Managing Portfolio Risk with Gold

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Managing Portfolio Risk with Gold Bullion

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The World Gold Council is a non-profit trade association whose mission includes demonstrating how gold can play a useful role in today's portfolio management. Most investors have a fixed perception of gold and may not be aware of gold's ability to control portfolio risk. In fact, many investors are surprised to hear that gold is helping a number of portfolio managers to solve some interesting problems. It is helping managers meet their fiduciary responsibilities when used as a risk management tool. The calculations and methodology in this presentation are based on authoritative outside sources.

The Hedging Instrument: Gold

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There are some basic characteristics of gold that make it such a unique asset. First, it is primarily a monetary asset, and partly a commodity. As much as two thirds of gold's total accumulated holdings relate to "store of value" considerations. Holdings in this category include: central bank reserves, private investments, and high-caratage jewelry bought primarily in developing countries as a vehicle for savings. Thus, gold is primarily a monetary asset.

Less than one third of gold's total accumulated holdings can be considered a commodity: jewelry bought in Western markets for adornment, and gold used in industry.

The distinction between gold and commodities is important. Gold has maintained its value in after-inflation terms over the long run, while commodities have declined.

Some analysts like to think of gold as a "currency without a country'. It is an internationally-recognized asset that is not dependent upon any government's promise to pay. This is an important feature when comparing gold to conventional diversifiers like T-bills or bonds which, unlike gold, do have counter-party risk.

Determinants of the Gold Price

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Econometric studies indicate that the price of gold is determined by two sets of factors: "supply" and "macro-economic factors".

Supply and the gold price are inversely related. Besides new mining supply, the available supply of gold in the market is made up of three major "above-ground sources": (1) reclaimed scrap, or gold reclaimed from jewelry and other industries such as electronics and dentistry; (2) official, or central-bank, sales; (3) gold loans made to the market from official gold reserves for borrowing and lending purposes. In recent years, the growth in gold supply has come from "above-ground" sources.

In the case of "macro-economic factors", the U.S. dollar tends to be inversely related to gold, while inflation and gold tend to move in tandem with each other. Also, high real interest rates are generally a negative factor for gold. Overall, the impact of the above determinants on the gold price is judged to be neutral-to-slightly-positive at this time.

Effective Portfolio Diversifier

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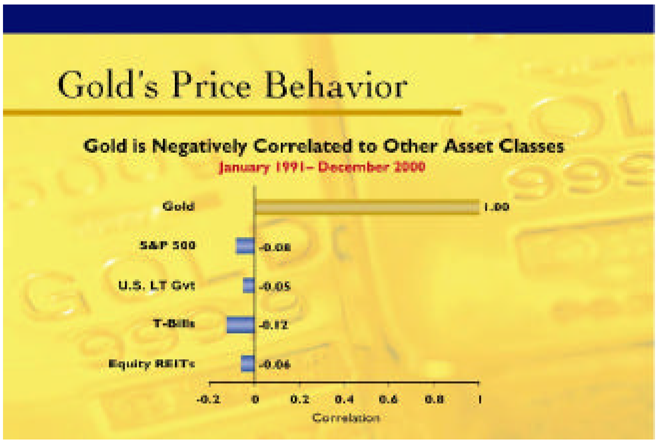
This statement summarizes the usefulness of gold in terms of "Modern Portfolio Theory," a strategy which is utilized by many investment managers today.

Using this approach, gold can be used as a portfolio diversifier to improve investment performance.



Gold is Negatively Correlated to Other Assets

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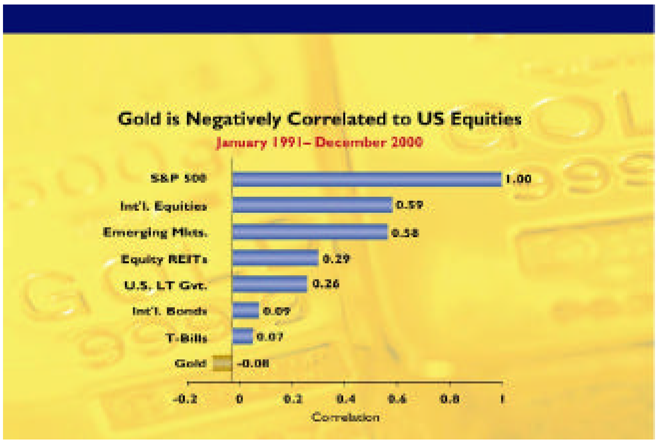
This chart demonstrates why gold is such a helpful diversifier.

The bar charts above display the correlation between gold on the one hand, and various asset classes on the other. Gold is negatively correlated with most other asset classes. For example, whenever long-term bonds decline, there is a tendency for gold to go up. Whenever equities decline, there is an even greater tendency for gold to go up.



Gold is Negatively Correlated to US Equities

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In this chart we can see that gold is more negatively correlated to U.S. stocks than any of the other asset classes that are typically used as portfolio diversifiers (such as bonds, emerging market equities, and REITS). This makes gold an especially effective diversifier for equity-oriented portfolios.

Reversion to the Mean

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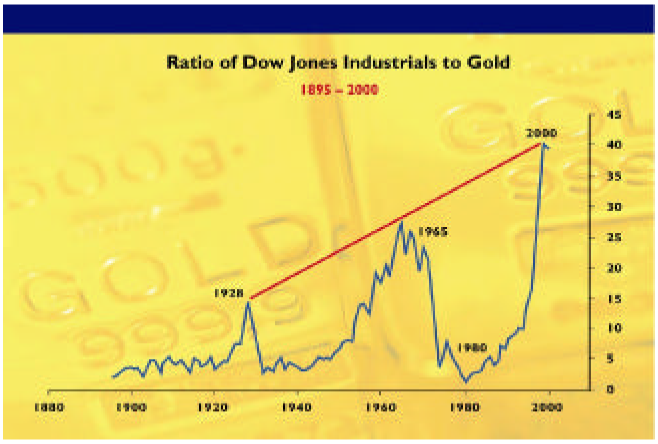
Let's examine the relationship between gold and equities a little further. Historically, the price of gold has generally moved in the opposite direction to equities. In particular, the price of both equities and gold tend to "revert to the mean" at certain points in history. During the recent years of strength in the stock market and weakness in the gold price, many portfolio managers have had reason to question what role, if any, gold can play in a portfolio's performance.

Yet consider…the stock market has been unusually high compared to its mean, as this chart illustrates, and the gold price has been unusually low compared to its mean. Therefore, the upside potential for the gold price is perceived to be greater than the downside potential.

Recently it appears the stock market has had some reversion to the mean. The key question is whether the market will continue to revert to the mean.



Ratio of Dow Jones Industrials to Gold

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This chart displays the ratio of the Dow Jones Industrial Average to the gold price since 1885. The ratio of these investments have experienced marked peaks and valleys during major market cycles -- peaking once in 1928, a second time in 1965, and a third time in 1999. Since then the ratio has turned downwards. Again the question remains: will the ratio continue its decline?

Key dates:

1896	Time of financial turmoil, and speech by Williams Jennings Bryan on "Cross of Gold".
1932	Bottom of stock market cycle.
1980	End of inflationary boom, resulting in the erosion of the value of financial assets.

Gold Makes Portfolio Returns More Predictable

There are three main problems associated with traditional methods of asset allocation:

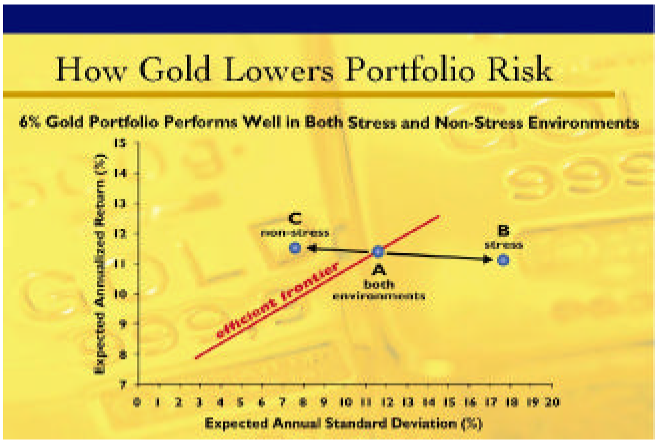
(1) Historical returns are <u>not</u> normally distributed
Almost all asset allocation studies that use mean-variance optimization assume that the returns of the assets are normally or log normally distributed and consequently can be described by their mean and standard deviation. Yet, historical returns are <u>not</u> in reality normally distributed.

(2) Financial Stress
Traditional asset allocation often does not work during periods of financial stress when it is most needed.

(3) Unanticipated Inflation
Traditional portfolios do not perform well during these periods.

The inclusion of gold in equity portfolios addresses these three problems. Gold has been shown to reduce both negative skewness (that is, portfolio underperformance) and the number of outliers, by making the portfolio's distribution more "normal" (point 1, above). Also, gold improves portfolio performance during periods of stress and unanticipated inflation (points 2 and 3).

Overall, gold can be used to create portfolios that will have less "surprise" and perform more in line with the investor's expectations created by the asset-allocation process.



Effective Diversification During "Stress" Periods

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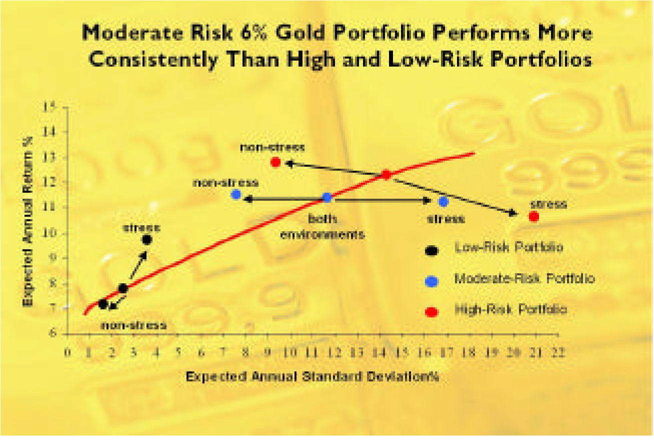
Traditional methods of portfolio diversification often fail when they are most needed – that is, during periods of financial "stress" (instability). On these occasions, the correlations and volatilities of return for most asset classes (including traditional diversifiers such as bonds and alternative assets) increase, thus reducing the intended "cushioning" effect of a diversified portfolio. Consequently, the portfolio does not perform as originally expected, leaving investors disappointed.

This chart depicts an "efficient frontier" curve (red line) using a new optimization procedure which recognizes that periods of stress do in fact occur. The portfolios included on the efficient frontier contain the following asset classes: large cap equities, international equities, Treasury bills, long-term Treasury bonds, small cap equities and gold. The assumption made in developing this efficient frontier is that there is an equal likelihood of either a stress or non-stress period occurring. Notably, gold appears in many portfolios along the efficient frontier, ranging from very conservative, low-risk portfolios (mainly bonds and T-bills) to aggressive, high-risk portfolios (mainly equities).

Next, Monte Carlo simulations of future returns were conducted for stress and non-stress periods for a variety of portfolios on the efficient frontier to test the consistency of their performance.[1] Based on the results of these simulations, a portfolio with a moderate expected risk exposure of 11.6% (standard deviation) and an expected annual return of 11.4% was selected (point A) for two reasons. First, this portfolio had relatively consistent results during both stress and non-stress periods. Second, the expected returns were near the level of returns for a typical 60% stock/ 40% bond portfolio. This efficient portfolio includes a 6% allocation to gold.

When stress conditions were simulated on the 6% gold portfolio, the return (point B) was 11.1% (only 50 basis points lower than the expected return of 11.4% for point A). Similarly, when non-stress conditions were simulated (point C), the return was 11.5% (10 basis points higher than expected in point A). Thus, the selected portfolio with 6% gold weighting (gold line) had generally similar returns regardless of whether the environment was stress (point B) or non-stress (point C) – a desirable result.

[1] A Monte Carlo simulation using GARCH techniques was conducted assuming the selected portfolio shown in *chart 1* experienced 5,000 5-year periods of stress and non-stress.



Moderate-Risk Portfolio Performs Consistently Well In Both Environments

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This chart compares the performance of efficient portfolios with both higher and lower levels of expected risk and return during both stress and non-stress environments. All of these portfolios contain gold. The low-risk portfolio (in lower left corner) had a lower return and volatility during non-stress periods, but a higher return and volatility during stress periods. On the other hand, the high-risk portfolio (in upper right corner) had a higher return and lower volatility during non-stress periods, but a lower return and higher risk during stress periods. High-risk investors are therefore, more likely to be disappointed during stress periods. The moderate risk portfolio with 6% gold, performs closest to the expected returns during both stress and non-stress periods. This portfolio is therefore less likely to result in unpleasant surprises for the investor.

How to Buy

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Gold bullion is available through brokerage firms and banks throughout the U.S. Investors can choose the method of purchase and storage that best meets the particular institution's needs. Investors can take direct possession (physical delivery) or they can buy through a storage program. In the latter case, the broker, banker or dealer uses a secure, third-party depository to hold and protect the gold for a small fee.

With a storage account, the investor holds title to a specified amount of gold, which gives him/her the right to demand physical delivery at any time. With most storage accounts, the investor is allowed to buy and sell gold over the phone and receives a complete record of all transactions for tax and portfolio management purposes. Investors holding a minimum of 10,000 oz. of bullion also have the option of earning a modest return through leasing programs. Like other interest rates, gold lease rates vary based on market circumstances and the length of maturity of the financial instrument.

The gold-linked instrument combines most of the attributes of an investment in gold with all the advantages of a bond. A major attraction lies in the broad range of structural variables that can be incorporated. An important benefit of the gold-linked instrument is that it enables the investor to buy gold with an income. The variables that can be built into the structure are such that it can be tailor made to meet the needs of practically any investor.

Conclusion

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Why Gold Now?

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Why is now a particularly appropriate time to be looking at gold? Much of the U.S. stock market has weakened, and the inflation rate has stopped declining. Meanwhile, the gold price has begun turning up from a very low level.

Accordingly, portfolio managers are focusing more on "preservation of wealth" strategies rather than aggressively seeking capital gains as they have done in recent years. They are increasingly recognizing the need to diversify their portfolios into alternative assets, including gold. To hold all one's investments in conventional assets such as stocks and bonds is to run the risk of experiencing bad portfolio performance due to the unbalanced structure of the portfolio.