Inflation Is Everywhere And Nowhere

Know what everyone else knows, and you know nothing. No, this is not some extraneous detour into Zen navel-gazing, but rather a description of the conundrum traders face every day. Markets are a game in the economic sense of the word, one wherein your best move can be demonstrated as not the best reaction to the situation as it exists but to your opponents' anticipated best move.

Inflation, however defined, creates an interesting twist on the game. We saw last month (see "Can The CPI Catch Your Eye," April 2004) how the CPI-U, now the basis for a futures contract, could not be added to a normal Treasury bond to create a Treasury Inflation Protected Security, or TIPS. Can futures on the CPI-U be used to trade all of those other markets whose link to inflation exists not only in the public mind but in economic and financial theory as well?

Consider a market such as gold, whose dominant fundamental is the relationship between expected inflation and the short-term interest rate cost of carry (see "Precious And Few," November 2003). Or a financial market such as currencies, where the dominant fundamental is the relationship between expected rates of inflation (see "Great Expectations," April 1997). And let's not forget about stocks, where both the quality of earnings and the discount rate employed are affected significantly by expected inflations.

Surely CPI futures will be useful in all three markets, right? Do not bet on it. It seems the CPI future will be a decent hedge vehicle for the CPI-U, but little more.

Un-Golden Link

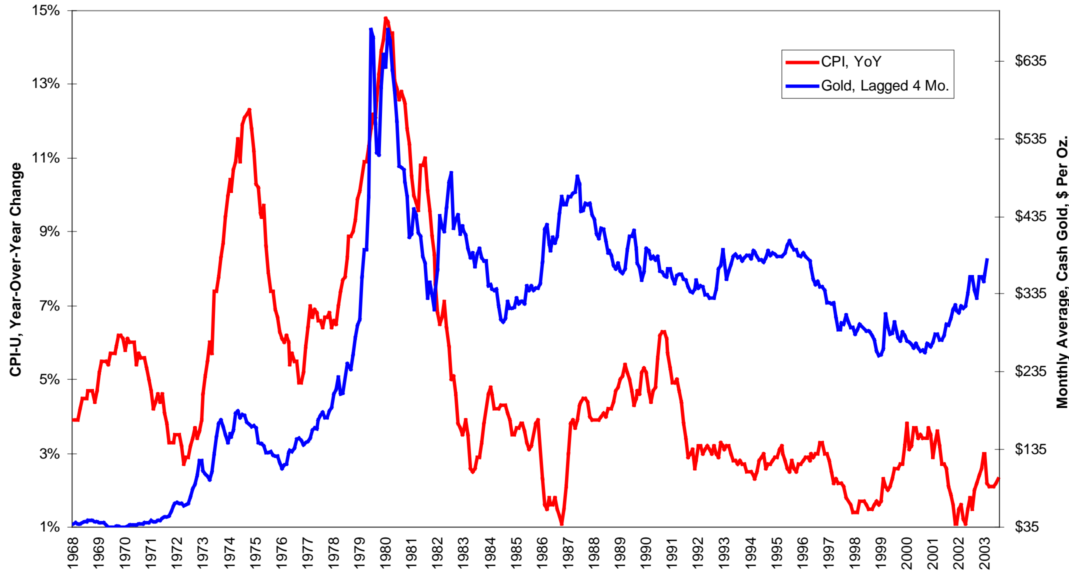
Just as we saw in the case of bonds, the link between gold and inflation starts to break down from a time horizon mismatch. Gold, as it should be, is a forward-looking market capable of discounting expected inflation while the CPI-U is a backward-looking and highly imperfect snapshot of inflation. We should not expect these two variables to link, and unsurprisingly they do not.

First, if gold embodies the linkages between expected inflation and short-term interest rates, any discussion of gold bereft of interest rate modification is incomplete. Moreover, it is pointless to argue that short-term interest rates, those used to finance holdings of gold represent inflationary expectations; those are measured instead by both the ordinal level of long-term rates and the shape of the yield curve. An inverted yield curve with high short-term interest rates reflects declining inflationary expectations.

Second, gold is a classic global market and has been so for a very long time. If it is measured in dollars and these dollars are themselves fiat money, a currency without a link to a finite store of value, a discussion of gold prices without a concomitant discussion of the dollar's purchasing power relative to other currencies also is incomplete. These two factors will be introduced in turn.

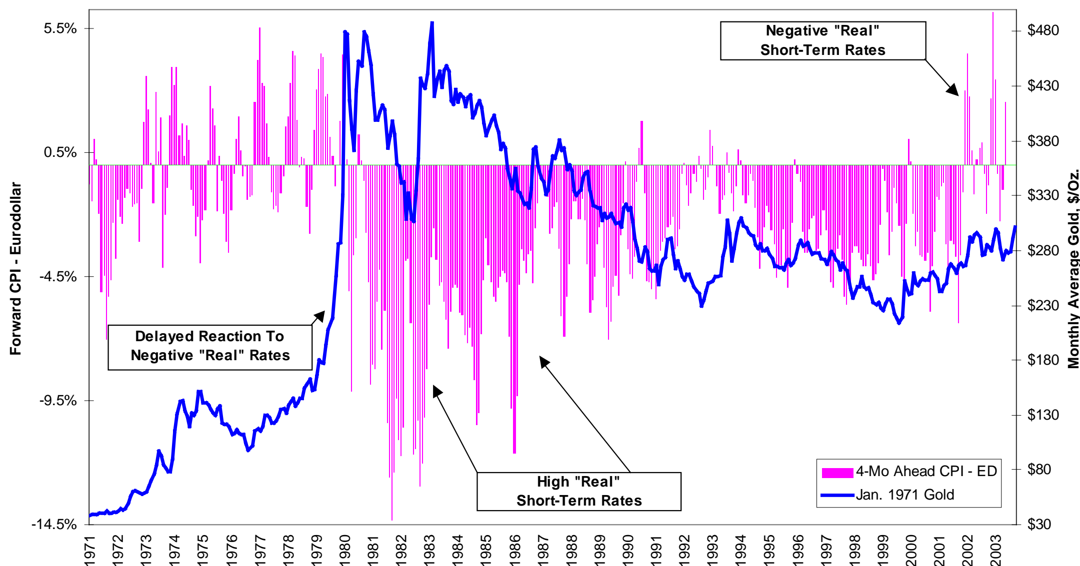
Monthly average returns on gold have led "returns," or percentage changes, on the CPI-U by four months since 1968. The relationship has been surprisingly weak ever since gold collapsed in the early 1980s. Gold did not descend as far in price as much as inflation dissipated, nor did it appreciate as much as the CPI-U did in those brief periods during the late 1980s and early 1990s when inflation accelerated. Even more amazing for those who wish to take a simplistic view of the matter is how the price of gold turned higher in the strongly disinflationary recession and bear market of 2001-2002.

Expect The Unexpected



Gold, as noted above, can increase in price if expected inflation exceeds the short-term interest rate holding cost. The calculation and monthly releases of the CPI-U data preclude any inferences as to what contemporaneous inflationary expectations were at the time. The next best thing, and a statistically imperfect one at that, is to compare the realized four-month ahead changes in the CPI less the eurodollar rate – an approximation for the gap between expected inflation and the holding cost – to the currency-adjusted price of gold. The first month in which this comparison can be constructed is January 1971.

Holding Costs Matter For Gold



The comparison confirms clearly that the long bear market in gold coincided with a long period of positive "real" short-term interest rates. Just as significant, the negative real short-term rates present through much of the 1970s contributed to the bull market in gold; the return to these negative real rates recently coincides with the upward move in gold seen since 2001 as well.

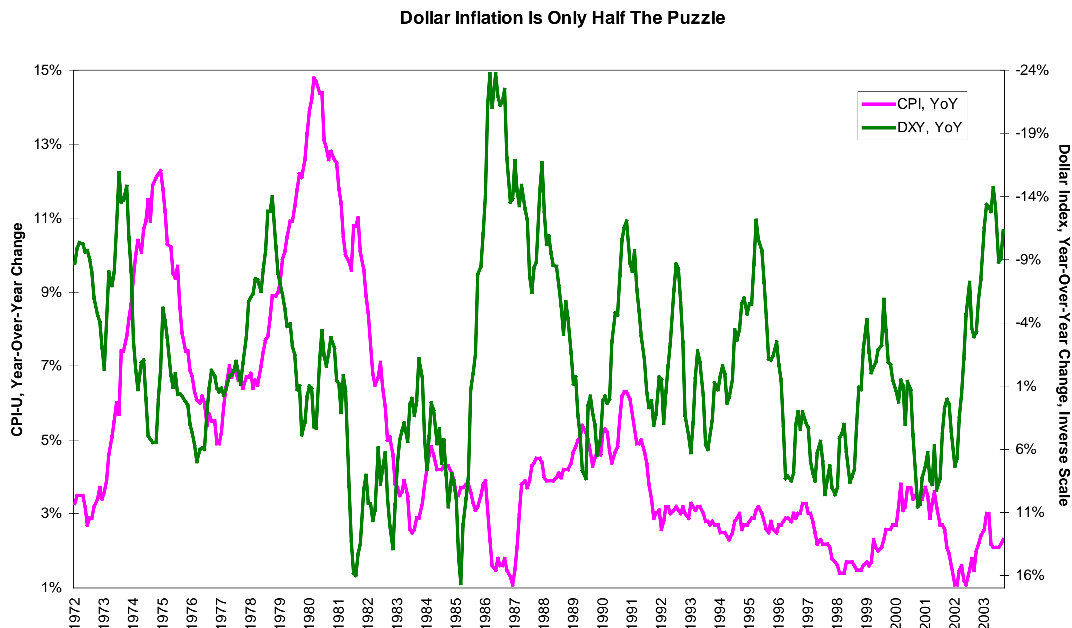
But the best statistical analysis often is the simplest: A quick glance at the relationship between the CPI-U and gold prices, however stated, indicates that CPI futures would be a very poor way of trading gold, or vice-versa.

Inflation And The Dollar
Inflationary expectations should play a key role in setting foreign exchange rates. At any maturity worldwide, there can be only one real interest rate, denoted as $R^{\wedge}$ below; arbitrage would occur otherwise with traders borrowing in the lower real rate and lending in the higher real rate until the two equalized. The differences in nominal interest rates, according to Fisher's Law, must be a function of different inflationary expectations, denoted as R^{e}_{us} and R^{e}_{for}, for U.S. and foreign rates below.

$$Future = \left[Spot * \frac{1 + (R^{\wedge} + R^{e}{}_{us}) * \frac{d}{360}}{1 + (R^{\wedge} + R^{e}{}_{for}) * \frac{d}{360}} \right]^{-1}$$

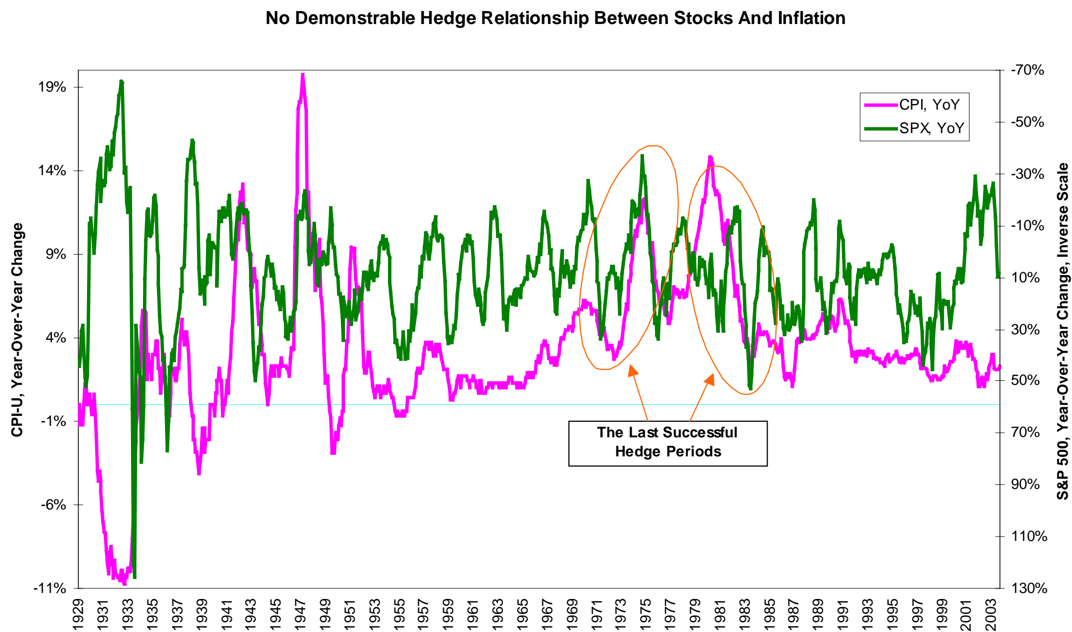
This so-called interest rate parity is violated regularly in currency markets for reasons such as absolute fund requirements, different yield curve shapes and political interferences. The yen, for an example of absolute fund requirements, tends to jump violently higher when importers finally have to buy (lend) in it to pay their Japanese suppliers. The currency of a country with an inverted yield curve at present should be strong against the dollar at short maturities, but weak at longer maturities. Political interferences need no introduction to anyone who has traded currencies.

Information on only one country's reported inflation is, by itself, the proverbial sound of one hand clapping. We need to know capital flows, yield curve shapes and relative interest rates in both countries, and most important, expected monetary policy responses to changes in both inflation and the currency. The difficulty of doing so even with all of this fundamental information available is such that currencies are the most technically traded of all major markets. If the CPI-U alone was the key determinant of the dollar's course, we should see a strong correlation in the chart below, but we clearly do not.

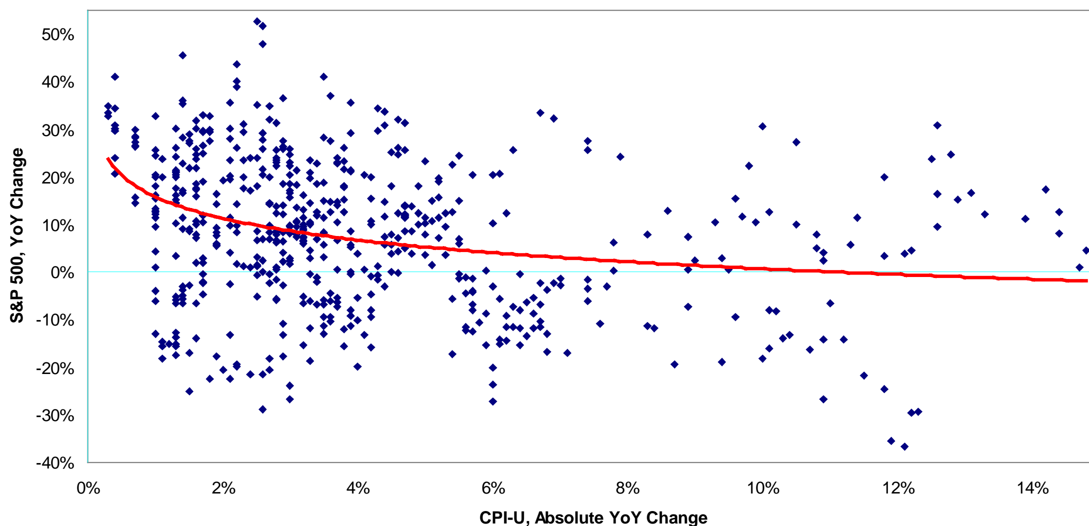


The CPI And Stocks
While it may be difficult for some to believe today, stocks once were regarded as having embedded inflation protection; the supposed ability to raise both prices and dividend payouts in the face of higher inflation was taken as a given up until the late 1960s. It was understood simultaneously, however, that inflation was anathema for bonds. Then came the inflation of the 1970s with its cruel lessons on capital replacement costs, operating expenses, high interest rates, the tax impact of FIFO accounting and the discounting effects of inflation upon future earnings streams.

The long-term relationship between the S&P 500 year-over-year changes based on monthly averages and the CPI-U presents no evidence of a hedgeable relationship; since the breakdown of the Bretton Woods system, only two short periods of coincident behavior between stocks and inflation have been observed. Neither market appears to lead the other, which suggests the stock market is confused over just what its link to price stability should be.



This confusion is understandable given the reality that stocks have no embedded protection against either inflation or deflation. Stocks suffered during both the deflation of the 1930s and the inflation of the 1970s. Stocks can accommodate mild inflation much like a host animal can accommodate a parasite gracious enough not to kill it. Of course, a mild inflation in and of itself is hardly a talisman against a bear market, as the 2000-2002 bear market demonstrated. About all we can conclude is stocks do best when absolute inflation or deflation is low, but even that relationship is weak.



Trade The Markets, Not Inflation
None of the above or last month's discussion of TIPS is to suggest that financial markets are unaffected by inflation. They are, and profoundly. The key relationships are based on expected inflation, not the report inflation of the CPI-U, and while inflation is a contributing factor to market movements, it makes only a partial contribution. But the tradable relationship already is subsumed within the market of interest. If your risk is stocks, bonds, metals or foreign markets, use one of the many instruments available for these trading purposes. It cannot get much simpler.