dependent on the technology/industrial areas of the market in terms of demand, which can be highly cyclical (**Chart 24**, p18).

**Chart 3: Gold has outperformed commodity sub-indices over the trailing 5-, 10-, and 20-year periods**  
Commodity sub-index returns\*



\*Annualised returns through 30 June 2021.

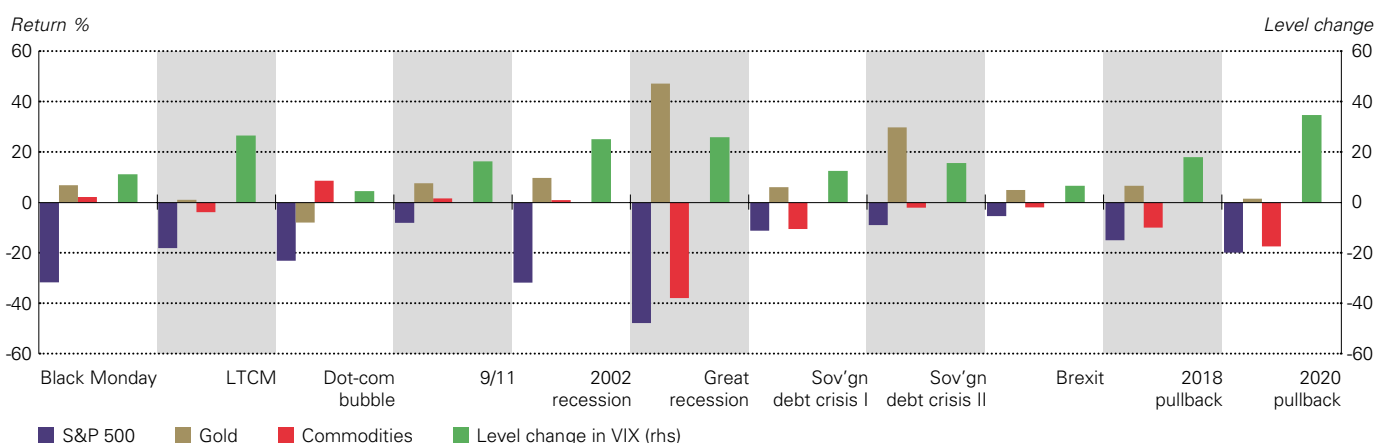
Indices include: S&P GS Precious Metals Index, S&P GS Industrial Metals Index, S&P GS Grains Index, S&P GS Agriculture Index, S&P GS Livestock Index, S&P GSCI Index, Bloomberg Commodity Index, Gold (US\$/oz) London PM fix.

On Goldhub.com see: [Gold returns](#).

Source: Bloomberg, World Gold Council

## Gold behaves – and is used – as a safe-haven in periods of systemic risk...

**Chart 4: Gold, unlike commodities, tends to perform positively when volatility increases**  
Performance of stocks, gold, commodities, and VIX during periods of systemic risk\*

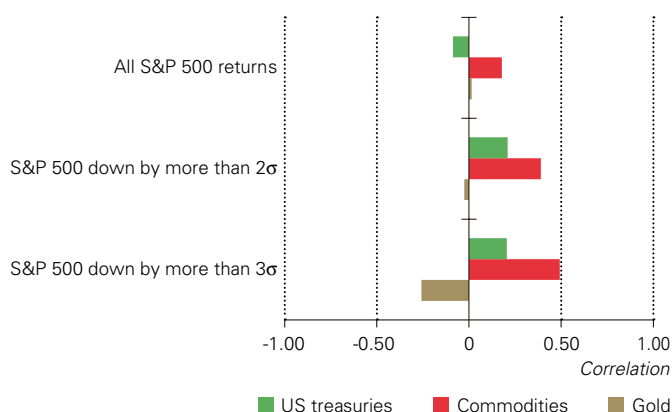


\* The VIX is available only after January 1990. For events occurring prior to that date, annualised 30-day S&P 500 volatility is used as a proxy.

Dates used: Black Monday: 9/1987–11/1987; LTCM: 8/1998; Dot-com: 3/2000–3/2001; September 11: 9/2001; 2002 recession: 3/2002–7/2002; Great Recession: 10/2007–2/2009; Sovereign debt crisis I: 1/2010–6/2010; Sovereign debt crisis II: 2/2011–10/2011; 2018 Pullback 10/2018–12/2018; COVID-19: 2/2020–3/2020. Commodities is the Bloomberg Commodity Index.

Source: Bloomberg, World Gold Council

**Chart 5: Gold has acted as a better diversifier than commodities and treasuries during strong equity selloffs**  
Correlation between gold, commodities and Treasuries with US stock returns, in various environments of stocks' performance\*



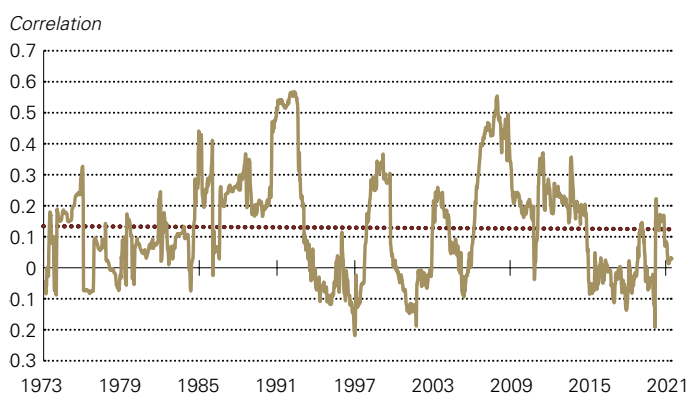
\*As of 31 December 2020. Correlations computed using weekly returns based on the Bloomberg Commodity Index, Bloomberg Barclays US Treasury Index, and the LBMA Gold Price PM since January 1973.

The top bar corresponds to the unconditional correlation over the full period. The middle bar corresponds to the correlation conditional on S&P 500 weekly return falling by more than two standard deviations (or 'σ') respectively, while the bottom bar corresponds to the S&P 500 weekly return decreasing by more than three standard deviations. The standard deviation is based on the same weekly returns over the full period.

On Goldhub.com see: [Gold correlation](#).

Source: Bloomberg, ICE Benchmark Administration, World Gold Council

**Chart 6: Over the past 48 years, gold exhibits little to no consistent correlation to oil on a two-year rolling monthly basis**  
Correlation between gold and oil\*



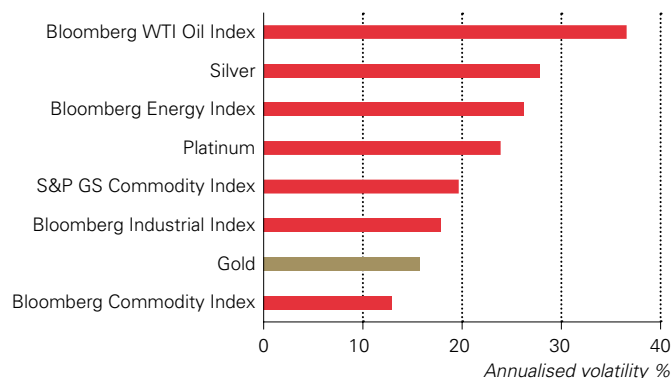
\*As of 30 June 2021.

Data is calculated using the rolling two-year correlation of monthly returns of oil and gold. The LBMA PM fix price is used for the price of gold, and the oil prices are determined via the Bloomberg Historical Oil Price Index as well as the Bloomberg WTI Crude Oil Sub Index Total Return.

On Goldhub.com see: [Gold correlation](#).

Source: Bloomberg, World Gold Council

**Chart 7: Gold is less volatile than most major commodity indices**  
10-year gold and commodities volatility\*



\*30 June 2011 to 30 June 2021 annualised weekly volatility of various commodities.

On Goldhub.com see: [Gold volatility](#).

Source: Bloomberg, World Gold Council

## Oil and gold remain largely unrelated

Gold and oil prices are not correlated, contrary to popular belief. Part of this misunderstanding is related to the size and scope of both assets, their global importance, broad commodities grouping, and the fact they are both generally priced in US dollars. At times, the two commodities move in the same direction, at other times in opposite directions (**Chart 6**), but there is no consistent relationship between the two. Oil tends to behave more like a risky asset, while gold is widely regarded as a risk-off asset (**Chart 20**, p15, **Appendix I**, p13).

## Lower volatility and a store of value in all inflationary periods

Gold is less volatile than most individual commodities and broad commodity indices (**Chart 7**). It is also less volatile than equities: from individual stocks and industry sectors to indices such as the Global MSCI World Index (**Chart 1**, p02). As such, gold can enhance portfolio stability and improve risk-adjusted returns.



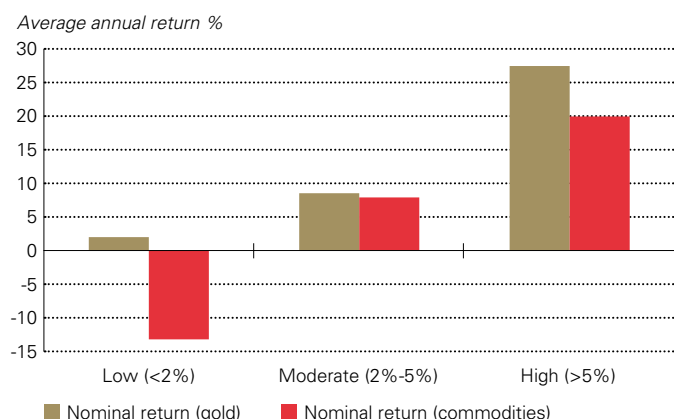
## Protecting against inflation

Commodities are often used for diversification during periods of high inflation. While it is true that commodities have performed well during inflationary periods, gold has performed better. And in periods of low inflation, commodities delivered negative nominal returns, while gold posted positive returns, reflecting increased demand when economic conditions are robust (**Chart 8**).

This behaviour is particularly relevant today. Despite a recent uptick, current inflation expectations are low from a historical perspective, so gold should outperform other commodities. Future expectations suggest a growing risk of higher inflation; this should also drive demand for gold, as it has outperformed commodities in both moderate- and high- inflationary periods.

**Chart 8: Gold and broader commodities perform well in high inflation environments, but commodities break down in low inflation markets**

Gold and commodity returns as a function of inflation\*



\*Based on y-o-y changes of the LBMA Gold Price, Bloomberg Commodity Index and US CPI between 1971 and 2020. Number of observations for each tranche: Low = 10, Moderate = 22, High = 12. The buckets were determined based on a 2% Fed target rating, a recent CPI number above 5% and a proportional amount of observations in each tranche. The results are consistent when adjusting tranche levels moderately.

Source: Bloomberg, Bureau of Labour Statistics, ICE Benchmark Administration, World Gold Council

## Gold as a store of value

Gold has a long and influential role as a monetary asset. Other metals, including silver and copper, have historically been used as currency but gold's role in the monetary system is far more extensive as it has been used for thousands of years. Considered a rare and precious asset for centuries, gold was a logical choice as a currency anchor, and it performed this role until the US came off the gold standard in 1971.<sup>9</sup> As such, gold made an important contribution to global economic architecture and, to this day, is considered a valuable international asset. Namely, it protects against currency declines and is the only precious metal used as a reserve asset (**Chart 18, Appendix I, p13**). Prior to 1971, major commodities enjoyed periods where their value in gold terms reflected inflation and increased, while the price of gold was pegged to the US dollar. After 1971, when the price of gold was able to float, the value of commodities in gold terms fell sharply.

Although gold no longer plays a direct role in the international monetary system, central banks and governments still hold extensive gold reserves (**Table 10, p17**) to preserve national wealth and protect against economic instability. Central banks are buying gold at an ever-increasing pace. In 2018 alone, they purchased more gold than at any time since the end of the gold standard – and they have been net buyers for 11 straight years.<sup>10</sup> Today, gold is the third largest reserve asset globally, following US dollar- and euro-denominated assets. Moreover, gold is increasingly used as collateral in financial transactions, much like other high-quality, liquid assets such as government debt.

<sup>9</sup> During the *gold standard*, the US dollar was backed by gold, and the foreign currency exchange rates were dictated by the *Bretton Woods System*. In August 1971, the Nixon Administration announced the halt of the free conversion between the US dollar and gold catalysing the collapse of the gold standard and, subsequently, the Bretton Woods system.

<sup>10</sup> On Goldhub.com see: [Gold supply and demand statistics](#).

## Gold is liquid and less impacted by futures storage and roll costs

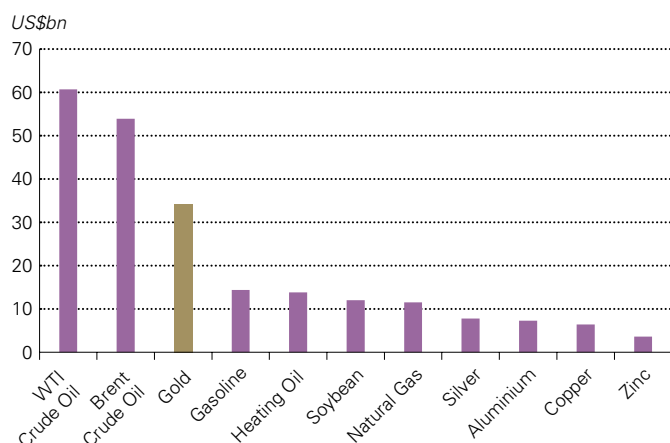
### Global liquidity on a physical-linked market

The gold market is robust and highly liquid. On the futures markets, daily volumes average US\$69bn (**Chart 22** and **Table 8, Appendix II**, p16), second only to oil on US exchanges over the past 10 years (**Table 9**, p16 and **Chart 9**). It is worth noting that in 2020, amid significant market volatility, gold traded more each day in the US, at US\$54 (bn), than either WTI Crude oil (US\$42bn) or Brent Crude oil (US\$36bn). On the over-the-counter (OTC) market, estimated volumes are even higher, at around US\$110bn.<sup>11</sup> There is a thriving physical gold-backed ETF market too, with daily volumes averaging US\$1bn. Overall, average daily trading in the global gold market ranges between US\$140bn and US\$200bn (**Chart 10**, p09, **Table 8**, p16, **Appendix II**, p16).

This extensive liquidity allows investors to access gold in a range of ways – which are particularly important when compared to other commodities – and highlights how gold operates within a differentiated market (**Focus 2**, p09).

**Chart 9: Volume in gold futures is higher than all commodities except oil on the COMEX**

Average daily trading volume in US dollars over the past 10 years\*



\*Based on 10-yr average trading volumes as of June 2021.

Source: Bloomberg, COMEX, World Gold Council

### Storage costs hurt many commodity futures returns, but only slightly for gold

Many investors access commodity markets via futures contracts. Because futures contracts are based on the expected price at a certain point down the road, as well as the costs of carry, storage, and interest, investors are exposed to an additional source of variability: the shape of the futures curve.

In general, futures curves have less of an impact on gold and other precious metals returns relative to most other commodities. Storage costs in particular account for a large proportion of the futures cost or cost of carry. But the storage costs of physical gold are negligible compared to those of other metals, while commodities such as natural gas incur extremely expensive storage costs, with most of those securities not settling for physical delivery. These costs are typically represented by a futures curve in contango, when futures prices are higher than spot prices.<sup>12,13</sup>

The shape of the curve, combined with the fact that futures contracts are typically rolled over or settled in cash, creates discrepancies between spot price returns and total returns. This difference can be very large in certain commodity markets, yet futures returns are not necessarily higher than spot returns.

The oil market between June 2001 and June 2021 exemplifies this point (**Chart 12**, p09, **Table 6**, p14, **Appendix I**, p13). Cumulative total returns based on spot were 88%; based on the futures markets, they were -111%, a by-product of the continuous rolling costs of maintaining a position.<sup>14</sup> During the same period, gold's spot return was 194% and the futures return was 189%. In fact, the roll cost has averaged approximately 25bps a year over the past 20 years, compared to 6% for the S&P GSCI. This reflects two important differentials between gold and other commodities. First, the shape of the gold futures curve tends to be flat at the most actively traded front end of the curve. Second, most investors either trade in spot or can potentially take physical delivery of futures contracts (although this can be quite costly and happens rarely). It is worth noting that the Bloomberg Precious Metals Sub-index and gold futures deliver similar performances over the long run, largely because nearly 82% of the Sub-index is comprised of gold futures.

11 Note that these estimates are subject to periodical historical revisions as more data becomes available. See details [Gold trading volumes](#) on goldhub.com for methodology.

12 Contango is a situation where the futures price of a commodity is higher than the spot price. Contango usually occurs when an asset price is expected to rise over time. This results in an upward sloping forward curve, which can increase the cost of maintaining exposure to a particular asset.

13 The spot price is the current price an investor would pay to acquire a commodity immediately. Spot price is frequently used with commodities because most commodities trade both on the 'spot market' and 'futures market'.

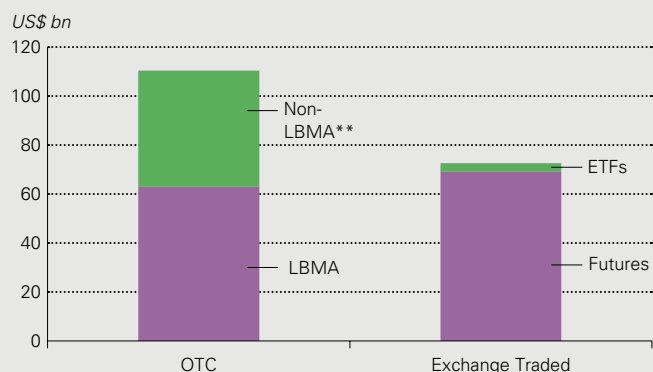
14 An investor is able to lose more than 100% of the initial investment – in this case 111% – because futures positions do not effectively allow for a buy-and-hold strategy, forcing frequent rebalances where additional money inflows are required to maintain the same investment size.

## Focus 2: A differentiated market

Most commodities trading is dominated by futures trading, while physical delivery is extremely low. In the gold market, by contrast, around 60% of trades are conducted via OTC or on exchanges usually linked to physical delivery, with gold futures representing less than 38% of all gold volume (**Table 8, Table 9, and Chart 22, Appendix II, p16**).

Physical delivery or holding of gold all but eliminates the potential credit risk in commodities futures markets. It is also worth noting that gold makes up nearly 40% of total average daily OTC open interest in all commodities – a percentage that has been steadily increasing – with other precious metals accounting for just 3%. All other commodities combined represent slightly over half of the commodities OTC market, highlighting the depth and breadth of the gold market (**Chart 11**).

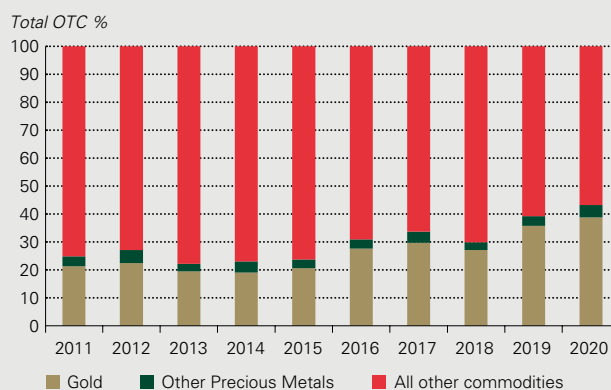
**Chart 10: Gold futures represent less than 40% of all gold traded**  
Average daily gold trading volume in 2020\*



\*As of 30 December 2020. \*\*Includes OTC data from the Shanghai Gold Exchange. Note that these estimates are subject to periodical historical revisions as more data becomes available.

On Goldhub.com see: [Gold trading volumes](#) for methodology and sources.

**Chart 11: Gold makes up a significant portion of all global commodity OTC open interest**  
Global commodity OTC open interest\*

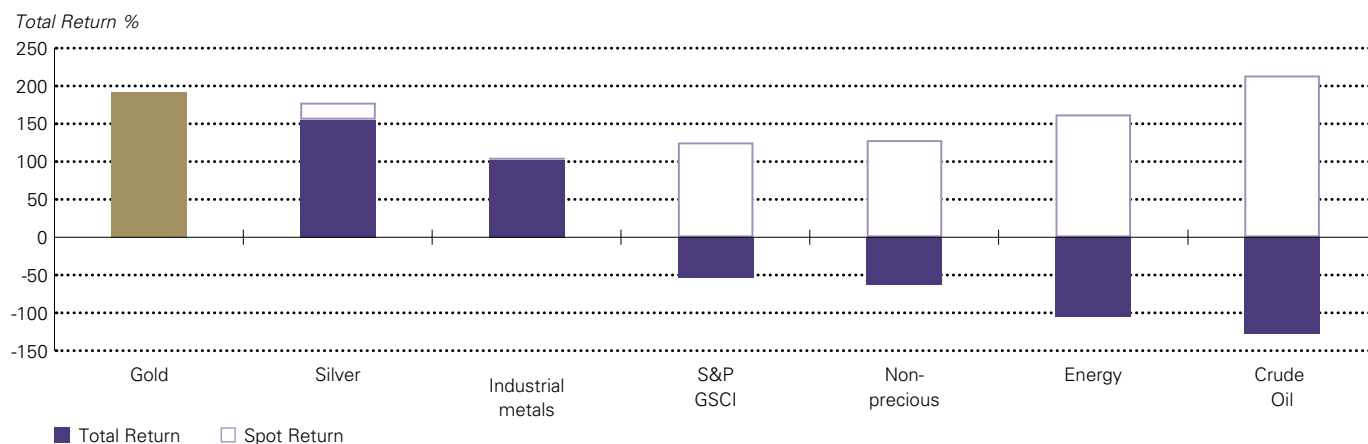


\*As of 31 December 2020.

Source: Bank of International Settlements (BIS)

**Chart 12: When considering total returns, gold futures far surpass that of other commodities**

Spot and total returns for gold and broad commodity sub-classes over the past 10 years\*



\*Data from 30 June 2001 to 30 June 2021.

On Goldhub.com see: [Gold returns](#).

Source: Bloomberg, World Gold Council

## Gold – efficient, effective, and under-represented

Despite gold's unique and differentiating properties, investors often cluster it into a commodities bucket that frequently represents a small allocation within their overall portfolio. Furthermore, the amount of gold allocated to this smaller commodities bucket is usually just a fraction of the bucket itself, further diminishing the weight.

Investors who access commodities via a broad-based index often assume they have an appropriate allocation to gold. In fact, most broad-based commodity indices have a very small allocation to gold. Indices such as the S&P GSCI or BCOM typically allocate between 6% and 15% to gold (**Table 2**, p03, **Table 3**, and **Table 4**).<sup>15</sup> While we previously noted that these allocations are trending higher, we do not believe such weightings provide an appropriate exposure to gold, particularly as commodities tend to represent a small portion of an investor's overall portfolio.

**Table 3: Gold is a small component in the S&P GSCI Index**  
S&P GSCI sector weights\*

Sector	Weight
Energy	54%
Agriculture	19%
Livestock	8%
Industrial metals	12%
Precious metals	7%
<b>Gold</b>	<b>6.27%</b>

\*Weights as of 31 January 2021; gold weighting is a sub-weight of Precious Metals..

Source: S&P Global, World Gold Council

**Table 4: Gold has a more prominent yet still small weight in the Bloomberg Commodity Index**

Bloomberg Commodity Index sector weights\*

Sector	Weight
Energy	30%
Grains	23%
Industrial metals	15%
Precious metals	19%
<b>Gold</b>	<b>15%</b>
Softs	7%
Livestock	6%

\*Weights as of 30 June 2021; gold weighting is a sub-weight of Precious Metals.

Source: Bloomberg, World Gold Council

## Focus 3: Commodity index limitations

There are a few reasons for the differences in gold weightings in the most used commodity indices.

The Bloomberg Commodity Index (BCOM) places greater emphasis on liquidity and economic importance, which boosts the weighting of gold, versus the S&P GSCI Index with its smaller weight to gold. And while the BCOM provides a more significant weight to gold than other indices, it still under-represents the appropriate weight to gold when considering the index's methodology and gold's performance.

This relates partly to the nature of the gold market. The BCOM bases liquidity on futures volumes (**Table 9**, p16 **Appendix II**, p16) but, as we highlight above, over 60% of gold is traded on the OTC market with most trading on spot. By contrast, the vast majority of trading in other commodities is conducted via the futures market. This significantly drives down gold's weighting in the index (**Table 4**).

Gold also suffers because BCOM defines diversification based on maximum weights to specific commodities and sectors. There is, for instance, a maximum allocation to precious metals, of which gold represents a portion. However, the indices do not consider diversification from the perspective of cross-asset or global correlation, even though this may be a more appropriate measure of diversification at the portfolio level. Additionally, there is an individual commodity weight max of 15% that gold has now achieved, suggesting it will not garner additional weighting in the future unless the index methodology changes.

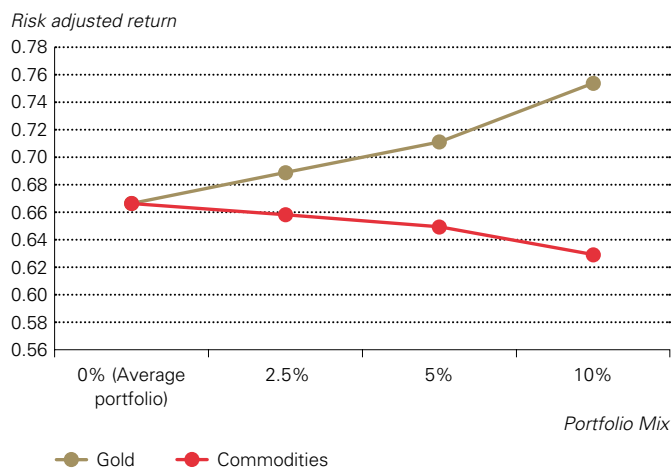
Finally, the economic significance of gold is not considered holistically. In particular, while gold plays a role in positive economic periods, its role is even more important during market downturns, setting it apart from almost every other commodity.

<sup>15</sup> Determinants and weights in the Bloomberg Commodity Index include economic significance, diversification, continuity, and liquidity.



**Chart 13: Gold allocations improved absolute and risk-adjusted returns more than commodities over the past 20 years**

Performance of a hypothetical average institutional portfolio with and without commodities or gold\*



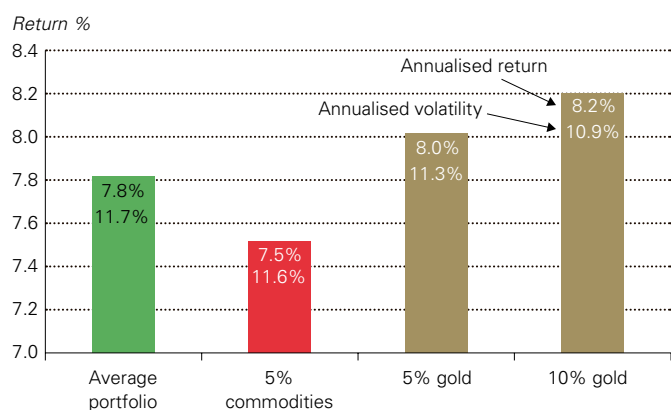
\*As of 30 June 2021.

Risk-adjusted return defined as portfolio return divided by annualised volatility and based on the total return indices and benchmarks listed below using data from June 2001 to June 2021 assuming quarterly rebalancing.

A 0% allocation denotes a hypothetical average portfolio with market data from JP Morgan Asset Management and Coalition Greenwich (formerly Greenwich Associates), as well as data from Blackrock. It includes a 58% allocation to stocks (30% Russell 3000, 19% MSCI ACWI ex US, 9% FTSE Nareit REITs Index), 28% allocation to fixed income (20% Bloomberg Barclays US Aggregate, 5% S&P/LSTA Leveraged Loan Index, 3% Bloomberg Barclays US Corporate High Yield Index), and 14% allocation to alternatives (10% S&P Listed Private Equity Index, 4% Hedge Fund HFRI Index).

**Chart 14: Gold improves absolute and risk-adjusted returns**

Performance of a hypothetical average institutional portfolio with and without commodities or gold\*



\*As of 30 June 2021.

Based on monthly data from June 2001 to June 2021 assuming quarterly rebalancing. See [Chart 13](#) for portfolio indices and allocations.

Source: Bloomberg, ICE Benchmark Administration, World Gold Council

## Under-allocated to gold: a missed opportunity?

Commodity exposure is generally limited to less than 10% of an investment portfolio, and in many cases this is much lower.<sup>16</sup> Gold usually accounts for less than 10% of that amount – in other words, most portfolios will have less than 1% exposure to gold.

While commodity exposure does provide diversification benefits from a lower volatility perspective, our analysis suggests that adding a 2%–10% portfolio allocation to commodities **decreased risk-adjusted returns** over the past 20 years. However, gold can do much more. Looking back over the past two decades, replacing or supplementing a commodities allocation with gold provided two key benefits: **it increased absolute returns and reduced portfolio volatility** when compared to a portfolio with no commodity exposure or with only broad-based commodity exposure ([Chart 13](#) and [Chart 14](#)).

### Gold improves risk-adjusted returns across portfolio structures

To determine the optimum allocation to gold it is useful not only to compare gold with other commodities, but also to consider the broader impact that gold can have on portfolios. The World Gold Council has conducted analysis, based on typical US investment portfolio allocations of varying risks, and back-tested the ideal allocations of gold for each investment objective ([Chart 19, Appendix I, p14](#)). Our analysis indicates that US dollar-based investors can meaningfully improve the performance of a well-diversified portfolio by allocating between 2% and 10% to gold ([Chart 15](#), and [Table 5, p12](#)).

Broadly speaking, the higher the risk in the portfolio – whether in terms of volatility, illiquidity, or concentration of assets – the larger the required allocation to gold to offset that risk.

<sup>16</sup> A recent study by Coalition Greenwich (formerly Greenwich Associates), in conjunction with the World Gold Council, found that institutional investors expected to allocate 2% to commodities in their portfolios.

**Table 5: Gold allocations improve risk-adjusted returns**  
Hypothetical resampled returns, volatility, gold weights, and risk-adjusted-returns\*

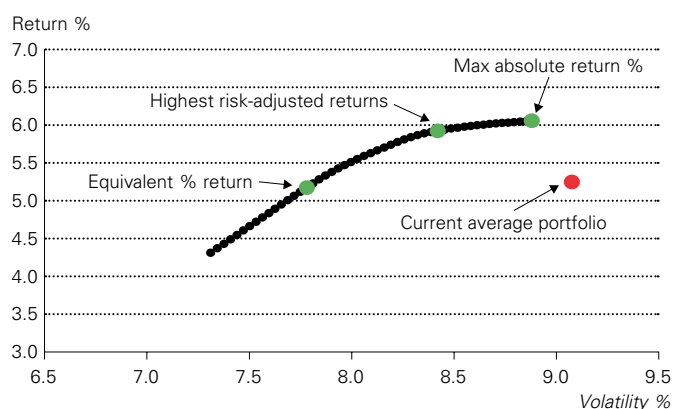
Portfolio	Return	Volatility	Gold weight	Risk-adjusted returns
Current average portfolio	5.2%	9.1%	0.0%	0.57
Equivalent % return	5.2%	7.8%	3.8%	0.67
Highest risk-adjusted returns	5.9%	8.4%	4.7%	0.70
Max absolute return	6.1%	8.9%	5.9%	0.69

\*Based on 20-year historical returns, volatility, and correlation, resampled using Blackrock's expected asset returns and volatility over the coming decade.<sup>17</sup>

Source: World Gold Council

**Chart 15: Gold can significantly improve risk-adjusted returns of hypothetical average institutional portfolios across various levels of risk**

Range of gold allocations and the allocation that delivers the maximum risk-adjusted return for each hypothetical portfolio mix\*



\*Based on monthly data from 30 June 2001 to 30 June 2021 assuming quarterly rebalancing. See [Chart 13](#), p11, and [Table 5](#) for portfolio indices and allocations.

'Max absolute return' represents the highest expected absolute return in percentage terms based on the analysis.

'Highest risk-adjusted returns' represents the highest risk-adjusted returns for a given portfolio.

'Equivalent % return' represents the portfolio anticipated volatility for a portfolio with the same expected return of a current US pension fund.

'Current average portfolio' is the current weightings resampled with no gold exposure.

Analysis based on New Frontier Advisors Resampled Efficiency. For more information see *Efficient Asset Management: A Practical Guide to Stock Portfolio Optimization and Asset Allocation*, Oxford University Press, January 2008.

Source: World Gold Council

## Conclusion

A commodity is defined as an economic good, which is valued and useful and has little or no difference in composition or quality regardless of the place of production. While gold fits this definition, its market dynamics and the diversity of its application make it very different from other commodities.

This difference is underlined by gold's robust performance profile in terms of returns, volatility, and correlation. Taken together, these characteristics produce a more diversified portfolio than one with a simple, broad-based commodities exposure.

Looking at other commodities, some can be considered luxury goods, some have technological applications, and some are basic, everyday products. Some are used to hedge against inflation, some protect against currency devaluation, and all provide a degree of diversification in an investment portfolio. However, **only gold performs all these functions.**

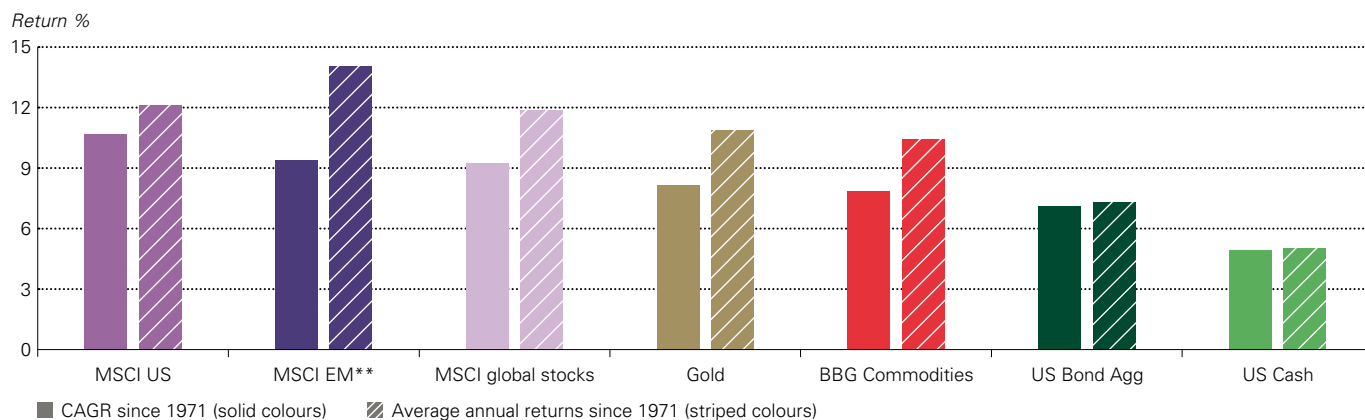
Indices such as the S&P GSCI or the Bloomberg Commodity Index are widely used by investors as benchmarks for their commodity allocations. While gold's weight in these indices is increasing, it remains too low. More importantly, we find that under these conditions, an investor who only holds gold via a diversified commodities index will not achieve optimal returns (per unit of risk) or minimise expected losses.

**Implementing an outright or supplemental position to gold reduces risk without diminishing long-term expected returns. In particular, strategic allocations ranging from 2% to 10% can significantly improve and protect the performance of an investment portfolio, while providing the exposure desired by the commodities investment itself.**

<sup>17</sup> Expected returns/volatility from Blackrock by asset class: Russell 3000: 5.1%/15.4%; MSCI ACWI ex US: 6.6%/15.4%; FTSE Nareit REITs Index: 5.0%/17%; Bloomberg Barclays US Aggregate: 1.1%/4.3%; S&P/LSTA Leveraged Loan Index: 7.0%/7.0%; Bloomberg Barclays US Corporate High Yield Index: 3.0%/8.9%; S&P Listed Private Equity Index: 12%/10%; Hedge Fund HFRI Index: 5%/6%; LBMA Gold Price PM: 5%/17%.

# Appendix I: Performance

**Chart 16: Gold returns are on par with the stock market over the long run**  
Annualised returns of gold and other assets\*

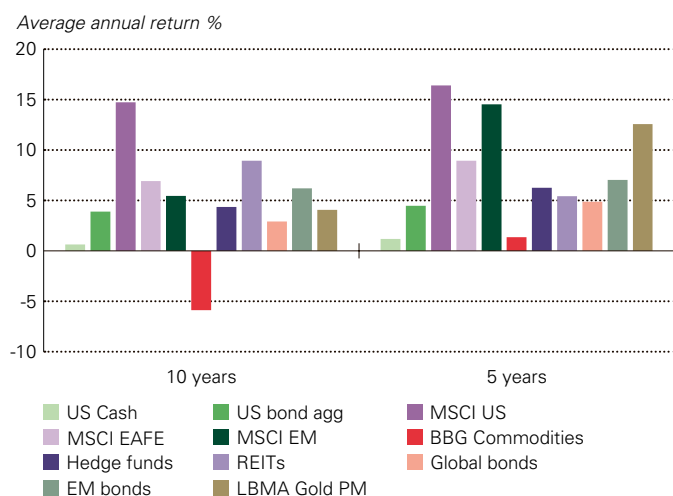


\*As of 30 June 2021. Based on total returns indices including MSCI US, MSCI EAFE, MSCI EM, JPMorgan 3-month US cash, BarCap US Bond Aggregate, Bloomberg Commodity for the 10- and 20-year average, and S&P GSCI since 1971 due to data availability. Gold performance based on the LBMA Gold Price. Data between 1 January 1971 and 30 June 2021.

On Goldhub.com see: [Gold prices](#).

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

**Chart 17: Gold has performed well over the past decade in a risk-on environment**  
Average returns of gold against other major asset classes\*

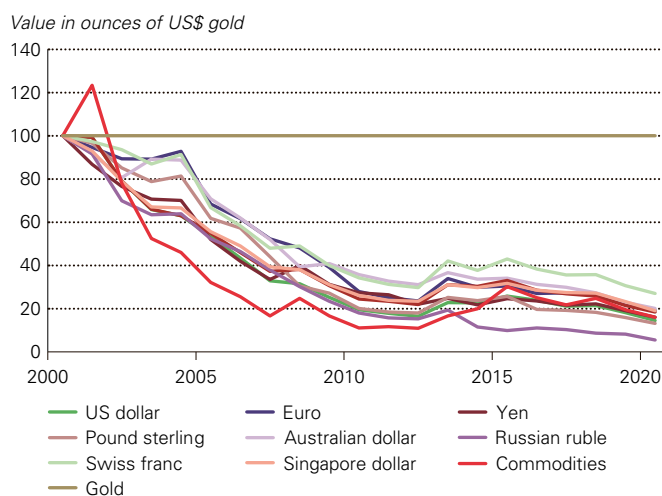


\*As of 30 June 2021. Based on total returns indices including MSCI US, MSCI EAFE, MSCI EM, JPMorgan 3-month US cash, BarCap US Bond Aggregate, Bloomberg Commodity Index, Gold performance based on the LBMA Gold Price. Data between 30 June 2011 and 30 June 2021.

On Goldhub.com see: [Gold prices](#).

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

**Chart 18: Gold has held value against fiat currencies**  
Value of currencies and broad commodities relative to gold (January 2000 = 100)\*



\*As of 31 December 2020. 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.

On Goldhub.com see: [Gold prices](#).

Source: Bloomberg, ICE Benchmark Administration, World Gold Council

**Table 6: Gold's low storage costs help its total return when compared to other commodities**

US dollar return (%) for various commodities and commodity indices in selected periods<sup>1\*</sup>

	Cumulative spot return			Cumulative total return		
	June '01–June '21	June '11–June '21	June '16–June '21	June '01–June '21	June '11–June '21	June '16–June '21
Gold <sup>2</sup>	193.62	21.38	35.49	193.62	21.38	35.49
S&P GSCI	91.58	-24.18	31.59	-37.47	-70.07	3.15
Energy	83.09	-39.59	27.81	-85.01	-109.38	-14.88
Industrial metals	115.71	1.62	54.98	111.49	-12.91	51.69
Precious metals	190.83	16.20	35.98	175.22	6.94	29.60
Non-precious	88.07	-25.97	31.30	-46.13	-74.63	0.88
Agriculture	99.30	-7.93	33.01	-29.69	-48.33	-1.48
Grains	110.50	3.71	43.00	-28.69	-39.43	2.41
Livestock	50.89	11.61	16.25	-84.98	-37.14	-16.87
Crude oil	88.46	-36.03	28.86	-126.89	-162.64	-51.60
Silver <sup>2</sup>	184.88	-23.16	43.23	162.82	-36.95	35.01
Platinum	74.78	-36.26	16.85	94.44	-43.77	12.97
Copper	184.98	8.85	74.31	227.48	10.74	74.61

\*As of 30 June 2021.

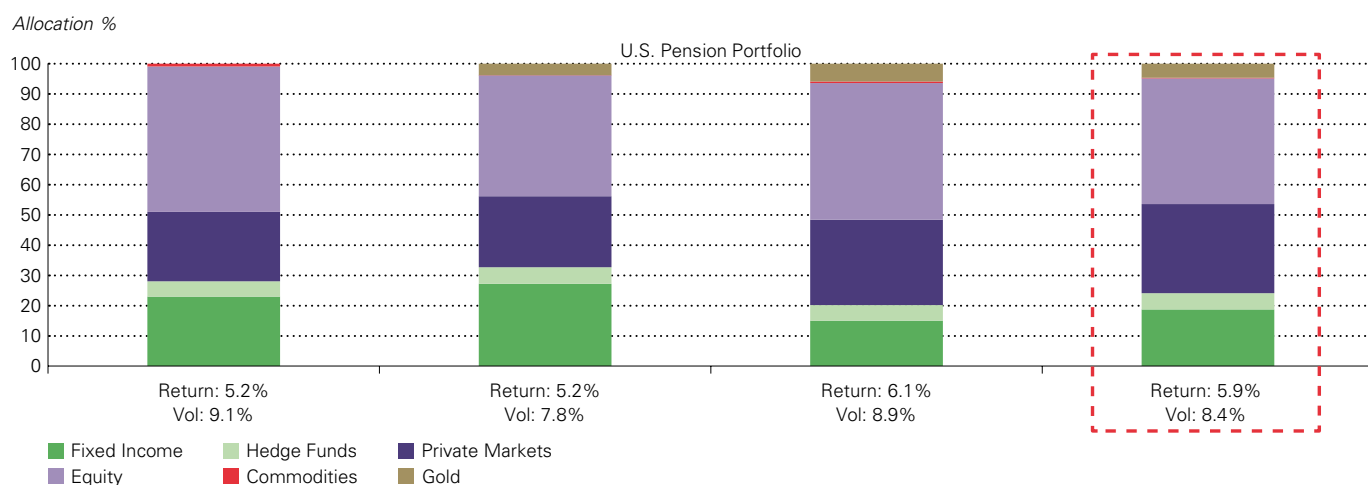
1 Calculations based on S&P GSCI indices and sub-indices except otherwise noted.

2 Spot prices based on the London PM fix for gold and London fix for silver.

Source: S&P, Bloomberg, LBMA, World Gold Council

**Chart 19: Riskier portfolios benefit from larger gold allocations**

Long-run optimal portfolio allocations based on asset mix\*



\*Based on monthly data from June 2001 to June 2021 assuming quarterly rebalancing. See [Chart 13](#), p11, for portfolio indices and allocations.

Analysis based on New Frontier Advisors Resampled Efficiency. For more information see *Efficient Asset Management: A Practical Guide to Stock Portfolio Optimization and Asset Allocation*, Oxford University Press, January 2008.

Source: World Gold Council



**Table 7: Gold has low correlation to other commodities**

10-year daily correlation of gold to other commodities\*

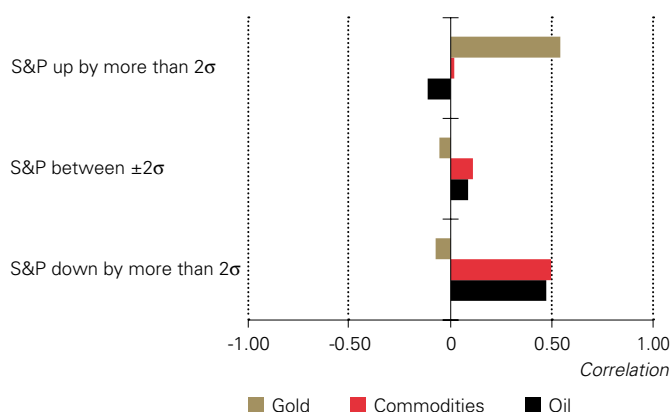
	S&P GSCI	Industrial metals	Precious metals	Non-precious	Agriculture	Grains	Livestock	Gold	Silver	Platinum	Crude Oil	Aluminium	Copper
S&P GSCI	1.00												
Industrial metals	0.47	1.00											
Precious metals	0.21	0.30	1.00										
Non-precious	1.00	0.46	0.17	1.00									
Agriculture	0.36	0.24	0.15	0.35	1.00								
Grains	0.29	0.18	0.12	0.28	0.97	1.00							
Livestock	0.18	0.10	0.03	0.18	0.11	0.09	1.00						
<b>Gold</b>	<b>0.17</b>	<b>0.27</b>	<b>0.94</b>	<b>0.13</b>	<b>0.12</b>	<b>0.09</b>	<b>0.00</b>	<b>1.00</b>					
Silver	0.33	0.44	0.89	0.30	0.20	0.15	0.04	0.78	1.00				
Platinum	0.38	0.47	0.67	0.35	0.17	0.12	0.12	0.63	0.70	1.00			
Crude Oil	0.91	0.33	0.10	0.92	0.15	0.10	0.05	0.08	0.23	0.29	1.00		
Aluminium	0.35	0.81	0.23	0.35	0.21	0.16	0.05	0.21	0.32	0.35	0.23	1.00	
Copper	0.44	0.92	0.27	0.43	0.21	0.15	0.10	0.24	0.41	0.43	0.32	0.57	1.00

\*As of 30 June 2021.

Source: Bloomberg, World Gold Council

**Chart 20: Oil behaves like a risk-on asset**

Correlation between gold, commodities and oil with US stock returns in various environments of stocks' performance\*



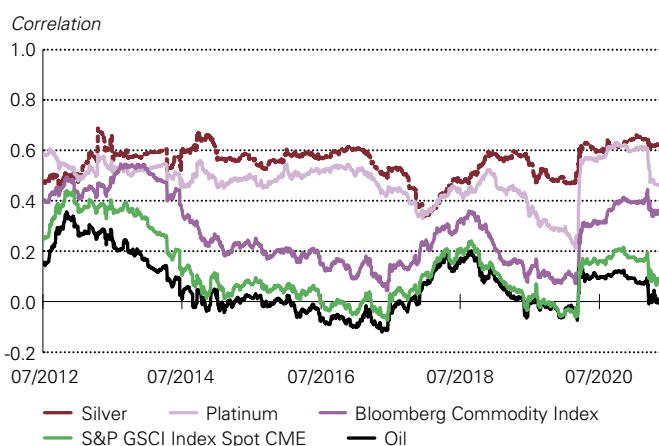
\*As of 30 June 2021. Correlations computed using weekly returns based on the Bloomberg Commodity Index and the LBMA Gold Price PM and Bloomberg Oil Index since January 1987, due to data availability.

The middle bar corresponds to the correlation during periods of less than positive or negative two standard deviations. The bottom bar corresponds to the correlation conditional on S&P 500 weekly return falling by more than two standard deviations (or 'σ') respectively, while the top bar corresponds to the S&P 500 weekly return increasing by more than two standard deviations. The standard deviation is based on the same weekly returns over the full period.

Source: Bloomberg, ICE Benchmark Administration, World Gold Council

**Chart 21: Gold has modest correlation to precious metals but its correlation is low or negative when compared to other commodities**

Rolling 1-year daily correlation of gold to other commodities over the past 10 years\*



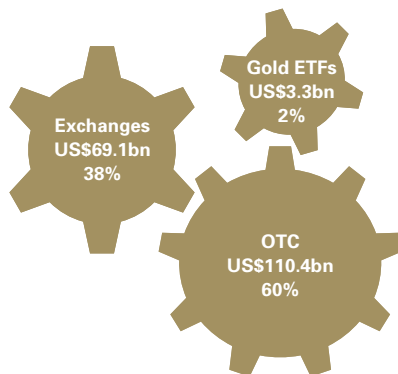
\*As of 30 June 2021.

On Goldhub.com see: [Gold correlation](#).

Source: Bloomberg, World Gold Council

# Appendix II: Liquidity

**Chart 22: Gold is liquid across key investment platforms**  
Average daily trading volume by point of access in 2020\*



\*Average daily trading volume from 1 January 2020 to 31 December 2020.  
Gold liquidity includes estimates of OTC transactions and published statistics on futures exchanges, and gold-backed exchange-traded products. For more information, see [Gold trading volumes](#) on goldhub.com.  
Source: Bloomberg, Nasdaq, World Gold Council

**Table 8: Gold volumes are strong across multiple trading venues**

Average daily gold market trading volumes in 2020\*

	Exchanges	2020 Average US\$(bn)
OTC	LBMA-i ††	63.1
	Non-LBMA-i (Mid ‡)	47.3
	<b>Total (Mid)</b>	<b>110.4</b>
Exchanges	COMEX	54.4
	Shanghai Futures Exchange	6.19
	Shanghai Gold Exchange §	6.22
	LME ¶	0.16
	All other exchanges ^	2.34
	<b>Total Exchanges</b>	<b>69.3</b>
Gold ETFs	North America	2.61
	Other regions	0.68
	<b>Total gold-backed ETFs</b>	<b>3.29</b>
	<b>Global gold market liquidity</b>	<b>183.00</b>

\* As of 31 December 2020.

Sources: Bloomberg, COMEX, Dubai Gold & Commodities Exchange, ICE Benchmark Administration, London Bullion Market Association, London Metal Exchange, Multi Commodity Exchange of India, Shanghai Gold Exchange, Shanghai Futures Exchange, Tokyo Commodities Exchange, World Gold Council

Note that these estimates are subject to periodical historical revisions as more data becomes available.

On Goldhub.com see: [Gold trading volumes](#).

**Table 9: Gold is more liquid than nearly every other commodity**

Daily average of open interest and notional volume for commodities traded on the COMEX\*

Commodity	Open Interest (US\$bn)	Volume (US\$bn)
Brent Crude Oil	\$145.7	\$53.8
WTI Crude Oil	\$127.3	\$60.5
Gold	\$67.5	\$34.1
Soybean	\$39.8	\$12.0
Natural Gas	\$36.4	\$11.5
Heating Oil	\$32.8	\$13.8
Corn	\$32.4	\$7.5
Gasoline	\$30.7	\$14.3
Aluminium	\$26.1	\$7.2
Silver	\$17.7	\$7.7
Copper	\$15.3	\$6.4
Nickel	\$10.8	\$3.2
Zinc	\$9.7	\$3.6
Cotton	\$7.7	\$1.0
Lean Hogs	\$7.5	\$1.4

\*Includes the daily averages for the past 10 years ended 30 June 2021.

Source: Bloomberg, World Gold Council

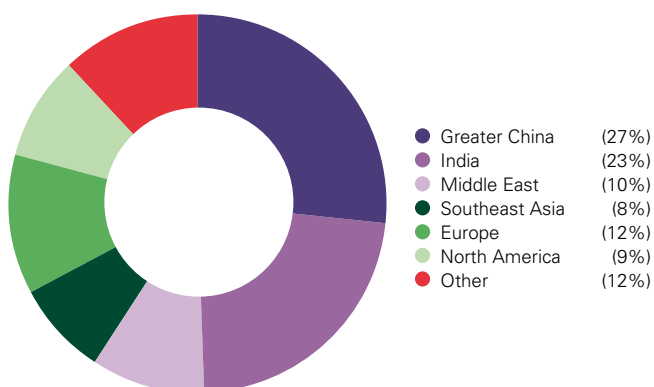
# Appendix III: Demand

## Gold demand is global

Demand for gold is global. Despite the perception that gold is a luxury good, bought for jewellery and investment purposes by developed nations, over 50% of demand comes from emerging markets (**Chart 23**).

Commodities other than gold also have desirable characteristics and, as important inputs to the global economy, are increasingly attractive as alternative sources of diversification for institutional and individual investors alike. However, most commodities tend to be heavily exposed to one aspect or another of the economy and subject to idiosyncratic risks.

**Chart 23: Demand for gold is global**  
Gold demand by region\*



\*Computed using annual average demand from 2011 to 2020. Regional breakdown excludes central bank demand due to data availability.

On Goldhub.com see: [Gold Demand Trends](#).

Source: ETF company filings, Metals Focus, Refinitiv GFMS, World Gold Council

While oil's global importance as a primary source of energy makes it a highly liquid commodity, the oil market is far more dependent on the business cycle than gold as oil is primarily used for industrial purposes. Oil, which carries the largest weight in the commodity indices, only has 16% use outside of the energy space.<sup>18</sup> Similarly, oil production is geographically more concentrated in certain regions of the world; for example, more than 50% of proven reserves of oil are currently located in the Middle East. It is incredibly difficult to know what percentage of oil demand is actually in investment, given investors don't take physical delivery and the majority of oil trades in the futures markets. Moreover, investors tend to access the oil market primarily via derivatives contracts, which in turn increase their counterparty risk exposure.

Gold is not consumed like typical commodities; its above-ground stocks are available for continuous utilisation. Many other commodities tend to be much more highly specialised and lack gold's diverse demand; agriculture commodities, for instance, are largely used for food consumption.

**Table 10: Gold represents a large percentage of central bank reserves**

Total central bank holdings are growing at the highest levels in history\*

Rank	Country	Tonnes	% of Reserves
1	United States	8,133.5	77.6%
2	Germany	3,362.5	74.3%
3	Italy	2,451.8	68.9%
4	France	2,436.0	64.3%
5	Russian Federation	2,295.4	21.8%
6	China, PR, Mainland	1,948.3	3.2%
7	Switzerland	1,040.0	5.4%
8	Japan	846.0	3.4%
9	India	695.3	6.5%
10	Netherlands	612.5	67.0%

\*As of March 2021.

Data does not include the IMF, which holds the third largest percentage of gold, but does not provide a figure for gold as a percentage of its total reserves.

On Goldhub.com see: [Monthly central bank statistics](#).

Source: IMF, World Gold Council

<sup>18</sup> IEA: [Key World Energy Statistics, 2014](#).

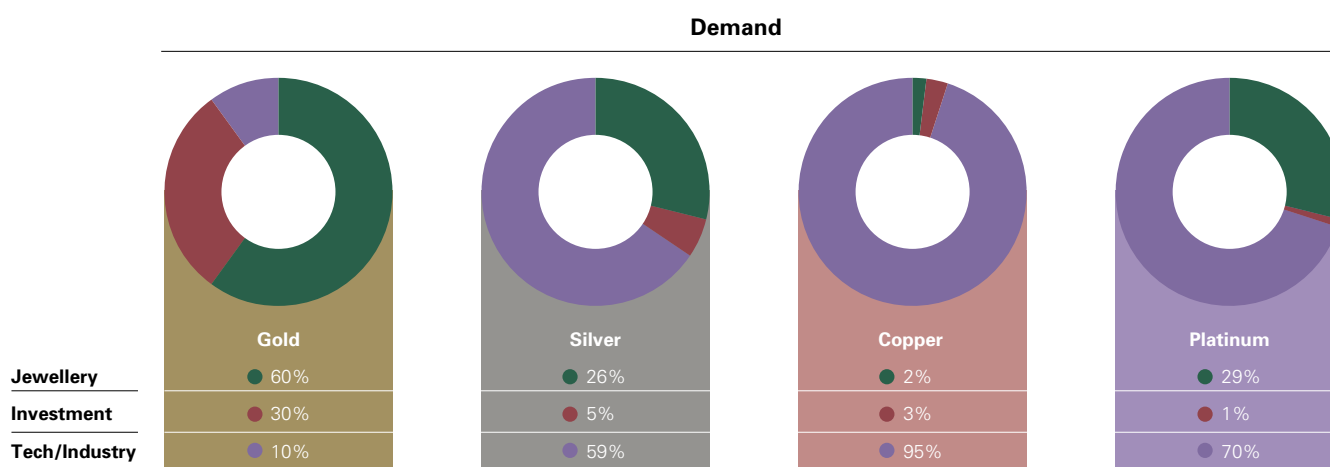
Not surprisingly, gold shares more characteristics with other metals – in particular precious metals – than it does with any of the other commodity categories. For example, beyond the obvious similarities of mine production, many metals can be reused or recycled for new fabrication, thus providing an additional source of supply. This is in stark contrast to energy, agricultural, and livestock commodities which are spent, consumed, or transformed but are rarely recoverable. Metals also tend to have longer shelf lives and are less susceptible to adverse storage conditions than agricultural commodities. They can also be transported without the need for specialised infrastructures such as in the case of oil or natural gas.

Gold differs from other commodities. Emerging economies not only purchase it as jewellery to fulfil cultural needs, but also invest in gold to protect against currency volatility, to move away from developed market currencies, and to offset the risk of market downturns.

The technology and industrial sectors account for a much larger portion of demand for most other metals, including silver (**Chart 24**), which makes these metals more exposed to the business cycle. Moreover, gold is one of the densest elements, facilitating storage when compared to other metals such as copper; it is not only the most noble of metals (resistant to corrosion and oxidation), but also the most malleable and ductile known.<sup>19</sup> Because gold is almost indestructible, all the gold that has ever been mined still exists in one form or another. Thus, recycled gold comprises a larger share of supply than for any other metal, allowing the market to absorb primary production shocks and shortages in a more effective way.

**Chart 24: Supply and demand for gold is more varied than other commodities. Gold demand around the world is driven by multiple purposes – as a luxury good, a component in high-end electronics, a safe-haven investment, and a portfolio diversifier**

Demand and supply by source (%) for selected metals in 2020\*



\*As of January 2021. Investment includes net central bank activity.

Source: DataStream, GFMS, The Silver Institute, Johnson Matthey, US Geological Survey, International Copper Institute, World Gold Council

<sup>19</sup> Eds Corti and Holliday, *Gold: Science and Applications*, CRC Press, 2010.



# Appendix IV: Supply

## Gold supply is limited

Gold supply is scarce; we estimate that there are approximately 201,296t of gold above ground, worth more than US\$12.2tn. Mine production adds approximately 3,300t per year, equivalent to an annual 1.8% increment (**Chart 25** and **Chart 26**).<sup>20</sup>

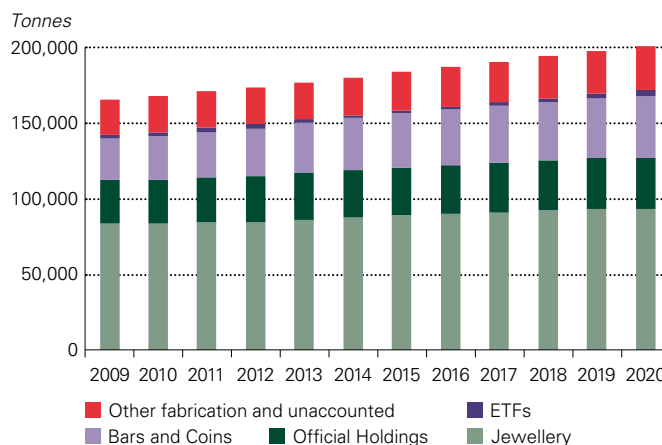
The gold market has two attractive features for investors. Gold's scarcity supports its long-term appeal. But gold's market size is large enough to make it relevant for a wide variety of institutional investors – including central banks.

While short-term supply constraints can affect many commodities, those constraints are typically based on variable factors such as production rates. Fewer supply shocks exist for gold because mine production is evenly spread across continents (**Chart 27**, p20), maintaining gold's low volatility compared to other commodities (**Chart 7**, p06). And although gold mining can be increased, ultimately a finite amount of the commodity remains in the ground.

Production also constitutes a differentiating factor for the gold market. The production of many commodities, including some of the most actively traded ones, tends to be highly concentrated in particular regions of the world. For example, 40% of oil is produced in the Middle East and Eurasia, platinum primarily comes from South Africa (73%), and silver is mainly mined in Latin America.

Gold, however, is more evenly distributed, with no single region accounting for more than 23% of production as of 2021. This diversification of production contributes to gold's lower volatility relative to other commodities, as it makes it less subject to geopolitical and other specific risks, such as weather variations resulting from climate patterns. The supply of gold comes from a combination of mined and recycled; mine production is evenly spread across continents, contributing to gold's low volatility relative to commodities.

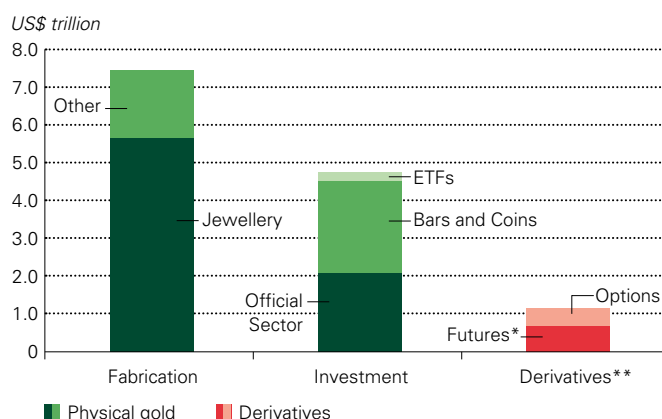
**Chart 25: Stock of gold has grown at a steady pace**  
Above-ground stock of gold (tonnes)\*



\*As of 31 December 2020.

Source: Metals Focus, Refinitiv GFMS, World Gold Council

**Chart 26: Gold has significant value in both physical and paper forms**  
Value of above-ground gold and gold derivatives\*



\* As of 31 December 2020.

\*\* Represents open interest in COMEX, TOCOM and OTC.

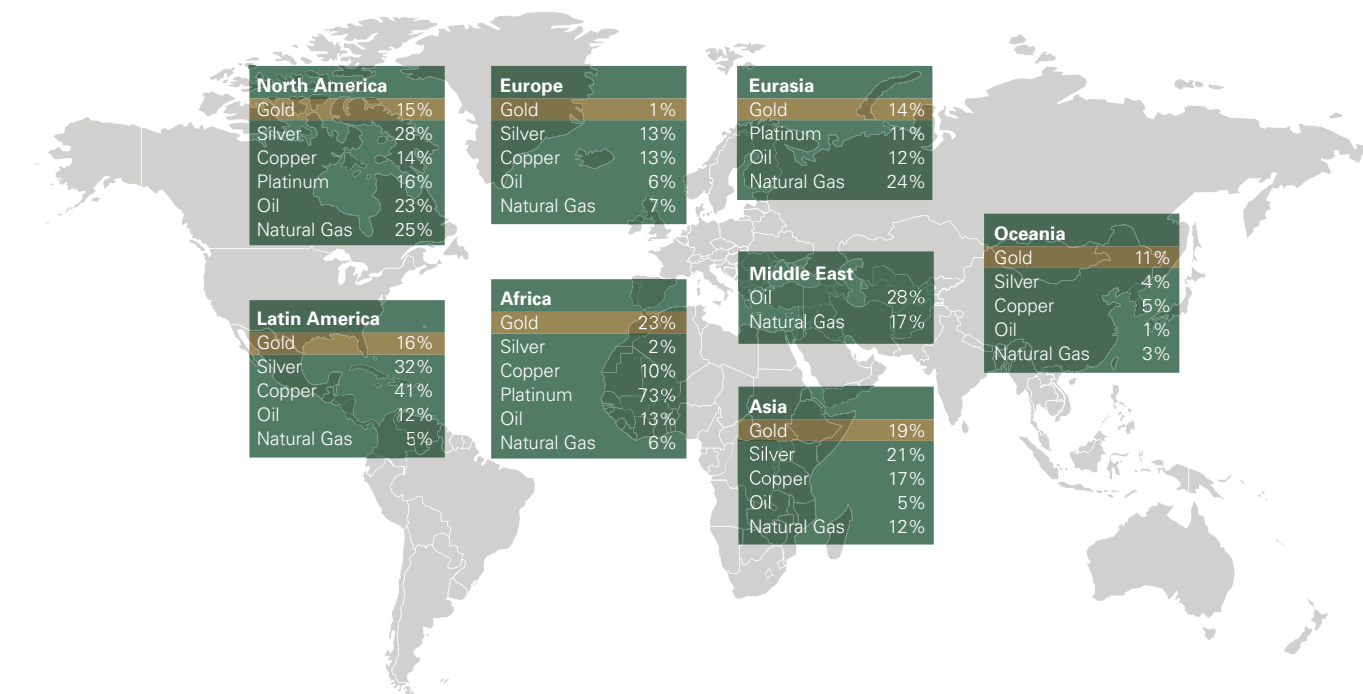
On Goldhub.com see: [Financial market size](#).

Source: Bank for International Settlements, Bloomberg, ETF company filings, ICE Benchmark Administration, Metals Focus, World Gold Council

20 Based on the December 2020 LBMA Gold Price PM and 2020 above-ground estimates by Metals Focus, Refinitiv GFMS, and the World Gold Council.

# Chart 27: Gold is produced globally and is evenly distributed

1-yr production locations from primary sources by region (%) for selected commodities\*



\*As of 31 December 2020. Regional breakdown excludes central bank demand due to data availability.

On Goldhub.com see: [Gold mine production](#).

Source: DataStream, GFMS, The Silver Institute, Johnson Matthey, US Geological Survey, International Copper Institute, CIA World Factbook, World Gold Council

# Additional reading

We include below a list of publications and links by the World Gold Council that discuss relevant aspects of gold for investors:

## Market and Investment Updates

- *Gold mid-year outlook 2021*, July 2021
- *Time to realise gold's true volatility*, May 2021
- *Beyond CPI: Gold as a strategic inflation hedge*, April 2021
- *Rates pose risks but also unlock opportunities for gold*, April 2021
- *Gold 2021 outlook*, January 2021
- *Gold and central bank reserve management during the COVID-19 pandemic*, May 2020
- *Gold supply chains show resilience amid disruption*, May 2020
- *Gold, an efficient hedge*, April 2020
- *Global gold-backed ETF holdings and flows*, Monthly
- *It may be time to replace bonds with gold*, October 2019
- *The impact of monetary policy on gold*, March 2019

## Gold Demand Trends

- *Q2 2021*, August 2021
- *Q1 2021*, May 2021
- *Full year and Q4 2020*, January 2021

## In-depth reports

- *Gold and cryptocurrencies: How gold's role in a portfolio differs from cryptos*, February 2021
- *The relevance of gold as a strategic asset*, February 2021
- *Gold and climate change: The energy transition*, December 2020
- *Global gold ETFs: A popular gateway to the gold market*, November 2020
- *Gold and climate change: Current and future impacts*, October 2019

## Gold Investor

- *The role of gold in a volatile world*, August 2020
- *Lombard Odier CIO Viewpoint: The case for holding gold*, August 2020

## Primers

- *Central banks*, March 2020
- *China's gold market*, March 2020
- *Gold prices*, May 2018
- *Mine production*, May 2018
- *Gold-backed ETFs*, May 2018
- *Recycling*, May 2018





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