ASSET CLASSES AND INFLATION: A COMPLICATED HISTORY

- Inflation has been unusually calm of late around the world – but it may be poised to pick up, and investors should be thinking about asset allocation.
- The research on asset-class behavior when inflation rises suddenly or persists over longer-term periods offers mixed messages to investors.
- One thing is clear, though: Commodities have been a powerful hedge, outperforming other assets in both inflationary “shocks” and more-persistent inflationary periods.
- In addition, other hard assets, such as gold and real estate, have also performed well during inflationary “shocks”.
- There’s no all-inclusive hedge against inflation, but our best advice is classic investment wisdom: stay diversified – including in this case a small commitment to hard assets.

Introduction

Since 2009, inflation has been subdued globally relative to its historical norms. Indeed, since the Great Recession we have seen central banks worldwide looking to spur inflation, and with it, economic growth, through traditional interest-rate reductions. Many central banks have also been purchasing sovereign and other debt in the open market – a strategy known as quantitative easing, which keeps interest rates artificially low. Now, however, with economic growth ticking up in many regions, investors are beginning to see signs from central bankers that the era of quantitative easing is coming to a close.

Predicting future inflation rates is extremely difficult at this juncture, as it always is – let alone the returns of various asset classes in different inflationary environments. That said, with inflation possibly on the rise, our quantitative-research team at Gerstein Fisher set out to define appropriate levels of diversification and risk management under scenarios of high inflation as well as short-term inflation levels in excess of expectations.

Exhibit 1 shows Consumer Price Index (CPI) 12-month percentage changes from January 1953 through October 2017.1 The rates have varied widely, but have recently been hovering near the low end of their range.

Background: Mixed Messages in the Research

In 1977, Nobel-laureate Eugene F. Fama and financial theoretician G. William Schwert estimated the extent to which different assets provided effective hedges against both the expected and unexpected components of inflation between 1953 and 1971.2 They found that common stocks

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1 The Consumer Price Index (CPI) measures changes in the price level of a basket of consumer goods. In January 1953, the Bureau of Labor Statistics increased the sample of goods used in measuring the Consumer Price Index and the frequency of data collection. Thus, we regard January 1953 as the starting point for accurate and comprehensive information about US inflation rates.

did not fare well against inflation, posting returns that were negatively correlated to the expected inflation rate, as well as unexpected changes in inflation. A particularly inflationary period within the time horizon of the study occurred from 1968 through 1971. Inflation was 5% annualized over that four-year period, while US stocks, as measured by all stocks trading on the NYSE weighted by market capitalization, returned only 3.0%. At the same time, one- to three-month Treasury bills provided a 5.8% annualized return; one- to five-year government bonds returned 5.5%; and real estate returns (as measured by the rate of inflation of the Home Purchase component of the CPI) were 6% annualized. And so the researchers concluded that during the period covered by their analysis, US-government bonds and bills were relatively effective hedges against expected inflation, while private residential real estate partially hedged against both expected and unexpected price increases.

However, other research suggests that bonds are less resilient than Fama and Schwert thought. In a 2009 working paper titled "Inflation Hedging for Long-Term Investors," IMF researchers Shaun Roache and Alexander Attie assessed the inflation sensitivity of different asset classes, and found that commodities were an effective inflation hedge over 12-month periods, while both equities and bonds were negatively affected by an increase in the inflation rate. And so researchers at different times came to different conclusions about the power of various assets to act as inflation hedges.

Currently, although (or perhaps because) inflation is low, we believe that investors should be thinking about how a broad range of asset classes might react to a short-term "shock" to the CPI rate, or the arrival of a longer-term inflationary period. We are not predicting imminent high inflation in this paper, but we believe that investors have become accustomed to price increases that are tamer than the historical record in Exhibit 1 suggests.

Commodities Win When Inflation Hits Unexpectedly...

With that as background, we reviewed more than three decades of data on asset-class returns in a variety of inflationary environments. We defined periods with “positive unexpected inflation” to be those whose 12-month actual changes in the CPI were at least 0.5 percentage point higher than forecasted.

Exhibit 2 compares the average rolling-one-year performance of different asset classes when inflation was unexpectedly high as well as in all periods, going back as far as 1981. Not surprisingly, commodities proved to be the best hedge among all asset classes against inflation shocks, delivering a 27.6% average annual return when the CPI rose unexpectedly. This result comports with Roache and Attie’s research, and reflects commodities’ rapid price adjustments in line with inflation.

Gold has also been a meaningful hedge in these periods, along with Treasury Inflation-Protected Securities (TIPS); REITs; and – in particular – equities from the emerging world, which tend to be heavily exposed to commodity-related industries. However, stocks from the developed markets lagged their emerging counterparts meaningfully when inflation arrived in a rush.

…But Other Assets May Also Be Helpful

Exhibit 3 summarizes the historical performance of different asset classes in low-, medium-, and high-inflation periods. When CPI was low (defined as an annualized growth rate below 2.1%), returns were particularly strong in a few asset classes, such as US equity, US REITs, international equity, and US high-yield bonds. Moderate

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Commodities have been the stand-out inflation hedge

Exhibit 2: Average One-Year Asset-Class Returns – Unexpected Inflation vs. All Scenarios

<table>
<thead>
<tr>
<th>Inflation Regimes</th>
<th>Low</th>
<th>Moderate</th>
<th>High</th>
</tr>
</thead>
<tbody>
<tr>
<td>Commodities</td>
<td>-14.7%</td>
<td>8.5%</td>
<td>23.6%</td>
</tr>
<tr>
<td>Gold</td>
<td>2.3%</td>
<td>6.1%</td>
<td>4.7%</td>
</tr>
<tr>
<td>TIPS</td>
<td>4.7%</td>
<td>8.4%</td>
<td>10.6%</td>
</tr>
<tr>
<td>US REITs</td>
<td>9.2%</td>
<td>18.9%</td>
<td>12.2%</td>
</tr>
<tr>
<td>Global REITs</td>
<td>5.7%</td>
<td>15.0%</td>
<td>6.8%</td>
</tr>
<tr>
<td>US Equities</td>
<td>11.6%</td>
<td>15.6%</td>
<td>12.1%</td>
</tr>
<tr>
<td>Developed Intl. Equities</td>
<td>8.4%</td>
<td>13.6%</td>
<td>11.5%</td>
</tr>
<tr>
<td>Emerging-Mkt. Equities</td>
<td>3.6%</td>
<td>18.6%</td>
<td>18.5%</td>
</tr>
<tr>
<td>US Agg. Bonds</td>
<td>6.3%</td>
<td>8.4%</td>
<td>9.7%</td>
</tr>
<tr>
<td>Global Agg. Bonds (Excl. US)</td>
<td>0.7%</td>
<td>4.7%</td>
<td>11.1%</td>
</tr>
<tr>
<td>US 1–3 Yr. Gov. Bonds</td>
<td>3.9%</td>
<td>6.0%</td>
<td>8.3%</td>
</tr>
<tr>
<td>Global 1–3 Yr. Gov. Bonds (Excl. US)</td>
<td>3.3%</td>
<td>7.7%</td>
<td>8.1%</td>
</tr>
<tr>
<td>US High-Yield Bonds</td>
<td>7.5%</td>
<td>14.3%</td>
<td>6.1%</td>
</tr>
<tr>
<td>Cash</td>
<td>1.8%</td>
<td>3.7%</td>
<td>6.2%</td>
</tr>
</tbody>
</table>


* Time period is shorter for some asset classes; see Source note above.


Stocks, bonds, and real estate have also had good returns in inflationary times

Exhibit 3: Rolling-One-Year Average Returns by Inflation Scenario

Sources: Gerstein Fisher research, Bloomberg

* See the text of this paper for definitions of the three inflation scenarios.
Inflation (defined as between 2.1% and 3.2% growth in CPI) was generally the most accommodating environment for investing; this should not be surprising, since stocks, real estate, and high-yield bonds all tend to perform well in relatively “normal” inflationary periods.

In periods of high inflation (growth of greater than 3.2% in CPI), commodities shined (as expected). The returns of TIPS and investment-grade bonds were also significantly better than in low-inflation environments, benefiting from the higher interest rates that accompanied inflationary spikes. Emerging-market equities, with their ties to commodities, posted superior results as well, especially since some of the high-inflation periods were also characterized by robust economic growth. Generally speaking, commodities and other “hard” assets such as gold and real estate have helped to hedge against inflationary shocks. But like most asset classes, both gold and real estate have done less well when inflation was at its highest levels and during extended inflationary periods.

**Conclusion: Stay Diversified**

Our findings suggest that commodities and other “hard” assets usually help hedge inflation, both when it arrives as an unexpected “shock” and as it persists. Other asset classes present a more complicated story. Stocks and bonds, broadly, lag during periods of short-term surprises in inflation but perform better in more extended inflationary cycles and particularly well when inflation is moderate.


We also examined commodities in more general research on risk and return, focusing on the role they can play in a portfolio. We found that with only a 5% allocation, commodities can improve risk-adjusted returns in a diversified portfolio,* primarily because of the risk reduction they usually provide. While the overall return differential was modest between portfolios with and without an allocation to hard assets (including commodities), those with such exposure experienced lower volatility in 98% of the five-year periods between January 1970 and July 2017. Commodities proved to be particularly useful during extended years of poor equity markets. For more details, see our blog “Is There an Investment Case for Down-and-Out Commodities?” (https://gersteinfisher.com/viewpoints/is-there-an-investment-case-for-down-and-out-commodities/)

Further, we reviewed REITs and global real estate in various interest-rate environments. These assets can perform surprisingly well when rates are rising (periods, by the way, strongly correlated with high inflation). For one thing, real estate typically “passes on” higher interest rates to tenants. See “REITs and Rising Rates: Fear Not” (https://gersteinfisher.com/viewpoints/reits-and-rising-rates-fear-not/) for more details.

Finally, as to inflation, there’s no “silver bullet” that can completely hedge the risk, especially since the timing and degree of future inflation rates are always uncertain. That said, we think that the data on asset-class performance as well as the general principles of diversification warrant a modest exposure to asset classes with histories of performing well in inflationary periods – commodities in particular, as well as gold and real estate when inflation suddenly and unexpectedly rises.

And so we believe that most investors are well served by including a (small) component of hard assets in their portfolios, especially commodities. But more generally, we believe asset diversification is the best strategy, regardless of the prevailing inflation-rate regime.

* Balanced portfolio with commodities is comprised as follows — 55% S&P 500 Index, 40% 5-Year Treasuries, 5% S&P GSCI Index.
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