



Credit: Private Client

Inflation Hedges

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Inflation is defined as a general rise in prices within an economy over time. As prices rise, each unit of currency buys fewer goods and services. This loss of purchasing power is what savers fear, because their savings will buy significantly fewer goods and services if inflation is too high. The risk of inflation is usually greatest for retired people living on their savings. Those in their working years are less at risk because wage inflation roughly keeps up with, and many times outpaces, price inflation. When most people talk about inflation, they are likely talking about the inflation rate, which measures the annualized percentage change in the price of a basket of goods and services. At Sankala Group, all

of our clients are savers, and many of them are retired; thus, we are acutely aware of our responsibility to understand and hedge against inflation in the portfolios that we manage.

When designing an investment portfolio, there are two main questions we ask about inflation:

1. What rate of inflation will the economy experience over the next few years?
2. What are the best inflation hedges (investments that gain when inflation rises)?

While both of these questions are important, the first question has been particularly difficult to answer correctly. Beneath the guise of simple macroeconomic forces, the winds that shift inflation are so capricious that accurate predictability has remained elusive. When the timing of a threat to an investment portfolio is unpredictable, it is prudent to include a structural position in a few hedge investments to provide protection if/when the threat materializes. Fortunately, the second question is more tractable, so we will focus on answering it. This letter will examine the two essential components of what makes the best inflation hedge:

1. Positive correlation with inflation.
2. Reasonable expected return.

While it is impossible to perfectly quantify the rate of inflation, we accept that the Consumer Price Index (CPI) is the best overall measure of inflation. According to the U.S. Bureau of Labor Statistics, CPI is a measure of the average change over time in the prices paid by urban consumers for a market basket of consumer goods and services. For our analysis, we selected the broadest and least modified measure of CPI: the non-seasonally adjusted U.S. City Average All Items Consumer Price Index for All Urban Consumers (CPI-U). The CPI-U represents about 93 percent of the total U.S. population. We then calculated the correlation coefficient of multiple asset classes relative to CPI-U (Table 1). Combining 10 year return forecasts from Research Affiliates with our proprietary return forecasting models, we report the return forecast in a range from low to high for each asset in Table 1.

Table 1. Asset Class Correlation with CPI-U and Return Forecast

Asset Class	CPI Correlation	Return Forecast
Energy Sector (1999)	0.71	Medium
Agricultural Sector (2008)	0.58	Medium
Short Term TIPS (2013)	0.56	Low
Gold (2005)	0.47	Low
Gold Miners (2007)	0.44	Medium
Intermediate Term TIPS (2001)	0.44	Low
Emerging Market Value (1999)	0.37	High
Copper Miners (2011)	0.28	Medium
International Small Cap Value (1995)	0.28	High
Financial Sector (1999)	0.16	Medium
Real Estate Investment Trusts (1997)	0.14	Medium
Long Term TIPS (2010)	0.12	Low
US Small Cap Value (1994)	0.11	High
S&P500 (1975)	0.10	Low
US Large Cap Growth (1993)	0.03	Low
Long Term U.S. Treasury Bonds (1987)	-0.14	Low

- Red** - Popular inflation hedge with an unacceptable hedge/return profile.
- Yellow** - Popular inflation hedge with an acceptable hedge/return profile.
- Green** - Less known inflation hedge with a good hedge/return profile.
- Grey** - Not an inflation hedge; included for comparison purposes.

The correlation coefficient was calculated by comparing the 12 month change in CPI-U with the 12 month change in the asset price from the year listed for each asset through 2021. Because we do not have equally long data sets for each asset in Table 1, and we

know that correlations can behave differently in different time periods, it is appropriate to interpret these correlation coefficients as an approximation to give us a rough idea of the relative ranking of these assets.

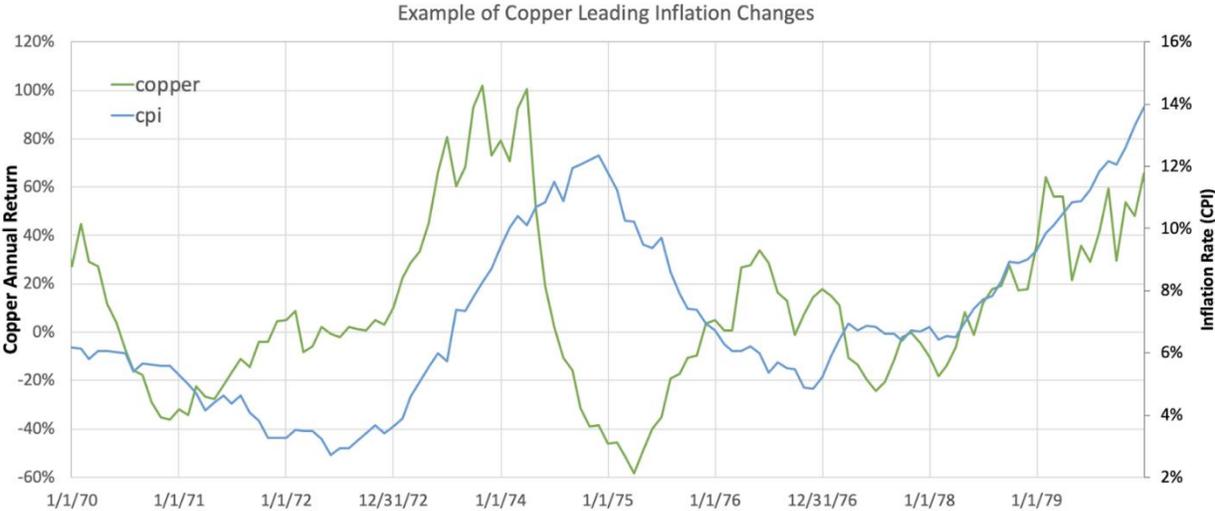
The assets highlighted in red are commonly cited as good inflation hedges, but our analysis shows that their combination of inflation correlation and current expected return is not good enough to deserve a place in our portfolios. The assets highlighted in yellow are targeted inflation hedges that have a moderate to high correlation with inflation plus a medium expected return (except Gold), and thus deserve a small portfolio allocation. Even though gold has a low expected return, it does earn a place in our portfolios because it serves as a prudent insurance policy that protects against multiple worst case scenarios. While the Energy and Agricultural Sectors have the highest correlation with inflation, these sectors do not have high enough expected returns to earn a larger allocation. The best combination of correlation with inflation and high expected return is found in the assets highlighted in green: Emerging Market Value and International Small Cap Value stocks. These assets deserve a larger portfolio weight due to their high expected return and their reasonable correlation with inflation.

Of note is the wide ranging correlation of Treasury Inflation Protected Securities (TIPS), depending on their duration. The principal of TIPS increases with inflation and decreases with deflation, as measured by the Consumer Price Index. When TIPS mature, you are paid the adjusted principal or original principal, whichever is greater.

TIPS also pay interest twice a year, at a fixed rate. The rate is applied to the adjusted principal; so, like the principal, interest payments rise with inflation and fall with deflation. This sounds like a perfect inflation hedge, but the problem is that TIPS are bonds with duration which makes their price move inverse of inflation if interest rates rise. The longer term the TIPS, the more their duration counteracts the inflation adjustment. Thus, we see that short term TIPS are one of the assets most correlated with inflation (0.56), while long term TIPS are only slightly correlated with inflation (0.12). At this point in time, TIPS are not an attractive investment because their current yields range from -0.02% for 30 year TIPS down to -1.68% for 5 year TIPS. Even though their principle is guaranteed to keep up with inflation, their yield is negative, which nearly ensures a negative real return.

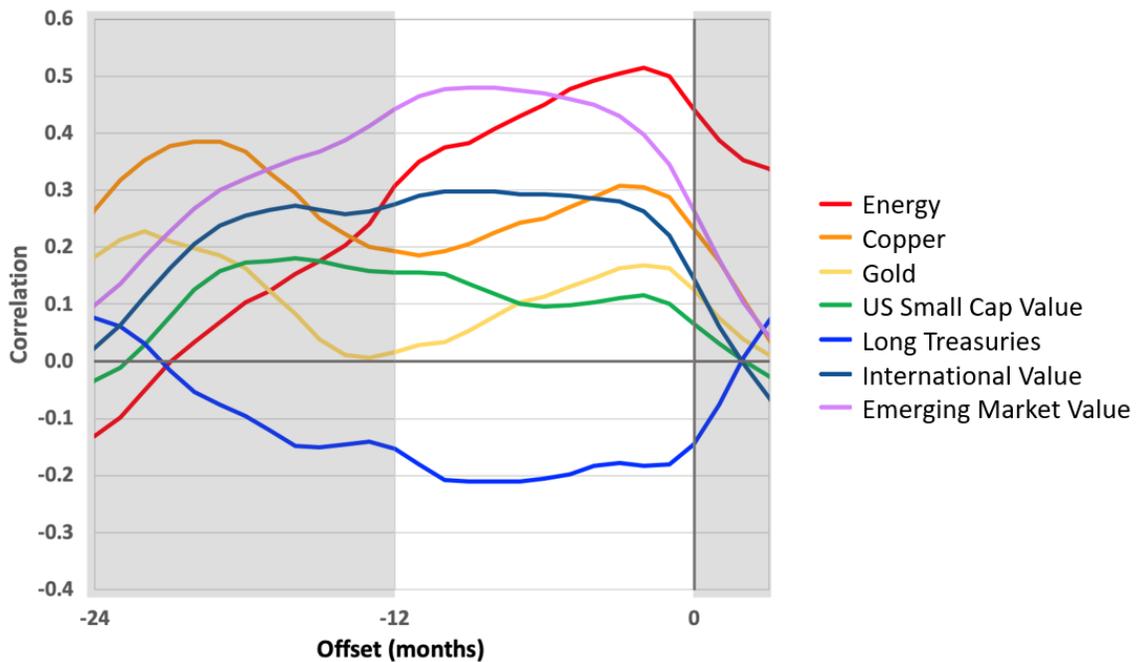
It is often said that the market “looks ahead 6 to 9 months.” When it comes to inflation, this means that inflation hedges might start to go up before inflation starts to rise. An example of how this looks is shown in Figure 1.

Figure 1. Copper Returns Lead Inflation Change



In Figure 1, we can see that the annual return of copper peaks several months before the annual rate of inflation peaks, and it also bottoms well before inflation bottoms. We went on to analyze selected inflation hedges to see if they display a leading return movement relative to coming changes in the inflation rate. We scanned their correlation with CPI-U change in a range from 24 months before, to 3 months after, the point of the inflation rate reading (Figure 2).

Figure 2. Time-Shifted Correlation of Asset Annual Returns vs. Annual CPI Change



This analysis was run from 1989 through 2021. Figure 2 shows that Emerging Market Value and International Value stocks are leading indicators of inflation demonstrated by their higher correlation with the change in CPI-U 6 to 9 months later. Conversely, Long Term U.S. Treasuries are an inverse leading indicator - their movement 6 to 9 months ahead display the highest anti-correlation to changes in inflation. Interestingly, the targeted inflation hedges: Energy, Copper, and Gold display higher correlations to inflation 1 to 3 months before inflation changes, acting as a shorter lead time predictor of coming inflation. (Copper and Gold annual returns are also more strongly correlated with inflation changes 15 to 18 months ahead, but this long lead time is difficult to use for investment purposes.) Of note, all of the correlations fall toward 0 in the months after the inflation rate reading. This shows that investing in these hedges in response to an observed inflation rate change is too late. We need to hold the inflation hedges before inflation starts going up to benefit from their hedging value.

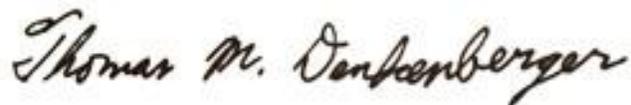
Because the future inflation rate is so difficult to predict, we prefer to always hold a subset of investments that are positively correlated with inflation and have a medium to high expected return. If/when these investments become undervalued, we are happy to buy more inflation protection at a low cost; we don't need to accurately predict inflation to build an inflation hedged portfolio that has a reasonable expected return. During the past

year, Emerging Market Value and International Value stocks have traded at some of their widest discounts in history relative to the general market. We have taken advantage of this opportunity by overweighting these assets.

Looking forward, it does seem likely that significant government stimulus, coupled with the reopening of the economy, will drive up the inflation rate as we head into the summer. We are happy to be holding diversified portfolios in which we have recently built an overweight position in our high expected return inflation hedges.

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Best,



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