NEPC

# THE BARBAROUS RELIC STRIKES BACK: THE ROLE OF GOLD IN INVESTMENT PORTFOLIOS

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## Overview

In times of elevated market volatility, investors cast their eyes to any asset category that rises as stock markets and other risky assets fall. Amid the turmoil of the last several years, only a few assets have risen consistently in price – prominently US Treasuries and gold. In fact, one cannot go very far without encountering the topic of gold. Whether you're reading the Wall Street Journal, chatting near the water cooler, or scanning Twitter, the shiny yellow metal tends to come up in conversation. At some point in 2011, these headlines screamed out to you:

- "(State of) Utah Studies Gold / Silver as Alternative Form of Legal Tender" – CNN-Money.com, March 29, 2011.
- "University of Texas ("UTIMCO") Gold Buy is a Game Changer" – SeekingAlpha.com, April 19, 2011.
- "GLD Surpasses SPY As Biggest ETF" – Bloomberg News, August 22, 2011.
- "To Resolve Debt, US Will Return to Gold Standard – Jim Grant" – King World News, April 14, 2011.
- "Spot Gold Surpasses $1,900 – Up Over 30% YTD" – August 22, 2011.
- "Gold Crashes" – August 23, 2011.
- "Gold in a Bubble" – Half the world, past 5 years.
- "Gold not in a Bubble" – The other half.

With the exception of religion and politics, perhaps no other topic divides investors as much as whether gold is a worthwhile investment. Though the world tends to be divided into Red State – Blue State, Keynesian – Austrian, Red Sox – Yankees, NEPC believes the analysis of gold requires a nuanced approach that should not lead to a binary yes-no answer.

**"YOU KNOW WHAT I LIKE MOST ABOUT GOLD? I HAVE A LOT OF IT." -SCROOGE MCDUCK**

In this paper, we examine two topics: the various roles gold can play in a long-term investment program, and why some analysts consider gold unworthy of inclusion in any investment portfolio. We conclude that gold has three potential roles in institutional investment programs:

- As a component of a broader real assets investment allocation to help hedge against inflation,
- As a source of alpha for trading-oriented strategies such as global asset allocation and global macro,
- As a component of a "tail-risk" hedge against extreme economic environments.

Importantly, the magnitude or sizing of any investment in gold depends upon the investment philosophy of the investor.

## The Case for Gold

To understand the case for investing in gold, it is important to consider its properties (a) as a commodity, and (b) as a currency, or money substitute. We will look at each individually.

### *Gold as a Commodity*

In 2009, NEPC published a white paper in which we recommended an allocation to real assets as appropriate for most long-term investment portfolios. Real assets encompass an array of investment strategies whose values are sensitive to inflation and include TIPS, commodities, commodities-linked stocks, commodities-oriented hedge funds, and illiquid direct investments including

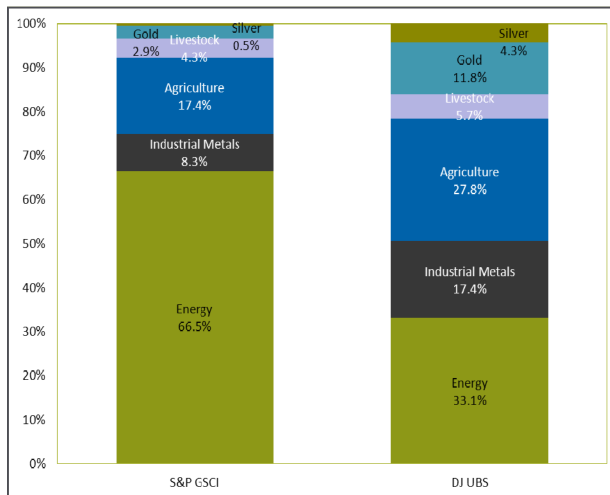
energy, farmland, timber, and infrastructure. These assets tend to rise in price with inflation and provide a natural hedge for equity and debt holdings, which typically lose value during periods of unexpected inflation. Although anticipated inflation may result in higher bond yields and higher equity earnings growth, which may provide decent nominal returns for stocks and bonds, it is unexpected inflation that tends to cause problems for investors.

**COMMODITY ROLL YIELD HAS BEEN *DE MINIMUS*, OR EVEN NEGATIVE, DUE TO MANY COMMODITIES BEING IN CONTANGO AND COLLATERAL YIELD HAS BEEN CLOSE TO NIL DUE TO THE FED'S ZERO INTEREST RATE POLICY.**

Historically, commodity investing has been viewed as purely speculative, since there are no intrinsic income-generating properties associated with holding a single long commodity. However, when holding a portfolio of commodities futures, either through a passive strategy indexed to a benchmark such as the S&P Goldman Sachs Commodity Index ("S&P GSCI") or the Dow Jones UBS Commodity Index ("DJ UBS Commodity Index"), or through an actively managed portfolio, investors have three sources of return: (1) Price – the changes in the spot prices of the commodities, (2) Roll Yield – when commodities are in backwardation (future prices are lower than current prices), roll yield is positive and can enhance the total return, and vice versa for contango, and (3) Collateral Yield – futures contracts require margin, generally in the form of T-bills, which have interest that accrue to the owners, and thus provide some incremental total return. As a result, investors utilizing commodities futures indices are generating return not only from the changes in spot prices, but also potentially from roll yield and collateral yield. However, it must be noted that, over the past few years, roll yield has been *de minimus*, or even negative, due to many commodities being in contango, and collateral yield has been close to nil due to the Fed's Zero Interest Rate Policy.

The two major commodities indices used by institutional investors are the S&P GSCI and the DJ – UBS Commodity Index. The S&P GSCI Index is calculated primarily on a world production basis and is composed of the principal physical commodities that are the subject of active, liquid futures markets. The weight of each commodity is determined by the average quantity of production as per the last five years of available data. The DJ -UBS Commodity Index is calculated based on economic significance and market liquidity, and there are some overriding weight-restrictions on the maximum allocation for each type of commodity.

Figure 1




*Source: S&P GSCI Factsheet / DJ UBS Commodity Index Handbook*

Consequently, the S&P GSCI tends to be more energy-heavy and the DJ-UBS tends to be more diversified. Yet each has a place for gold in their respective index. Please see Figure 1.

Although gold is included in commodity indices, is it just like other commodities? Well, hog bellies and most other commodities are not utilized in jewelry or as part of central banks' reserves. And although certain other metals and commodities have physical and chemical properties that make for strong use in technological applications, not all of them are recycled to the extent that gold is. Consequently, gold is somewhat anomalous among commodities, as shown in Figure 2.

Figure 2

| | Demand | | | Supply | | |
|---|---|---|---|---|---|---|
| Commodity | Jewelry | Investment / Bars & Coins | Technology / Industry | Mine Production | Recycling | Other Sources |
| Gold | 49% | 41% | 10% | 60% | 40% | |
| Silver | 25% | 25% | 50% | 79% | 19% | 2% |
| Copper | 2% | 3% | 95% | 85% | 15% | |
| Platinum | 36% | 9% | 55% | 88% | 12% | |

*Source: World Gold Council, as of Year End 2010*

Yet, like other commodities, the price of gold is driven by long-term dynamics of demand and supply. As of 2010, the World Gold Council estimates that approximately 168,300 tons of gold have been mined over the course of human history. About half of that has been used in jewelry and 10% in industrial, dental, technological, or other types of usage. Thus, roughly about 35% – 40% is held for financial or investment purposes. Figure 3 outlines the estimated usage of all the gold tonnage that has ever been mined (source: World Gold Council).

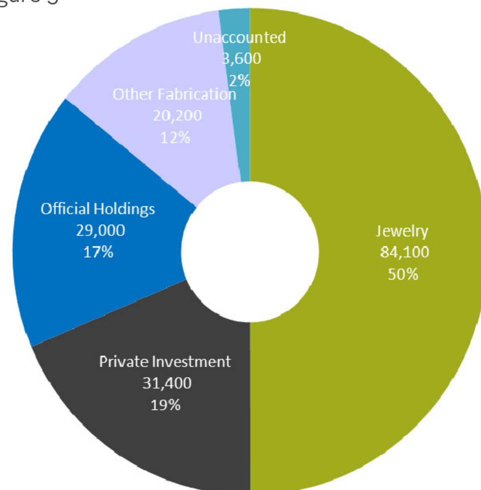
**IT IS ESTIMATED THAT A LITTLE MORE THAN $8 TRILLION WORTH OF GOLD HAS BEEN CARRIED OUT OF THE GROUND SINCE THE BEGINNING OF TIME.**

Using these estimates of all the gold that has ever been mined, and presuming a market value of $1,500 / ounce, it is estimated that a little more than $8 trillion worth of gold has been carried out of the ground since the beginning of time. For comparative purposes, the GDP of the United States is around $15 trillion and the US National Debt is also around $15 trillion.

And, though they aren't making more beachfront property, they are making, or at least mining and recycling, more gold, although not at a very rapid pace. Unlike when the first few nuggets were found at Sutter's Mill in California in 1849, modern gold mining is a difficult, energy-intensive, expensive process. And over the past few years, demand has outstripped supply.

Figure 4 illustrates a few key points. First, mine-supplied gold is stuck at around 2,500 tons per year or so. No matter how much prices increase, mine production is not going to account for much more than 3,000 tons per year. That may supply jewelry and technological needs, but does not leave much for investment-related uses of gold. Second, whereas central banks once were large sellers of gold, they are now moving the other way and becoming net buyers, which is reducing the available supply. Third, though gold-related ETFs have taken off, they do not account for much more than 10% of annual gold demand, on average. Yet, when looking back at Figure 3, one notices that there are about 60,000 tons held either for investment purposes or as part of central bank holdings. This translates to about 15x annual supply and 20x annual demand. Hence, there seems to be a lot of ballast to the system from the perspective of industrial supply and demand usage.

Figure 3




*Source: World Gold Council*

Figure 4

**Gold Supply and Demand, in Tons**

| | 2008 | 2009 | 2010 | Q1 2011 |
|---|---|---|---|---|
| **Supply** | | | | |
| Mine Production | 2,410 | 2,589 | 2,689 | 664 |
| Net Producer Hedging | (352) | (236) | (103) | (10) |
| *Total Mine Supply* | *2,058* | *2,353* | *2,586* | *654* |
| Official Sector Sales | 232 | 34 | (76) | (129) |
| Recycled Gold | 1,316 | 1,695 | 1,645 | 348 |
| ***Total Supply*** | ***3,606*** | ***4,082*** | ***4,155*** | ***873*** |
| **Demand** | | | | |
| Fabrication | | | | |
| Jewelry | 2,304 | 1,814 | 2,017 | 576 |
| Technology | 461 | 410 | 466 | 114 |
| *Total Fabrication* | *2,765* | *2,224* | *2,483* | *690* |
| Investment Related | | | | |
| Total Bar & Coin | 879 | 778 | 1,149 | 366 |
| ETF & Similar | 321 | 617 | 338 | (56) |
| *Total Investment Related* | *1,200* | *1,395* | *1,487* | *310* |
| ***Total Demand*** | ***3,965*** | ***3,619*** | ***3,970*** | ***1,000*** |

*Source: Wolrd Gold Council*

## Gold as a Currency

What is money? A commonly cited definition is that money is anything that is accepted in payment for goods and services and in repayments of debt. The main uses of money are as a medium of exchange, a unit of account, and a store of value. Yet the economics textbooks tend to leave out political nuance. The control over money, or the perception over the control of money, is inherently political in context. Whether one looks at the effect on the Roman denarius from Nero's and other emperors' debasements, or considers the charged rhetoric of William Jennings Bryan's Cross of Gold speech in 1896, one must view money through a prism of politics. As Mayer Rothschild said, "Give me control of a nation's money and I care not who makes her laws."

### *Medium of Exchange*

Primitive societies tended to barter and did not utilize any money or medium of exchange. Gradually, as societies moved from barter to monetary economies, different goods were in competition

with each other for use as money. The Yap Islanders used giant stone coins, Polynesian societies used shells, and, eventually, many societies used gold and silver. In fact, the first known coins, from around 640 BC in what is now modern-day Turkey, were made of gold. Why did gold and silver tend to win over stone coins or shells? Monetary historians state that the qualities of durability, divisibility, recognizability, portability, scarcity, and an appropriate value-to-weight ratio made gold and, to an extent, silver the winners of this monetary competition.

**THE MAIN USES OF MONEY ARE AS A MEDIUM OF EXCHANGE, A UNIT OF ACCOUNT, AND A STORE OF VALUE.**

Yet, as industrial society took off, specie (gold and silver) were not enough to keep up with the pace of commercial transactions. It's difficult to finance global multi-national trade with large quantities of metals. And, of course, governments wanted to help, so they started issuing bills of credit, which eventually became fiat money. Fiat money is money that has value only because of government regulation or law. In Latin, fiat means "let it be done".

Whereas specie-backed money entails the legal requirement that the issuer redeem it in fixed weights of specie, fiat money's value is unrelated to the value of any physical quantity. And, a feature of all fiat money is its acceptability to the government for payment of taxes and charges. Look on any US Dollar Bill, and in the lower left corner, you will see the statement, "This Note is Legal Tender for All Debts, Public and Private." And, except for scarcity, fiat money has most of the qualities described above that made gold and silver the winners of the monetary competition. In fact, fiat money itself is a relatively new phenomenon. While paper money has existed for several hundred years, it was not until 1931 that Britain went off the gold standard, with the US following its lead in 1971. So, up until forty years ago, the major currencies of the global financial system were backed by a promise to pay in specie.

### *Unit of Account*

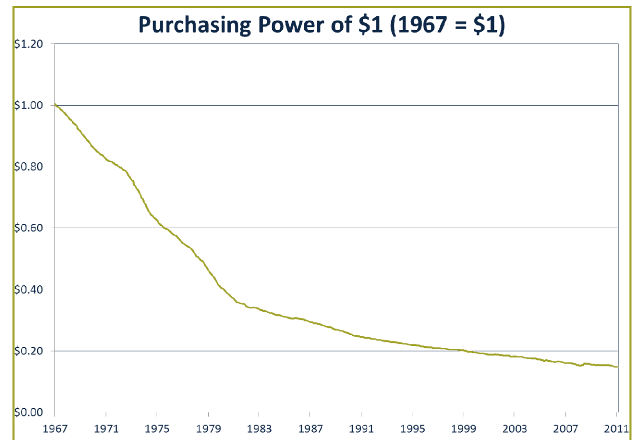
One major problem with specie money over time has been as a unit of account. Though somewhat divisible, it is not easy to facilitate transactions involving small items with gold and silver. Sure, over time an ounce of gold has generally been able to buy you a toga or a Saville Row suit. However, what if you need a button? Specie money has had some problems with divisibility, and this has added friction costs to transactions. Yet, fiat money suffered no divisibility problems. Consequently, over time, fiat money tended to emerge as preferable to specie-backed money as it more easily greased the wheels of commerce.

### *Store of Value*

The main area where fiat money fails and gold succeeds is as a store of value. Using the Consumer Price Index ("CPI"), one can look at any period of time and determine inflation's impact on value (even though the CPI may understate the true impact of inflation). For example, say you had $100 in 1975. You could either go out and buy $100 worth of goods and services or stick the cash in your mattress. If you stuck it in the mattress and you never got around to replacing the mattress, by 2011 that $100 buys only $23 worth of goods and services.

In graphical form, in Figure 5, one sees that the purchasing power of a fiat dollar is pretty ugly.

Figure 5




*Source: US Bureau of Labor Statistics*

However, gold has not suffered from this erosion. Specie money, due to its durability and low cost of preservation, has been deemed suitable for the purpose of storing value. One framework for making this comparison is to create a theoretical gold price equivalent, which would give gold the same purchasing power it had at the end of the gold standard by calculating the convertibility ratio of $35/ounce in 1933 and then multiplying by a factor representing the growth in the quantity of fiat money from that time. Under the classical gold standard, gold was the entire world's money. By counting worldwide growth in currency (not only US dollars) and comparing it to a worldwide price currency index of the gold price, this framework avoids the shortcomings of looking only at gold's price in US dollars. Using this analysis, since the end of the gold standard, the price of gold in units of fiat currency has tracked its purchasing-power equivalent price fairly well, oscillating in a relatively narrow band around its theoreti-

cal value. Essentially, the purchasing power of gold has been reasonably stable in the time since the end of the gold standard, thus maintaining its store of value.

**"GOLD GETS DUG OUT OF THE GROUND, THEN WE MELT IT DOWN, DIG ANOTHER HOLE, BURY IT AGAIN AND PAY PEOPLE TO STAND AROUND GUARDING IT. IT HAS NO UTILITY. ANYONE WATCHING FROM MARS WOULD BE SCRATCHING THEIR HEAD." -WARREN BUFFETT**

Thus, one can conclude that gold can and has served as money. Although fiat money has better attributes of divisibility and as a unit of account, its ability to serve as a store of value has shortcomings. This will lead us later to our discussions about philosophy and politics.

## The Case against Gold

There are two main components of the case against gold – one strategic and the other tactical. Warren Buffet provides an oft-quoted summary for the strategic case against investing in gold:

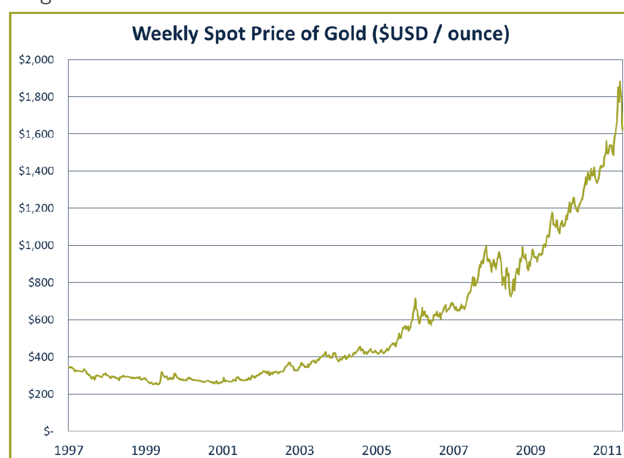
"Gold gets dug out of the ground, then we melt it down, dig another hole, bury it again and pay people to stand around guarding it. It has no utility. Anyone watching from Mars would be scratching their head."

This school of thought asserts that, in order to assign a value to an asset, there must be something to value. The most common methods of valuation include discounting future cash flows to determine a present value, identifying comparables, assigning a replacement value, or valuing based on a role in a production process. Based on these approaches to valuation, gold stumps financial analysts. It does not generate income. In fact, it costs money to hold. As shown in Figure 4, a small fraction of annual gold production is consumed in manufacturing. Other commodities are used in production processes that can generate an income stream whether we look at oil, gas, copper, or wheat. As a result, in a long-term strategic asset allocation modeling process, gold does not have a place as a stand-alone asset class, except as a sub-segment of a commodity portfolio described above.

While one may not entirely agree with this conclusion, one must concede that Buffet and the anti-gold crowd have a point. Outside of industrial and dental uses, the utility of gold is not enormous. Its main utility, historically, has been as money, or at least as a store of value. And in a fiat world, completely divorced from the gold standard, there hasn't been much use of gold as money for at least a generation or two.

The other main argument against holding gold, especially in the latter part of 2011, is tactical. Gold has experienced a remarkable increase in price that has accelerated as the overall global financial situation has worsened. After such a run it is possible that we are at the top of a bubble which is about to burst. The vertiginous fall in gold's price in September 2011 highlighted the possibility of further price declines and emphasized the high price volatility that gold can experience. Since there have been major price movements of gold in the past, some argue that its volatility is too high to justify having in any portfolio.

Figure 6




*Source: Bloomberg*

First, gold has been on a decade-long tear, as shown in Figure 6, which outlines the weekly price of spot gold in US dollars.

The last five years, particularly, have seen the nominal price of gold nearly triple, which warrants some degree of caution. However, one needs to consider that, over the past several years, real interest rates have been negative. During the 1980s and 1990s, when gold was in the doldrums, real interest rates averaged about 4%. And as Warren Buffet and others who don't like gold note, gold pays no dividends. Consequently, real interest rates are approximately the opportunity cost for holding gold. Thus, when yields are negative, there are no real opportunity costs for holding gold, although holding costs arise for storage and security of physical possession of gold.

With a Zero Interest Rate Policy announced by the US Federal Reserve Bank and designed to remain in effect for the foreseeable future, real interest rates appear likely to remain negative indefinitely. Thus, there may be a floor on gold prices.

## Gold as a Source of Alpha

The current tactical case against holding gold, however, also highlights the second major reason for considering investing in gold: as a potential source of alpha. Earlier in this paper, we built the case that gold has attributes of both commodities and currencies. Over time, commodity and currency prices demonstrate trending and mean-reverting tendencies that can be exploited for active returns by experienced traders using both fundamental and systematic approaches. Academic studies, empirical observation, and our research support the conclusion that managers can add alpha on the long and short side from trading the price movements in gold as they can in other currencies, sovereign bonds, equity indices, and commodities.

**MANAGERS CAN ADD ALPHA ON THE LONG AND SHORT SIDE FROM TRADING THE PRICE MOVEMENTS IN GOLD AS THEY CAN IN OTHER CURRENCIES, SOVEREIGN BONDS, EQUITY INDICES, AND COMMODITIES.**

In general, the types of strategies that seek to exploit these price movements are global macro, global tactical asset allocation, and other similar active management strategies. Many institutional investors currently utilize these strategies. Consequently, many investors have gold holdings embedded in their portfolio. While these are not long-term asset allocation holdings, they are tactically traded on both the long and short side as managers seek to add alpha. Therefore, gold may be one of several items, such as currencies, sovereign bonds, equity indices, and commodities, that fundamental or systematic active managers trade concurrently to add value. Hence, many investors have exposure to gold in these alpha-seeking strategies, but the exposure will represent a small part of an overall investment program (and indeed could be net short or negative exposure at any given time depending on the outlook of the particular manager(s)).

## The Politics of Gold

A review of the politics of gold highlights the third potential role for gold in a long-term investment portfolio: that of a component of a hedge against an extreme economic environment. Thus, in our view, any discussion involving gold necessarily involves a political discussion. And that political discussion ultimately comes down to whether gold is a money substitute and specifically a store of value. Goldbugs typically point to the breakdown of Bretton Woods, or the systemic breakdown of the classical gold standard or any number of historical monetary regime change events that ultimately harmed one class of society. Typically this was due to the eroding value of a fiat currency via the ability of a government to run the printing presses or drop cash from helicopters or debase the denarius. This tended to harm savers or any class that accumulated wealth and tried to store it in the form of a fiat currency.

On the other side are those who view with suspicion anyone clinging to the notion of the barbarous relic or classical gold standards as hopeless luddites who fail to see the benefits of an enlightened technocracy that may successfully manage the monetary system and lubricate the wheels of commerce. And, like the followers of William Jennings Bryan, they seek to have a monetary system that can be managed and grown appropriately to ultimately accrue benefits to debtors and those who may benefit from "a little inflation".

Yet, many Keynsians and gold doubters take for granted a world where gold is not money, fiat currency is stable, and fiscal and monetary policy are predictable. Regarding the first assumption, gold has been a form of money for much of human history up through Nixon's closure of the gold window on the dollar and the end of the classical Bretton Woods System in 1971. Historically, the past 40 years have been mostly anomalous compared to the longer scope of human commercial activity. While calls for a return to a quasi-gold standard or a basket of Special Drawing Rights involving multiple fiat currencies as well as gold were in the realm of the lunatic fringe as recently as a few years ago, the debate has gone more mainstream lately. In fact, Grant's Interest Rate Observer editor Jim Grant has been discussing the inevitability and desirability of a gold standard for some time (see "The Scourge of the Faith-Based Paper Dollar," Wall Street Journal, July 16, 2011). Thus, claiming that gold is not money by merely citing the past 40 years and ignoring the previous 4,000 years (and potentially the next 4,000) may not be appropriate.

Additionally, fiat currency valuations, fiscal and monetary policies have not been particularly stable or predictable lately. Seemingly since Lehman Brothers ceased to exist in the autumn of 2008, stock prices, bond yields, currency moves, and asset flows have been driven almost more by policy diktats and press conferences from Brussels or Washington than by discounted cash flows or projected top-line revenue growth on individual securities. And with extraordinary Zero Interest Rate Policy, Operation Twist, Quantitative Easing (v.1, v. 2, v. 3, etc.), the European Financial Stability Facility, Cash for Clunkers, various Jobs Bills, Healthcare Legislation, and who knows what else, the message emanating from Washington, London, or Brussels certainly cannot be called predictable or stable.

Another argument against holding gold is that it is not a perfect hedge for bad things happening elsewhere in the portfolio. During the third quarter of 2011, while equities were also getting crushed (-15%), gold dropped by $300 or nearly 15% in a matter of days. Similarly, in 2008, during the maelstrom of the Lehman crisis, gold dropped by 25% while equity markets cratered by 50%. Partly, it seems that gold serves as a source of liquidity for many investors during times of market turmoil. Consequently, in times of acute crisis, gold can experience tremendous selling pressure, relative to other less-liquid assets. Yet, these episodes of intense selling pressure have tended to reverse themselves within a quarter or two and prices have resumed to trend. Of course, this is not to say that this will always happen. However, this phenomenon has been observed over the most recent bouts of market sell-offs. Thus, while an investment in gold will not serve as a perfect insurance policy and pay off at the exact moment when equity markets tank, over a multiple-quarter or multiple-year period gold has been observed to balance off some of the equity market risks in a portfolio.

GOLD HAS BEEN A FORM OF MONEY FOR MUCH OF HUMAN HISTORY UP THROUGH NIXON'S CLOSURE OF THE GOLD WINDOW ON THE DOLLAR AND THE END OF THE BRETTON WOODS SYSTEM IN 1971.

Consequently, the view against gold which holds that it has no real utility and has not served as money and won't serve as money rests on some assumptions that may not hold forever. Namely, the anti-gold position assumes a fiat world *ad infinitum* that has no place for any specie-backed currency or ADR (i.e., continuing the historical anomaly of the past 40 years) and where there is stability and predictability in currency regimes, monetary policy, and fiscal policy. In our view, this, too, moves toward a question of politics and where you stand depends on where you sit.

We believe the recent price appreciation of gold is, at least in part, being driven by the willful depreciation of fiat currencies by governments. In essence, government policy across the globe has dictated a managed depreciation in a mercantile effort to essentially drive exports and help boost GDP. The challenge, of course, is when everyone does it concurrently. The "race to the bottom" ensues.

Hence, the use of gold as a hedge against the devaluation of fiat currencies is not easily placed in an overall asset allocation framework, as this political, behavioral, or psychological driver of price cannot be modeled using standard tools. For most long-term investors, a risk-budgeted approach to asset allocation allows them to let asset-diversification and time-diversification obviate the need for implementing specific tail-risk hedges.

## The Place for Gold in an Institutional Portfolio

Ultimately, investors will need to ascertain: (a) Is gold viable for inclusion in an investment portfolio? And if so, (b) how much should be allocated? According to press reports, the University of Texas Investment Management Company ("UTIMCO") allocated 5% of its portfolio in early 2011 to the purchase of physical gold bars. Some have speculated that this move was a political statement, others have speculated that it was a prescient investment , and others are confused by it. While we don't know the exact reasons for the move, we believe investors can benefit from discussions similar to those we presume UTIMCO undertook.

Regarding the viability of gold in investment portfolios, we believe virtually all investment committees can respond in the affirmative. Gold can be utilized as a hedge against inflation and/or the devaluation of fiat currencies, and as a source of alpha from dynamic trading by active investment managers. Typically, gold may be a component in a commodities portfolio, a position in a dynamic global asset allocation program, a part of a global macro strategy, or, in the extreme as shown by UTIMCO, a dedicated long-term holding. Gold is a significant commodity and is represented in size in most commodity indices. Thus, any exposure to commodities should have a gold component. However, as detractors state, commodities can be volatile in price movements. And as events in 2008 and 2011 have shown, extreme price volatility may not necessarily be linked directly to traditional valuation moves. Instead, liquidity challenges elsewhere in the capital markets may dictate the sell-off of liquid holdings in non-core assets such as gold. Further, given the relative size of the precious metals markets relative to the fixed income or equities markets as well as the potential novelty of the investment class to many investors, extreme price movements can cascade into rapid sell offs as weak hands relinquish positions in efforts to manage internal risk. Consequently, investors may benefit from active management. Hence, the ultimate size of the exposure should be left to active asset managers or allocators, such as global macro traders, global asset allocation managers, or active commodities managers. Few investment committees debate the size of their non-political commodity exposure in areas such as wheat, corn, sugar or zinc. Thus, for many committees, upon making an asset allocation deci-

sion to commodities or real assets or global asset allocation strategies, the ultimate size of the gold exposure may be delegated to active management.

> "ALL THE GOLD WHICH IS UNDER OR UPON THE EARTH IS NOT ENOUGH TO GIVE IN EXCHANGE FOR VIRTUE."
> -PLATO

However, for those committees that have a definitive philosophy or belief about gold specifically, which ultimately is a political statement regarding gold as a currency substitute, store of value, or fiat currency devaluation hedge, there is an additional decision. Such committees may determine, as UTIMCO did, that a longer-term carve-out for gold is warranted. The size of that allocation ultimately depends upon their philosophy or belief about the prospects for gold as an alternate currency, as well as the prospects for existing fiat currencies. In the end, this will be an argument on the merits, or lack thereof, of the central banking technocracy and political fiscal discipline. And that choice was illustrated by George Bernard Shaw when he wrote, "You have to choose 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 due respect for these gentlemen, I advise you, as long as the Capitalist system lasts, to vote for gold."

Yet, for many investors, the ultimate decision about gold will not revolve around its unique asset allocation within a portfolio, but rather its use as a trading vehicle for active management in strategies such as global tactical asset allocation, global macro, or commodity trading strategies. Figure 7 summarizes the main methods by which most institutional investors may utilize gold within their portfolios.

Gold is but one of several investment tools that can be utilized by institutional investors. Using it will not solve all the other challenges investors face from hostile capital markets, political uncertainty, or evolving technological change. It can have a place in an investor's portfolio, but investors must do other things well in order to meet the obligations of their investment programs. As Plato said, "All the gold which is under or upon the earth is not enough to give in exchange for virtue."

Figure 7

| Role | Total Portfolio Allocation | Type of Strategy / Manager | Objectives | Considerations |
|---|---|---|---|---|
| Inflation Hedge – Component of Commodities Portfolio | 0.5% to 2.0% of Plan Assets (0% - 15% of Commodities Allocation which may be 5%- 15% of Plan Asset Allocation) | Index-oriented long-only commodities strategies; either active or passive | Hedge impact of inflation | Costs, volatility, potential lack of a risk premium |
| Alpha Seeking | -2% to +2% (part of a 5% - 10% portfolio allocation) | Global Macro, GTAA, Risk Parity | Add excess return | Fees, volatility, potential for negative alpha |
| Dedicated Gold Allocation – Hedge Against Monetary Regime Change (UTIMCO) | ? | Direct physical holding and/or ETF | Hedge against devaluation of fiat currency | Carrying cost, opportunity cost, imperfect hedge, price volatility, career risk |

*Source: NEPC*

## Disclaimers and Disclosures

- Past performance is no guarantee of future results.
- Information on market indices was provided by sources external to NEPC, and other data used to prepare this report was obtained directly from the investment manager(s). While NEPC has exercised reasonable professional care in preparing this report, we cannot guarantee the accuracy of all source information contained within.
- This report may contain confidential or proprietary information and may not be copied or redistributed.

In addition, it is important that investors understand the following characteristics of non-traditional investment strategies including hedge funds, real estate and private equity:

1. Performance can be volatile and investors could lose all or a substantial portion of their investment
2. Leverage and other speculative practices may increase the risk of loss
3. Past performance may be revised due to the revaluation of investments
4. These investments can be illiquid, and investors may be subject to lock-ups or lengthy redemption terms
5. A secondary market may not be available for all funds, and any sales that occur may take place at a discount to value
6. These funds are not subject to the same regulatory requirements as registered investment vehicles
7. Managers may not be required to provide periodic pricing or valuation information to investors
8. These funds may have complex tax structures and delays in distributing important tax information
9. These funds often charge high fees
10. Investment agreements often give the manager authority to trade in securities, markets or currencies that are not within the manager's realm of expertise or contemplated investment strategy