GOLD, A PRECIOUS ASSET IN THE INVESTOR'S TOOLBOX

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For thousands of years, gold has been considered an object of beauty, a currency, a commodity, and an investment. In the past, the alluring metal has motivated entire societies, determined the fate of kings, driven explorers to extraordinary lengths to obtain it, and inspired some of mankind's greatest achievements. Yet as financial markets developed rapidly in the late 20th century, gold receded into the background, and many investors lost touch with the precious metal. Between 1933 and 1974 it was illegal for US citizens to own gold in the form of bullion. Similarly, in China from 1950, private ownership of bullion was prohibited until a series of reform started to take place in the 1990s. Access to metal as an investment was very restricted for many people across the world. Today, however, bullion investing is largely democratised. A key catalyst for this has been the development of Exchange Traded Products (ETPs) in 2003, created by ETF Securities (now WisdomTree). Physical backed ETPs now have close to US$143 billion[1] assets under management from 0 in 2003.

During the various Gold Standards and the Bretton Woods monetary regimes[2] , gold's natural behaviour was constrained by the monetary construct, and hence we have less data on gold's behaviour in an unconstrained environment than we do for equities and bonds. Points of access and liquidity have rarely been as high as they are today. Also, it is still a relatively niche investment. As such, its investment characteristics are poorly understood by the market at large. In this piece we explore some of gold's investment traits and see how it can fit into an investors' portfolio.

Gold characteristics

One factor that separates gold from other precious metals is that there are large above-ground stocks which can easily be mobilised. As a result of gold's liquidity, it often acts more like a currency than a commodity. But unlike most fiat currencies, its supply cannot be increased at the click of a few buttons following a monetary policy meeting. As such, it has a "super-haven" status. While central banks may expand their monetary base in the face of economic turbulence, gold cannot be debased in the same way. This makes gold historically an excellent hedge against geopolitical and financial market turbulence.

1 Source: WisdomTree, Bloomberg. As of 10th 2020. Value represents an all-time high at the time of writing

2 Monetary regimes, where currencies were fixed to the gold price. The Bretton Woods System started to break down in 1971.

Geopolitical hedge

Anecdotally we observe that following geopolitical shocks, gold performs well. Threats of war, disruptions to a political system, often lead to a surge in demand for gold. Our analysis shows that when the Geopolitical Risk (GPR Index)[3] has risen 2 standard deviations above its historic average (indicating heightened geopolitical tension), gold has risen 8.5% on average, while the S&P 500 Equity Index has fallen 6.6% in those months. In Figure 1, we look at some specific geopolitical shocks

FIGURE 1: GEOPOLITICAL SHOCKS AND GOLD

	Event date	Gold Price Change 1 year forward	Equity Price Change 1 year forward	Relative gold outperformance
Yom Kippur War	06/10/1973	47.4%	-42.0%	89.4%
Nixon's Resignation	09/08/1974	14.9%	4.4%	10.5%
9/11 Terrorist Attack	11/09/2001	16.9%	-15.1%	32.0%
Paris Bombings	13/11/2005	33.5%	17.6%	15.9%

Source: WisdomTree, Bloomberg. Gold is based on Bloomberg spot prices and Equities are based on the S&P 500 Index. ***Historical performance is not an indication of future performance and any investments may go down in value.***

Looking back, gold has behaved as a very powerful geopolitical hedge historically. In times of crisis, it helped cushion equity performance for investors with the foresight to own it.

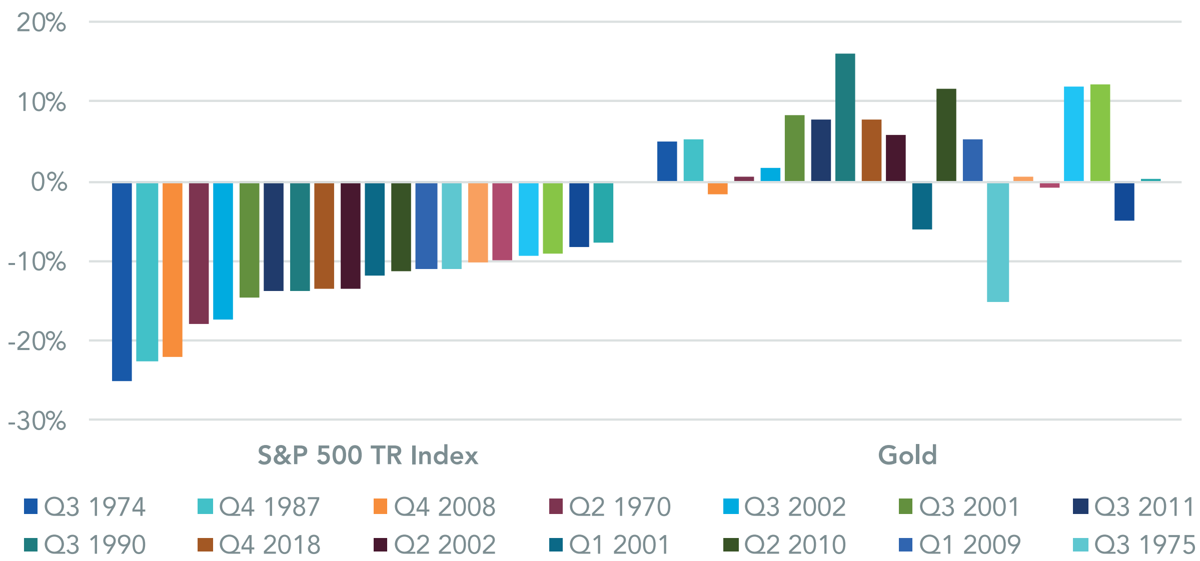
Financial hedge

Gold does not act as a safe haven asset only in periods of geopolitical turmoil. Investors flock to the yellow metal also in periods of financial turbulence and uncertainty.

Focusing on financial market shocks – specifically on equity shocks – if we look at the worst 20 quarters of equity performance since 1968, gold has outperformed equities in 19 of them. Moreover, gold has had a positive return in 15 of those quarters. In fact, on average, gold has outperformed equities by 17.3% in those 20 quarters.

[3] Dario Caldara and Matteo Iacoviello construct a monthly index of Geopolitical Risk (GPR Index) counting the occurrence of words related to geopolitical tensions in leading international newspapers. The Benchmark Index (GPR) uses 11 newspapers and starts in 1985. Data from 31/01/1985 to 31/01/2020. There were 15 months in which the series was 2 standard deviations above average.

FIGURE 2 : GOLD'S PERFORMANCE IN 20 WORST QUARTERS FOR S&P 500 SINCE 1967



	S&P 500 TR Index	Gold	Difference
Q3 1974	-25.2%	4.9%	30.0%
Q4 1987	-22.5%	5.4%	27.9%
Q4 2008	-21.9%	-1.7%	20.3%
Q2 1970	-18.0%	0.6%	18.6%
Q3 2002	-17.3%	1.6%	18.9%
Q3 2001	-14.7%	8.3%	23.0%
Q3 2011	-13.9%	7.6%	21.5%

	S&P 500 TR Index	Gold	Difference
Q1 2001	-11.9%	-6.1%	5.8%
Q2 2010	-11.4%	11.5%	22.9%
Q1 2009	-11.0%	5.4%	16.4%
Q3 1975	-11.0%	-15.0%	-4.1%
Q3 1981	-10.2%	0.6%	10.9%
Q3 1998	-9.9%	-0.8%	9.1%
Q1 2008	-9.4%	12.0%	21.4%

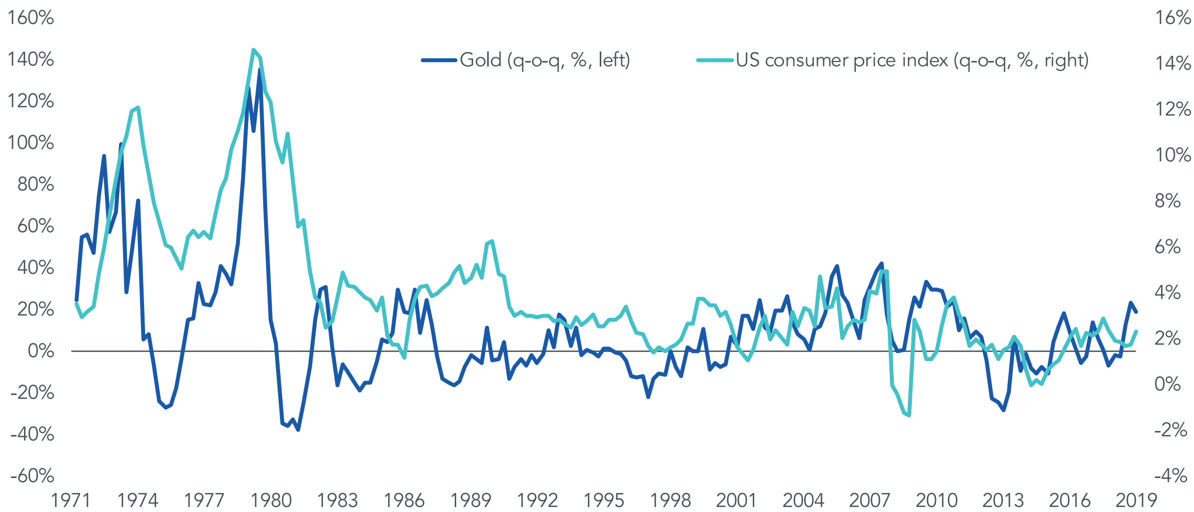
Source: WisdomTree, Bloomberg. In USD. From December 1967 to February 2020 using quarterly data. Gold is proxied by the LBMA Gold Price PM Index and S&P 500 is proxied by the S&P 500 Gross Total Return Index. ***Historical performance is not an indication of future performance and any investments may go down in value.***

Looking back, gold has again behaved as strong financial hedge historically. In periods when most risky assets were performing negatively, investors in gold have been rewarded with mostly positive performance that would cushion their portfolio.

Inflation hedge

Monetarists see inflation as a consequence of too much money chasing too few goods. That describes inflation as a demand shock (as opposed to a supply shock like an oil pipeline disruption that makes energy scarcer and hence more expensive). Lots of money sloshing around the system encourages people to buy more goods and services, driving up their price. As outlined earlier, gold can be the perfect antithesis to fiat currencies. When central banks, printing money at will, are driving the value of a currency lower by generating inflation, gold, with limited supply should hold its value and rise relative to the currency being debased. Figure 3 highlights that gold has been an effective hedge for inflation. It has been especially successful during periods of elevated inflation, like in the late 1970s and early 1980s. In WisdomTree's gold price model[4] inflation is one of four major variables we have identified that consistently explains gold price behaviour.

FIGURE 3: GOLD PRICE VS US INFLATION



Source: WisdomTree, Bloomberg. Period 1972 to 2019. "q-o-q": Quarter on Quarter. ***Historical performance is not an indication of future performance and any investments may go down in value.***

The fact that gold rises with inflation means that it is not just a "doomsday" asset – i.e. it doesn't just perform when cyclical assets are faltering. Strong economic activity that generates inflation often goes hand-in-hand with gold price gains. Therefore, gold does not have to be a drag on a portfolio in the "good times". Introducing gold into a portfolio can help immensely during "bad times" but doesn't have to be costly in "good times".

THE STRATEGIC CASE FOR GOLD IN NUMBERS

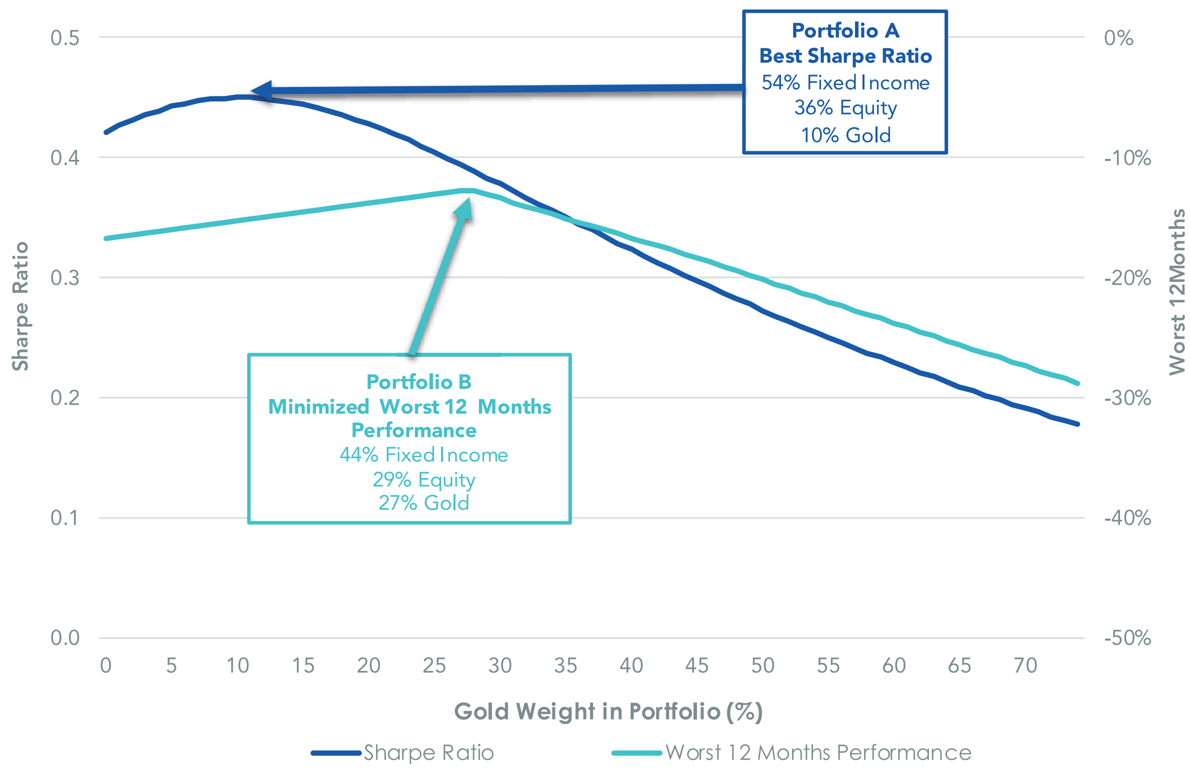
Geopolitical or financial crises are hard to predict. The coronavirus-driven performance that has helped gold to its highest level in seven years[5] could not have been predicted. This means that it is hard to be invested in gold during crisis without being invested in gold on a longer-term basis.

[4] How do we value gold

[5] As of 06 March 2020, source Bloomberg spot price.

In order to highlight the advantages and drawbacks of a strategic asset allocation to gold, we consider in Figure 4, a hypothetical 60/40 fixed income/equity portfolio ("the 60/40 Portfolio"). Our objective is to monitor the change in Sharpe Ratio, i.e. the average return earned in excess of the risk-free rate per unit of volatility, as well as the change in the worst 12 months performance, ie the performance of the portfolio over the worsts 12 month period. As a starting point we invest 60% in fixed income (US Treasuries) and 40% in equities (Global Developed Equities). That can be read in the chart at gold = 0 on the horizontal axis, where the long-term Sharpe Ratio (from January 1973 to December 2019) is 0.42 and the performance of the worst 12 months is -17%. We then studied the effect of adding gold to the portfolio on the long-term Sharpe ratio and on the worst 12 months performance. When gold is added to the portfolio, equities and bonds are reduced in a manner that leaves the ratio of bonds to equities 60:40.

FIGURE 4: A SMALL STRATEGIC ALLOCATION IN GOLD WOULD HAVE DELIVERED THE BEST SHARPE RATIO SINCE 1973



	60/40 Portfolio	Portfolio A	Portfolio B
Return	7.6%	7.8%	7.9%
Vol	6.7%	6.6%	7.9%
Sharpe Ratio	42.1%	45.0%	39.4%
Max Drawdown	-19.2%	-19.8%	-20.7%
Worst 12 Month	-16.8%	-15.3%	-12.8%

*Source: WisdomTree, Bloomberg. Period January 1973 to February 2020. Calculations are based on monthly returns in USD. The portfolio is rebalanced semi-annually. Equities are proxied by the MSCI World Gross Total Return Index and Fixed Income is proxied by the Bloomberg Barclays US Treasury Total Return Index. Y**ou cannot invest directly in an index. Above numbers include backtested data. Historical performance is not an indication of future performance and any investments may go down in value.***

In Figure 4, we observe with the dark blue line that adding gold benefits the Sharpe ratio (by lowering the volatility of the portfolio) up to a 10% allocation to gold (The "Portfolio A"). The Sharpe ratio rises from 0.42 to 0.45. Above 10% gold, the Sharpe ratio starts to decrease. That acknowledges that gold is not in of its own a low-volatility asset. It just behaves differently to other assets and hence complements a portfolio. Looking at the worst 12-month performance (light blue line) for each portfolio, it is clear that adding gold significantly reduces the downside risk of the portfolio. Adding 10% gold to the conservative portfolio reduces the worst 12 months performance from -17% to -15%. Adding 27% gold (The "Portfolio B") can cushion the bad times further, with the worst 12 months performance narrowing to -13%.

Coming back to Gold as a hedge, we mentioned earlier that Gold tends to cushion equity losses in financial crises or geopolitical shocks but that such tactical use is very tricky because of the uncertainty around the timing of such events. Hypothetical Portfolio A and Portfolio B illustrate very clearly that a strategic investment in gold did not in fact create performance drag in the portfolio. On the contrary, it even improved return and risk metrics. It means that over the last 45 years, investors could have held on their hedge (in this case gold) without having to pay any premium for that hedge and in fact would have benefitted financially from that hedge over the long term. For example, in 2008, Portfolio A would have lost 7.9% compared to 9.2% for the 60/40 Portfolio highlighting the benefits of Gold as downside protection. But astoundingly in 2009, Portfolio A also outperformed the 60/40 Portfolio 11.1% to 9.6% i.e. even in an early recovery/rebound year, gold did not create a drag on the portfolio.

Such impact on a portfolio can be explained by the diversifying behaviour of gold. In figure 5, looking at long term correlations, we observe that gold is uncorrelated to equities (through MSCI World TR Index here) but it is also very uncorrelated from fixed income (through US Treasuries). These correlations explain quite clearly why there are numerous advantages to adding gold strategically to a portfolio, trying to leverage the uncorrelated behaviour of gold as an asset.

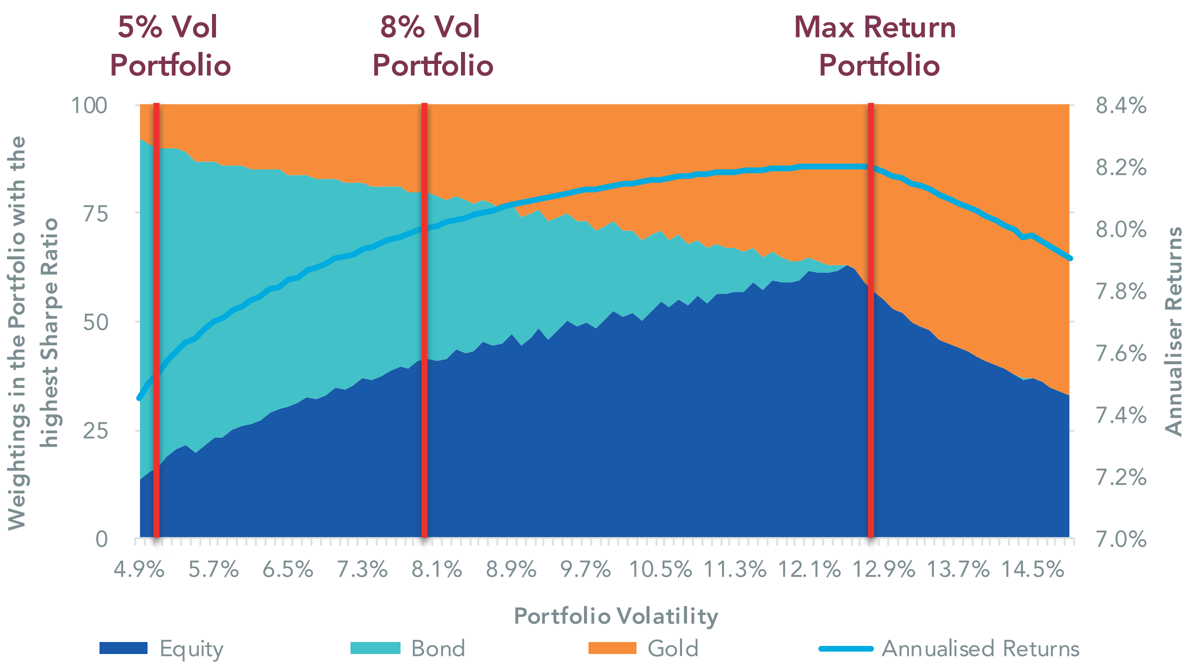
FIGURE 5: CORRELATIONS OF RETURNS FROM 1973 TO 2020

	60/40 Portfolio	Portfolio A	Portfolio B
MSCI World TR Index	100.0%	3.8%	11.3%
Bloomberg Barclays US Treasury TR Index		100.0%	5.2%
Gold			100.0%

Source: WisdomTree, Bloomberg. Period January 1973 to February 2020. Calculations are based on monthly returns in USD. Equities are proxied by the MSCI World Gross Total Return Index and Fixed Income is proxied by the Bloomberg Barclays US Treasury Total Return Index. ***You cannot invest directly in an index. Above numbers include backtested data. Historical performance is not an indication of future performance and any investments may go down in value.***

Continuing to look at the long-term impact of strategic investment in gold, we look for portfolios with the highest historical returns for each given level of volatility i.e. all the efficient portfolios. In Figure 6 we observe that gold is held strategically by all those efficient portfolios. What that means is that, for any level of volatility, the portfolios with no gold allocation would have underperformed a portfolio with gold. Efficient portfolios with volatility of around 5% held around 5% gold. For example, the "5% Vol Portfolio", i.e. the portfolio with 5% volatility that performed the best over the period had an 8% investment in Gold (with 14% Equity and 78% Fixed Income). Efficient Portfolios with higher volatility invested in even higher proportion of gold. The 8% Vol Portfolio for example would have held 20% of Gold. In fact, in hindsight, the portfolio that would have delivered the highest returns over the 45 years (the "Max Return Portfolio") is composed of 63% equities and 37% gold.

FIGURE 6: EFFICIENT PORTFOLIO WEIGHTING BY LEVEL OF VOLATILITY



	5% Vol Portfolio	8% Vol Portfolio	Max Return Portfolio
Return	7.5%	8.0%	8.2%
Vol	5.0%	8.0%	12.6%

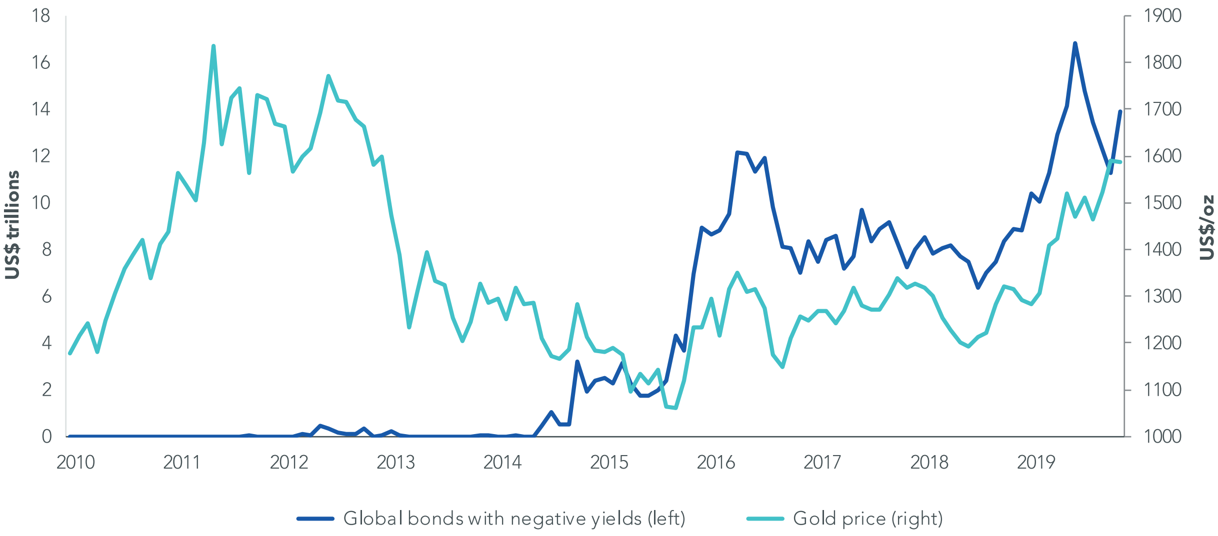
Source: WisdomTree, Bloomberg. Period January 1973 to February 2020. Calculations are based on monthly returns in USD. The portfolio is rebalanced semi-annually. Equities are proxied by the MSCI World Gross Total Return Index and Fixed Income is proxied by the Bloomberg Barclays US Treasury Total Return Index. ***You cannot invest directly in an index. Above numbers include backtested data. Historical performance is not an indication of future performance and any investments may go down in value.***

Figure 4, 5 and 6 really highlight the strategic case for holding gold on a long-term basis in a portfolio. At the end of the day, gold is a strongly diversifying asset which can perform well in both "bad" times and "good" times. Historically, its addition clearly translates into a better risk return profile for a portfolio while providing some defensiveness in financial and geopolitical crisis.

GOLD THE ONLY DEFENSIVE ASSET WITH NON-NEGATIVE REAL YIELDS

Gold has historically competed with government bonds as a source of safety in turbulent times and for a place in portfolios. However, while the metal has often been criticised for not having any yield, today, the zero yielding asset is faring better than assets with negative yields. Close to US$14 trillion, of a market of US$103 trillion bonds globally, are negative yielding. Arguably a bond bubble has been brewing for the past 30 years. If bonds become a source of a melt-down, rather than the antidote, gold would be all the more favoured. Gold prices have been rising in line with increasing negative yields since 2016. Despite a pull-back in negative yields in 2020, gold has continued to rise.

FIGURE 7: GLOBAL BONDS WITH NEGATIVE YIELDS



Source: WisdomTree, Bloomberg. Period February 2010 to February 2020. ***Historical performance is not an indication of future performance and any investments may go down in value.***

We know there is a good relationship between gold and real interest rates. We typically measure real rates using Treasuries Inflation-Protected Securities (TIPS). However, they have a short history of existence (1997). Over that period, we have only seen negative real rates on 10-year TIPS during the 2011-2013 period. That was a period of very strong gold price performance.

FIGURE 8: GOLD VS REAL RATED (TREASURY INFLATION-PROTECTED SECURITIES YIELD)

Source: WisdomTree, Bloomberg. Period: January 1997 to February 2020. ***Historical performance is not an indication of future performance and any investments may go down in value.***

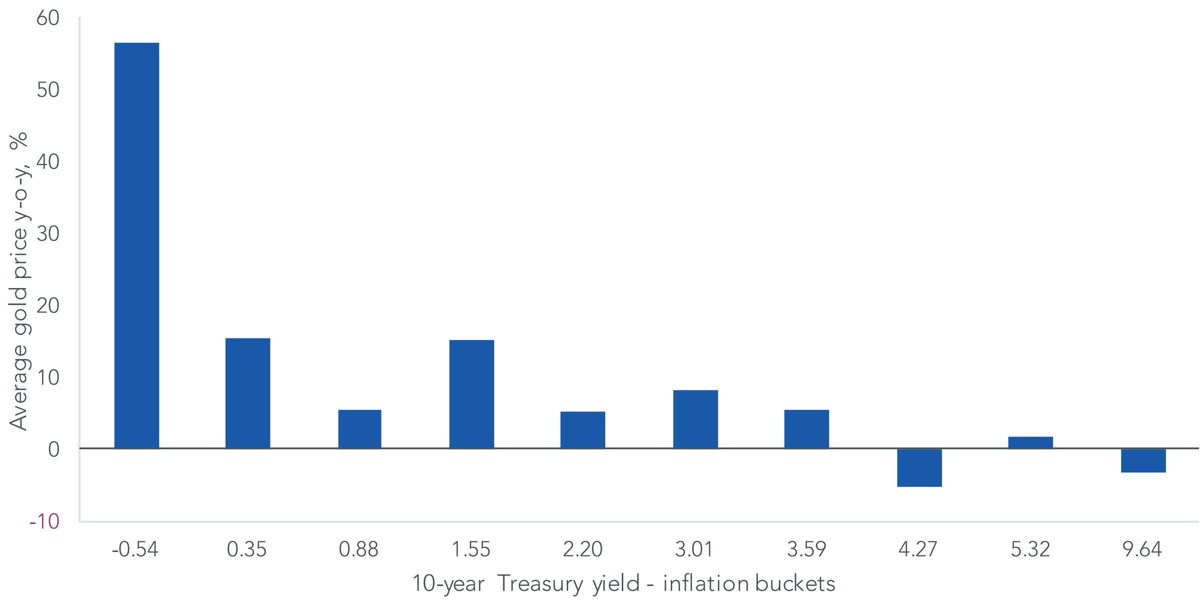
To look back further, we have created a synthetic real rates series which is nominal Treasury yields less current Consumer Price Index (CPI) inflation. It is conceptually different to the TIPS real rate (taking the difference between a nominal rate and TIPS real rate gives you a market break-even inflation expectation over the 10-year horizon rather than current inflation). However, we can see in Figure 9 (which is a scatterplot of this synthetic real rates and gold prices growth), that this series seems to have decent relationship with changes in gold prices. Lower real yields appear associated with higher gold prices going back to 1972. Looking at the top left quadrant of the graph we see many observations where real rates are negative and the 12-month gold performance is very high. In fact, the lower left quadrant is almost empty with very few observations where the real rates are negative and gold performance is negative. Interestingly, looking at lines of best fit, the slope appears steeper when rates are negative than when rates are positive. This indicates that gold prices rise more when rates are negative. So, in addition to the strategic case for gold, there is a strong tactical case for gold in a negative rate environment.

FIGURE 9: US 10-YEAR YIELD LESS INFLATION VS GOLD (1972-2019)

Source: WisdomTree, Bloomberg. Period: January 1972 to January 2020. "y-o-y": Year-on-year. Lines of best fit shown on chart are calculated via Excel function (labelled linear in key above). We use a separate line of best fit for the positive real yield observations and negative real yield observations. ***Historical performance is not an indication of future performance and any investments may go down in value.***

We know that the number of observations of negative real rates are lower than those of positive real rates. In an attempt to not get visually distracted by the smaller sample of negative rates, in Figure 10 below we present the same data, but show the average gold price change by real rate buckets, with roughly equal observations in each rate bucket (approx. 58 observations in each bucket). The chart highlights that in the bucket with real rates below -0.54%, gold prices performed very strongly (56% year-on-year on average). Whereas in the bucket with real rates between 5.32% to 9.64%, gold prices fell on average by 3.2%.

FIGURE 10: GOLD PERFORMANCE IN DIFFERENT REAL RATE ENVIRONMENTS



Source: WisdomTree, Bloomberg. Period: January 1972 to January 2020. ***Historical performance is not an indication of future performance and any investments may go down in value.***

With real rates today at -0.49% based on 10-year TIPS and -1.50% based on the synthetic measure (4 March 2020), if history is any guide to the future, gold could be in for a period of strength. Gold's role in a portfolio could become more important in a period of protracted low interest rates. If the secular trend of lower real rates continues, then maybe what was seen as a tactical reason for being in gold becomes a strategic reason.

Gold has a strong record of being a hedge against geopolitical, financial and inflationary shocks. Gold in this regard can be seen as a potential insurance asset. Shocks, by their very nature, can't be predicted. So, investors using gold as strategic hedge are likely to have to allocate before shocks occur (i.e. it is a long-term holding). Gold having historically performed well in low rate - particularly negative real interest rate – environments and considering that we are currently in a very low bond yield environment, gold may be benefitting from tail winds going forward that could also help tactical allocation in portfolio. However, since gold has asymmetric traits, the metal does not have to be drag on portfolios in good times. As a diversifier, it helps improve Sharpe ratios of a portfolio of bonds and equities. Our analysis highlights that investors can continue to get improvements to Sharpe ratios with up to a 10% allocation of gold (from a base of 60% bonds and 40% equity). On some risk measures, the portfolio continues to improve up to 27% in gold. Gold performs well in low interest rate environments and hence there is a tactical case for the metal in today's environment. If the secular trend of lower real rates continues that could add to the strategic case for gold in a portfolio.

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