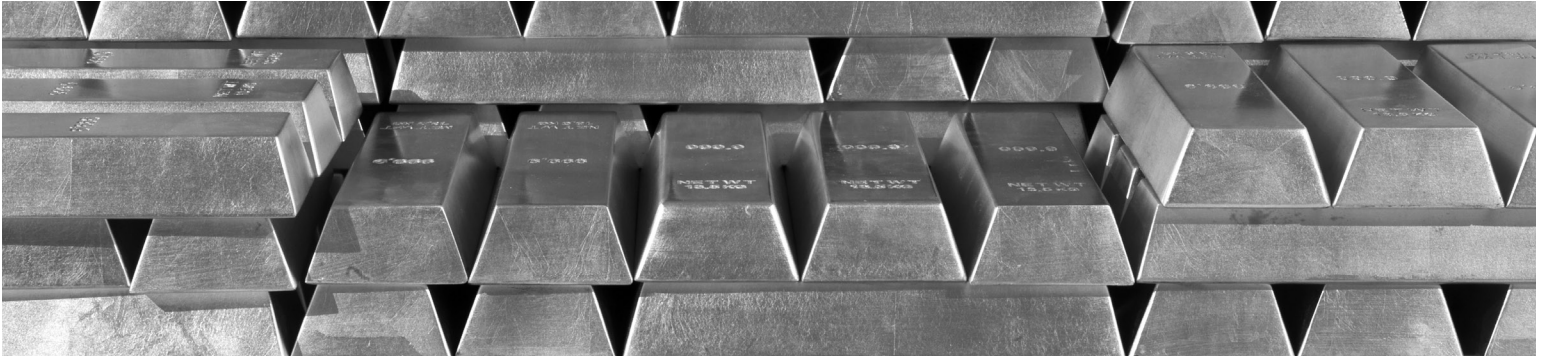


Gold as a Hedge Against Left Tail Risk



The economic turmoil and market collapse of 2008-9 have provoked widespread investor concern about *left tail risk*—low-probability/high-severity events that can cause an investment portfolio to drop more than three standard deviations in value. Many institutional investors now seek ways to reduce their vulnerability to left tail risk through non-traditional hedging strategies.

In this paper we explain why gold, in its role as a “real” or universal currency, may be an effective way to hedge a long-only equity portfolio against tail risk. We explain gold’s historical power as a hedge, explore the differences between gold as a hedge and gold as an investment, consider the different advantages of holding bullion, gold mining stocks or ETFs, and discuss the potential benefits of seeking to hedge against tail risk with gold while at the same time retaining significant exposure to equities.

Why Gold Is a Universal Currency

Since the first coin was introduced in 700 B.C., precious metals—notably gold and silver—have emerged as universal currency, primarily because of their physical properties: They are durable, recognizable, divisible, easily standardized and relatively easy to store and transport. Because of its permanence and the stability of its supply, gold has advantages over silver as a currency. Unlike silver, gold is virtually indestructible and it resists moisture, oxygen and other corrosive agents. While silver tarnishes, an ounce of gold mined 5,000 years ago in Egypt is just as lustrous as an ounce that was mined yesterday in Quebec. And since very little gold is consumed by chemical or manufacturing processes, it is the only commodity for which the cumulative supply ever produced is still largely in existence.



Unlike other precious metals such as platinum and palladium, gold's value is not tied to the business cycle.

Additionally, unlike other precious metals such as platinum and palladium, gold's value is not tied to the business cycle. While gold does have some industrial uses, these are quite limited: dental crowns, electrical contacts, infra-red protective coatings for satellites. Whether in the form of currency, jewelry or other articles of adornment, gold has historically served as a store of value. Platinum and palladium, by contrast, are used as chemical catalysts (in automotive catalytic converters, for example) and industrial cycles drive their demand. As a result, platinum and palladium have a beta, but gold does not.

Lastly, gold is a very scarce asset: All the above-ground gold in the world today—approximately 165,000 tonnes¹—would fit into two Olympic-size swimming pools.² Below ground, the proven and probable reserves total just 75,000 additional tonnes.³ Worldwide, there is less than one troy ounce⁴ of gold per capita—a ratio that has held fairly constant over time.⁵ New gold from mines around the world adds just 1.5% a year to the total supply.⁶ As a result, we can estimate with a relatively high degree of confidence what the supply of gold will be not just this year, but also ten years hence.

The Lessons of History

Because of gold's distinctive characteristics, it has served as a safe-haven currency in periods of economic distress. Since world governments abandoned the gold standard in the first half of the twentieth century, confidence in paper money has proved to be highly variable.

History has shown that over time, governments tend to debase their currencies, whether their money is in the form of paper or coin. This gloomy observation is hardly new. As far back as 1748, in *The Spirit of the Laws*—a book that helped inspire the American Revolution—the French political philosopher Baron de Montesquieu described the difference between what he called “real” money, which has intrinsic worth, and the “ideal” money issued by governments.

There is both real and ideal money. Civilised nations generally make use of ideal money only, because they have converted their real money into ideal. At first their real money was some metal of a certain weight and standard, but soon dishonesty or want made them retrench a part of the metal from every piece of money, to which they left the same name; for example, from a livre at a pound

1 A tonne, or metric ton, is equal to 1,000 kilograms, or 2,205 pounds avoirdupois.

2 <http://ngm.nationalgeographic.com/print/2009/01/gold/larmer-text>.

3 First Eagle Investment Management.

4 A troy ounce is equal to 1.097 ounces avoirdupois. 1 tonne=32,150 troy ounces.

5 World Gold Council.

6 World Gold Council.



weight they took half the silver, and still continued to call it a livre... By this method the livre is an ideal livre... and so far may this be carried that what we call a livre shall be only a small part of the original livre or pound, which renders it still more ideal.⁷

Paper currency comes into the world via the printing press; no force other than human prudence can limit the amount produced.

Today, the term “ideal money” has given way to “fat money,” which refers to money that has value only because of government regulation or law. The “abuse” that in Montesquieu’s time took the form of adding base metals to gold or silver coins has more recently taken the form of printing paper currency in greater and greater volume. Despite these differences, Montesquieu’s observation about government behavior continues to hold true—most dramatically in periods of hyperinflation. In the early 1920s, for example, the German government printed so much paper money that the exchange rate between the mark and the dollar—roughly one-to-one before the outbreak of the First World War—soared to one-trillion-to-one. Lore has it that German citizens used their nearly worthless banknotes as wallpaper.

Paper currency comes into the world via the printing press, and no force other than human prudence can limit the amount produced. Playwright (and socialist) George Bernard Shaw alluded to this fact in 1928, when the gold standard was under debate in the U.K.

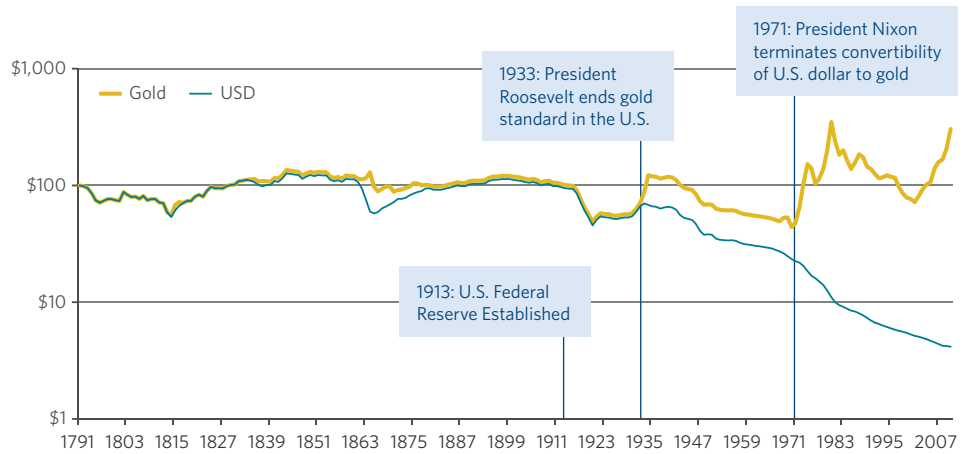
“With a gold currency, [the stability of money] tends to maintain itself...You have to choose (as a voter) between trusting to the natural stability of gold and the natural stability of the honesty and intelligence of the members of the Government. And with all due respect for those gentlemen, I advise you, as long as the Capitalist system lasts, vote for gold.”⁸

While the United States has not experienced hyperinflation, it has nonetheless seen the value of its paper currency erode in the years since 1933, when the dollar was taken off the gold standard. For a century following 1834, when the value of the dollar was fixed at 1.50 grams of gold (the equivalent of \$20.67 for a troy ounce of gold), the dollar held its purchasing power against a fixed basket of commodities. Since 1933, the purchasing power of the U.S. dollar has fallen sharply, but the value of gold has largely held its own. [Note that the vertical axis of the following graph is logarithmic, and that the dollar has actually lost 94% of its purchasing power over this period.]

⁷ Spirit of the Laws, Book xxii, “Of laws in relation to the use of money” http://www.constitution.org/cm/sol_22.htm.

⁸ The Intelligent Woman’s Guide to Socialism and Capitalism, p.263.

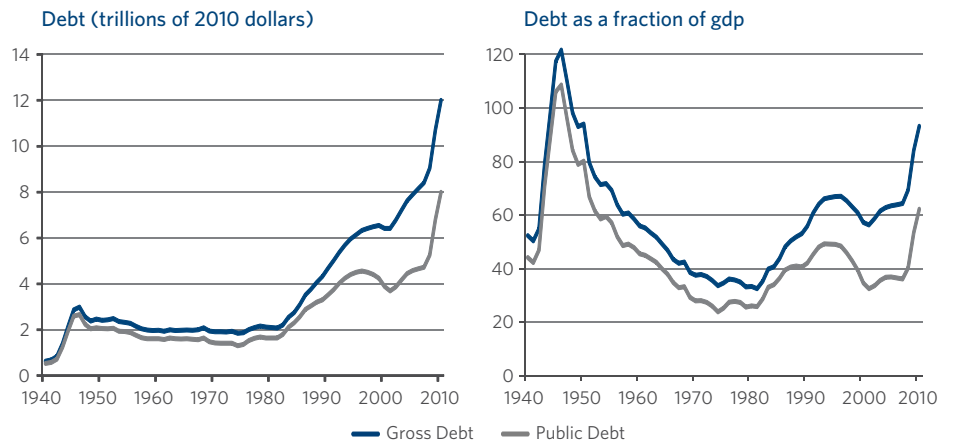
Purchasing Power of Gold vs. U.S. Dollar for Basket of Commodities 1791-2010



Source: www.measuringworth.com.

In recent decades, U.S. government policies have raised particular concerns about the dollar. During Alan Greenspan's tenure as Federal Reserve chairman, the Fed adopted "easy-money" policies that could have led to unintended negative consequences. In its 1998 bailout of Long Term Capital Management, for example, the Fed seemed willing to solve the market's problems at virtually any cost and with little regard for moral hazard. Since then, government interventions, bank bailouts, long-term trade imbalances and currency crises have only heightened concerns. By the end of 2010, for example, the total outstanding debt of the U.S. government exceeded \$14 trillion, and by the end of 2011 it is expected to equal or surpass the nation's gross domestic product.⁹ As a result, rating agencies have warned that the United States could lose its triple-A rating.

United States Debt, 1940-2010



Source: First Eagle Investment Management.

These developments have prompted some investors to seek some way to hedge against runaway inflation, outright currency debasement, deflation, sovereign failures and other man-made tail events that cannot be forecast.

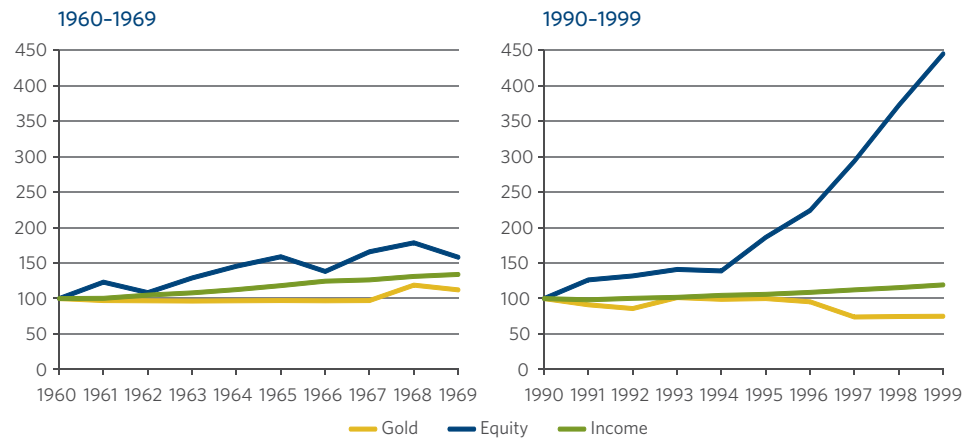
⁹ U.S. Department of Treasury <http://www.treasurydirect.gov/govt/reports/pd/mspd/2010/opds122010.pdf>.

If gold is real money and the alternative is man-made money that results from a politically generated process, then the value of gold is inverse of confidence in the man-made monetary mechanism.

Hedging an Equity Portfolio with Gold

If gold is real money and the alternative is man-made money that results from a politically generated process, then the value of gold is the inverse of confidence in the man-made monetary mechanism. During times when people have faith in the monetary regime, they don't feel hedging is required. As the charts below illustrate, for example, during the 1960s and 1990s in the United States, gold lost value relative to equities and per capita income. Essentially, Americans were less willing to put part of their savings into nature's alternative currency because they felt no need for it. There was optimism about the system.

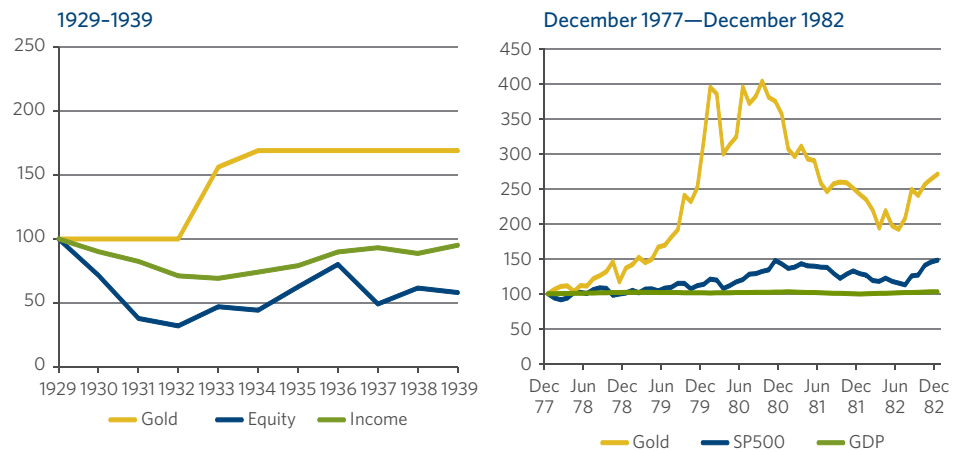
Performance of Gold vs. Equities and GDP



Source: First Eagle Investment Management.

As demonstrated in the charts below, during the Great Depression of the early 1930s and the great inflation of the early 1980s, gold appreciated dramatically in nominal terms versus paper money, versus equities and versus per capita income.

Performance of Gold vs. Equities and GDP



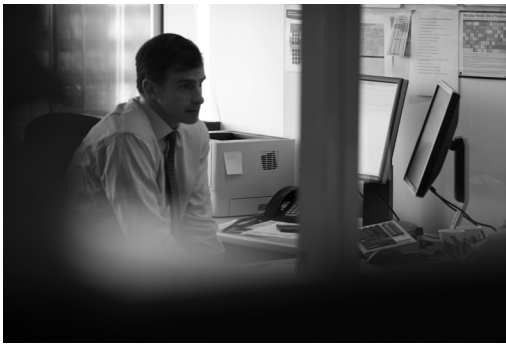
Source: First Eagle Investment Management.

James Grant of *Grant's Interest Rate Observer* has described the price of gold as “the reciprocal of the world’s stock of faith in the person Ben S. Bernanke and others like him.”¹⁰ As Grant indicates, the phenomenon is indeed a global one. In the 1970s,

10 <http://themessthatgreenspanmade.blogspot.com/2008/03/jim-grant-is-making-sense.html>.

petrodollar economies used gold to diversify their foreign exchange reserves away from the U.S. dollar as investors were gripped by fear of inflation and a declining dollar. Today, China and other trading nations are increasingly concerned that U.S. dollars comprise too great a share of their foreign exchange reserves. In this kind of environment, it is not surprising to see gold emerge once again as a substitute currency.

Through time, gold often has its highest value when unemployment rates and fiscal deficits are high. These tend to be times when confidence is low—periods when the private sector is hoarding cash, rather than investing it in plant and equipment or risky assets. These are also times when the private sector is likely to be skeptical of government. Not only is there more hoarding of capital, but there is also a greater inclination to deploy it as the natural substitute for the man-made system. On the other hand, when confidence recovers, money tends to flow back into productive investment in plant, in hiring and in equities. Unemployment rates come down, and interest rates rise. At these times, people are more inclined to own paper money because it offers a yield to protect them against the annual rate of inflation.



Through time, gold often has its highest value when unemployment rates and fiscal deficits are high.

In normal periods, the relationship between the performance of the economy and the value of gold has not always been one-to-one, and gold has certainly been volatile over time. However, under extreme conditions, the relationship has historically been clear: At times of extreme confidence, gold has tended to be very depressed and equities to be buoyant; at times of extreme pessimism, equities have tended to be depressed and gold buoyant.

For equity investors intent on preserving capital in real terms, a real asset like gold may be very useful. While the value of gold can be thought of as the reciprocal of confidence, the price of equities is often the *product* of confidence. Owning equities can be viewed as sailing choppy seas in seeking to reach a destination. In the nautical world, ballast keeps a ship stable against the forces of wind and waves. Although gold—like any commodity—can be volatile, gold in a portfolio may be viewed as a form of financial ballast. As confidence cycles can be quite large, having this ballast can potentially be very helpful.

Other hedges are possible, of course, such as put options or other derivatives transactions. The problem here is that buying a derivative usually entails taking on some form of counterparty risk, as institutions that bought hedges from Lehman Brothers understand very well. Secondly, most instruments that can be bought in the over-the-counter market are time-bound in nature, so the investor has to be right not only on direction and counterparty, but also on timing. Gold, by contrast, is something that does not decay or waste. In other words, gold is a form of long-dated value storage that does not present the same counterparty risk.

Gold also has distinct advantages over other kinds of assets and hedges, such as TIPS, oil and other natural resources, and real property. TIPS are U.S. government obligations denominated in dollars, but gold is not denominated in any particular currency or dependent on the solvency of any particular government. The prices of oil, other natural resources and real property would all be negatively affected by a serious disruption of the business or credit cycle, but the price of gold, because gold has limited industrial uses, has not historically been affected by business cycles.

A Hedge is Not an Investment

Many institutional investors own gold as an investment within their commodities allocation. Their commodities managers trade in and out of the metal with the goal of boosting investment returns. However, investing should not be confused with hedging.

An investor hedging with gold neither sells it all when the price appreciates nor initiates a new position when the price falls.

Someone who hedges with gold is agnostic about its price and includes an allocation to gold in both good times and bad. Apart from making adjustments to stay within a target range, an investor hedging with gold neither sells it all when the price appreciates nor initiates a new position when the price falls.

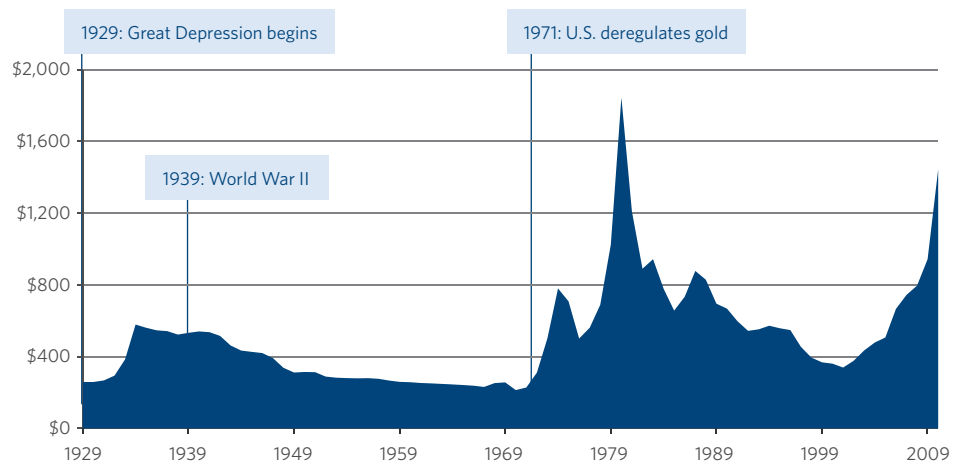
The fact that gold underperformed during long spans of time after 1980 does not undermine the case for using it as a hedge. During the same period, the developed world benefitted from a long period of prosperity buoyed by cheap credit, low unemployment and general confidence in the system—the kind of environment where one would expect gold to be out of favor. However, under the conditions we currently face—double-digit unemployment, a nearly double-digit fiscal deficit, diminishing confidence in the U.S. government’s credit strength—gold has the potential to provide stability in an uncertain world.

An institution that hedges with gold is comfortable seeing its price decline if this decline is the result of renewed confidence in the global economic system. What could be negative for gold over time would be a period when corporate profits rise, workers are hired, interest rates return to normal levels, fiscal prudence prevails and the government puts its financial house in order—the very developments that would be constructive for a portfolio’s broader investments in enterprises.

Rising Premium

As the price of gold surpassed \$1400 a troy ounce in November 2010, the cost of this hedge rose, too. While some observers contend that the current price of gold denotes a bubble, the level is still below the peak seen in January 1980, when gold reached \$873 a troy ounce—more than \$2,200 in today’s dollars.¹¹ The question, we believe, is not whether or not we are witnessing a bubble, but rather, what fundamentals have affected this change in price?

Value of Gold, 1929 - 2010



Source: www.measuringworth.com.

Note: Prices represent calendar year-end values. Prices are adjusted for inflation, representing price per ounce in 2010 dollars.

In the 1990s many central banks, believing that gold was no longer a critical element in their foreign reserve holding strategy, sold gold in large quantities. These sales helped depress the price to below \$250 a troy ounce—a decline that tended to reinforce the view that gold was a useless commodity. Today, by contrast, confidence

¹¹ <http://www.bloomberg.com/apps/news?pid=newsarchive&sid=a3w9OGzFR3Y>.



in the global economy has been shaken, and gold is once again sought as an alternative currency. Central banks in the East—particularly India, China and Russia—are buying gold for their vaults, but those in the West are not willing to sell it. Despite the September 2009 decision by the International Monetary Fund to sell 403 tonnes of gold, the ounces available for purchase are limited, and this has driven the price higher—a simple case of supply and demand.

Investors who remember the 21 years during which the price of gold stagnated are quick to claim that all the gold being hoarded in vaults around the world could reach the market at any moment. There are, however, several countervailing trends that could be positive for gold. China is believed to have foreign reserve holdings (not including gold) equal to \$2.65 trillion—60% of it in U.S. dollars.¹² If this number is correct, it is not inconceivable that China would convert a number of these dollars into a gold reserve larger than that of the United States.

It is also possible that institutional investors will turn out to have a larger-than-expected appetite for gold. If all global pension plans were to allocate 2% of their portfolios to gold, they would need to purchase 100% of the world's gold mining output—47,000 tonnes—for 17 years (assuming that mining companies could continue to supply gold at the 2009 rate).¹³

No one knows with confidence whether gold has reached its peak value. History would suggest that at various points in time, conditions have been worse than at present for the financial system: world wars, pandemics, hyperinflation, a Great Depression. If any of these calamities were to recur, the value of gold could be higher than it is today. Of course, the price of gold could also decline in response to changing conditions.

Bullion, Gold Stocks and ETFs

Gold bullion tends to be viewed as one of the safest ways to invest in gold because it has the least risk. The asset is already out of the ground, so it is free and clear of mining risk. It has limited counterparty risk—a gold bar is no one's liability. On the other hand, a bar of gold offers no yield, has storage costs and is taxed at a collectable rate that is less favorable than the capital gains rate. As a result, gold bullion is not always the *cheapest* way to invest in gold ounces.

From a hedging point of view, gold in the dirt can be as useful as gold in the vault. Buying shares in gold mining companies with proven reserves is a way to acquire gold that has yet to be brought above ground. This is riskier than buying bullion because there are operational risks inherent in getting gold out of the ground and, potentially, political risks related to the regimes where mines are located. On the other hand, it is

¹² First Eagle Investment Management, March 2010.

¹³ First Eagle Investment Management, March 2010.

also possible that a gold company could turn out to have greater resources than it has booked as reserve. Netting out the costs of extraction and financing, it is sometimes cheaper to buy gold via gold-mining companies than to buy it directly in the form of bullion. Said another way, an investor may be able to pay significantly less than the current spot price of gold by buying the stocks of gold mining companies with proven and probable reserves of gold because the price of bullion includes the cost of extracting and financing it.

Gold-mining stocks may offer another advantage, as well. In 1933, the U.S. government forbade private citizens from owning more than five troy ounces of gold and confiscated the rest of their coins and bullion in exchange for \$20.17 per troy ounce in cash. In 1934, President Roosevelt raised this exchange rate to \$35 a troy ounce in order to effectively make the dollar “cheaper,” which would in turn make U.S. goods cheaper in non-U.S. markets, which would in turn theoretically help spur the economy through increased exports. The change was also an effort to fight dramatic domestic deflation—fallout from bank failures of the Great Depression—by increasing the money supply. Apart from this change, the law forbidding citizens from owning more than a controlled amount of gold remained in effect until 1974. On the chance that history repeats itself and private gold holdings are once again confiscated, mining stocks would become more valuable as the only way to access call options on the ounces of gold below the ground.



Those who view gold as a hedge typically take a far more conservative approach to their gold allocation.

Those who view gold as a hedge typically take a far more conservative approach to their gold allocation. They view gold mining stocks as call options on the ounces underground. To assure that these ounces will indeed emerge from the ground, they focus on mines containing sufficient gold that can be mined at reasonable cost. For example, it is likely they would consider investing in mining companies only if they are at the stage of mine building or beyond. Additionally, an investor using gold as a hedge would want to feel confident that the mines of any gold mining companies were located in countries with stable political regimes—i.e., countries in which there is little or no risk that the government will nationalize the mines.

Those investing in gold for potential price appreciation and *not* as a hedge can also invest in speculative gold stocks, including exploration companies and gold mining discoveries where there are serious obstacles to development. These are high-risk investments. Relatively few gold “finds” turn out to be real, and of those that are real, many face hurdles great enough to render their exploitation economically unattractive.

Those seeking an exposure to gold—whether as a hedge or an investment—can, and should, consider allocating capital toward the “cheapest ounces” of gold possible. As a result, gold-mining ETFs have given investors yet another way to gain exposure to the metal. In our view, passively managed gold-mining ETFs may not be the best way to invest in gold mining stocks. While all gold miners produce the same fungible product, every gold mine in the world has unique attributes and a distinct economic profile. Mining methods, metallurgy, geography, topography and political climate vary from one mine to the next, and all impact a mine’s economics.

Effective Control of Risk

Institutional investors are adopting many strategies in an attempt to reduce their vulnerability to left tail risk: decreasing equity allocations; increasing allocations to alternative strategies and real assets; increasing allocations to bonds; and seeking to reduce volatility within their equity allocations. Hedging with gold is one way to attempt to implement the last of these strategies.

Intelligent value investing in equities continues to be a sound way to potentially generate positive absolute returns over time, and reducing a portfolio's exposure to equities may diminish an institution's potential investment returns and increase the likelihood that assets will fall short of liabilities. Rather than retreating from equities, institutional investors may be better served by strategies that hedge against left tail risk while allowing for a sizable allocation to stocks. For those that hedge with gold, caution and asset growth may prove to be compatible.

Left tail events are by definition rare, but they are not so rare that they can safely be ignored. Additionally, these events catch all but a few investors by surprise when they occur. Most investors—apart from inveterate bears—hope that tail events can be averted. We believe it is wise to back that hope with the potential protection that gold may provide. Insofar as it is a universal currency, gold may also be an effective hedge against left tail risk for institutional equity portfolios.



About First Eagle

First Eagle Investment Management is an independent, closely held firm with approximately \$56 billion in assets[†] under management and a heritage dating to 1803. Over its long history, the firm has helped its clients to preserve capital and earn attractive returns through widely varied economic cycles—a tradition that is central to its mission today. For more information visit www.feim.com.

[†] As of 3/31/2011.

The use of hedging techniques is speculative and there can be no assurances that any hedging techniques will be effective. Investment in gold and gold-related investments present certain risks, including political and economic risks affecting the price of gold and other precious metals like changes in U.S. or foreign tax, currency or mining laws, increased environmental costs, international monetary and political policies, economic conditions within an individual country, trade imbalances and trade or currency restrictions between countries. The price of gold, in turn, is likely to affect the market prices of securities of companies mining or processing gold, and accordingly, the value of investments in such securities may also be affected. Gold related investments as a group have not performed as well as the stock market in general during periods when the U.S. dollar is strong, inflation is low and general economic conditions are stable. In addition, returns on gold related investments have traditionally been more volatile than investments in broader equity or debt markets.



All investments involve risks, including the loss of principal. There can be no guarantee that one investment strategy will perform better than another. Investors may not invest directly in any index.

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