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The Allure of Silver

Often overlooked, the other precious metal can lower risk in a portfolio. It provides important diversification in combination with gold or on its own. But speculators beware.

by Julie Ni Zhu, Research Analyst, and Steven R. Cunningham, PhD, Director of Research and Education

One of the seven sacred metals of alchemy, silver has been overlooked by many modern investors. Many who have speculated in silver likely have been misguided in the attempt. While the perverse demand and supply characteristics of the market make speculative trading impractical, we find that silver can reduce risk and increase returns in portfolios.

It is uncorrelated with other assets, and therefore provides useful diversification. This supports its use in buy-and-hold investment portfolios.

An examination of volatility processes of precious metals provides evidence that individual commodities are too distinct to be considered a single asset class. It is incorrect to exclude silver from a portfolio on the grounds that the portfolio already contains gold.

The two precious metals react differently to economic conditions, opening the door to adding *both* gold and silver to a portfolio to improve diversification. Using intraday data, an October 2000 study by Rohan, Chaudhry, and Koch in the *Journal of Economics and Business* measure the responses of silver prices to macroeconomic news releases. Silver showed weak short-term responses to the Consumer Price Index (CPI), hourly wages, business inventories, and construction spending, but stronger responses to unemployment and capacity utilization.

By comparison, gold was responsive on the short-run to news releases on capacity utilization, CPI, wholesale prices, unemployment, and GDP.

If the point of the diversification is to add assets that are responsive to different elements of the economy, gold and silver might each find a place in portfolios.

Like gold, silver also can serve as a hedge, an insurance policy against inflation. As inflation rates rise beyond typical levels, gold and silver respond in a disproportionate fashion. A 1 percent increase in the rate of inflation results in silver and gold prices accelerating by 1.58 percent.

During high inflation periods, similar to gold, the increase in the price of silver dramatically exceeds the inflation rate, as it did in the late 1970s, probably because people see it as a safe haven. According to Thomson Reuters, the 2010 indexes of silver, gold, and base metal prices show that silver outran the gold price index, making it the metal for which the price has increased the fastest.

Correlation of Silver and Gold with Other Assets

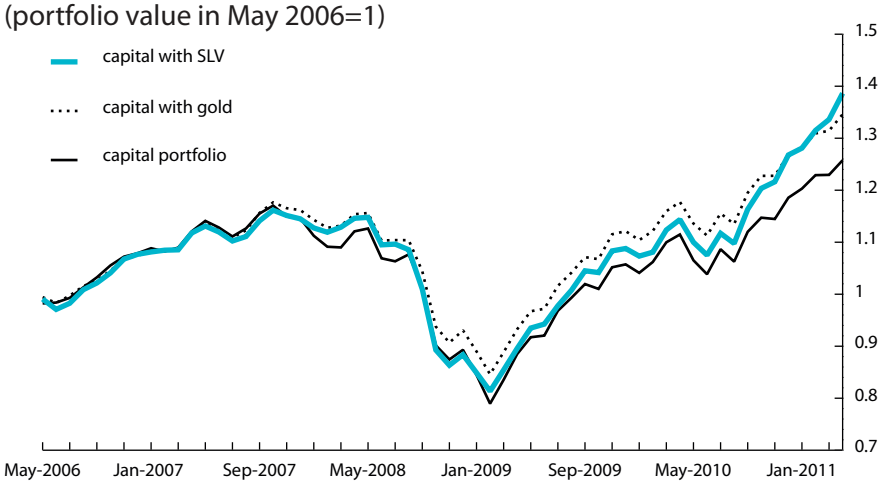
	*Correlation with Silver**	*Correlation with Gold**	*Available Data Periods*
iShares Silver ETF (SLV)	0.953	-	05/2006-04/2011
Gold London PM Fix	0.748	-	02/1968-04/2011
Crude Oil	0.236	0.191	02/2001-03/2011
S & P 500 Index	0.050	-0.043	04/1968-04/2011
Russell 2000 Index	0.079	0.027	01/1979-04/2011
S&P United States REIT Index (gross div.)	-0.005	-0.072	08/1989-03/2011
Barclays Capital US Aggregate Bond Index	-0.200	-0.076	01/1976-04/2011
Long-Term Government Bonds	-0.170	-0.083	02/1968-04/2011
Long-Term Corporate Bonds	-0.140	-0.091	02/1968-04/2011

* London PM Fix.

Inside this report The annual reports for Social Security and Medicare show continued deterioration in the financial outlook for both programs. To keep benefits at current levels, the federal government will have to come up with more than half trillion dollars in additional money by the year 2020. People not yet retired should start planning now for reduced benefits. See back page.

Also The complications remarriage brings to estate planning can require some dedicated solutions. See Ask the Expert. Page 3.

Chart 1: **Silver's Performance in a Portfolio**
(portfolio value in May 2006=1)



Silver Exchange-Traded Funds (ETFs) hit the market in April 2006, which increased the ease with which silver can be used as an investment asset. Prior to that date, investing in silver involved storage, transportation, and delivery issues. The metal is also taxed at a rate as high as 28 percent, since silver is treated as a "collectible" rather than being taxed at a lower capital gains tax rate when it is sold.

The ETFs make it much easier to consider diversifying a portfolio with silver. This has re-made the silver market as investors, small and large, have added silver ETFs to their portfolios.

The growth of silver ETFs has been dramatic. From 2006 to 2010, silver ETF holdings increased 324.4 percent. By late 2010, 58.6 percent of total silver demand was for ETFs. This demand shift has been met with an increase in silver prices during the same period.

To be useful in diversifying a portfolio, an asset needs to offer more than just a convenient financial vehicle. Its price movements must be uncorrelated with those of other assets.

Silver correlation coefficients indicate no relationship with stock prices. Less than 24 percent of the fluctuation in crude oil can be tied to silver price fluctuations, so that fluctuations in oil prices are not likely to have much impact on silver prices. Correlations with bonds of various types run between 14 and 20 percent.

The correlation of silver and gold prices is 75 percent. While this is substantial, it suggests that the two metals do not move in lock-step. In short, when other assets lose value, silver will not typically follow. This suggests that silver can lower risk in a portfolio.

To examine this, we added silver and gold to a theoretical stock-bond portfolio, evaluated from May 2006, when the silver ETF was newly created, to April 2011. The initial securities portfolio contained 60 percent stock, represented by the S&P 500 index, and 40 percent bonds, represented by Barclays Capital U.S. Aggregate Bond Index. We also considered the portfolio with 54 percent stock, 36 percent bonds, and 10 percent silver ETFs (SLV). For comparison, we include a similar portfolio with gold instead of silver.

We computed the Sharpe Ratio—the ratio of return to risk for all three portfolios. The higher the Sharpe Ratio, the more return an investor gets while accepting less uncertainty about the outcome. As the table below shows, both gold and silver can lower volatility and increase the expected return when added to a portfolio. Silver performed slightly better than gold in this capacity.

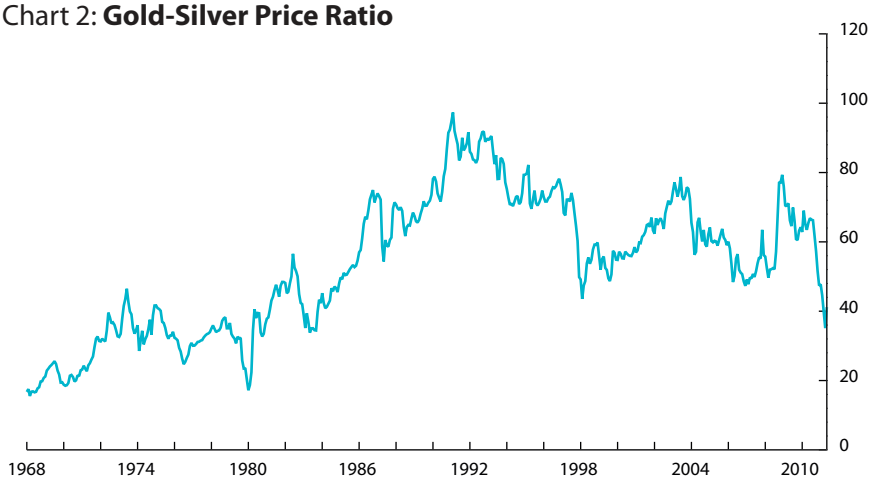
Return-Risk, 05/2006 – 04/2011

Portfolio	*Sharpe Ratio*
Securities Only	0.11
with Gold	0.27
with SLV	0.31

The returns of portfolios with silver did not add very much to the growth of wealth until late 2008, when silver started to catch up with gold. As shown in Chart 1 above, in the period after silver ETFs were created, portfolios including gold or silver had higher returns than the pure capital assets portfolio, and silver seems to have surpassed gold and has higher growth this year.

Speculators, on the other hand, struggle with silver's price volatility and stubborn refusal to be explained by a simple trading model. In real terms, silver prices are essentially flat for long periods; silver simply retains its value in the face of limited background inflation.

Chart 2: **Gold-Silver Price Ratio**



Even nominal gains are small. In 1990, for example, silver sold for $4.83 per troy ounce; 10 years later, the market price was $4.95. Some researchers have argued that from 1990 to 2005 net silver disinvestment activity was drastically high. The effect of this was to unusually depress silver prices, due to a market expectation that the supply of silver would increase in the future which would drive down silver prices.

In markets, prices are driven by supply and demand. The demand for silver is unlike most other precious metals. Unlike gold, 63 percent of the silver produced every year goes to industrial applications.

Silver surrounds us. It has the highest electrical conductivity of any element, and the highest thermal conductivity of any metal. This makes it ideal for uses in electronic devices, such as televisions, computers, and cell phones.

In some compounds, silver is highly reactive, leading to its use in such things as automobile catalytic converters and photographic films. Silver compounds have a toxic effect on some bacteria, but without high toxicity to humans, lending to use in medical applications.

This industrial demand can swing dramatically with business cycles or technological changes, leading to pronounced price changes that are extremely difficult to predict.

In contrast, most gold is used for jewelry, coins, or bullion, which can be reclaimed. Silver use in industrial processes is often destroyed. So day-by-day silver is becoming rarer. Known reserves are declining. This creates long-term upward pressure on prices. The current world reserves of silver are 510,000 metric tons, according to the U.S. Geological Survey, which is 10 times higher than the world reserves of gold.

Based on the supply of silver from mining production, it might be tempting to conclude that silver's supply is more stable that its demand. After all, silver mining, for the most part, has been in a slow, stable growth pattern, driven by rising demand and improvements in mining technology.

But silver supply is not driven entirely by private market demand and technology. Silver supply is also affected by movements of silver in and out of the marketplace by governments. A substantial increase in supply related to Chinese government sales contributed to the soft price of silver during early 2000s. This outflow stopped in 2007, leaving recent total world net government sales at only about 50 percent of what it was in 2006.

Worse, two-thirds of silver production is essentially unpredictable because it is a byproduct. So its supply is influenced by changes in production levels of base metals such as zinc or copper. These random changes translate into erratic, unpredictable price changes, frustrating attempts at the construction of consistently successful short-term trading strategies for silver.

Some traders use the ratio of the gold price to the silver price, illustrated in Chart 2 on page 2, as a way of gaining insight into future silver price movements. When the ratio rises to historically high levels, as it was in 1990, the thinking is that silver has become underpriced. Buy. When the ratio falls to a low level, as it did in 1980, sell.

Unfortunately, this approach is wrought with problems. A recent study by Adrangi, Chatrath, and David, in the journal *Applied Financial Economics*, examines this strategy. Using 15-minute intraday data, they find that when the difference in the two prices becomes "large," silver adjusts to close the imbalance. While trading on this information is theoretically possible, in practice the markets are distorted by too many other factors to make this consistently practical.

While this may rule out speculative trading as a consistently winning strategy, silver may play an important role in long-term, buy-and-hold portfolios.

ASK THE EXPERT

Second Chances

Estate planning for second or subsequent marriages brings a number of competing concerns.

The first thing to consider is a prenuptial agreement. These not only protect assets from being taken in a divorce, they also provide for distribution of the assets in a manner as desired by the asset holder in the event of his or her death. This can help protect assets for children from a previous marriage. The protection is particularly important because a surviving spouse who is dissatisfied with what he or she would inherit can disregard the will and take a share determined by state law, usually one-third of the assets. A prenuptial agreement would override this statutory share.

An irrevocable life insurance trust also can provide assets for children from a previous marriage. So can a Qualified Terminable Interest Trust or QTIP, which has the added benefit of providing income for a surviving spouse while protecting the principal for children. A QTIP trust also protects assets from being subject to estate tax at the death of the initial spouse.

Also at issue when people remarry is how to share and provide assets for a new spouse. There are some fairly forthright solutions. Life insurance is an easy way to provide funds for a surviving spouse. Owning property jointly allows both spouses to have full access to it. And designating a spouse as a beneficiary on retirement accounts permits funds to pass to a surviving spouse with great income-tax advantages.

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To submit questions for future columns, email asktheexpert@aier.org. For guidance on specific situations, consult your lawyer or financial advisor.

More Bad News About Entitlements

Shortfalls for Social Security and Medicare are projected to be worse than previously thought.

by Polina Vlasenko, PhD, Research Fellow

Social Security and Medicare are in big trouble. Now.

The recently released annual reports of the trustees of the two programs show that their already shaky financial situations have deteriorated since last year. The government will have to make changes soon to keep both programs viable.

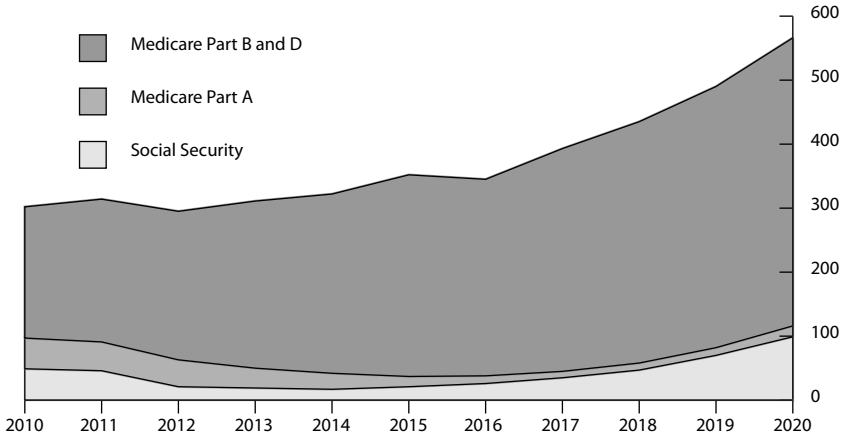
Driven by an aging population, rising life expectancy, and ballooning medical costs, expenditures on both Social Security and Medicare will exceed tax revenues *every year* from now on. This cash deficit will grow over time, exerting increasing pressure on the federal budget.

The only direct source of funding for Social Security is payroll taxes: Employer and employee each pay 6.2 percent of earnings, up to an annual maximum (currently $106,800 per year). Similarly, Medicare Part A is financed by payroll taxes: Employer and employee each pay 1.45 percent of earnings with no maximum. But no tax revenue is dedicated to financing Medicare Part B and D. About a quarter of expenses are covered by premiums paid by enrollees. The rest is covered by general revenue transfers from the federal budget. Because of this, Medicare will become an increasing drain on government funds.

The chart shows how much expenses are projected to exceed dedicated revenues for these programs over the next 10 years. In 2020, to continue providing benefits promised under the current law, the federal government will have to spend more than half a trillion dollars out of general revenues. This is *in addition to* the dedicated revenue collected from payroll taxes, taxes on benefits, and Medicare premiums. This additional payment is equal to more than 25 percent of *all* 2010 federal tax receipts.

Strained Federal Budget
(billions of dollars)

Projected outlays from general revenues required to fund Social Security and Medicare.



Both programs have trust funds that are projected to last for years: until 2036 for Social Security and 2024 for Medicare. Unfortunately, the trust funds do not represent a stock of any real assets. They hold only special issue U.S. Treasury securities; the money was lent to Congress and already has been spent.

Because Social Security and Medicare will be running cash deficits from this day forward, every year the trust funds will cash in some of the securities. The Treasury can meet these obligations in only two ways—raise taxes or borrow.

Given the already high level of outstanding federal debt, it might be difficult to cover this shortfall through borrowing. And the only alternative to the politically unpleasant option of raising taxes is another politically unpleasant choice: reforming Social Security and Medicare in a way that reduces government's outlays.

The government will have to address the financial shortfall quite soon. It is likely that Washington will enact some combination of measures that include both reduced benefits and increased taxes.

People should not assume that Social Security and Medicare will remain unchanged in their current forms for decades. Changes will come sooner than that. Those who are not yet retired should plan for a future in which Social Security and Medicare will be less generous and more costly (in terms of taxes, premiums, and co-payments) than they are now.

AIER | gold corner

Price of gold, June 16, 2011, London PM fix.

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