BUY GOLD

LSE ECONOMIC HISTORY INVESTMENT COMPETITION

Josephine Precetti, Kevin Zhang, Maximilian Rudloff

Executive Summary

1) Gold has performed in the 3 macro environments most likely to emerge.

2) Gold's supply is more constrained than ever.

3) Gold is historically cheap relative to cash, bonds and equities.

4) Allocation to gold by investors and central banks is at record lows.

5) Gold offers valuable downside protection to a diversified portfolio.

6) Replies to our critics on inflation being transitory, gold's negative yield, and on alternatives like commodities & crypto.

Gold has performed in the 3 macro environments most likely to emerge

SCENARIO 1: STAGFLATION

- Gold is the best protection against the depreciation of paper currencies.
- Inflation seems here to stay as the effects of monetary policy 3.0 (coordination of MP & FP) begin to be felt.

SCENARIO 2: DEFLATIONARY DELEVERAGING

- Gold is one of the few assets that is nobody else's liability, which is desirable when defaults are common.
- Whilst bonds tend to do well in such environments, the current negative-rate environment reduces their upside.

SCENARIO 3: SUCCESSFUL REFLATION

- Whilst a well-managed reflation by the monetary and fiscal authorities is particularly beneficial to equities, gold also tends to benefit, although not always.
- A successful reflation seems unlikely given extreme & still mounting debt levels, monetary policy at the zero-lower-bound and rising external and internal conflict.

Annualized Real Returns *

	Cash	Bonds	Equities	Gold
Insufficient/Ineffective/Depression	**3.7%**	**7.2%**	**-8.6%**	**2.7%**
US 1929-1932	10.6%	13.9%	-22.0%	8.8%
JP 1994-2003	0.6%	3.7%	-3.1%	-0.2%
US 1936-1939	-0.2%	3.9%	-0.7%	-0.4%
Successful Reflation	**-1.4%**	**2.3%**	**11.9%**	**6.5%**
UK 1931-1936	1.8%	7.1%	13.5%	9.5%
US 1933-1936	-1.4%	3.9%	27.1%	14.4%
US 1940-1951	-4.7%	-2.4%	5.8%	-4.2%
UK 1947-1959	-1.6%	-1.5%	8.1%	-2.5%
US 2008-2012	-1.0%	4.6%	4.8%	15.2%
Stagflation	**-1.7%**	**-2.1%**	**-1.6%**	**21.7%**
UK 1970-1979	-2.6%	-2.5%	-1.7%	18.0%
US 1971-1979	-0.8%	-1.7%	-1.4%	25.4%

* For performance vs commodities, see slide 8.

Source: Bridgewater Associates

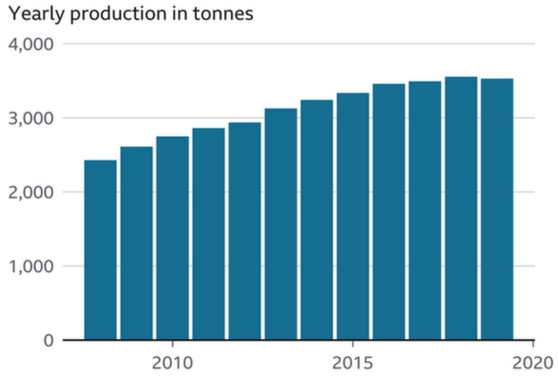
Under the scenario that appears most likely to us now, low growth and high inflation (stagflation), gold has historically been the best performing asset.

Gold's supply is more constrained than ever

Gold's supply: mining and recycling

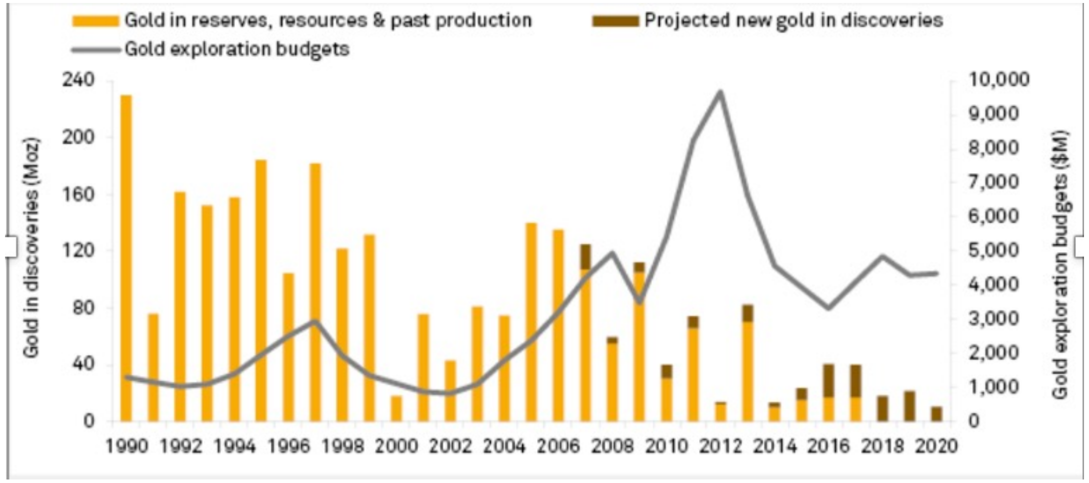
- Mine production accounts for the largest part of gold supply – typically, 75% each year. But annual demand requires more gold than is newly mined and the shortfall is made up from recycling.
- Reserves: gold that is economic to mine at the current gold price.
- Resources: gold that will potentially become economic to mine after further investigation, or at a higher price level.

Gold mining production has flatlined



- Historically, mining adds approximately 2,500-3,000 tonnes to the stock of gold p.a. with current levels heading back to trend.
- The 25 major gold deposits discovered in the last ten years (through 2019) amounted to 154.3 million ounces—only 7% of all the gold discovered between 1990 and 2019, which approximated 2.2 billion ounces.

No major discoveries in the past three years

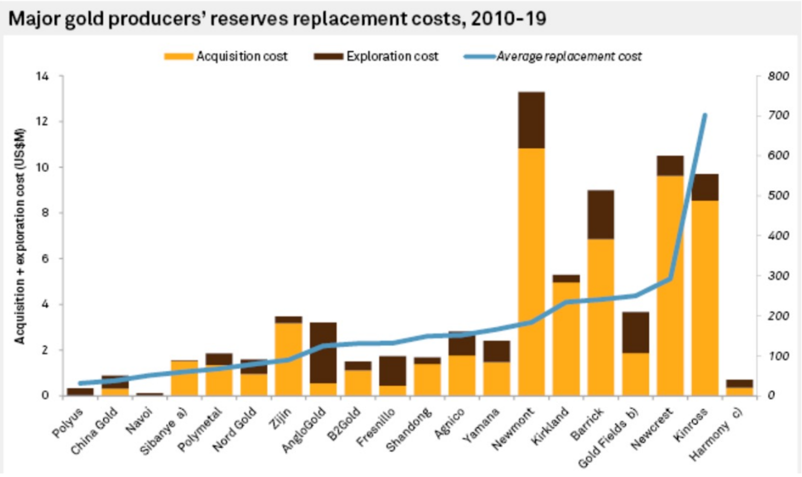


Source: S&P Global Market Intelligence

Reserve replacement costs are soaring

- Sixteen of the world's 20 largest gold miners saw their aggregate remaining years of production fall over the 2010-19 period with most replacements being acquisitions.

Production very much lags changes in the gold price leading to greater upside.



Source: World Gold Council

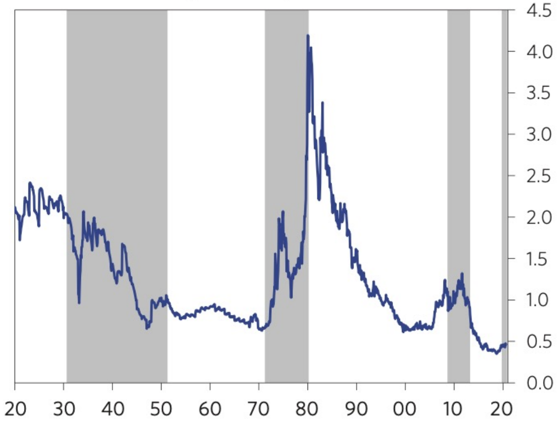
Gold is historically cheap relative to cash, bonds and equities

GOLD vs CASH

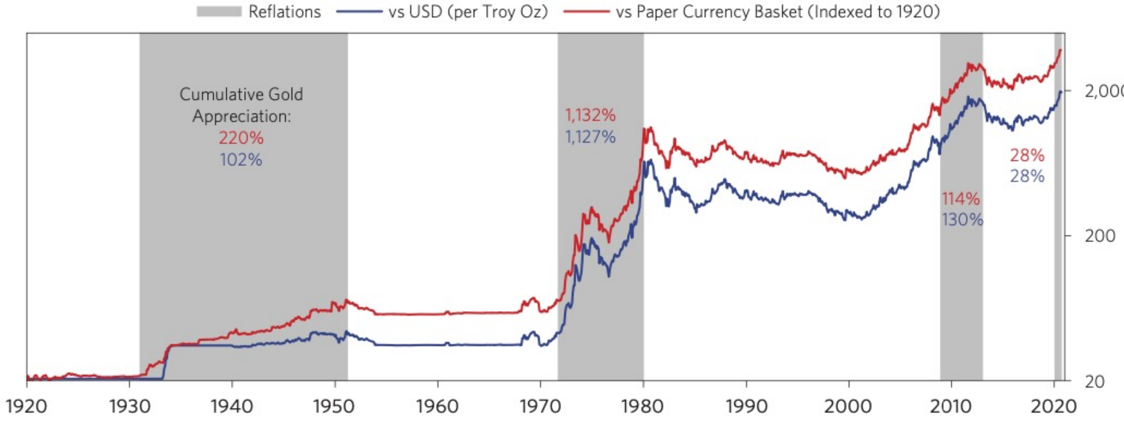
- Out of the extraordinary amount of monetary stimulus, very little has been invested in gold resulting in a historically low ratio in times of massive debt monetisation.

- Gold has rallied by a little less than 30% since the fiscal and monetary stimulus was announced, far less than historically.

Value of World Gold Stock / Money Printed by Central Banks



Gold Price vs Paper Currency



Source: Bridgewater Associates

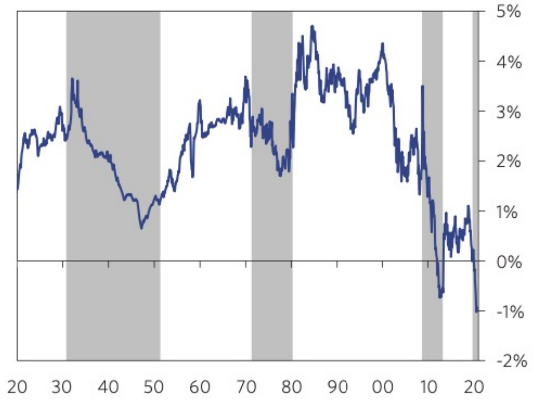
GOLD vs BONDS

- The real yield on bonds is now below 1% on about 80% of global debt.

- Gold is often criticised due to its nature as a negative-yielding asset but the fact that the real yield on most investment grade global bonds is below 1% dramatically reduces the opportunity cost of holding gold.

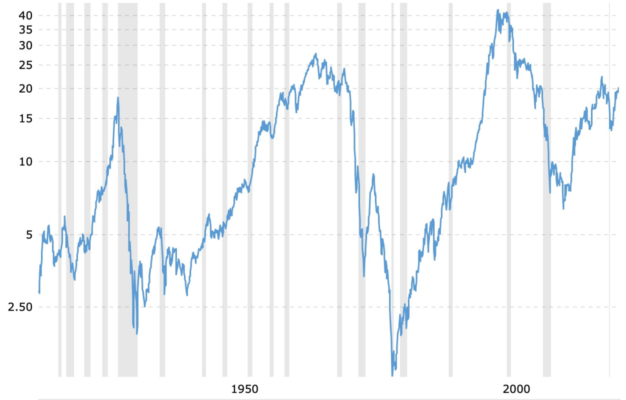
- Not only that, historically very low yields also reduce potential equity upside.

US 10-Year Real Yield

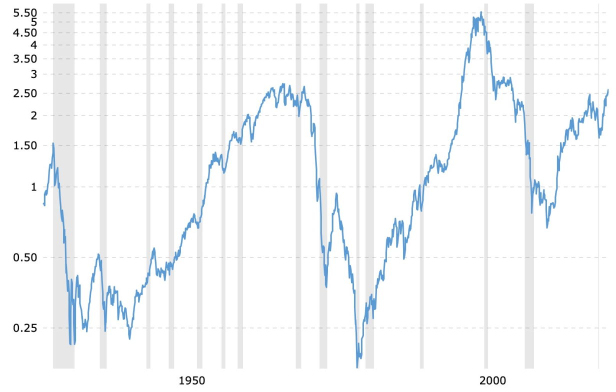


GOLD vs EQUITIES

Dow / Gold Ratio



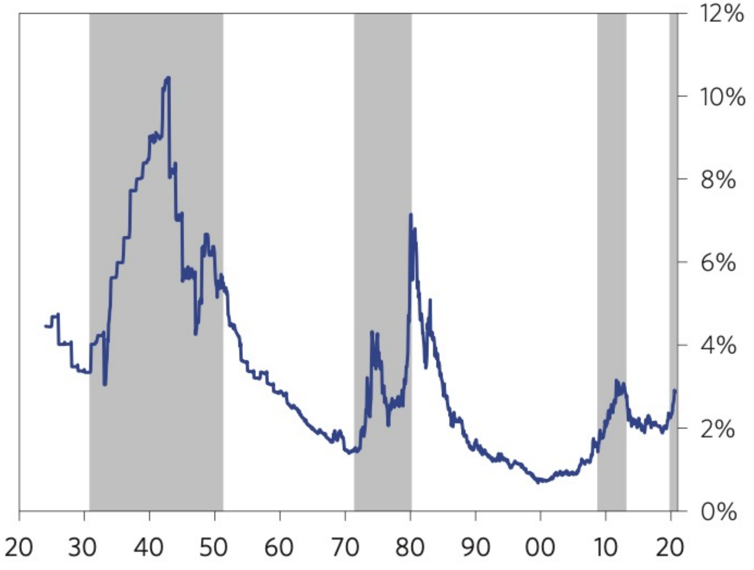
SP500 / Gold Ratio



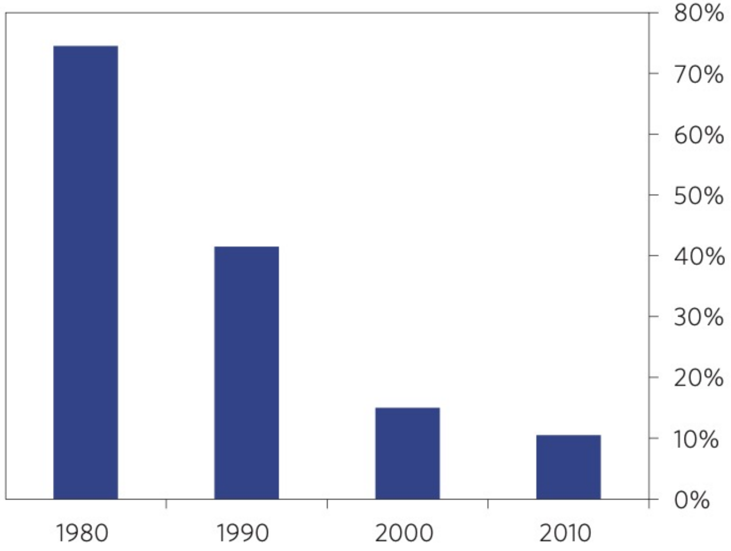
Source: MacroTrends

Allocation to gold by investors and central banks is at record lows

Gold Share of Global Assets (Equities, Debt, Gold)



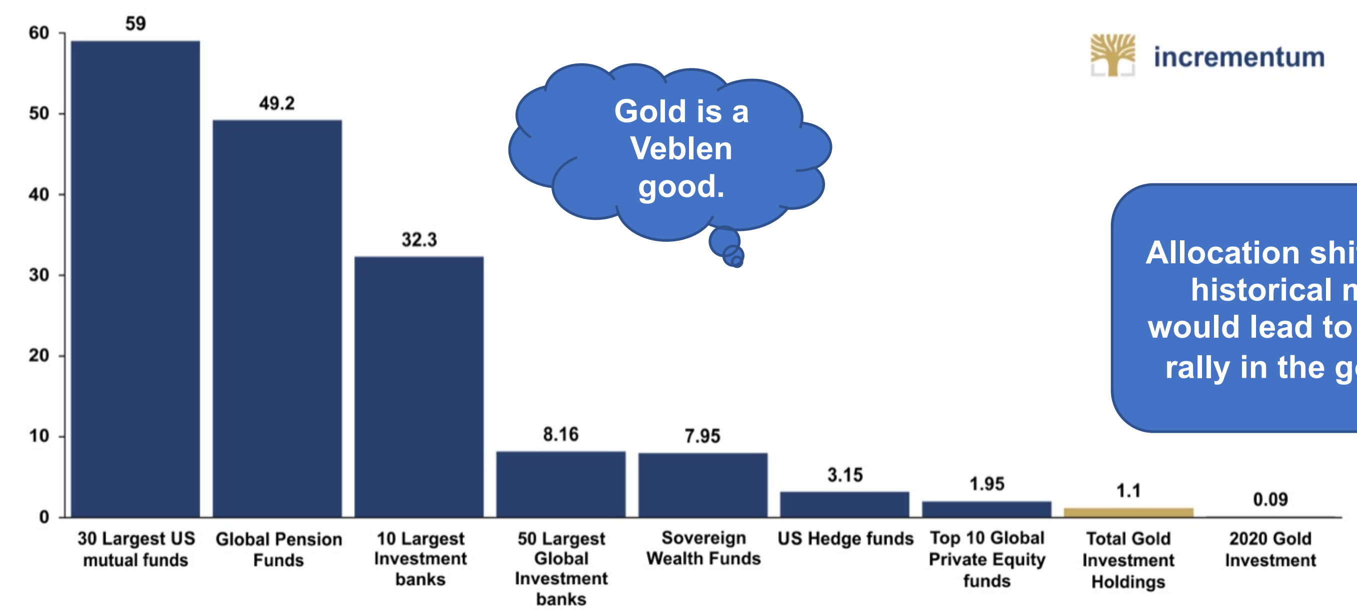
Central Banks Gold Allocation (% Total Reserves)



Source: Bridgewater Associates

The Gold Market Is Tiny in Comparison to Global Assets

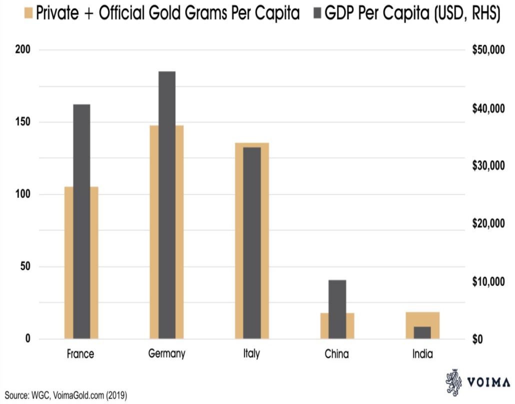
Gold Market in Comparison to Global Assets, AUM in USD trn., 2020



Source: Mutualfunddirectory.org, Willis Towers, relbanks.com, swfininstitute.org, barclayhedge.com, Investopedia.com, CPM, Incrementum AG

Gold is a Veblen good.

Allocation shifts back to historical medians would lead to a massive rally in the gold price.



Source: Voima Gold

Caclulations avaiable in Appendix B.

Gold as % of Central Bank reserves*	Gold Price (USD)
15% (+50%)	2,510 (+35%)
25% (+150%)	4,183 (+124%)
50% (+400%)	10,043 (+349%)

*Assuming current share is 10%.

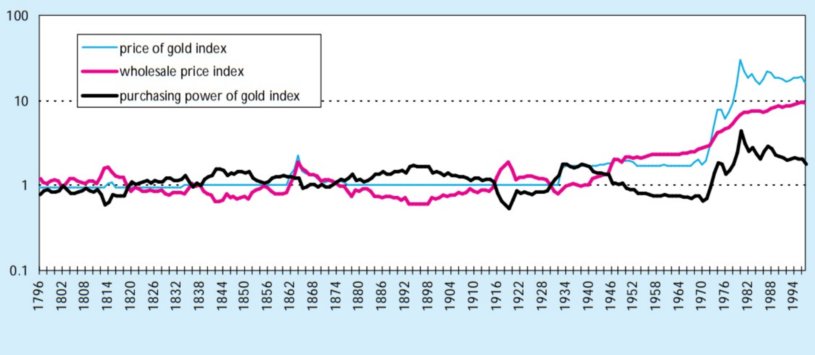
Gold as % of Institutional AUM**	Gold Price (USD)
3% (+50%)	2,510 (+35%)
5% (+150%)	4,183 (+124%)
10% (+400%)	10,043 (+349%)

*Assuming current share is 2%.

Gold offers valuable downside protection to a diversified portfolio

1. GOLD IS THE ULTIMATE STOREHOLD OF WEALTH

FIGURE 1.1
US: GOLD PRICE, WHOLESALE PRICES AND GOLD'S PURCHASING POWER 1796-1997.
Indices, 1930 = 1, logarithmic scale



Source: World Gold Council

Characteristics of a store of value:

Characteristic	Gold
Purchasing power	Gold has essentially maintained its purchasing power over more than two millennia.
Trustworthiness	Gold is trusted because it has an extremely long trackrecord, and it cannot easily be counterfeited.
Liquidity	Gold's fungibility and its widespread use ensure a highly liquid secondary market.
Portability	Gold is easy to transport.

2. GOLD IS GLOBALLY SOUGHT AFTER IN TIMES OF CRISIS

CASE STUDY: CHINA POST WWII

- Hyperinflation in the civil war period due to unrestrained issuance of the currency to fund the war effort.
- Gold performed extremely well against all kinds of assets, a performance we can witness throughout history in times of massive fiscal deficits, whether because of war or not.
- The Chinese people returned to a de facto gold (& silver) standard in these times of crisis.

TABLE 1*

THE SUPPLY OF MONEY AND WHOLESALE PRICES IN NATIONALIST CHINA 1937–47

Year	Total Money Supply†		Wholesale Prices‡	
	In Billions of CNC Dollars	Percentage Increase§	1937 = 100	Percentage Increase§
1937	3.6	....	100	....
1938	5.0	39	127	27
1939	7.4	48	214	68
1940	13.5	82	498	133
1941	25.0	85	1,258	153
1942	52.0	108	3,785	201
1943	104.0	100	12,556	232
1944	270.0	159	41,927	234
1945	1,472.0	445	158,362	277
1946	8,532.0	479	367,406	132
1947	55,000.0‖	544	2,617,781	612

* Source: A. C. Huang, "Inflation in China," *Quarterly Journal of Economics*, LXII (August, 1948), 564, 569.

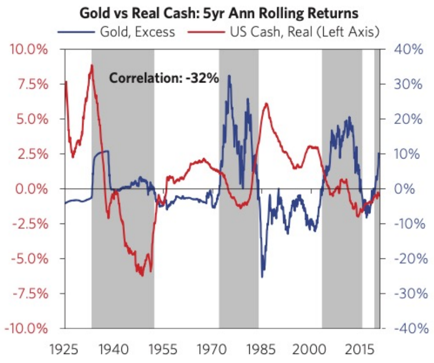
† Total note circulation of the four government banks before July, 1942, and of the Central Bank of China thereafter, plus total demand deposits of the four government banks.

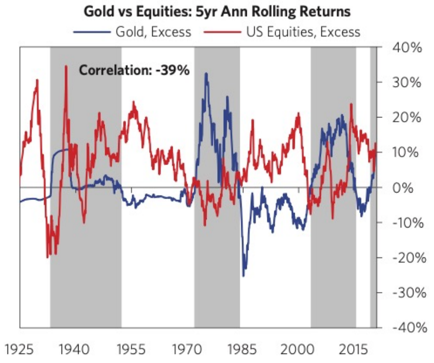
‡ Average of monthly prices.

§ Percentage increase from previous year.

‖ December estimated.

3. GOLD IS A GREAT DIVERSIFIER





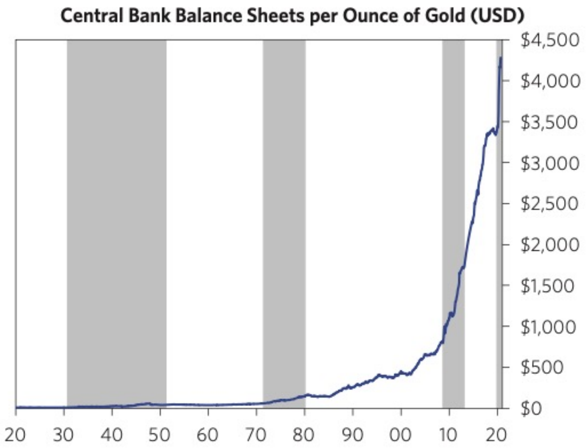
Historically, gold has been inversely correlated with cash and equities providing a successful diversification to portfolios wishing to hedge future cash returns (bonds) and equity returns.

Source: Bridgewater Associates

Replies to our critics: inflation, negative yield, commodities and crypto

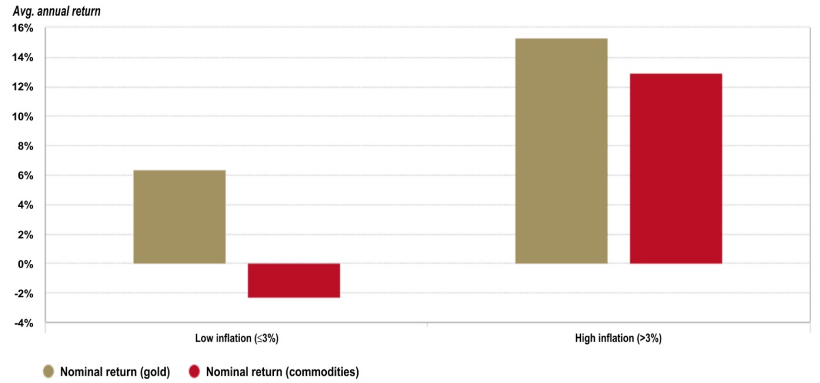
CRITICISM 1: INFLATION IS TRANSITORY

- Whilst central bank balance sheets expanded massively after 2008, QE only indirectly affected spending power.
- The coordination of monetary and fiscal policy (MP3) directly affects spending power by monetising government debt.
- When such spending does not create enough goods and services, it is inflationary.



CRITICISM 3: COMMODITIES ARE A BETTER INFLATION HEDGE

- Commodities are not only often outpaced by returns on gold in times of high inflation but they fail to offer any downide protection in times of economic stress, not to mention deflationary deleveragings.

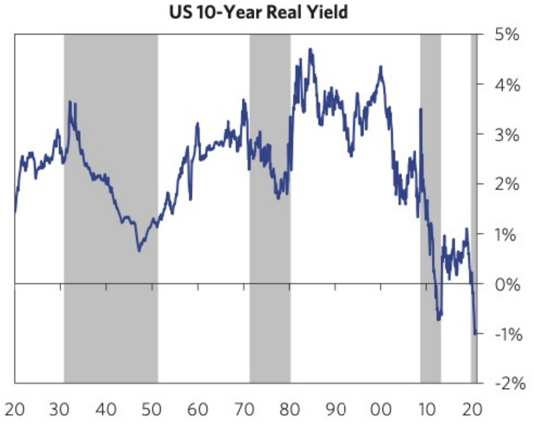


Sources: Bloomberg, ICE Benchmark Administration, World Gold Council; Disclaimer

*As of 31 December 2020. Based on y-o-y changes in US dollars for 'gold': LBMA Gold Price PM, 'commodities': Bloomberg Commodity Index and 'inflation': US CPI since January 1971.

CRITICISM 2: GOLD HAS A NEGATIVE YIELD

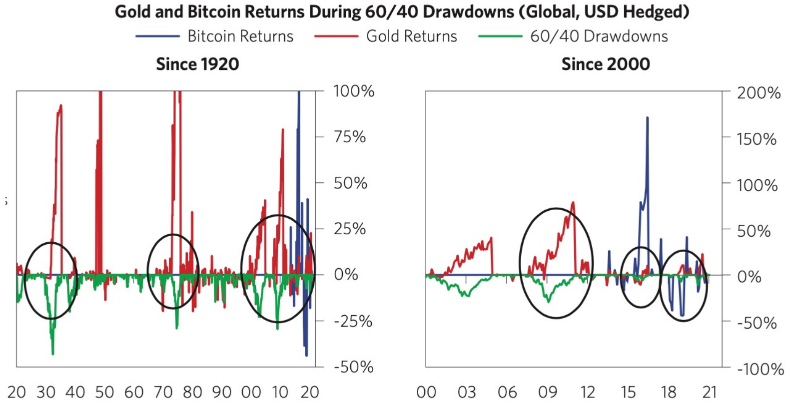
- The fact that the real yield on most investment grade global bonds is below 1% dramatically reduces the opportunity cost of holding gold.
- Historically very low yields also reduce potential equity upside.
- Gold-related equities can offer a positive yield to knowledgeable investors willing to stomach the volatility (see Appendix A).



Source: Bridgewater Associates

CRITICISM 4: CRYPTO HAS REPLACED GOLD

- Gold has been a reliable storehold of wealth since Biblical times whereas Bitcoin still hasn't proved that it is anything else than a vehicle for speculation.
- One can doubt crypto's attractiveness to Russia, China etc.



Source: Bridgewater Associates

Structuring: keep it simple and buy the largest gold ETF

STRUCTURING 1: INSTRUMENT

- Originally listed on the New York Stock Exchange in November of 2004, and traded on NYSE Arca since December 13, 2007, SPDR® Gold Shares is the largest physically backed gold exchange traded fund (ETF) in the world.

- It offers a means of participating in the gold bullion market without the necessity of taking physical delivery of gold.

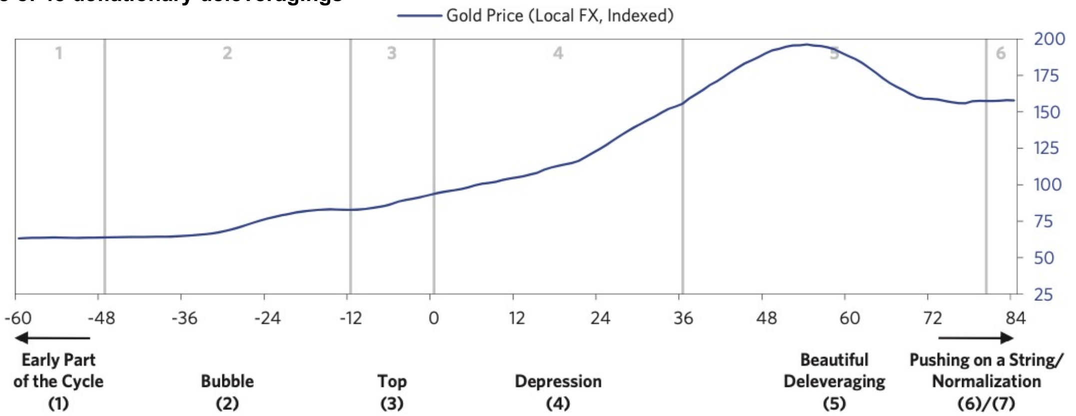
GLD Last Sale
US$**174.44**

Data source: fastmarkets.com
Data delayed 20 minutes.

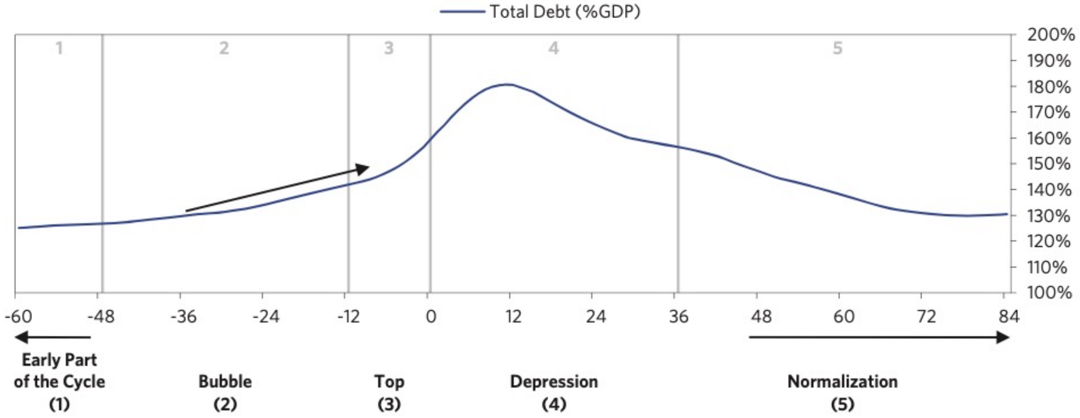
Gold spot price	**Total gold in trust**
Bid	Tonnes
US$**1,864.30**	**975.99**
Mid	Ounces
US$**1,864.50**	**31,379,162.69**
Ask	Value US$
US$**1,864.70**	**58,375,006,768.05**
Updated every minute	Updated every week day

STRUCTURING 2: TIME HORIZON

Average of 48 deflationary deleveragings



Average of 27 big inflationary deleveragings



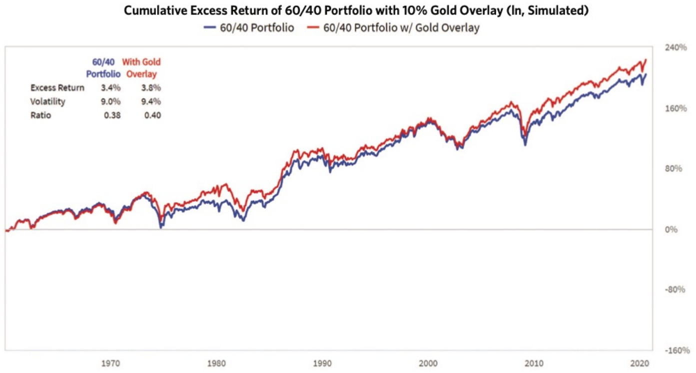
On average, it would seem that gold is particularly successful over a 6 year time-horizon.

Source: Bridgewater Associates

STRUCTURING 3: % ALLOCATION SIZE

- We advise that you structure your allocation size on the basis of your overall exposure to various other asset classes.

- Given the limited downside and the potential upside, we'd recommend a 25% allocation.



Source: Bridgewater Associates

Conclusion

1) Gold offers significant upside potential based on the study of history with the rally in its early innings, allocation to gold by investors and central banks at record lows, and a very low price relative to other assets.

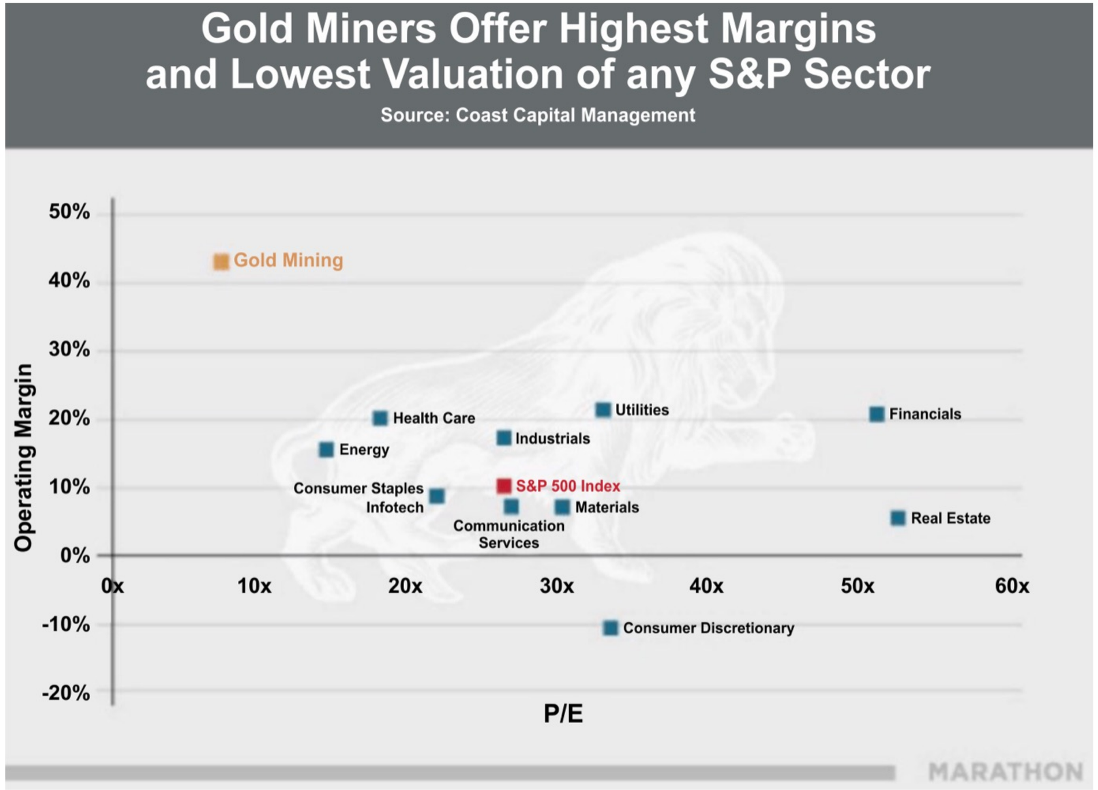
2) Gold also offers valuable downside protection to a diversified portfolio, especially in times of deflationary or inflationary debt deleveragings.

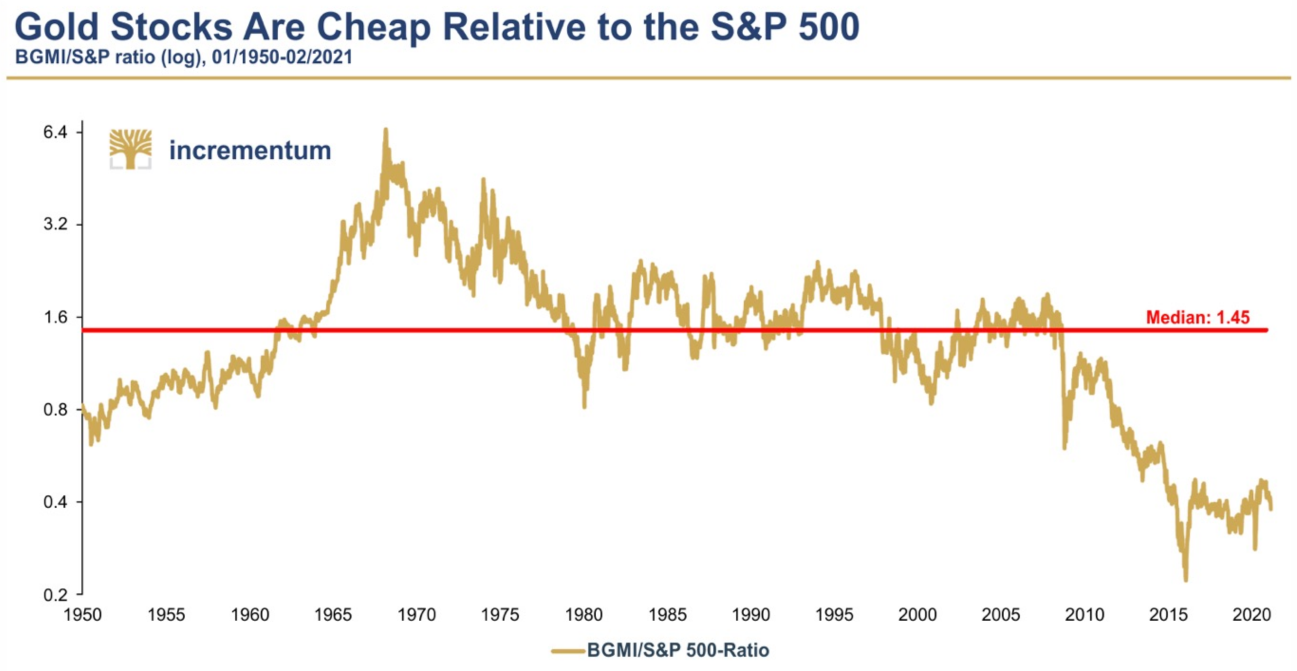
Buy the largest physically-backed gold ETF: SPDR Gold Shares (GLD ARCA)

Appendix A

Only for sophisticated investors with insight into the valuations of gold-mining shares

Gold mining shares seem to offer a compelling buying opportunity: dividend yield + substantial upside potential





Dividend yields of between 2 and 3% and average free cashflow yields of around 7%.

Sources: incrementum AG (top) and Coast Capital Management (bottom)

Appendix B

Calculations of allocation shifts:

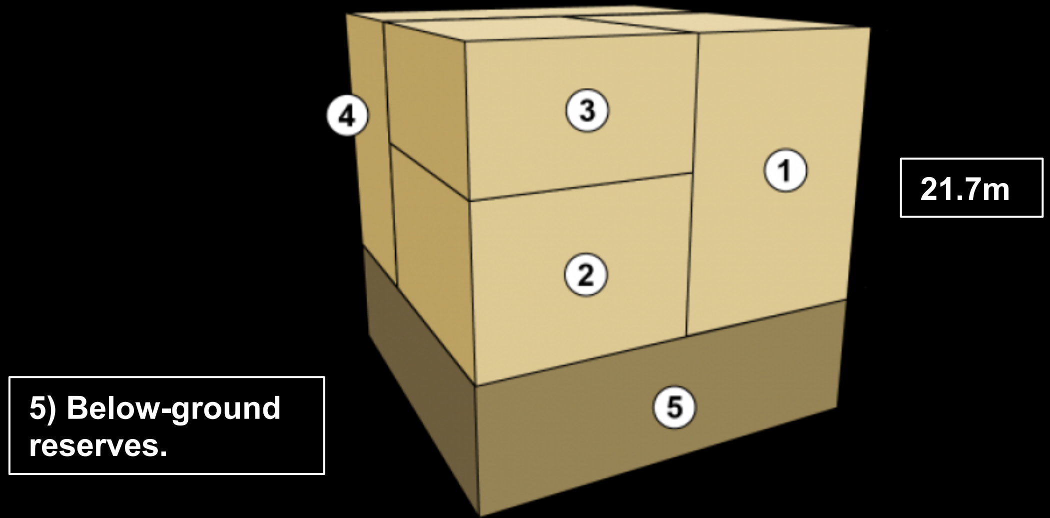
	15 %	25 %	50 %
Total reserves	12817	12817	12817
Share of reserves in gold	10 %	10 %	10 %
Reserves in gold	1281,7	1281,7	1281,7
Total gold market cap	11663	11663	11663
Reserves share of gold market	10,9894538283461	10,9894538283461	10,9894538283461
Increase gold in reserves	640,85	1922,55	5126,8
Total gold holdings	1922,55	3204,25	6408,5
Total gold holding check	1922,55	3204,25	6408,5
Implied gold market cap	17494,4999999999	29157,4999999999	58314,9999999997
Ounces of gold	6,969295824	6,969295824	6,969295824
Implied gold price	2510,22491250185	4183,70818750309	8367,41637500617
Current price	1865	1865	1865
Price rise	0,345965100537185	1,24327516756198	3,48655033512395

	3 %	5 %	10 %
Total AUM	103000	103000	103000
Share of AUM in gold	2 %	2 %	2 %
AUM in gold	2060	2060	2060
Total gold market cap	11663	11663	11663
AUM share of gold market	17,6626939895396	17,6626939895396	17,6626939895396
Increase gold in AUM	1030	3090	8240
Total gold holdings	3090	5150	10300
Total gold holding check	3090	5150	10300
Implied gold market cap	17494,5	29157,4999999999	58314,9999999999
Ounces of gold	6,969295824	6,969295824	6,969295824
Implied gold price	2510,22491250186	4183,70818750309	8367,4163750062
Current price	1865	1865	1865
Price rise	0,34596510053719	1,24327516756198	3,48655033512397

We assume that the market shares of gold stocks remain constant in line with Veblen Good’s theory although a substantial rise in price would most probably lead to lower demand from the jewellery and technology sectors. These are thus optimistic price calculations and should be taken with a grain of salt.

Q & A

THANK YOU FOR YOUR TIME



Josephine Precetti, Kevin Zhang, Maximilian Rudloff