



Third Party Research: Catalyst Research

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Precious Metals

Most pension fund managers and investment professionals use asset allocation to achieve diversification in order to reduce risk, maximize performance and, thus, responsibly manage their clients' funds. The traditional view of portfolio management, to achieve sufficient diversification, is to break portfolios into three asset classes, most commonly being: stocks; bonds; and cash. What has been lacking is the use of bullion and other precious metals in the diversification process.

Yet, over the past ten years, three precious metals have outperformed equities, by almost 4:1. Traditional portfolio thinking has been wrong in its belief that commodity stocks and other alternative investment vehicles were a sufficient replacement for physical precious metals in investment portfolios.

eResearch Corporation is pleased to provide an article by associate, **Catalyst Equity Research Inc.**, which looks at the advantage of diversification provided by bullion and other precious metals to investment portfolios. The conclusion is that precious metals have an important role to play in asset management allocation practice.

Catalyst Equity Research Inc., which was founded in 2003, is Canada's sole independent equity research company specializing exclusively in the financial services sector. Headed by Robin Cornwell, who has more than 30 years of experience in research and investment analysis of financial companies, Catalyst provides comprehensive investment research and advisory services to the investment community.

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Director of Research

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By Ignoring Precious Metals 'The Most Negatively Correlated Asset Class to Stocks & Bonds' Client Portfolios Are Clearly Not Sufficiently Diversified

EXECUTIVE SUMMARY: Why Traditional Portfolio Management Thinking is Wrong

Most pension fund managers and investment professionals use asset allocation to achieve diversification in order to reduce risk, maximize performance, and thus responsibly manage their client's funds. The traditional view of portfolio management is to break portfolios into three asset classes; most commonly being stocks, bonds and cash as sufficient to achieve diversification. This traditional view is quite simply incorrect as it has cost investors and pensioners dearly over the last decade alone.

The objective of this report is to clearly demonstrate that one of the most important investment categories; namely, precious metals (gold, silver and platinum) otherwise referred to as bullion, is an asset class of its own. We further assert that modern portfolio managers, investment advisors and the financial institutions employing these investment professionals are, in fact, not sufficiently diversifying their client's investment portfolios by excluding bullion as an asset class.

The definition of diversification maintains that a balanced investment portfolio should have various weightings of asset classes to be properly balanced. Furthermore, modern portfolio theory tells us that having the right mix of uncorrelated assets reduces risk and improves return. If that is the accepted practice, then why is it that the most negatively correlated asset group to stocks and bonds; namely, precious metals or bullion, has generally been excluded from portfolio diversification as an asset class?

By bullion, we are referring to physical bullion and not a bullion proxy such as the ownership of a mining stock or other alternative investment vehicles. Over the last ten years, the three precious metals have outperformed equities by almost 4 to 1. Where traditional portfolio thinking went wrong was in the belief that commodity stocks and other alternative investment vehicles were a sufficient proxy for physical precious metals in investment portfolios. But in reality, these so called proxy investments come with significant risks disassociated with the ownership and performance of bullion itself and do not necessarily provide a direct or pure asset class exposure to commodities.

We contend that these so called proxy investments add uncertainty as they expose portfolios to other variables such as financial, geographic and political risks which are then layered on top of operational and management issues. Physical bullion, on the other hand, provides insurance against failure of all other investments, better liquidity and is the only asset class (excluding cash) with a positive correlation coefficient with inflation, and therefore, the only asset class that can provide protection from a systemic crisis. For thousands of years, gold and silver have provided a reliable way to secure wealth. The simple reality is that many investment professionals do not recognize precious metals as an asset class. A direct physical allocation in precious metals provides an unencumbered investment with (i) no counterparty risk, (ii) sufficient liquidity for large investors, and (iii) no dependence on management for performance.

Once accepted that physical precious metals or bullion should be included as a necessary asset class, then the question becomes just how much of an allocation to physical precious metals or bullion is adequate. Based on historical efficient frontiers, Ibbotson found that including precious metals moderately improved the efficient frontier. Allocations ranged from 0% to 9%. Based on forward-looking efficient frontiers, Ibbotson found that including precious metals led to asset allocations with higher Sharpe ratios. Investors, it was determined, could potentially improve the reward-to-risk ratio in conservative, moderate, and aggressive asset allocations by including precious metals with allocations of 7.1%, 12.5%, and 15.7%, respectively.

The allocation to precious metals does not come at the expense of any single asset class, but rather from a reduction in several asset classes. Ibbotson suggests that the unique risk and reward profile of precious metals may make them a useful diversification tool in strategic asset allocations moving forward.

We contend that precious metals should be considered an asset class of its own and that an allocation to precious metals, as the most uncorrelated asset group, is essential for proper portfolio diversification.

DIVERSIFICATION = UNCORRELATED ASSET CLASSES

Modern portfolio theory tells us that having the right mix of uncorrelated assets reduces risk and improves return. A theory pioneered by Harry Markowitz back in 1952 states that it is possible to construct an “efficient frontier” of optimal portfolios offering the maximum possible expected return for a given level of risk. One of the critical aspects to this theory is achieving the right mix of investments or, in other words, ensuring portfolio diversification with uncorrelated assets.

Diversification Defined

Merriam-Webster defines diversification as to make diverse or to balance (as an investment portfolio) defensively by dividing funds among securities of different industries or of different classes. Investopedia.com defines diversification as a technique that mixes a wide variety of investments within a portfolio. The rationale behind this technique contends that a portfolio of different kinds of investments will, on average, yield higher returns and pose a lower risk than any individual investment found within the portfolio.

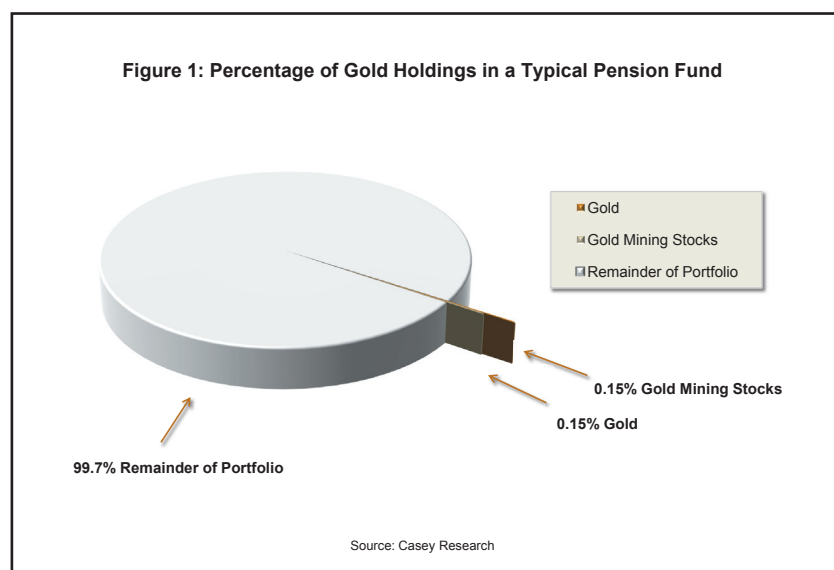
Diversification strives to smooth out unsystematic risk events in a portfolio so that the positive performance of some investments will neutralize the negative performance of others.

Therefore, the benefits of diversification will hold only if the securities in the portfolio are not correlated. A portfolio that is invested in multiple instruments whose returns are uncorrelated will have an expected simple return which is the weighted average of the individual instruments’ returns. Its volatility will be less than the weighted average of the individual instruments’ volatility. An investor can reduce risk simply by investing in many unrelated instruments.

TRADITIONAL THINKING IS WRONG

Most pension fund managers and investment professionals use asset allocation to achieve diversification in order to reduce risk, maximize performance, and thus responsibly manage their client’s funds. The traditional view of portfolio management is to break portfolios into three asset classes, most commonly being stocks, bonds and cash, as sufficient to achieve diversification.

This traditional view is quite simply incorrect.



Surprisingly, the Canadian Banks Forum is an exception; it more accurately defines asset allocation as a process whereby an investor diversifies his or her portfolio with different classes of assets such as stocks, bonds, cash investments, foreign currency, real estate, collectibles, precious metals, natural resources and life settlements. Furthermore, it states that because markets are constantly changing due to the unstable global climate, investors should examine and, if necessary, rebalance their asset allocation annually.

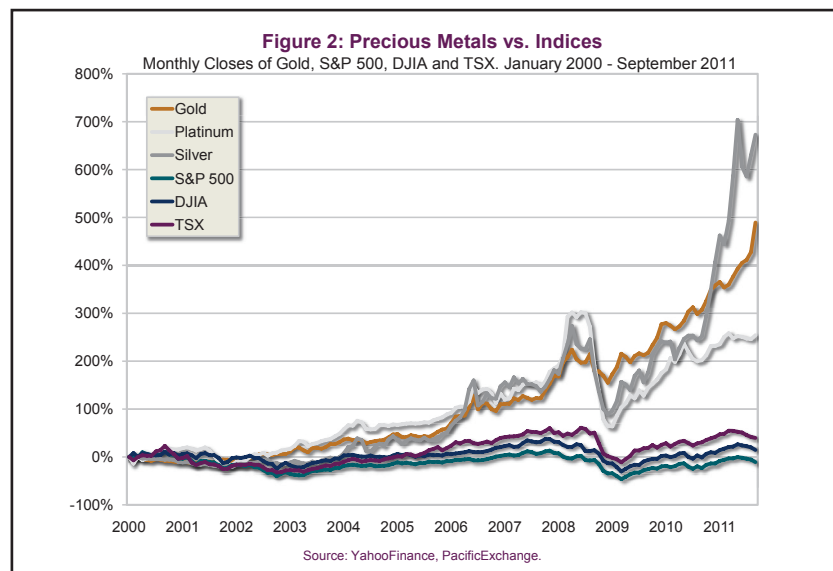
Stocks, bonds and real estate assets provide an ongoing source of value that can be determined using the present value of future cash flows. Commodities are consumed and do not provide a source of ongoing cash flow but rather a single cash flow. Currency, fine art and collectibles are not consumed and do not generate income but do have a monetary value.

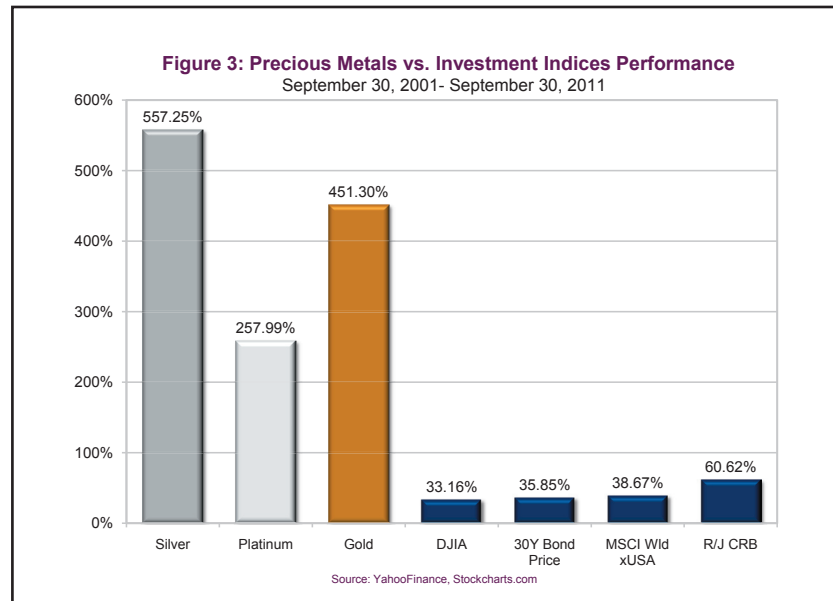
The traditional portfolio management thinking has resulted in a surprisingly small allocation of investment funds to precious metals. As an example, Figure 1 illustrates that only 0.30% (less than a 1/3 of 1%) of pension fund holdings are in gold, of which half of that amount is invested in gold mining stocks.

What should become obvious then is that traditional portfolio managers using the only three asset categories have clearly not sufficiently diversified client portfolios. Not only have they ignored one of the best performing asset classes, but additionally they have missed out on the concept of adequate diversification keeping in mind that precious metals were the most uncorrelated asset class.

GOLD, SILVER & PLATINUM OUTPERFORM

What is even more amazing to us is that the major financial institutions still adhere to this traditional investment philosophy. Portfolio managers and investment advisors should be concerned over Figures 2 & 3 showing how precious metals; namely, gold, silver and platinum have each singularly outperformed several major widely accepted investment indexes over the last 10 years. Investment professionals have a fiduciary responsibility to meet liabilities for pension plan and future retirement needs of their clients by managing the funds in a responsible and competent manner. To completely ignore the best-performing asset category for such an extended period clearly shows that client portfolios have not been sufficiently diversified. As we address later in this report, we do not include bullion proxies such as mining and metal stocks as they expose portfolios to other risks not associated with the performance of bullion itself.

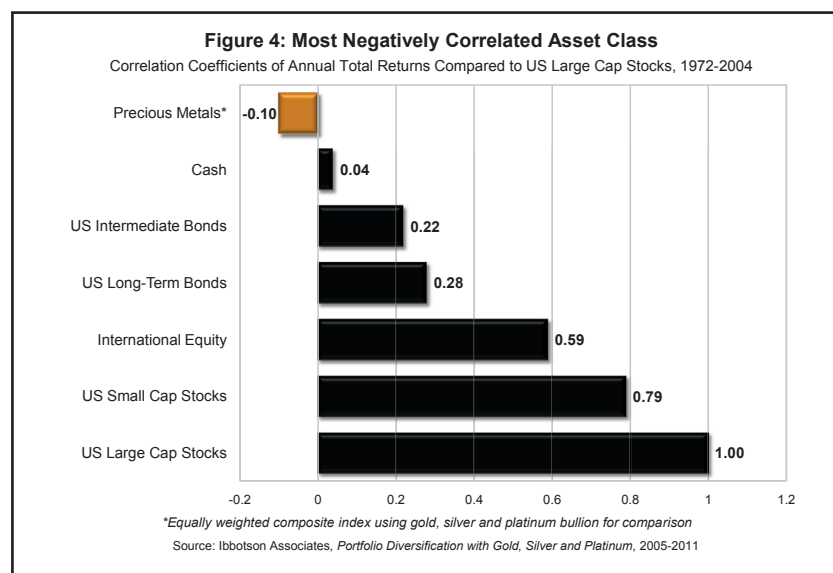




PRECIOUS METALS OFFER NEGATIVE CORRELATION

A study done by Ibbotson Associates (“Ibbotson”) in 2005 determined that precious metals are the most negatively correlated asset class to stocks and bonds. This study clearly made several important conclusions that portfolio managers and investment advisors, including those at large banks and trust companies, seem not to understand or choose to simply ignore.

The goal of the study was to explore the role of precious metals in a strategic asset allocation. An investment in commodity related stocks does not provide a direct or pure asset class exposure to commodities, specifically precious metals. Therefore, the risk and return characteristics of a direct physical investment in precious metals were explored by constructing an equally weighted composite based on gold, silver and platinum bullion spot prices referred to as the Spot Precious Metals Index (“SPMI”). The SPMI was then used as a proxy for the precious metals asset class. The Ibbotson study examined the 33-year period from February 1971 to December 2004.



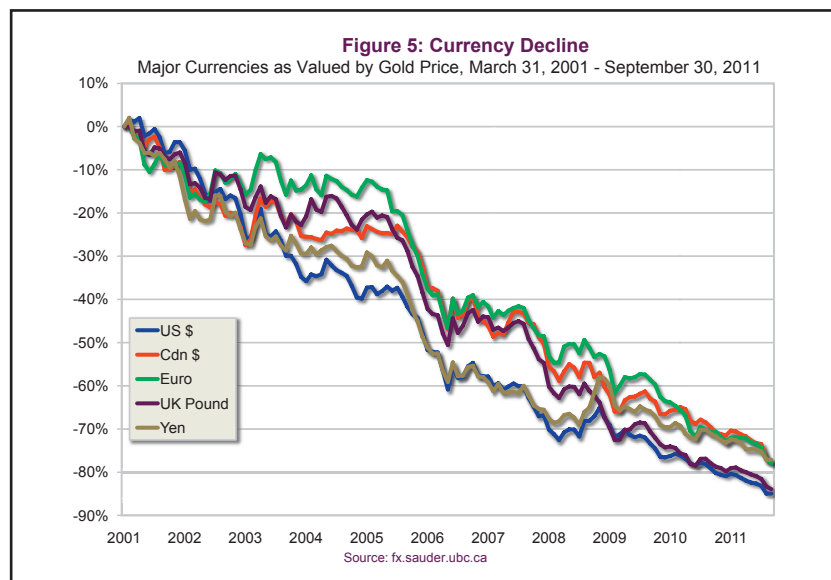
Particular detail in the Ibbotson study was directed to the correlations of precious metals with the traditional asset classes and how this relates to diversification. The Ibbotson study pointed out that for the period 1926 to 1969, the correlation between annual total returns for U.S. stocks and U.S. bonds was an attractive -0.02. However, more recently, the U.S. stock market and U.S. bond market correlations have increased. This is reflected in the 10-year rolling correlations from 1970 through 2004 that ranged from -0.03 to 0.80. Ibbotson concludes that the primary method for improving the risk-return characteristics of the efficient frontier is to expand the opportunity set of available asset classes.

Ibbotson found that over the 33 year period, the equity asset classes outperformed the other asset classes and that the overall performance of the SPMI was closer to the fixed income asset classes. While the standard deviation of the SPMI was quite high in isolation, according to modern portfolio theory, it is the interaction of the asset classes with each other that provides diversification. Of the 33 years of annual data, there were nine years that the U.S. Large Cap stocks had negative returns. During this period, the SPMI had the highest average arithmetic return. Furthermore, there were six years that an equally weighted portfolio of traditional asset classes had negative returns. The average arithmetic return of the portfolio of equally weighted traditional asset classes for these six years was negative 3.5%. For the same six years, the arithmetic return of the SPMI was a positive 13.4%. Precious metals provided positive returns when most needed.

Of the seven asset classes in Figure 4, the precious metals asset class is the only one with a negative average correlation to the other asset classes. As we point out, low correlations between asset classes are essential for diversification.

PRECIOUS METALS OUTPERFORM MAJOR CURRENCIES

All major currencies have declined relative to gold over the last ten years. Figure 5 clearly shows that cash is not 'king' as many portfolio managers would have you to believe. From this perspective, the best investment strategy for long-term investors seeking low risk secular growth potential is unencumbered physical bullion. In fact, in Figure 10, gold and physical currencies form the foundation of the investment pyramid. Of the two, gold is the better performer over the last ten years.



PRECIOUS METALS OFFER INFLATION PROTECTION

Excluding cash, precious metals is the only asset class with a positive correlation coefficient with inflation and, therefore, the only asset class that can provide protection from a systemic crisis. Ibbotson found that from May 1973 to August 1984, the SPMI was the top performing asset class with the longest run of any of the asset classes in the 11-year period. During the low inflation period, the SPMI had the lowest compound annual return, however, during the high inflation period, the compounded annual inflation rate was 8.6% and the SPMI had the highest compounded annual return of 20.8%. For the period studied, Ibbotson found that precious metals provided a substantial hedge against inflation.

EFFICIENT FRONTIER PORTFOLIO THEORY

Efficient frontier portfolios are optimal in both the sense that they offer maximum expected return for some given level of risk and minimal risk for some given level of expected return. Typically, the portfolios which comprise the efficient frontier are the ones most highly diversified. Less diversified portfolios tend to be closer to the middle of the achievable region. As noted in Figure 6, the optimal portfolios plotted along the curve have the highest expected return possible for the given amount of risk.

Figure 6 - Efficient Frontier Theory

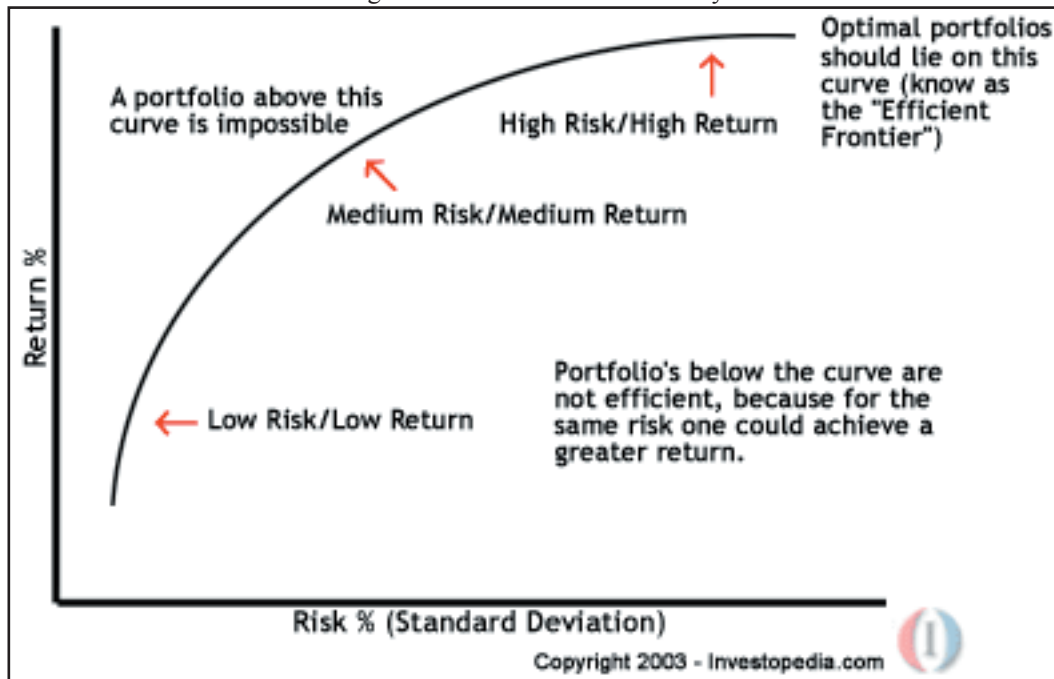
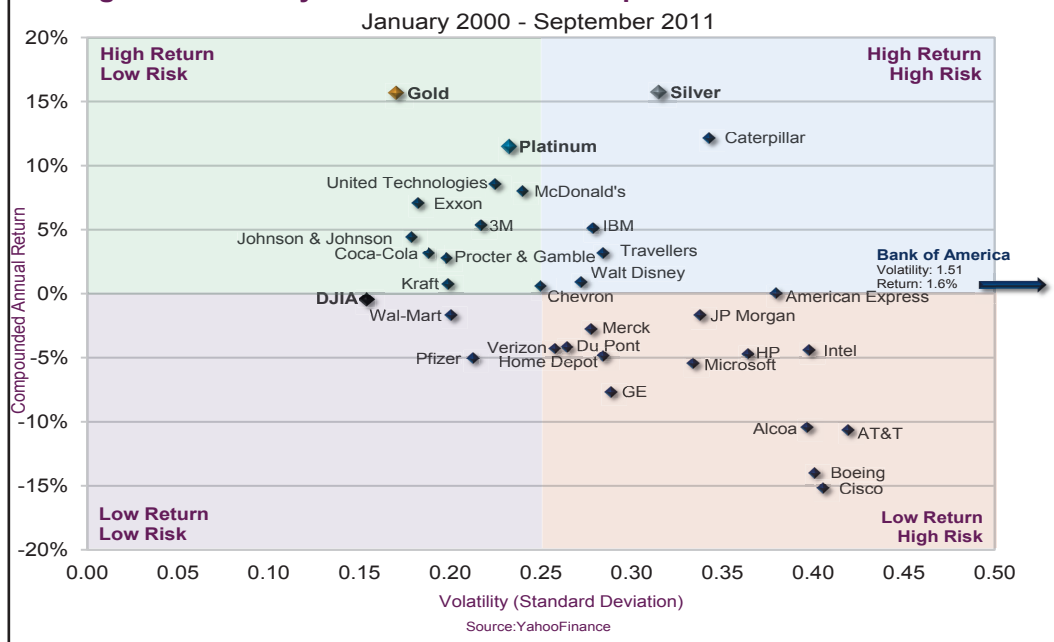


Figure 7: Volatility and Return - Dow Components and Precious Metals



Risk Compensation – Efficient Frontier Asset Mix & Asset Allocation

The most commonly used measure of risk is the standard deviation. It calculates the total risk or variance associated with the expected return. Simply put, it measures how volatile or widely spread an investment's returns are from its mean over a period of time. If gold is compared to every individual Dow Jones component over the last decade, it can be seen that it is less volatile and has a higher performance. When we compare using other common methods of risk/return measurements such as the Sharpe Ratio and the Sortino Ratio, we get the same results; namely, that gold as just one of the precious metals is less risky and performs better.

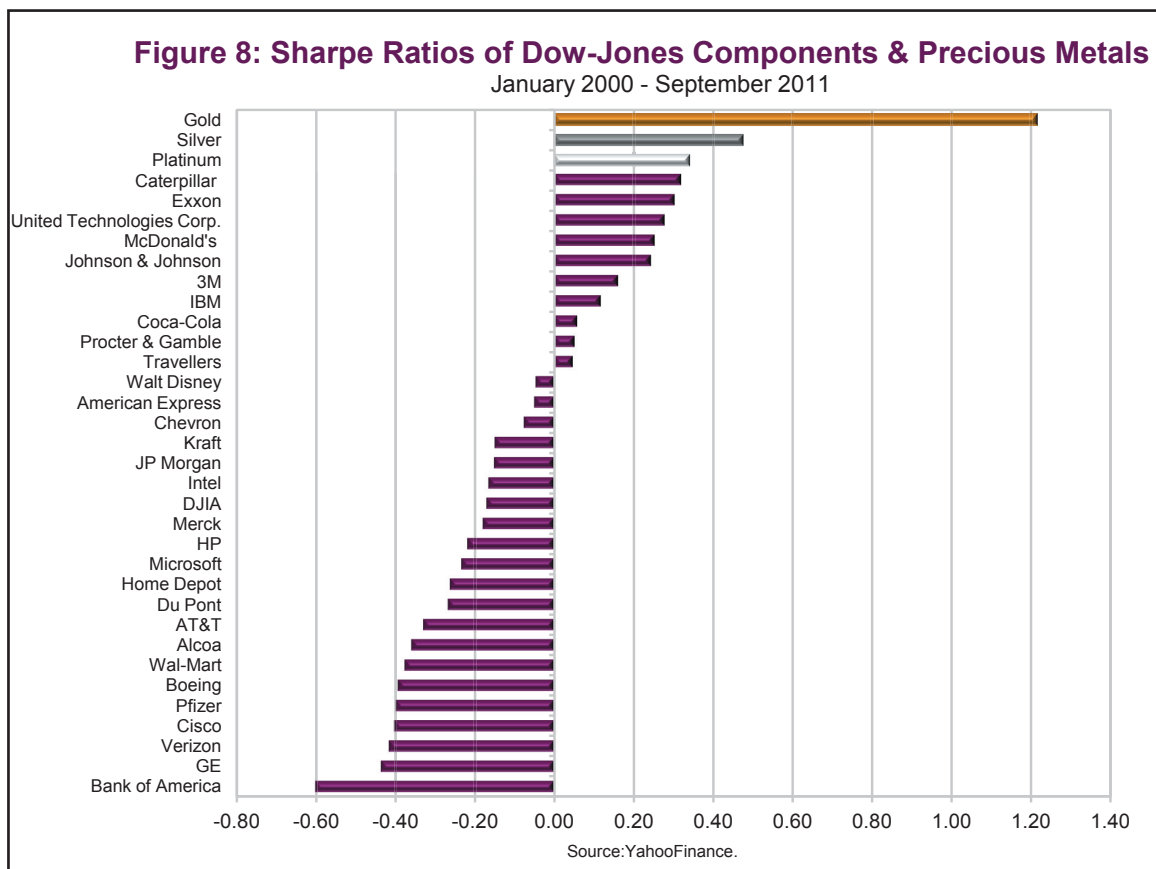
Sharpe Ratio

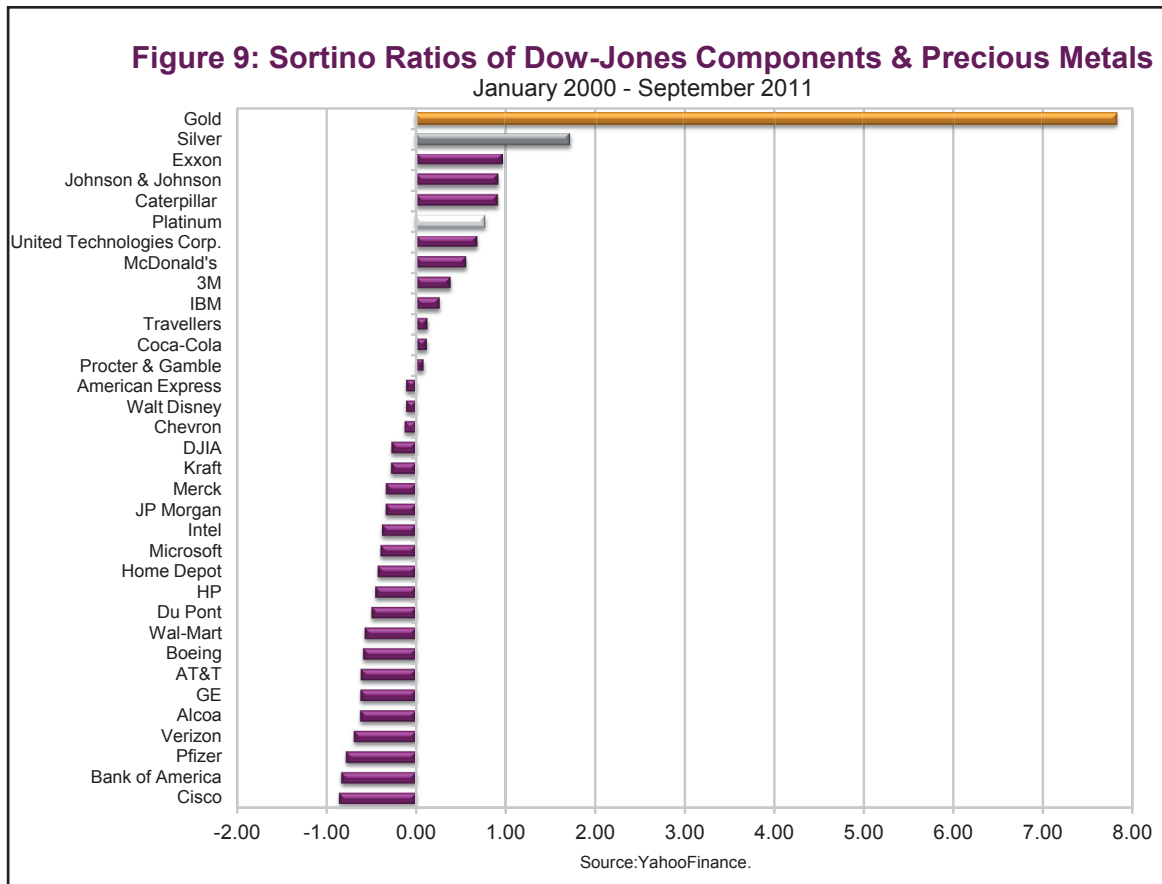
The Sharpe ratio (risk-adjusted rate of return) was developed by Professor William Sharpe in 1966 and is the most commonly used measure of risk-adjusted return. It measures the amount of excess return the investor is receiving in exchange for the extra volatility assumed in holding a riskier asset.

The Sharpe Ratio is broken down into three components: Asset return, risk-free return and standard deviation of return. After calculating the excess return, the Sharpe Ratio is obtained by dividing the excess return by the asset's standard deviation. This ratio or risk-free rate of return is used to gauge whether the investor is properly compensated for the additional risk incurred by investing in the risky asset. Traditionally, the risk-free rate of return is the shortest-dated government Treasury Bill rate.

The interpretation of the Sharpe Ratio is quite simply the higher the level the better. A high Sharpe Ratio means that the investment delivered a high return for its level of risk or volatility. As a result, the Sharpe Ratio provides a more meaningful insight to investment performance than simply looking at returns or volatility separately.

Figure 8 compares the Sharpe Ratio for gold, silver and platinum against the Dow components from January 2000 to September 30, 2011. All three metals outperformed.





Sortino Ratio

While the Sharpe Ratio is the most famous risk/return measure, others have been developed. The Sortino Ratio is similar to the Sharpe Ratio but focuses on downside volatility, not overall volatility. Since most investors are only concerned with downside risk, it is a more meaningful measure in practical terms.

Figure 9, compares the Sortino Ratio for gold, silver and platinum against the Dow components. When the Sortino Ratio is compared to the Sharpe Ratio in Figure 8, it can be seen that gold, silver and platinum are even more attractive, since a great deal of the volatility has been on the upside while the Dow components have primarily experienced downside volatility.

PORTFOLIO DIVERSIFICATION – THE MISSING LINK

What it is important to realize is that there is little or no framework or definition of what constitutes an asset class within portfolio management theory. In fact, there is little discussion on how uncorrelated assets reduce risk and improve returns. What we do know is that precious metal commodities (specifically, physical bullion in the form of physical gold, silver and platinum) seem to have been left out of the asset classification generally.

Commodities are in fact real return assets that happen to be examples of “real” assets as well. Real assets are things you can touch, which distinguishes them from capital or financial assets, such as stocks and bonds. Unlike financial or paper assets, the value of precious metals cannot fall to zero.

Exposure to precious metals can take several forms as identified below:

- Portfolio of commodity-related stocks and alternative investments including ETFs.
- Direct physical bullion investment.

Investors, however, must consider each option carefully particularly if they wish to be sure that their portfolio has the attributes that will be most efficient in achieving the negative correlation that bullion offers. Consider these following characteristics:

1). Portfolio of Commodity-Related Stocks & Alternative Investments

A portfolio of commodity-related stocks and alternative investment structured products, such as exchange traded funds (ETFs), are often used to balance portfolios. This, however, does not necessarily provide a direct or pure asset class exposure to commodities. In fact, these investments can add uncertainty as they may also provide exposure to other variables such as financial, geographic and political risks layered on top of operational and management issues.

In some cases, companies may hedge the prices of the commodities associated with their business which may immunize the price sensitivity to the underlying price trend of the commodities themselves. Therefore, a portfolio of precious-metal producing companies may not provide a pure exposure to the price of a precious metal and may not provide a hedge against precious metals price increases.

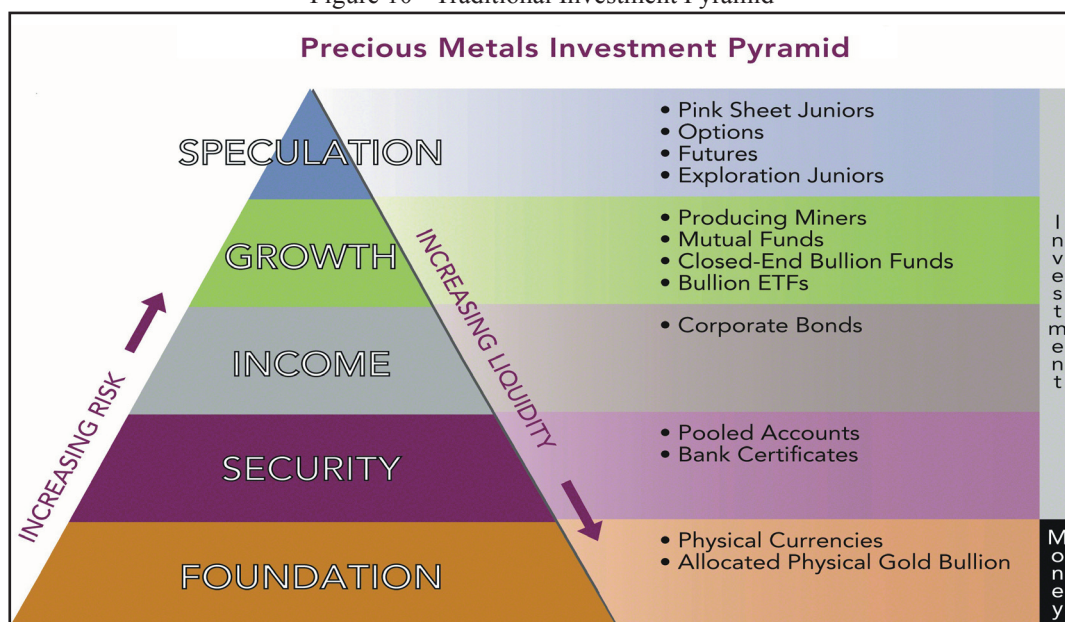
Take Barrick Gold Corporation (Barrick) for example: From January 2000 to March 2011, Barrick's stock price increased by about 100%. However, gold bullion increased by 350%. Historically, Barrick stock has been considered a pure play on the price of gold and considered by many portfolio managers a suitable substitute to gain exposure to gold bullion. Two factors should be considered for the dramatic difference between the investment performance of Barrick versus gold bullion. Firstly, Barrick some years ago hedged a significant portion of their gold and consequently missed out on the first leg up in the recent gold price. Secondly, and quite recently in fact, Barrick management surprised investors with a proposal to acquire Equinox Minerals Limited (Equinox), a company with major copper assets. The successful acquisition has now changed the profile of Barrick away from a pure gold play.

Because the underlying commodity stocks are part of the broader equity asset class, a portfolio of commodity related stocks is usually highly correlated with the broader equity asset class on a relative basis. Furthermore, during broad equity market declines, (such as the fall of 1987 and 2008) mining stocks have tended to follow the overall equity market trend rather than the price of the underlying metal.

Consider this broader list of risk factors contained in commodity related stocks and ETFs:

- Political risk such as nationalization or confiscation of assets, punitive tariffs, taxation & regulatory.
- International risk such as country currency devaluation.
- Default and credit rating risk that is largely associated with debt instruments.
- Systemic risk that include factors such as market risk, economic risk, inflation risk, default and international risk. Also open for inclusion are terrorist attacks, war, supply disruptions, and natural disasters.
- Loss of capital due to bankruptcies.
- Counterparty risks.
- Liquidity.

Figure 10 - Traditional Investment Pyramid



2). Direct Physical Bullion Investment

Bullion is insurance against failure of all other investments. Bullion also provides the best form of liquidity. For thousands of years, gold and silver have provided a reliable way to secure wealth. And yet, bullion is not considered an asset class. A direct physical allocation in precious metals provides an unencumbered investment with:

- No counterparty risk.
- Sufficient liquidity for large investors.
- No dependence on management for performance.

LIQUIDITY RISKS – NOT TO BE IGNORED

Liquidity can also be an issue for investors, particularly if large amounts of volume for any one form of investment need to be traded. Mining and metal stocks become correlated to the broader equity markets and experience much larger declines due to the relative size of these markets. Rather than improve returns and reduce volatility, metal and mining stocks may actually make portfolio performance noisier. Metal and mining stocks along with other alternative exchange traded investment vehicles may not be able to absorb large transaction volumes at any one particular time, particularly in a sharp market decline. Closed-end funds, for example, often trade at premiums and discounts to Net Asset Value (“NAV”). Large investors may pay premiums as high as 20% over NAV when purchasing but may then be subjected to discounts to NAV on disposition. One or both can be very detrimental to overall returns.

Gold and silver bullion are traded by members of the London Bullion Marketing Association 24 hours per day. The average daily turnover was over \$18 billion in April 2010. The turnover is the net difference in trades between members while the trading volume is estimated at 7 to 10 times that amount.

WHY TRADITIONAL PORTFOLIO THEORY IS WRONG

Most pension fund managers and investment professionals use asset allocation to achieve diversification in order to reduce risk, maximize performance, and thus responsibly manage their client’s funds. The traditional view of portfolio management is to break portfolios into three asset classes; most commonly being stocks, bonds and cash, as sufficient to achieve diversification.

This traditional view is quite simply incorrect.

Over the last ten years, the three precious metals have outperformed equities by almost 4:1. Where traditional portfolio thinking went wrong was in the belief that commodity stocks and other alternative investment vehicles were a sufficient replacement for physical precious metals in investment portfolios.

Having the right mix of assets is essential, and we believe that most portfolios are missing an allocation to precious metals as the critical link to the efficient frontier theory. As the definition of diversification maintains, a balanced investment portfolio should have various weightings of asset classes to be properly balanced. Each asset class whether it be stocks, bonds, cash, real estate, commodities or precious metals will have different risk profiles, volatility and correlations. Furthermore, we have pointed out that modern portfolio theory tells us that having the right mix of uncorrelated assets reduces risk and improves return.

If that is the case, then why is it that the most negatively correlated asset group to stocks and bonds; namely, precious metals or bullion, has generally been excluded from portfolio diversification as an asset class?

Furthermore, and of even greater significance, is the reality that so many banking and investment management companies simply do not recognize precious metals as an asset category. This is particularly disconcerting given the risks that we have clearly identified regarding the substitution vehicles used by portfolio managers in investing in metal and mining companies.

An allocation to precious metals, as the most uncorrelated asset group, is essential for proper portfolio diversification and, therefore, by excluding precious metals as an asset class, client portfolios are quite simply not sufficiently diversified.

WHAT IS AN ACCEPTABLE BULLION ALLOCATION?

Once accepted that precious metal or bullion should be included as a necessary asset class, then the question becomes just how much of an allocation to physical precious metals or bullion is adequate. Based on historical efficient frontiers, Ibbotson found that including precious metals moderately improved the efficient frontier. Allocations ranged from 0% to 9%. Based on forward-looking efficient frontiers, Ibbotson found that including precious metals led to asset allocations with higher Sharpe ratios. Investors, it was determined, could potentially improve the reward-to-risk ratio in conservative, moderate, and aggressive asset allocations by including precious metals with allocations of 7.1%, 12.5%, and 15.7%, respectively.

The allocation to precious metals does not come at the expense of any single asset class but rather from a reduction in several asset classes. Ibbotson suggests that the unique risk and reward profile of precious metals may make them a useful diversification tool in strategic asset allocations moving forward. Clearly, precious metals have an important role to play in asset management allocation practice.

ABOUT CATALYST EQUITY RESEARCH

Catalyst Equity Research Inc. (“Catalyst”) was founded in 2003 and is located in Toronto. Catalyst is the only independent equity research company in Canada specializing in the financial services sector. Catalyst offers over three decades of industry experience founded in both financial analysis and investment banking. Industry groups include chartered banks, trust companies, insurance companies, mutual fund companies and investment counselors.

Catalyst was founded on the principles of providing independent analysis based on sound fundamentals. It believes that change is a critical aspect of the investment process and that many companies find themselves in corporate structures that severely undermine shareholder value. Catalyst seeks to improve investment performance by better anticipating change and advocating how change can surface shareholder value. Catalyst’s independence is based on the position that it does not underwrite public companies, and does not broker trades or make markets in the shares of any public companies.

Catalyst’s founding partner, Robin Cornwell, has been a specialist in the Canadian Financial Services Sector for over 30 years and his work has included investment research reports on over 50 publicly traded companies encompassing chartered banks, trust and loan companies, finance companies, mutual funds and investment counselors. In addition, he has managed several of Canada’s largest financial services sector merger & acquisition assignments, directed the production of numerous new issue prospectuses and has been a chief financial sector advisor to Canada’s House of Commons on two occasions. Mr. Cornwell holds a Masters of Business Administration degree from the Schulich School of Business, York University, Toronto, Canada.

NOTES

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