Sheffield Investment Management, Inc.

Research Report: **GOLD**

October 2, 2013

INTRODUCTION

For many years we have included some form of gold ownership in all client portfolios for a variety of reasons including its portfolio diversification benefits, its perceived inflation hedge qualities, and for protection against government debasement of our money. So pervasive are these beliefs in the investment world that clients have rarely challenged us regarding either the appropriateness of owning gold in their portfolios (generally via the purchase of the gold bullion ETF: GLD) or the validity of its supposed hedging qualities. Furthermore, clients have never questioned us regarding what constitutes an appropriate amount of gold ownership or how such a calculation should be approached. We nevertheless think about these issues.

A detailed discussion about the perceived benefits of gold ownership, titled *"The Golden Dilemma"* and written by Mr. Claude Erb, CFA and Professor Campbell R. Harvey, (E&H) was published in the July/August 2013 edition of the Financial Analysts Journal® (Volume 69, Number 4), a publication of the CFA Institute. The article can be seen in its entirety at this web address: http://papers.ssrn.com/sol3/papers.cfm?abstract_id=2078535. In this article, the authors examined the composition of ownership of the world's gold supply and looked for evidence that would either support or disprove the many commonly held beliefs regarding those factors which are most commonly believed to influence the market price of gold. E&H present conclusions based upon their empirical studies which serve to either disprove, or at least cast serious doubt upon, virtually every commonly held belief regarding gold's investment characteristics. We thought their research was insightful enough to share a summary of their findings with you.

Because we are analysts at heart, and don't believe in our own infallibility, we love it when some well-researched empirical evidence disproves conventional wisdom. (Over the years we have discovered that conventional wisdom is wrong more often than people might think.) What follows in the balance of this report is a synopsis of many of the surprising conclusions reached by E&H which may in turn alter your views regarding how well gold actually lives up to the claims of its investment attributes.

Who Owns the World's Gold?

Unlike stocks or bonds which share a basic investment purpose across all holders (being the payment of an investment return over time), gold serves a variety of holders who do not necessarily share any common purpose for ownership. There are four distinct gold markets and each typically moves according to its own "rhythms". This reality about the gold market adds a great deal of complexity when one attempts to understand its price gyrations. Such complexity doesn't seem to faze gold oriented investment advisors who confidently predict what the future price of gold will be and within what timeframe. E&H observe:

> "*There are basically three uses for the above-ground supply of gold: jewelry, investment and technology. The investment category encompasses the holdings of central banks, individuals and other institutions. Jewelry claims about 50% of the outstanding above-ground stocks of gold, central banks and private investment each claim about 18% of the above-ground stock of gold, and fabrication accounts for around 12%." (pg29)*

Roger A. Sheffield, CFA
Sheffield Investment Management, Inc.
900 Circle 75 Parkway, Suite 750
Atlanta, GA 30339
(770) 953-1597
(770) 953-3586 (fax)
roger@shefinvestment.com
www.shefinvestment.com

As illustrated by **TABLE 1**, E&H conclude that the total gold held in these four markets (obtained by subdividing investment use between central banks and investors) amounts to approximately 171,300 tons and that mining activities increase that total by approximately 2,500 tons per year. Thus, ownership within these markets breaks down approximately as follows:

TABLE 1

Market	Metric Tons	%
Jewelry	85,650	50
Central Banks	30,834	18
Investors	30,834	18
Technology	20,556	12
Slippage	3,426	2
(Source: E&H Article)	171,300	100

Central banks buy and sell gold bullion for reasons that are unique to each country, and their activities can have a significant impact on world prices. During the previous 12 years, E&H generalize that western European central banks were reducing their gold reserves while Asian central banks (primarily China, Russia, India, Saudi Arabia and Singapore, among others) were increasing their reserves. Generally speaking, the price of gold does not appear to be a material consideration in these transactions.

When gold prices move sharply higher, people around the world begin to sell their jewelry for cash, which can amount to massive amounts of new supply relative to the amounts held by investors. This swing factor can become quite disruptive to gold's upward price trajectory.

Is Gold an Inflation Hedge?

Perhaps the most pervasive view in the investment world regarding gold is that it provides an effective hedge against inflation. In 1975, the 42-year ban on U.S. citizen's ownership of gold was ended and the authors use that starting date in a number of their analyses of gold's price behavior. Compared to CPI (our primary inflation measurement tool) inflation rates in the U.S. from 1975 through 2012, E&H observed:

> *"The price of gold swings wildly around the CPI. The inflation-derived price of gold and the actual price of gold have rarely been equal. Given the most recent value for the CPI, this version of the gold-as-an-inflation-hedge argument suggests that the current price of gold should be around $780 an ounce."*[1] *(pg 12)*

Furthermore, when comparing changes in the price of gold to the year-over-year *change* in the CPI to ascertain if changes in the price of gold <u>foretold</u> the future rate of change in the CPI, E&H found that gold offered no hedge against <u>unexpected future</u>

[1] *As of March, 2012*

inflation. Nor did changes in the inflation rate offer any insight as to the future price of gold. The authors conclude:

> *"In 'normal' times, gold does not seem to be a good hedge against realized or unexpected short-run inflation. Gold may very well be a long-run inflation hedge. The long run, however, may be longer than an investor's investment time horizon or life span." (pg19)*

<u>Gold as a Currency Hedge</u>

A second commonly cited reason for owning gold is to protect oneself against the risk of decline in the value of our nation's currency vis-à-vis other currencies. This opinion is not restricted to U.S. dollar holders, however. Central banks around the world often engage in currency debasing activities. Overzealous money creation by central banks is thus viewed as a reason for the decline in the exchange rate of one currency verses another.

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To get a sense of perspective on this accepted investment theory, E&H compare changes in the real (inflation adjusted) price of gold in the local currencies of eight developed countries: Australian dollar; Canadian dollar; Deutsche mark; Japanese yen; New Zealand dollar; Swiss franc; British pound and the U.S. dollar, between the years of 1975 and 2012. The surprising results of their analysis were that the real price of gold, in terms of each of these local currencies, moved largely in tandem across every country regardless of their monetary and fiscal policies, and that gold's real price over this 37 year period was largely independent of changes in currency values among the group. In fact, gold's price changes were *negatively correlated* to currency price changes for all countries in the sample. Stated inversely, fluctuations in currency values among these countries offered no insights into the change in the real value of gold within the respective countries.

In less-developed countries, a number of which have experienced massive currency devaluations as well as hyperinflation, gold has likewise had a spotty record as a store of value. The authors cite as a typical example the instance of Brazilian hyperinflation during the period 1980 – 2000. Annual inflation averaged 250% during those years and the nominal price of gold rose substantially in Brazilian currency terms. Nevertheless, the real value of gold in terms of the Brazilian currency fell by about 70% during this period. E&H note that losing 70% is better than losing almost 100%, so in a sense gold was able to maintain some of its purchasing power, but did not come close to preventing a major loss of wealth to Brazilian investors in their own country.

The bottom line: Governments frequently engage in policies which harm the exchange value of their country's currency vis-à-vis that of other countries' currencies. Owning gold during a period of currency debasement, including hyperinflation, offers no assurance that gold's purchasing power will be maintained in one's own local currency.

Gold as a Safe Haven during Turbulent Times

Another prevalent theory is that gold becomes a desired investment during periods of extreme economic or political turbulence. To test this theory, the authors compare changes in gold prices to changes in the S&P 500 index for the period 1975-2012 with a particular focus on periods of extreme market stress at home and abroad and find no clear proof that gold is a safe haven during such periods.

A safe haven asset is defined as one which maintains a dependably stable value during times of stress while enjoying continuous liquidity. Obviously, if gold maintained its purchasing power in a local currency during a period of extreme market turbulence elsewhere around the world, then perhaps investors could expect a similar outcome here in the US should the same conditions arise. This theory may be put to the test again here at home with the current budget/debt ceiling fiasco.

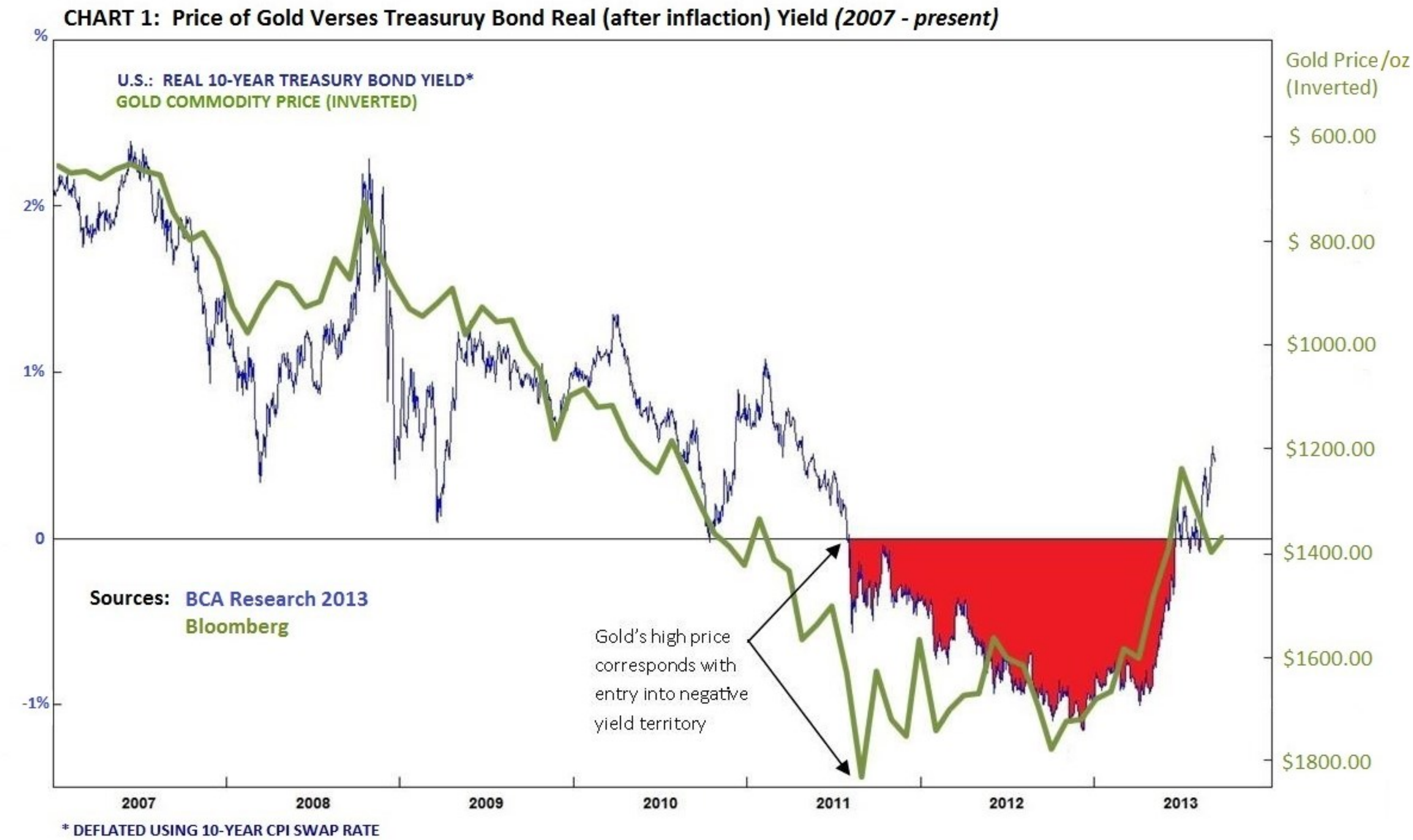
Gold as an Alternative to Assets with Low Real Returns

Since gold pays no current return such as a dividend or an interest payment, there is an opportunity cost to its ownership. When other investments are offering little or no current yield (such as in today's environment), another pro-gold theory posits that investors might be more willing to own gold. They are simply not giving up much in the way of forgone cash flow from other investment opportunities.

If inflation exceeds the return from an investment, than that investment is said to offer a negative "real" return. When this situation occurs, investors are in an even worse position because now purchasing power is being eroded, and gold may therefore be viewed as that much more of a desirable investment alternative. E&H test this hypothesis by examining the relationship between the inflation adjusted price of gold and the real (after-inflation) yield on 10-year Treasury Inflation Protected Securities (TIPS). We present in **CHART 1** (page 5) an illustration of the real yield of the 10-year treasury bond, which displays a similar history to the 10-year TIPS bond. Superimposed on the real yield chart is the (inverted) price action of gold during the same time period. The chart reveals that the price of gold peaked in August, 2011 — around the time that real treasury yields became negative. Approximately two years later, as real yields moved back towards zero, and then became positive once again, gold experienced a dramatic price decline.

CHART 1 reveals that real treasury yields and gold prices have recently had a fairly significant inverse relationship. In statistical parlance, the two measures have a -.82 correlation. Increasing real yields may be associated with anticipated future domestic economic growth and thus an argument can be made that the price of gold may continue to decline if the economy continues to expand causing the opportunity cost of holding gold to increase. One the other hand, if the economy weakens and deflationary trends reemerge, resulting in negative real treasury yields once again, the price of gold may reverse its present downward course if the current inverse relationship continues to hold.

We are more sympathetic to the information content of this chart than we expect E&H would be. In their view, the relatively short time period depicted in the chart may



obscure the possibility that a longer time period analysis would weaken the correlation. Secondly, E&H posit the possibility that two unrelated price trends with differing periodicities have aligned during this window of time before continuing on in their unrelated trajectories. They caution readers to avoid the "correlation implies causation" trap.

How Much Gold, If Any, Should I Own?

Given the preceding, it would be reasonable to say that our faith in gold as an inflation hedge, or as an antidote to a host of other investment calamities, has been shaken. E&H conclude with a discussion of why an investor may nevertheless decide that some amount of gold should be owned in a diversified portfolio. Perhaps the best reason is that changes in the price of gold do not correlate well with price movements in stocks and bonds. Thus gold can help reduce portfolio volatility but without necessarily improving or harming investor returns. Investors who are actively consuming their portfolios may find this characteristic warrants gold's inclusion to some extent in their asset mix.

The second reason relates to how closely an investor wants his/her portfolio to be representative of the world's total investable market portfolio, being the ultimate in diversification and termed the "*aggregate market reality*" by E&H. Based upon this line of thinking, the authors calculate that a benchmark, or neutral, weighting of gold would represent approximately 2% of investor portfolio assets. (See **TABLE 2**, page 6)

Figuring out how much to own of any asset class, or individual investment, for asset allocation purposes, is always a *personal* calculation however. In the final analysis, the "correct" answer is that it comes down to rationalizing what feels comfortable to each investor. For investment counselors, this ownership decision must be defensible and reasonable from the standpoint of prudence (itself a difficult term to define) and hindsight if things don't go according to plan.

One reasonably defensible approach to the asset ownership question is to start from an appropriate "neutral" index weighting of each desired investment and then make some bet away from that weighting based on the uniqueness of the investor's personal situation. Investors could thus use the 2% benchmark, or neutral weighting, as a starting point for a defensible gold position in a portfolio. The term "neutral" implies an ownership amount about which you have no strong opinion one way or another. It's a reasonable approach to an asset allocation issue.

The authors suggest that the total value of the world's stocks is approximately $51 trillion and the total value of the world's bonds is approximately $41 trillion. Virtually all of the world's stocks and bonds are owned by either institutional investors (pension/profit sharing plan, endowments, country wealth funds, etc.) or individual investors. E&H also estimate that the total value of *investors' portion* of the world's gold is approximately $2 trillion.

Adding the value of that investable gold to the market value of the worlds' stocks and bonds, we observe that gold in today's dollars equates to approximately 2% of the global investable wealth. This information provides a helpful frame of reference for what might constitute a neutral position of gold in a client portfolio.

TABLE 2 — GLOBAL INVESTMENT WEALTH

	$	%
Global Stocks	51 T	54
Global Bonds	41 T	44
Investable Gold	2 T	2
TOTAL:	94 T	100

Summing it all up

The market price of gold fluctuates for a combination of reasons which are difficult, if not impossible, for an investor to ascertain. That price is heavily impacted by the degree of faith individuals place in the story-of-the-day which seeks to explain why the price is what it is and in how that current story will affect its price in the future.

Moreover, investor demand for gold seems to rise and fall with the price action of gold. Thus, the higher the price, the greater the demand. Stated another way, gold investors appear to be momentum-based investors. As we have seen from the review of rationales presented above, it's difficult to anchor the current price of gold to anything as an aide to understanding its true "value". At any point in time, one or more of the theories described in this article may appear to "explain" gold's price action but none offer strong empirical truths.

Different people can reach different conclusions from analyzing the same data. So let's just say that the authors' thorough analysis of the various claims made in favor of gold ownership show these claims to be weak and frequently unsupportable at best when held to the harsh light of empirical evidence. Every now and then the price of gold may correlate closely with any of the rationales described in this article, but a skeptic could never be sure that any past trend will continue in the future or that some current correlation implies causality. *Caveat Emptor*.