



Defending Against Inflation: A New Look across Asset Classes

By Robert Huebscher
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In the long-term performance race against inflation, stocks are the hands-down winner, outpacing inflation 9.7% to 3.0% since 1926. But that history is characterized predominantly by modest inflation, with one big exception – the 1970s, when double-digit inflation contributed to a bear market.

As the government prints more money to finance rapidly expanding budget deficits, every investor must prepare for a possible return of 1970s-style inflation.

In theory, equities should perform well during inflation. They represent real assets, and as the prices of these assets rise, so should equity prices.

In this case, though, history and theory are at odds.

A working paper by two economists at the International Monetary Fund, “Inflation Hedging for Long-Term Investors,” provides the latest evidence that equities aren’t an effective hedge against inflation. Its authors, Alexander P. Attié and Shaun K. Roache, conclude that commodities and – surprisingly – nominal bonds have inflation-fighting characteristics that equities lack, but their performance is greatly dependent on the investment horizon.

Attié and Roache looked across a range of asset classes to see which have hedged against inflation effectively. They measured the returns for cash, equities, nominal bonds, real estate, commodities and diversified portfolios against inflation over a one-year time frame and over longer time horizons.

Inflation Hedging over a One-Year Period

For the one-year test, Attié and Roache used a regression to measure annual returns for each asset class against actual (“ex-post”) inflation. They did not attempt to determine the effect of inflation surprises; instead, their goal was to measure performance over a one-year period – the time span over which manager performance is often measured.

Commodities were the most effective hedge over the one-year period, with the CRB index, the GSCI total return index and the spot gold price posting economically and



statistically significant outperformance. For each one-percent increase in inflation, those commodities increased between 3.8% and 10%.

Nominal bonds performed poorly, losing up to 3% for every 1% increase in inflation. Equities were an ineffective hedge – U.S. large cap equities lost a statistically insignificant 0.03% for every percentage increase in inflation, and a diversified basket of international equities lost 3.5%.

Cash also failed to keep pace with inflation. US-denominated cash lost 0.24% and global cash lost 0.65% for every percentage-point increase in inflation. The authors note that this is a “puzzling result,” since cash should track inflation very closely, and they warn against “the dangers of concluding too much from simple regressions and the importance of testing for model stability.” They explain that these curious results for cash were heavily influenced by the 1980-82 period, when interest rates continued to rise even after the effects of the second-round oil shock and headline inflation began to abate.

Long-Term Hedging against Inflation

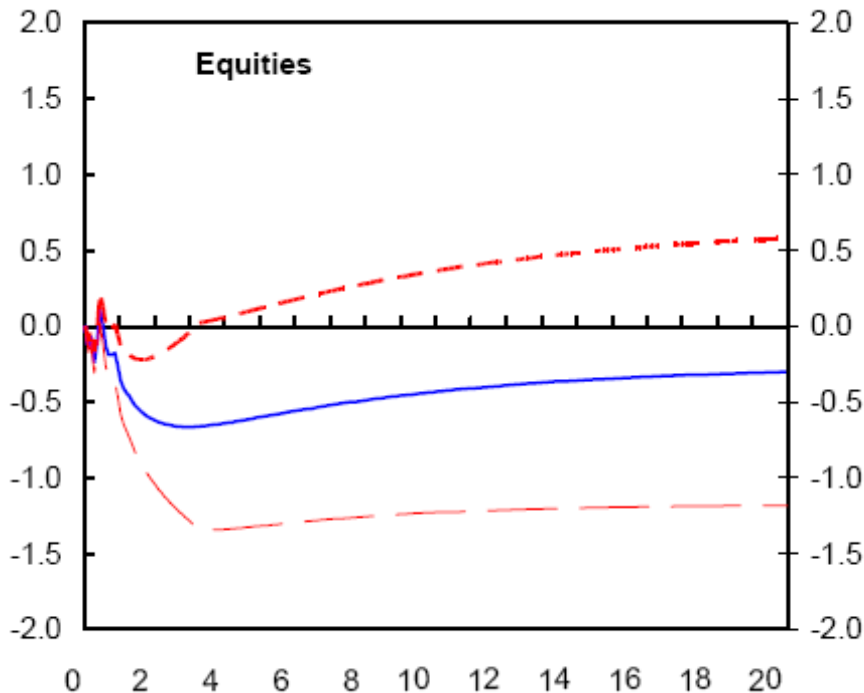
While effective inflation hedging over periods as short as one year is important, retirement portfolios are more concerned with the performance of various asset classes over longer time frames. To analyze this, the authors used a vector autoregressive (VAR) model. The VAR measures the relative responsiveness of each asset class to surprises or “shocks” in inflation rates.

With a VAR model, researchers make very few assumptions about the underlying model. Bond prices might drive equity prices one day and vice versa the next day. Complex relationships can be modeled where, for example, inflation and asset class returns all impact each other, and the past history of returns for each asset class affects current returns of each asset class.

When I spoke with Roache, he said that the VAR model “allows us to describe all of the different interactions between inflation and the asset classes without imposing too much theory.”

The best way to interpret a VAR model is to not look at equations, but to apply a shock to the system (in this case in the form of a spike in the inflation rate) and trace out its impact on other variables.

Here is what happens to equity returns when a one-standard-deviation spike (equivalent to approximately 0.2%) is applied to inflation rates:



The blue line shows the median return for equities over a 20-year period, bracketed by the red dashed lines, which represent one standard deviation above and below the median.

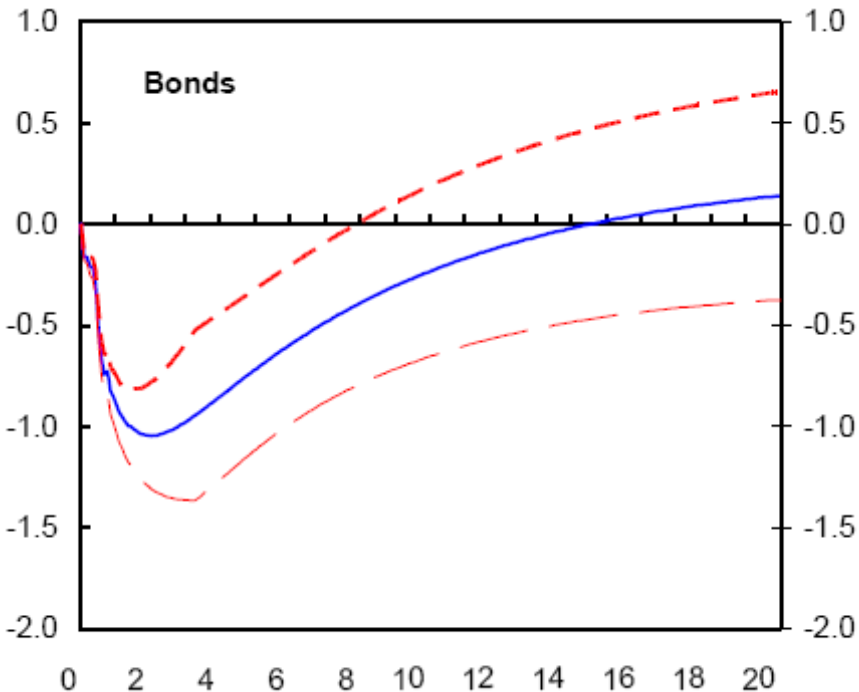
Equities suffer from the initial inflation shock and fail to recover, even after 20 years. The “problem,” Roache said, “is simply the lack of data available – all we have are positive surprises, at least since the late 1970s and we do not have much evidence on the effect of deflation. Equities have done badly when inflation has gone up unexpectedly.”

Instead of looking at data when there was a one-off quick shock, Roache believes different results would emerge as a result of disinflation, slow changes, or anticipated changes. “Over those sorts of periods equities might recoup losses that they suffer over the shock, but this model doesn’t capture that,” he said.

High inflation – over 5% – makes bond investors very nervous, according to Roache, and they ask for high real rates. “Equity investors don’t like high real rates,” he said.

When real interest rates fall and inflation is under control, then equities outperform, which is what happened in late 1980s and 1990s,

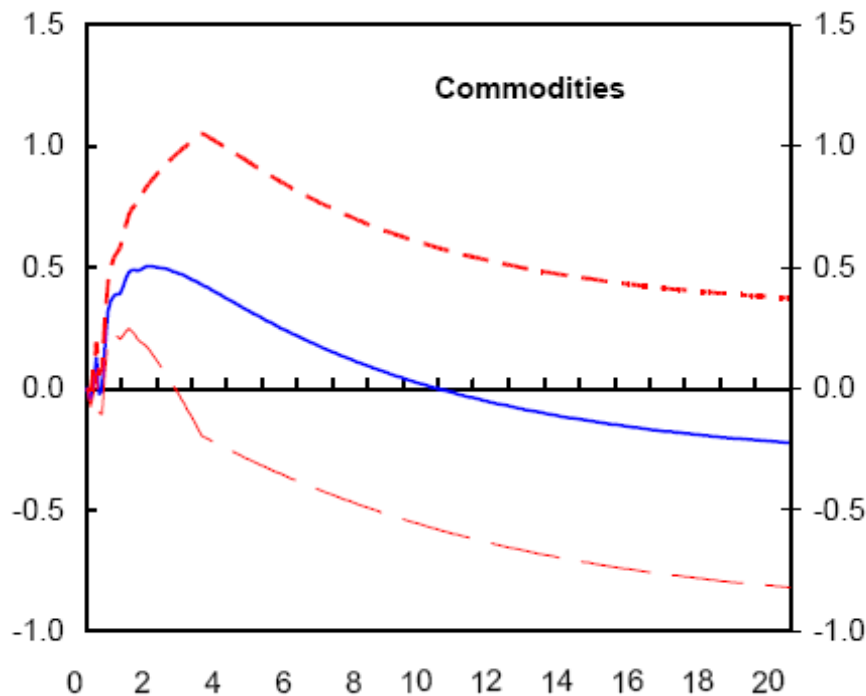
Bonds similarly suffer from the initial inflation shock, but eventually recover:



Roache said that a lot is driven by the experience of 1980s. “Bonds really sold off when investors believed the inflation shock might be permanent,” he said. Bond investors then asked for a higher risk premium – a higher real yield to protect against further surprises. “At some point yields stop rising and, once you get to that point, bond investors benefit from very high coupons and real yields-to-maturity,” he explained, adding that the process takes time and eventually levels off.



Commodities offer short-term relief from inflation, but those benefits dissipate over time:



Gold tends to do much better than other commodities. “Other commodities vary depending on their unique supply-and-demand fundamentals, whereas gold has a more stable profile,” Roache said.

Equities versus TIPS

“If you really want to hedge, use TIPS,” Roache said.

TIPS are designed to be a very effective hedge and would show up very well in Roache’s models. He did not test them because “decent data” is only available since 1997 and, until three to four years ago, liquidity was limited. TIPS were held primarily by long-term liability managers, regardless of their real yields. “Now we are starting to see TIPS as a regular asset class and ownership is broadening out, with liquidity rising,” he said.

One person who agrees that TIPS are the best hedge against inflation is Zvi Bodie, a professor of finance and economics at Boston University.

He believes everything hinges on the definition of a hedge. “If all you mean is that there is an expected risk premium associated with equities, then I agree that they can hedge



risk," he told me. "But equities are also risky. The reason to use equities is to take extra risk to earn a higher rate of return, not to hedge."

Bodie says the investment industry and organizations such as the Investment Company Institute (a trade group representing the mutual fund industry) have marketed equities inappropriately, misleading investors about issues such as their effectiveness as inflation hedges.

"If what you want is safety, stay away from equities," Bodie said.

Bodie's PhD thesis was on the subject of equities as an inflation hedge, and he showed that equities were slightly negatively correlated with inflation. In a 1976 article, *Common Stocks as a Hedge against Inflation*, he famously argued that "this negative correlation leads to the surprising and somewhat disturbing conclusion that to use common stocks as a hedge against inflation, one must sell them short."

"TIPS is it. Any other asset class exposes you to other types of risk," said Bodie.

Bodie was critical of a new ETF, the WIP, which hedges against global inflation. This ETF makes sense if you believe there is default risk in US Treasury bonds, he said, but it exposes the investor to currency risk and sovereign default risk.

The WIP is an example of an "underlying fallacy in conventional wisdom that it is driving people to wrong conclusions," Bodie said. For example, he said conventional wisdom holds that diversification reduces risk. "But it doesn't if you are already holding the safest assets – those backed by the US Treasury," he said. "If you take risk, you may end up earning much less."

Implications for Retirement Portfolios

If one's goal is to have a secure retirement – as is the case for most middle-income wage earners – and not to create an estate for your children, then Bodie says the focus should be safety.

"Retirees should be concerned with getting through the rest of their life without being dependent on their children, especially since many have to support their own parents. That burden is sometimes a big burden," he said. "If you don't expect an inheritance and are willing to accept the burden of caring for your parents, then the greatest thing you can do is make sure your kids don't have that burden."

At age 66, Bodie believes he should have no equity exposure. "All I want is security, and I buy inflation-protected bonds and life annuities," he said, noting that a number of AA-rated insurance companies now issue inflation-protected annuities. He is still



undecided about long-term-care insurance. “In some sense, I want catastrophic illness insurance beyond Medicare,” he said. “I have seen some pretty bad nursing homes.”

In short, Bodie said, “Don’t speculate with retirement wealth.”

If you are much younger, Bodie said your equity exposure depends on the risk exposure in your career. “If you are young and on a secure track toward decent and secure long-term income, then you can afford equity risk. By and large, don’t expose more than 10% to equities unless you are a high net worth individual, in which case losses don’t materially affect your standard of living.”

Bodie admits his is not the conventional view, but, he said, “that conventional view is basically false.”

Roache mostly agrees with Bodie, believing that inflation-fearing investors should rely on a direct hedging approach with TIPS or other derivatives, such as inflation swaps. He said there is “no evidence that equities offer protection in an inflationary environment.” If investors can’t do that for mandate reasons, then they should look at tactics such as commodity exposures or sector allocation strategies. “Some sectors, such as energy and mining, hedge better than others, like consumer-oriented sectors that can’t pass through inflation,” he said.

I asked Bodie for his inflation forecast. He prefaced his answer by saying that his forecast carries a very big standard deviation and “it is not clear it matters what I predict.”

Nonetheless, he predicts inflation averaging 3% over the next decade.

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