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THE ROLE OF GOLD IN INVESTMENT PORTFOLIOS

Editor’s note: this is provided as an example of the practical role intermarket analysis can have in a portfolio. It was originally published at FlexiblePlan.com and is reprinted here with permission.

We examine some of the history and ongoing debate over owning gold from the context of an investor. Quantitative analysis of gold in different economic and market regimes demonstrates that gold has been valuable for investors as both an alternative source of return and also as a hedge. Contrary to conventional wisdom, the study finds that over the period from 1973 to 2015, the efficient allocations to gold for a typical balanced investor ranged from 5% to 45% depending on the desired risk preference. Furthermore, the optimal allocation was 25%, which produced higher risk-adjusted returns than any other portfolio.

What role should gold play in modern portfolio diversification?

New analysis supports optimal portfolio allocation to gold of 25%

Even the most ardent supporters of portfolio and investment management theory have had belief systems shaken to the core over the past 15 years. With all of the boom-and-bust volatility and unprecedented global systemic risk, both traditional advisors and individual investors have been forced to re-evaluate approaches to risk management and consider new alternatives in portfolio construction. Asset classes have, to say the least, challenged historical norms.

One thing is certain. Within the challenging environment we have all seen, it has become imperative to develop a portfolio approach that minimizes drawdowns and volatility, while delivering respectable returns, all within an individualized investor risk profile.

Perhaps nowhere has the debate raged more fiercely than in consideration of alternative asset classes, especially the role of commodities and precious metals, and most notably gold. Many traditional wealth and portfolio managers will begrudgingly acknowledge that gold should play a role in investors’ portfolios, but frankly the rationale can seem quite thin and more instinctual than empirical.

This paper will present a brief discussion of the “gold debate,” a broad overview of the tangible benefits of portfolio diversification with gold, and some eye-opening data suggesting a much more important role for gold in portfolios that seek optimal risk-adjusted returns.
Gold

There can be little doubt that throughout history gold has been universally revered as the physical embodiment of enduring wealth and status. King Midas (famed in Greek mythology for his “Midas touch”) and El Dorado (the mythical “Lost City of Gold”) are just two examples of the evocative and exotic images raised by the allure of gold. The quest for gold has created and toppled dynasties and nation states over the millennia.

Gold has been used as a form of currency for thousands of years. Unlike paper or electronic currency, gold has a fixed supply and as a physical commodity can be relatively difficult to obtain. As a result, gold has historically offered a natural hedge against inflation and provided an alternative to investors when the value of other forms of currency is depreciating.

But what does this all really mean for today’s investors and those entrusted to manage their portfolios?

One can find compelling arguments from respected investment professionals, economists, hedge funds, and major Wall Street strategists on all sides of the gold issue as it pertains to portfolio management.

Ray Dalio, founder, chair, and CIO of Bridgewater Associates, LP (generally regarded as the world’s largest and most successful hedge fund, with over $150 billion in assets under management), shared this in a 2012 interview with CNBC:

“I think gold should be a part of everybody’s portfolio to some degree because it diversifies the portfolio—it is the alternative money. We have a situation where we have too much debt. Too much debt leads to the printing of money to make it easier to service. ... Money can be produced, [but the supply of] gold is somewhat limited.”

Some traditional arguments for gold

Before we delve into the quantitative analysis, let’s take a big picture look at some of the most enduring arguments for the role of gold in a portfolio.

The literature from academia, the financial press, respected Wall Street firms, and the general investing community all generally come back to some basic assertions on the potential benefits of allocations to gold in a portfolio:

- As a hedge against inflation
- As a hedge against deflation
- As protection against a declining U.S. dollar (and other major global currencies)
- As a safe haven in times of geopolitical and financial market instability
• As a basic commodity, with its own supply and demand fundamentals

• As a long-proven store of historical value

• As an “insurance policy” against black-swan and “long-tail” risk events

• As an asset with common (though not perfect) negative correlations with other asset classes

• As an investment with an underlying global central bank and sovereign wealth demand

• As an underowned investment class, suggesting future demand increases

• As an important portfolio diversifier

Each of these arguments can find its supporters and naysayers, all armed with their own particular analyses and biases. But even well-credentialed critics of gold grudgingly admit there is a place for it in most every investor’s portfolio.

In a recent paper titled “The Truth about Gold: Why It Should (or Should Not) Be Part of Your Asset Allocation Strategy,” professor Campbell R. Harvey of Duke University’s Fuqua School of Business, summarized in part,

“The attractiveness of gold as an investment can generate heated arguments, many of which are based on wishful thinking rather than fact... Most arguments for holding gold in a portfolio are not supported by an analysis of the data. Nonetheless, an argument can be made for including gold as a commodity in a well-diversified portfolio, particularly if investors and central banks increase their demand—even moderately—for gold.”

And an independent, proprietary study by Oxford Economics concluded,

“We find that because of its lack of correlation with other financial assets, gold has a useful role to play in stabilizing the value of a portfolio even if the conservative assumption of a modest negative real annual return is made.”

Of course, there are no guarantees of even “a modest negative real return” on one’s investment in gold. Gold can go through periods of extreme volatility, like all asset classes. One only has to look at the period from 2008 to 2015, when gold suffered a 34% decline, then delivered a 281% price increase, followed by a sharp 38% retracement, for a total price decline of 31% by the end of 2015. Gold’s volatility can be intimidating for short-term traders and should, for most investors, be considered principally as a long-term portfolio component. Of course, for professional traders, its volatility can make it an excellent tactical trading tool, as well.

A quantitative analysis of the role of gold in investment portfolios
Opinions on the subject of gold as a portfolio component are highly polarized, and it is often difficult to separate hyperbole from facts. We believe it is necessary to fully understand the economic and market drivers that can make gold a valuable constituent of a typical investor’s portfolio.

We will focus this quantitative assessment on a look at how gold has performed relative to other major asset classes since 1973 (the year in which the price of gold was finally unfrozen from its $35 per ounce Great Depression status) under a variety of market and economic conditions. The global and U.S. economies since that time have thrown a multitude of challenging situations at investors, from several energy crises, to the interest-rate spikes of the 1970s, to any number of macro geopolitical situations— including the two great booms and busts of the stock market over the past 15 years.

We have selected 1973 as the starting point for analysis, as this represents what we believe to be the first “clean” calendar year for gold price performance following the momentous decisions of the Nixon administration in August 1971. Actions taken then effectively ended “ties” to gold standard for the U.S. dollar and suspended convertibility of the dollar to gold. Let’s first look at the annualized rate of return of various asset classes from 1973 to December 31, 2015 (Figure 1).

As shown, equities have been the best-performing asset class throughout this period, followed by gold and Treasury bonds. But equity performance has been far from a “smooth ride” for the past several decades. In contrast, gold’s equally bumpy journey has demonstrated a unique ability to outperform equities in times of equity market stress and also under a variety of different economic conditions.

Let’s examine several of those economic scenarios, again based on historical data from January 1973 to December 2015. We examined the favorable performance of gold relative to other asset classes under seven different conditions:

1. Real returns on the 10-year Treasury bond are negative (real interest rates less than zero).

2. Equities are in a bear market.

3. Commodity prices are in a bull market.

4. The U.S. dollar is in a bear market.

5. U.S. Treasury bonds are in a bear market (rising-interest-rate environment).
6. Inflation is rising.

7. Market volatility is high.

**Scenario #1: Real rates on Treasury bonds are negative**

One of the most important benchmarks for investor returns is the “real” 10-year yield, or the current total return to a 10-year Treasury bond minus the expected rate of inflation. Since the Treasury return is considered virtually “risk-free,” this represents what an investor can reasonably expect to earn on a long-term investment adjusted for changes in currency purchasing power.

Typically, when real yields are positive, equities and bonds tend to perform well as long-term investments. However, the nightmare scenario that keeps pension-fund and other asset managers up at night is when real yields are negative.

Under certain conditions, investors are willing to accept a negative real return in exchange for “safety” and the likelihood that they will recover most of the principal that they invest. This is most common for conservative investors that are near to or currently in retirement.

Negative real rates have been common throughout much of the era that has followed the financial crisis of 2007–2009. This has been a result of the Federal Reserve systematically lowering interest rates to near-zero levels in order to boost the economy. Treasury yields had fallen so far that they were below the rate of inflation for much of 2011 and 2012—indicating that real yields were actually negative.

The question then becomes, “How is an investor going to earn a real return on one’s investments?” This scenario deserves very serious consideration. Real yields have been currently hovering around zero. As it turns out, the great savior in this scenario has historically been gold.

Figure 2 shows the compounded annual return for various asset classes when real 10-year yields are negative. Definition: When the current total return to a 10-year Treasury bond minus the expected rate of inflation is less than zero.

As shown, gold is the best performing of all major asset classes, delivering nearly 11% annual returns when real Treasury returns are negative, while equities perform at a rate about one-half that of gold. Since 2013, when we first released this paper, real rates have persisted to remain near zero, occasionally moving into negative territory. Additionally, gold has been exceptionally weak. While the general principles
and relative performance of each asset class remains the same, the absolute return in gold has decreased. Gold has responded to expectations of inflation and a rise in interest rates by giving back some of the gains it had experienced in the negative-real-rate environment.

**Scenario #2: Equities are in a bear market**

Another benefit attributed to investing in gold is that it provides valuable protection in equity bear markets. It would be reasonable to assume that Treasurys would perform best in equity bear markets, but that has not been the case. Looking across more than 40 years of market history, we identified bull, bear, and sideways markets in the S&P 500 Index*, then assessed the returns of alternative asset classes during the bear periods (Figure 3).

Clearly gold has outperformed all other asset classes during periods of equity market stress. Surprisingly, its historical compound return during major stock declines has been higher than the return of Treasurys. This disparity arises because gold offers inflationary protection as well as crisis protection. In addition, because gold has relatively minor demand as an industrial metal, and demand is only partially consumer driven, it tends to have very little economic sensitivity.

The period from 10/10/2007 through 3/9/2009 marked the recent credit crisis, and it was considered a major bear market, lasting 355 days. During this period, the equity market fell 55.2%. In contrast, gold rose 24.6%, more than both Treasurys and the U.S. dollar, which both gained 13.5%. Surprisingly, commodities as an asset class fell in value and did not prove to be a fully defensive allocation.

**Scenario #3: Commodities are in a bull market**

Figure 4 shows the performance of the different asset classes during bull markets in commodities. As you can see, although gold provided positive returns during equity bear markets, while commodities could only muster smaller losses, gold nearly matched the performance of commodities during bull markets in commodities themselves. It thus behaves well on its own and as a useful substitute for broader commodity exposure.
One of the significant bull markets in commodities occurred from 8/30/1977 to 2/11/1980. It coincided with U.S. President Jimmy Carter’s warning that “the world is running out of oil,” as well as the tensions with Iran and a phased deregulation of oil prices. Commodities rose 61% over that period, while gold soared 386%.

**Scenario #4: The U.S. dollar is in a bear market**

We have also looked at historical data that shows the U.S. dollar’s value was decreasing relative to a “basket” of foreign currencies (Figure 5).

There can be any number of reasons for a dollar bear market, ranging from trade and budget deficits to monetary policy decisions. The data in Figure 5 shows that gold performed extremely well, and significantly outperformed all other asset classes, when the U.S. dollar was falling. Perhaps this is because it is considered to be the currency of last resort by many investors.

For example, the Bretton Woods agreement was a fixed exchange-rate system where the U.S. dollar could be exchanged for gold at a fixed price of $35 per ounce, and other major world currencies had a fixed exchange rate to the dollar. As mentioned earlier, in response to a growing deficit in U.S. gold reserves versus U.S. dollars outstanding, President Nixon decided to break the agreement in 1971. In March 1973, the fixed exchange rate system officially became a floating exchange-rate system. The U.S. dollar was in a bear market from 1/22/1973 to 7/6/1973 and declined roughly 18% during that time frame. Gold gained 331% over that same time frame, reflecting the increased money supply that was not factored into the price.
Scenario #5: U.S. Treasurys are in a bear market

U.S. Treasurys reflect lower prices when interest rates are rising and yields increase. Gold has historically offered the best returns under such a scenario, even outperforming equities, as Figure 6 shows.

Since the first release of this paper in 2013, we have experienced Treasury bear markets. The largest effect of these bear markets has been on the performance of equities, which have not fared well in these recent environments. Equities have decreased in compound annual growth rate (CAGR) from 16.2% to 2.7%, largely because these environments do not occur often, and recent performance has been poor. The expectation is that eventually interest rates will need to rise from their current near-zero levels, initiating another Treasury bear market. This highlights the important return and diversification benefits that gold may have in the future if history repeats itself.

Scenario #6: Inflation is rising

Figure 7 shows the historically superior performance of gold when there was a sustained increase in the general level of prices for goods and services. We have defined rising inflation as periods when the one-year rate of change of the Consumer Price Index (CPI) is positive, with causality arising from increased demand chasing too few goods or a rising-cost environment for producers and manufacturers. Within this type of environment, the U.S. dollar clearly weakened, in both “price” and purchasing power, while gold performed well, outperforming a basket of commodities.

In 2006, in large part due to rising energy costs, G-7 nations faced the highest level of inflation since the early 1990s. Between January and August 2006, inflation rose 3.6%. In contrast, the price of gold rose 21.5%.
Scenario #7: Market volatility is high

We have defined high volatility as periods when the Implied Volatility Index (VIX) levels were in the top quintile of their 23-year history. As Figure 8 demonstrates, Treasurys performed best when volatility was high, as investors tended to “run for the safety” of preserving principal. But gold also had positive returns, averaging a 2.9% annualized return and serving as a useful “crisis” hedge for investment portfolios.

For example, during the Russian financial crisis in August 1998, volatility spiked to high levels starting on August 3 and remained elevated until November 19. In this short period, gold managed to gain 3.5%, while other assets endured a rollercoaster ride. More recently, the extreme levels of volatility seen during the 2007–2009 U.S. credit crisis saw gold sell off dramatically along with most other asset classes. However, it did not fall as far and subsequently recovered much faster, allowing it to exit 2009 at new all-time highs.

Performance of gold in different economic regimes

It is clear from these examples that gold can provide favorable returns and act as an important counterbalancing portfolio component under a variety of very specific market and economic conditions. But, how does gold perform under different classic economic regimes?

A popular concept in modern portfolio theory is the “All Weather” definition of economic regimes, with four different “states of the world” characterized by either rising or falling inflation and rising or falling economic growth. Bridgewater Associates, the large and very successful hedge fund mentioned earlier, has developed a simple conceptual graph to capture this idea (Figure 9).
In our analysis, we considered the different environments that could be characterized by the change in both inflation and economic growth, and then created our own identifying labels:

- “Normal”: Real economic growth rate (GDP) is rising and inflation (CPI) is rising.
- “Ideal”: Real economic growth rate (GDP) is rising and inflation (CPI) is falling.
- “Stagflation”: Real economic growth rate (GDP) is falling and inflation (CPI) is rising.
- “Deflation”: Real economic growth rate (GDP) is falling and inflation (CPI) is falling.

Figure 10 shows the relative frequency of these different economic regimes over the 43-year time period that was studied. As you can see, the most frequently occurring economic state (77%) was what we call “Normal,” characterized by rising economic growth and rising/moderate inflation. This is to be expected, as most central banks around the globe tend to target a 2–3% annual inflation rate, and governments and private industry obviously attempt to achieve economic growth over time.

In contrast, the extreme opposite situation, “Deflation,” fortunately has occurred relatively infrequently (2%). This is the destructive situation where both economic growth and inflation are falling. Japan is a modern case study of the deleterious effects of deflation. (The longest and most notable period of deflation in the U.S. was during the Great Depression, which is outside of the time frame of our study.) Governments generally attempt to avoid this situation at all costs, even if that means printing money and creating temporary excess inflation.

“Stagflation” is a situation where inflation is rising and growth is falling. This has occurred roughly 12% of the time. The most notable example of stagflation was during the 1970s when inflation was high, partially due to the energy crisis, and the economy endured some difficult times.

Finally, “Ideal” conditions are defined as the period where inflation is falling but economic growth is robust and rising. This regime was present roughly 9% of the time. This is a great environment for business expansion and for investors in many asset classes. The 1990s is the best example in recent U.S. history of an “Ideal” period. Figures 11 through 14 summarize the performance of the various asset classes during each of these economic regimes.
There are several takeaways from this analysis pertinent to gold:

- In the most commonly occurring circumstance of “Normal” economic conditions, gold finished a close second to equities in terms of average annual return.
- In “Ideal” conditions, equities provided the best performance.
- However, in the two most negative economic regime conditions, gold far outperformed equities. In fact, in times of “Stagflation,” gold provided vastly superior returns to any other asset class.
- “Stagflation” tends to happen slightly more frequently than “Ideal” economic conditions (12% versus 9%), creating quite an interesting “trade-off” between gold’s performance and that of equities under these two regimes. Gold provided positive returns during both periods, while equities only had positive returns in one. Still, gold underperformed equities significantly during “Ideal” conditions. Yet, during periods of “Stagflation,” gold’s 16.37% annualized gain versus equities’ 22.47% loss is certainly a compelling statistic.

This, once again, reinforces the case for gold as an important portfolio diversifier. Gold provided positive returns under most market conditions (98% of the time in the last 43 years, as shown above). Gold may not outperform equities in times of normalcy and growth, but it has greatly outperformed equities in times of market stress and less-than-ideal economic conditions. Because such times have had the greatest negative returns for traditional equity portfolios, gold can have a significant effect on long-term portfolio volatility.
Gold as a diversifier versus other asset classes

The analysis presented illustrates that gold can provide diversification in several different economic regimes, each of which lies somewhere on the future economic horizon. But how does gold move in relationship to traditional asset classes like stocks and bonds?

As Figure 15 illustrates, gold provided a low correlation to both stocks and bonds and did not move in tandem with traditional asset classes.

One of the statistical measures used to capture this relationship is the correlation coefficient, which ranges between 1 and -1. A coefficient of 1 indicates that a pair of assets move in perfect tandem, while -1 indicates that a pair of assets move in an opposite or alternating fashion. Table 1 shows the correlation of gold for a basic set of institutional asset classes.

<table>
<thead>
<tr>
<th>Table 1: Gold As A Diversifier: Inflation-Adjusted Correlation Matrix for Basic Assets (January 1974–December 2015)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Asset Names</td>
</tr>
<tr>
<td>Average Correlation to All Basic Assets</td>
</tr>
<tr>
<td>T-Bills</td>
</tr>
<tr>
<td>Intermediate U.S. Government Bonds</td>
</tr>
<tr>
<td>Long-Term U.S. Government Bonds</td>
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<tr>
<td>S&amp;P 500 U.S. Equity</td>
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<tr>
<td>IA S&amp;P Small-Cap U.S. Equity</td>
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<tr>
<td>MSCI EAFE International Equity</td>
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<tr>
<td>CRB Futures Index</td>
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</table>

Gold had an average correlation of 0.06, indicating almost no relationship/dependency with other basic asset classes. Gold had the highest correlation to the CRB Futures Index, which is to be expected because this represents exposure to the commodities sector, which includes gold. Clearly gold has been an excellent diversifier for a basket of basic institutional asset classes.
Optimal portfolio allocations to gold

The study by Oxford Economics referenced earlier shows the optimal allocation to gold is 5%, assuming 2.2% growth and 2% inflation. Under the conditions where inflation was higher, the optimal allocation was also found to be higher than 5%, and the same was true for conservative investors in a low growth/low inflation scenario.

In a 2006 study, Richard Michaud, Robert Michaud, and Katharine Pulvermacher of New Frontier Advisors demonstrated that gold was part of the optimal portfolio for investors at all levels of risk preference tolerances—not just for a balanced investor. Adjusting for uncertainty and seeking the most robust solution, Michaud et al. found that for risk-level tolerances consistent with a balanced investor (around 10% risk), the optimal allocation to gold was found to be above 10% in the base-case scenario using multiple asset classes and historical market data.

Figure 16 is from the Michaud et al. study. It shows the optimal portfolio weight in gold and the maximum (upper) and minimum (lower) allocations at different levels of target portfolio risk.

Using a more conservative set of assumptions with estimated portfolio inputs, Michaud et al. found that the optimal allocation to gold was close to 5% at risk levels consistent with a balanced investor. Figure 17 shows the optimal portfolio weight in gold and the maximum (upper) and minimum (lower) allocations at different levels of target portfolio risk in their conservative case.

But, has gold boosted risk-adjusted returns for a more typical portfolio? What has the optimal allocation to gold been for a typical portfolio? These are more important questions than finding the optimal allocation across a broad universe of asset classes that are more commonly held in large pension portfolios.
First, we define typical: The most common portfolio is one that contains a 60% allocation to equities and a 40% allocation to bonds, or what the literature might refer to as a traditional “balanced portfolio.”

As a test of gold’s possible diversifying power, we can use this typical portfolio and add an allocation to gold to determine whether we can increase risk-adjusted returns. We will represent stocks in the portfolio with the Vanguard Total Stock Market Index, and for bonds we will use the 10-year Treasury Total Return Index.

Figure 18 shows the risk-adjusted return ratio (Sharpe) as a function of the allocation to gold from 1973 to 12/31/2015.

Note that all of the blue “dots” left of the vertical center line are portfolios that dominate a balanced portfolio in terms of risk-adjusted returns. In finance parlance, these portfolios are considered to lie on the “efficient frontier.” Table 2 shows a more complete breakdown, providing data points for various levels of allocation to gold and the resulting total portfolio risk/reward ratio. All portfolios with allocations to gold highlighted in green have been superior to a traditional balanced fund in terms of risk/reward ratio (0.74).

As Table 2 demonstrates, it has been possible to allocate as much as 45% to gold in a portfolio and still have a superior risk/reward ratio to a portfolio that only holds a balanced fund. The optimal allocation from a risk/reward standpoint has been to allocate 25% to gold and 75% to a balanced portfolio.
This is 5% higher than was optimal when we first released this paper in 2013. In terms of returns, all three asset classes offered less to investors than they did in our last study. In such an environment, diversification becomes more important than returns in creating the best risk-adjusted portfolio. Because the correlation between the asset classes has not changed much from when the previous study was performed, the amount of gold included in a portfolio to reach Sharpe optimality is higher.

Table 3 compares this “optimal portfolio” with both gold and a balanced portfolio. Looking at Table 3 we see that this optimal portfolio has had a higher return, lower risk, and higher risk-adjusted return than either a “gold-only” or a traditional “balanced portfolio.” The higher return for the optimal portfolio may seem
counterintuitive, but the low correlation of gold to a balanced portfolio permitted a gain in returns from periodic rebalancing (monthly in this case).

**Concluding thoughts on the evidence**

Our study demonstrates that adding gold to a typical/balanced portfolio has been beneficial across a wide range of allocations in terms of boosting risk-adjusted returns. Unexpectedly, over the 43 years studied, the optimal allocation has actually been 25% to gold and 75% to a balanced portfolio, representing a mix of roughly 45% stocks, 30% bonds, and 25% gold. In fact, investors could have allocated as much as 45% to gold based on historical analysis and still fallen on the frontier of efficient portfolios that dominate holding a pure balanced fund.

Both the optimal (25%) and upper range of efficient portfolios (45%) may seem fairly high relative to the 5% “rule of thumb” allocation to which a large number of financial advisors seem to subscribe. But there is precedent. The “Permanent Portfolio” by Harry Browne recommends an equal weighting (25%) across stocks, bonds, cash, and gold as being optimal across different economic regimes. We believe the evidence presented in this white paper strongly suggests that the current prevailing “conventional wisdom” greatly understates the potential role of gold in portfolios for a typical investor over the long term.

*Every investor should reconsider their portfolio’s current allocation to gold*

Based on our 43-year study, it appears most investors are likely underinvested in a full range of investment alternatives, and specifically in gold as a long-term asset class. Research suggests that an allocation to gold over the long term can be as high as 45%, while still providing better risk-adjusted returns in various market environments as compared to the traditional “60/40 balanced” investment portfolio.

For investors, who have understandably grown more concerned about capital preservation in times of macroeconomic risk, but who are still looking for optimized returns, gold should be strongly considered as a key portfolio element. Over the long term, gold offers the broad benefits of (a) ongoing marketplace demand in the face of limited supply; (b) historic protection from extreme market events, high periods of inflation, and devalued currencies; (c) a time-tested component of portfolio diversification; and (d) liquidity and versatility in terms of the many forms of ownership possible for an investor.

References


Source Data


Gold is Dollar Index (Bloomberg) 1/4/1971 to 10/31/2015. CCI is Continuous Commodity Index (Bloomberg) 9/1/1996 to 10/31/2015. This is an equal-weight index across various commodity markets.


Gold is London; Gold PM Price (Bloomberg).

Treasury Yield to the U.S. Government 10-Year Yield (Bloomberg).

CPI is the BLS Consumer Price Index All Urban Consumers.
STOCKTWITS BASED S-FACTOR RETURN CHARTS

BY JOE GITS

Editor’s note: This was originally published at Social Market Analytics and is reprinted here with permission.

Social Market Analytics (SMA) aggregates the intentions of investors as expressed on the StockTwits platform. SMA creates proprietary S-Factor metrics that quantitatively describe the current conversation relative to historical benchmarks. This data provides strong predictors of future price movement. This blog will focus on the deterministic nature of the StockTwits data set when aggregated into SMA S-Factors. StockTwits is a community for active traders to share ideas enabling you to tap into the pulse of the market: http://stocktwits.com/

The charts and tables below illustrate the subsequent open to close return of stocks that are being spoken about abnormally positively or abnormally negatively on StockTwits twenty minutes prior to market open. Sharpe and Sortino ratios for the theoretical portfolios are included as well. The SMA S-Score looks at the current conversation relative to historical benchmarks and creates effectively a Z-Score.

The Green line below is an index of subsequent open to close return of stocks with abnormally positive conversations on StockTwits prior to the market open. The Red line is an index of the subsequent open to close return of stocks with an abnormally negative conversation prior to market open. The black line represents the market open to close return and the blue line represents a theoretical long/short portfolio.

These charts clearly illustrate the predictive information present in the StockTwits message stream. If there was no predictive power in the StockTwits data set the Green, Red, and Black lines would be nearly identical - statistically not the case. These signals are available at 9:10 am Eastern time well before the market open.

The chart below looks at the full SMA history of StockTwits based S-Factors. The theoretical long portfolio has a Sharpe Ratio of 1.53, theoretical short portfolio -.82 Sharpe and LS portfolio has a Sharpe of 3.68. Sortino Ratios are above one as well. There is strong predictive power in this data.
The last year has been particularly challenging for the Hedge Fund community. Below is a chart with the performance of the theoretical portfolios broken out from 1/1/2015 to current. As you can see these portfolios performed well in this volatile market period.

For more information on these data sets please contact Pierce Crosby: (pierce@stocktwits.com) or Joe Gits: (joeg@socialmarketanalytics.com).
IN MEMORIAM: IAN WOODWARD

Ian Reginald Woodward, 84, of Palos Verdes Estates, California (and Austin, TX), passed away peacefully in his sleep at home on May 29th, 2016.

He was born on September 6th, 1931 to Reginald and Noreen Woodward in Calcutta, India, a four generation English family in India under the British Raj. He attended boarding school in the shadows of the Himalayas at Goethals in Kerseong, where he skipped a grade his final year and still graduated 2nd in his class. He moved to London soon after World War II for college at Faraday House where he graduated with honors in Engineering. While studying for finals, he took a break and went for a walk, and heard music coming from the local hall. There he met Patricia Breen and asked her to dance to “Some Enchanted Evening.” They were married in London a few years later on June 18, 1955 and celebrated 60 years of loving marriage last summer.

After graduation, he joined Ultra Electronics in London, working on computers when the industry was in its infancy. He left for two years’ compulsory service in the Royal Air Force where he rose to Flying Officer in signals for the 111th squadron Black Arrows acrobatic flying team. He returned to Ultra, and then applied for one of 12 slots for jobs in America with Univac, and he was selected from 500 applicants. After two years, he moved to Xerox Corporation, where he worked for 27 years in Rochester, NY, Dallas, TX, and El Segundo, CA. He worked on the first fax machine, was the program manager for the first low-end laser printer (the Xerox 2700), and had several positions in planning and program management. After “retiring” at 59, he started a second career in high growth stock investing, combining his sharp mind for numbers, his strategic insights, and fun presentation style to help others understand the market and invest for themselves. His main hobby was stamp collecting, and he won many awards for exhibiting his “Exploring Jamaica Through Obliterators”, including a grand award. For his years of advancing British Caribbean stamps, he was awarded the prestigious Fellow of the Royal Philatelic Society of London.

He is survived by two children, David (Gina) Woodward of Austin, TX, and Paul Woodward of West Linn, OR; five grandchildren, Eric, Ryan, William, Trevor, and Chelsea; one sister, Wendy Plant of Henley-on-Thames, England; and seven
in-laws, Sheila (Sean) Carroll and Eily Breen (McGrath) of Kilworth, Ireland, Rev.
Joss Breen of Churchlands, Australia, Diarmuid (Nora) Breen of Mallow, Ireland;
and Harry Speten of Peoria, IL.

He was preceded in death by his wife, Patricia Breen; his daughter, Susan
Woodward; his brother Keith Woodward (died young); and five in-laws,
Maureen Washatka (Breen), Cassie Speten (Breen), Paddy Breen, Alf Plant, and
Bob Washatka.

A private memorial will be held with immediate family only. Memorial contributions may be made to Wounded Warriors
(WoundedWarriorProject.org).

Ian’s interest in investing began as he was nearing retirement from Xerox. His entire portfolio consisted of Xerox stock,
which was rising sharply during the 1990’s, but a colleague warned Ian that he should diversify to protect his financial
future.

He began a rigid self-study course based upon CAN-SLIM principles by having Pat, his wife, record William O’Neil’s segment
on the Financial News Network each day while Ian was at work. In the evening Ian absorbed everything O’Neil had said
that day, and after doing this for several months, he decided he was ready to begin buying individual stocks when he was
able to know O’Neil’s analysis of a stock before O’Neil made his comments on the video tape.

Ian shortened CAN-SLIM to ERG for Earnings Growth, Relative Strength and Group Strength, the three most important
elements of high growth stock investing. He also contributed many colorful terms and concepts that are used by many
today including the High Jump, Rust and Black Spot Disease to locate over extended stocks, HGS Box Stocks which classifies
stocks according to various stages of earnings growth, the Kahuna and Eureka which locate strong institution interest in
the market, and many other concepts. His work is embedded in the HGSI Investor software which is used by individual
investors and portfolio managers world-wide.

Ian became a coveted speaker at investment conferences by accident. Another man was scheduled to conduct a Telescan
seminar in Florida in the early 1990’s, but had a conflict and suggested this “Woodward fellow” who had developed a
following on the Prodigy and AOL stock forums. Ian was an instant success on the Telescan tour, and soon attracted a large
following. His colorful style, combined with his knowledge of stocks and markets, made him a much sought after speaker.

After Telescan went out of business in the late 1990’s, Ian collaborated with George Roberts to integrate Ian’s concepts
into George’s HGSI Investor software. Ian began holding semi-annual HGS workshops in Palos Verdes California in 1998,
and teamed up with one of his students, Ron Brown, in 1999 to form a partnership for the workshops, and a monthly
newsletter. This partnership lasted 17 years until Ian’s death.
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A STUNNING NEW FINDING: RETURN SEASONALITIES ARE EVERYWHERE

BY WESLEY R. GRAY, PH.D.

Editor’s note: this was originally published at Alpha Architect and is reprinted with permission.

We’ve discussed return seasonalities in the past, especially as they pertain to our approach to momentum. Turns out seasonality effects aren’t confined to momentum — they are literally everywhere and they are incredibly strong.

This paper will blow your mind once you let the results settle in a bit.

Source paper
Slides

Turns out stock returns are lumpy across the calendar. Stocks don’t earn “average” returns each month, they earn a lot of return in some months and little to no returns in other months...and this pattern is predictable, persistent, and powerful.

Here is an image from the authors the explains the basic idea:

Abstract:

A strategy that selects stocks based on their historical same-calendar-month returns earns an average return of 13% per year. We document similar return seasonalities in anomalies, commodities, international stock market indices, and at the daily frequency. The seasonalities overwhelm unconditional differences in expected returns...

Instead of focusing on particular characteristics to form portfolios (cheap, high mom, low vol, quality, etc.) one can simply form portfolios based on their performance during a particular month.

Here are their bottom-line results:
Interesting, to say the least...more to come on this subject. The R&D engines will be roaring this summer.
NOT ON MY WATCH – KEEPING A GREAT DEPRESSION AT BAY

BY LINDA FERENTCHAK

Editor’s note: this was originally prepared by Financial Communications Associates and was published in The Thoughtful Investor newsletter, a client and prospect newsletter for investment professionals who don't believe buy and hold is the best way to manage a client’s portfolio. To learn more, visit their web site.

Could interest rates in the U.S. go negative? If they do, the rationale may be the memory of the Great Depression.

The Great Depression began 90 years ago in the United States as an ordinary recession in the summer of 1929. Today it is remembered primarily in old photographs and movies, and the pain has faded from public memory. The impact of the Great Depression still lingers, however, in the minds of economists, and particularly the minds of the economists who manage the Federal Reserve Bank system. If there is one thing they do not want, it is a rerun of the Great Depression under their watch.

Trying to pin down the cause of the Great Depression has spawned countless books, but at its most basic, people stopped spending. To limit stock market speculation, the Federal Reserve had increased interest rates, which reduced interest sensitive spending. Then the stock market crash reduced wealth and consumer spending substantially. Banking panics in the early 1930s resulted in cash hoarding that wasn’t helped when the Federal Reserve also deliberately contracted the money supply and further raised interest rates. The Revenue Act of 1932 increased American tax rates greatly in an attempt to balance the federal budget, and by doing so it dealt another blow to the economy by further discouraging spending.

How bad was the resulting contraction in spending? Between the peak and the trough of the downturn, industrial production in the United States declined 47% percent and real gross domestic product (GDP) fell 30%. (In contrast, during the next worst U.S. recession, 1981-1982, GDP fell 2%.) The U.S. experienced the near-total breakdown of a previously affluent economy for ten hard years. There was nothing romantic about the breadlines, peddlers on street corners, shuttered factories, rural poverty, and so-called Hoovervilles where homeless families sought refuge in shelters of salvaged wood, cardboard, and tin. 2.5 million people fled the Plains states as the Dust Bowl stripped topsoil from the land. Unemployment exceeded 20% in a society where 21% of the workforce was employed in agriculture.
While a combination of government policy errors worsened the decline in spending during the Great Depression, to prevent a second Great Depression, the most common prescription is to keep people spending and limit saving. To keep people spending, the Federal Reserve has two basic strategies – (1) Promote inflation, which feeds the benefit of buying now to avoid paying more in the future. This means avoiding deflation, which would make goods cheaper the longer one waits, and potentially reduce wages. (2) Make saving unattractive.

Removing the incentive to save by dropping interest to zero or below is one tool to do so. The catch is the low interest rates have to offset consumer concerns about the direction of the economy. The slow U.S. recovery is one sign that interest rates have limited utility as consumers stubbornly continue to save and spend judiciously.

Linda Ferentchak has worked in financial industry communications since 1979 and has an extensive background in investment philosophies and techniques, and money management subjects. She has decades of experience creating newsletters and marketing materials designed to meet FINRA and SEC advertising requirements. Prior to founding Financial Communications Associates, Linda specialized in investor relations. She holds a MBA in marketing along with BA degree in technical journalism with minors in business marketing and political science.
How would you describe your job?

I help clients make better decisions to fuel their retirement goals.

What led you to look at the particular markets you specialize in?

When I was in my early twenties I was captivated by the work of William O’Neil so naturally I gravitated towards US equities. As I learned more about correlations and intermarket analysis, I became interested in commodities and fixed income as well.

Do you look at any fundamental or economic inputs to develop your opinions?

I consider myself a pure technician, so I am comfortable forming opinions without the aid of fundamentals. Oftentimes, I will cross-reference my viewpoints with those who specialize in fundamentals to gain perspective. Using an approach that incorporates currencies, commodities, fixed income, and equities is paramount in today’s macro environment. I consider interest rates and central bank policy to be the starting point for any type of market analysis.

What advice would you have for someone starting in the business today?

Learn as much as you can before you start making decisions that will affect someone else. Don’t trust the media, it will only cloud your judgement. Learn to make data driven decisions and when it comes to bias, always check yourself twice. Never forget that you must be a perennial student of the markets. If you get too confident and cocky, the market will crush you.

What is the most interesting piece of work you’ve seen in technical analysis recently?

I always find the most joy going back in time and finding hidden gems within the library of TA. More often than not I find myself going back and referencing stuff that I’ve read; the classics, like the work of Welles Wilder, H. M. Gartley, and Yale Hirsch.

What research area do you think offers the greatest potential in technical analysis at this time?
Momentum indicators are ten a penny today, there are so many variations and regurgitations you can spend the rest of your life trying to craft the perfect oscillator. What is most important is being able to unify and quantify your work so that it makes sense to yourself and others. Expanding TA within a statistical based framework is the next level in gaining exposure for our discipline. Everything that I do is expressed statistically. The folks over at EidoSearch are doing some very interesting things assigning probabilistic outcomes to chart patterns. Every day I get excited about TA because there is so much out there left to uncover.

Alan began position trading equities in 2005 as an O’Neil disciple, where he developed an affinity for TA. When equity markets began to turn towards the downside, exploring other trading methods to exploit conditions of high volatility and non-trending environments became a necessity. This led him to the work of Larry Connors, whom he had the pleasure to learn from and work with during one of the most difficult markets in recent memory. As a trader he engaged in quantified research, developing proprietary trading systems and traditional methods of technical analysis. He believes in a holistic approach using back-tested trading systems, intermarket analysis, cycle studies, and statistical based models. Currently he assists clients achieve retirement goals for themselves and their employees and continues technical research on bigcaptrader.com
No comment is needed for this chart which was prepared by Mark Ungewitter, a private investor who was formerly an Investment Officer at Charter Trust Company in Concord, New Hampshire and Director of Portfolio Management at Investors Bank and Trust in Boston, Massachusetts. It is a simple but clear breadth analysis.