



Gold: Savior or Fraud

October 2019

Setting the Record Straight

- Despite the common perception gold provides protection against high and increasing inflation, gold actually has performed best in deflationary environments.
- Although evidence suggests gold offers protection during periods of stock market distress, historically it loses its luster during severe market corrections.
- On the other hand, gold and expected real interest rates have a statistically strong relationship; but, historically, market participants have had a poor track record predicting real rates.
- While there will be periods when gold provides attractive returns, the inconsistency and unpredictability of these periods dissuade us from including gold in our capital market allocations.

Upon rising nearly 20 percent over the past 12 months, gold prices are making headlines and sparking intrigue among investors. While investors may be tempted to associate increased equity volatility (as measured by the VIX Index) to gold's recent price appreciation, we are reminded of the popular quip *"It ain't what you don't know that gets you into trouble. It's what you know for sure that just ain't so."* In this paper, we examine what role gold should play, if any, in a portfolio.

A Brief History

Gold's role in commerce is a history of monetary systems. During the Roman Empire, under a gold-backed monetary regime, the Romans used gold and silver coins to facilitate trade, support capital projects and fund military expeditions. Eventually these costs accumulated relative to the finite supply of silver and gold entering the empire. In response, Roman officials devalued their currency by decreasing the purity of the coins to increase the supply in the market. It was effective to a point. Eventually the diminished coin quality led to hyperinflation, contributing to the demise of the Roman Empire.

There are numerous other cases of monetary regimes vacillating from gold- to fiat-based systems. Throughout regime changes, a common theme emerged: the balance between monetary flexibility and trust in a monetary system.

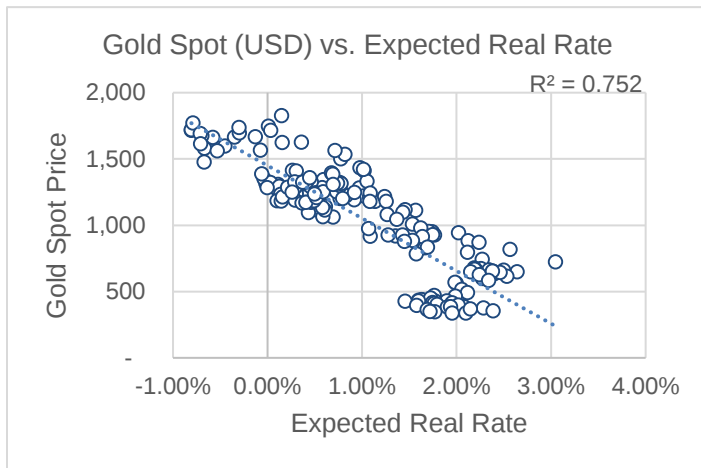
Fast forward to the immediate aftermath of World War II, allied nation leaders tied foreign exchange rates to the U.S. dollar and pegged the U.S. to gold at \$35 per ounce. That monetary arrangement, The Bretton Woods System, lasted until 1971 when U.S. President Richard Nixon closed the gold window. Since then, global policymakers have generally favored the floating rate fiat currency arrangement in place today.

Unlike other assets whose returns are driven primarily by their ability to generate cash flows, the price of gold is driven primarily by supply and demand. Since the supply of gold is relatively static, the demand for gold is the primary driver of price appreciation. The rule-of-thumb is the demand for gold rises when prospects for economic growth weaken, such as high inflationary or volatile market environments, so we put this assumption to the test since it is key to the price of gold.

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Putting Gold to the Test

To test this, we looked at real interest rates expectations as a barometer of economic growth. Falling real interest rate expectations indicate investors expect a lower rate of return from financial assets. If common perceptions hold true, gold prices should be negatively correlated with expected real interest rates. A correlation of one means



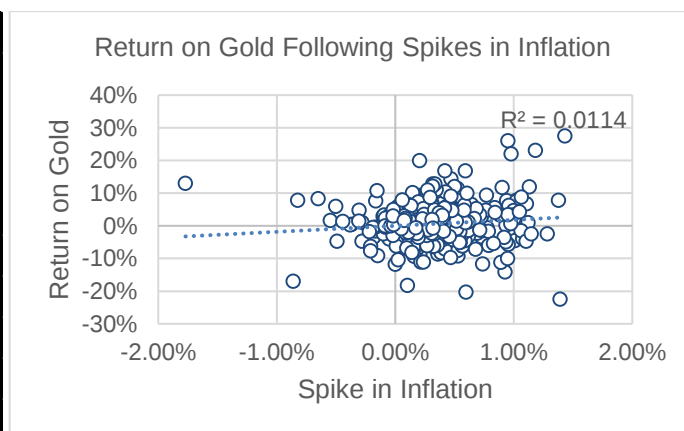
the two move in perfect unison, negative one means they are opposites and zero means they have no statistical relationship with one another. As the graphic to the left shows, the correlation between the two is -0.87, a significant negative relationship.

So, we can indeed trust that investors are more interested in gold when economic growth expectations taper. However, real interest rate expectations often deviate materially from realized real rates. In fact, 65 percent of realized real rates cannot be explained by expected real interest rates. If investors cannot comfortably rely on real interest expectations, let's examine how gold performs in market environments commonly associated with poor economic growth.

Proponents of gold argue its price should rise during periods of high and rising inflation, suggesting inflation reduces the purchasing power of a currency relative to a scarce resource. This makes sense, conceptually. If this is true, the correlation between the rate of inflation¹ and the return of gold² should be sufficiently positive. Between January 1976 and June 2019, the rate of inflation and the return of gold had a correlation of 0.0765. This suggests a positive, but immaterial, relationship between inflation and gold.

Separating the data into different inflationary regimes produced similar results. The table below shows returns from gold were low during periods of high, stable and low inflation. In contrast to the popular narrative gold hedges against inflation, historical data shows the opposite. Even during periods of high inflation, defined as more than 4.0 percent year-over-year, gold prices generated lackluster returns. On average, gold actually performed best during periods of deflation. If we instead consider spikes in inflation³, historical data, as seen in the scatter plot below, still does not support the view that gold serves as a hedge for inflation.

Performance of Gold in Different Inflationary Environments				
Inflationary Environment	Number of Periods	Average Rate of Inflation	Average Return of Gold	Correlation of Gold and Inflation
High ⁴	152	6.94%	0.96%	0.1317
Stable ⁵	241	2.91%	0.26%	0.0213
Low ⁶	115	1.42%	0.65%	0.0303
Deflation ⁷	14	-0.64%	1.78%	-0.0281
Total	522	3.66%	0.59%	0.0765

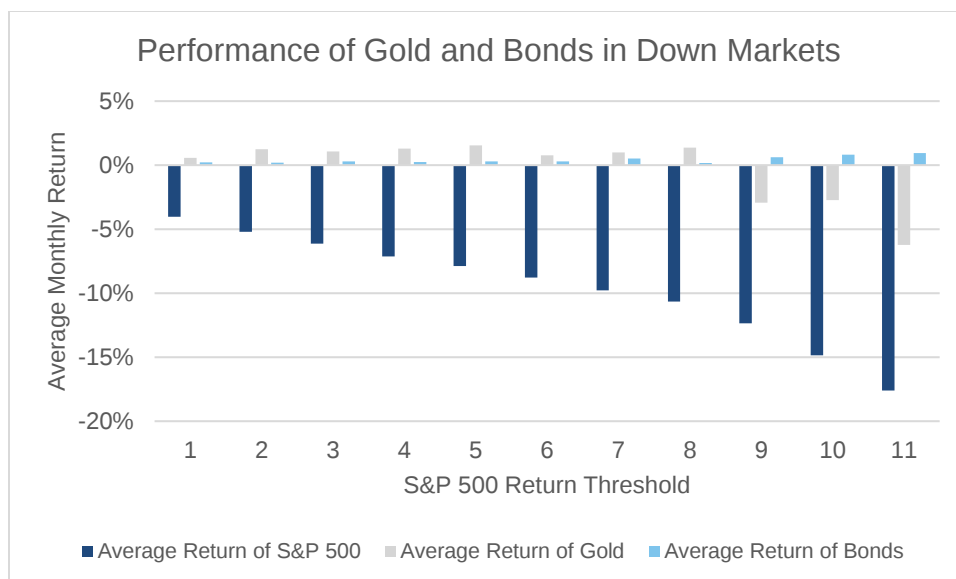


Our analysis shows gold performed better during deflationary periods, which historically coincide with increased volatility and equity market drawdowns. This brings us to another common argument in support of gold. Gold functions as a safe-haven asset during periods of market distress. As markets come under pressure, gold should function as insurance and prices should appreciate or remain stagnant.

Another common claim for gold's role in an investor's portfolio is to act as a safe-haven asset that protects in down markets. To assess gold's functionality as a safe-haven asset, we turn our focus to drawdowns on the S&P 500 Index. Focusing on those months the S&P 500 Index generated negative returns, gold proponents would expect gold prices to rise or remain static. Mathematically, if this assumption were to hold, the correlation between the returns from gold and the S&P 500 Index should be negative during these periods. The table displayed to the right shows the monthly correlation of returns from the S&P 500 Index, gold and the Barclays Aggregate Bond Index for varying levels of market drawdowns.

S&P 500 Return Threshold	Number of Periods	Correlation with Gold	Correlation with Bonds
-1%	148	-0.0299	-0.0506
-2%	100	0.0956	-0.1120
-3%	75	0.0908	-0.0802
-4%	55	0.1575	-0.1328
-5%	43	0.2380	-0.1283
-6%	31	0.2073	-0.1633
-7%	22	0.2747	-0.1418
-8%	16	0.3853	-0.3751
-9%	9	0.1312	-0.3025
-10%	5	0.2500	-0.3344
-11%	3	-0.4788	-0.4965

As the graph below shows, gold tends to hold up well relative to stocks across all equity drawdown periods observed. However, while gold returns were positive for equity drawdowns within an eight percent drawdown, gold prices actually fell during more severe pullbacks. Paradoxically, some proponents of gold are in favor of owning the asset as a hedge against these more severe downturns. On the other hand, bonds produced positive returns across these environments, indicating they provided better insurance against market drawdowns.



Gold, with its rich history as a monetary surrogate, remains a polarizing asset. With many heuristic biases around gold, it is advantageous to step back and focus on the data. Our analysis shows investors are indeed more interested in gold when economic growth expectations deteriorate.

Expectations, however, only sparingly align with reality. There is little evidence gold either protects against inflation or provides insurance against market drawdowns. We do not deny there will be times when gold performs admirably and appears to be an attractive allocation within a portfolio. However, these periods either do not align with common perceptions or are difficult to forecast. For those reasons, we do not recommend a strategic allocation to gold. Instead, we recommend constructing a traditional portfolio of fixed income and equities along with an allocation to real assets, as discussed in our piece, [Why Invest in Real Assets?](#)

¹Defined as the year-over-year change in the seasonally-adjusted Consumer Price Index (CPI) for All Urban Consumers: All Items.

²Defined as the month-over-month change in the gold spot price.

³Defined as the month-over-month change in the seasonally adjusted CPI for All Urban Consumer: All Items.

⁴Defined as a year-over-year change in CPI for All Urban Consumers: All Items of greater than 4%.

⁵Defined as a year-over-year change in CPI for All Urban Consumers: All Items of between 2% than 4%.

⁶Defined as a year-over-year change in CPI for All Urban Consumers: All Items of greater than 0% and 2%.

⁷Defined as a year-over-year change in CPI for All Urban Consumers: All Items of less than 0%.