

Forward And Backward With Inflation Swaps

The well-known KISS Principle, keep it simple, stupid, never receives a warm welcome amongst financial professionals whose livelihoods depend on complexity. To be fair, this is no different from other priesthoods in fields such as law and accounting. There is a lot of economic rent to be extracted from others by creating problems only you can solve.

Take the idea of inflation protection, please. The concept behind Treasury Inflation-Protected Securities (TIPS) and other inflation-linked bonds is simple: You, the investor, agree to pay for insurance against higher inflation by accepting a lower yield and will receive compensation in the form of principal accrual based on future realized inflation. It often all falls apart after that as the yield on nominal Treasuries can be distorted by developments ranging from quantitative easing and deliberate distortions of the yield curve by the Federal Reserve to haven bids for Treasuries resulting from stock market downturns or sovereign debt crises elsewhere.

A second problem arises from a combination of TIPS' relative illiquidity and the simple fact each issue is a bond. A ten-year note has a maturity of ten years only upon issue. Its maturity declines thereafter and this affects not only normal characteristics such as duration and convexity but as the issue approaches expiration, it puts the inflation-accrual component of the bond's payment at maturity at risk.

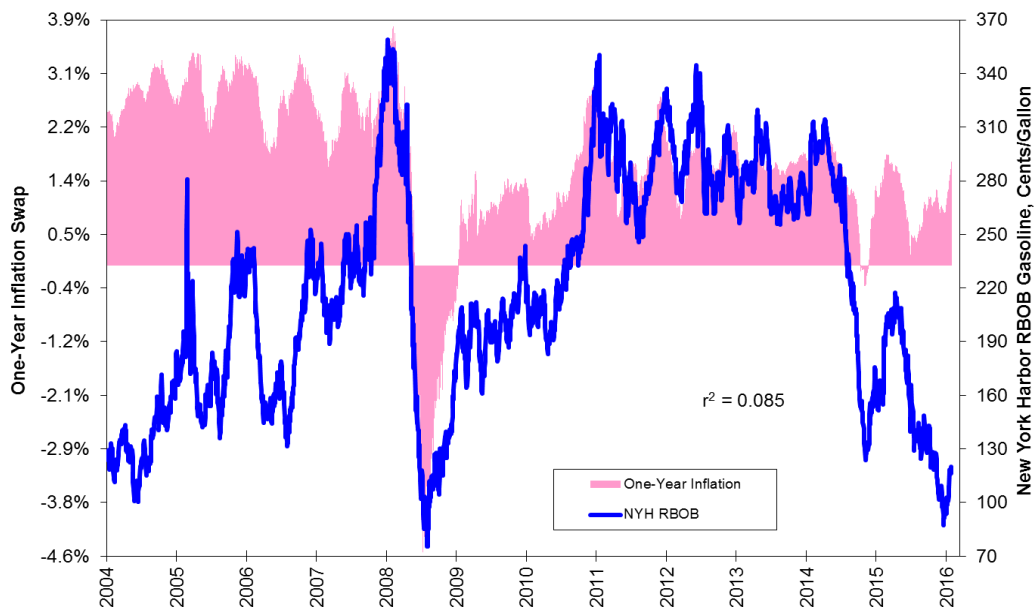
Wall Street addressed these issue-specific problems by creating inflation swaps. The periodic payouts on these instruments would be linked to the difference between realized inflation and a fixed-rate set at the time of the trade's initiation. These rates and the pricing and hedging of inflation swaps ultimately are linked to the yields and implied inflation breakevens in the TIPS market and therefore should trade similarly.

Factor Leads And Lags

TIPS traders often believe inflation expectations are influenced by developments in external markets. However, this is not demonstrable in the case of ten-year TIPS breakevens. Can we demonstrate any sort of relationship between one-year inflation swaps, the maturity most at risk to loss of accrued principal and the one that should be most sensitive to short-term developments in external markets, and three factors commonly associated with inflation expectations, gold, gasoline and ten-year swap spreads? A rising swap spread indicates an increased demand by floating-rate payors to fix their payments. Such a move reflects bearish opinions for Treasuries and corporate bonds and by extension for equities.

First, let's map one-year inflation swap rates against these three markets on a contemporaneous basis, beginning with RBOB gasoline at New York Harbor, the basis for the NYMEX contract. The fit has been rather poor over the entire data sample, with an r-squared or percentage of variance explained of just 0.085. While the fit may appear close visually between May 2011 and June 2015, it also appears to oscillate between a leading and a lagging relationship and even turned negative in the second half of 2015. Such a relationship cannot occur economically between two variables and be causal.

One-Year Inflation Swaps And Gasoline Prices

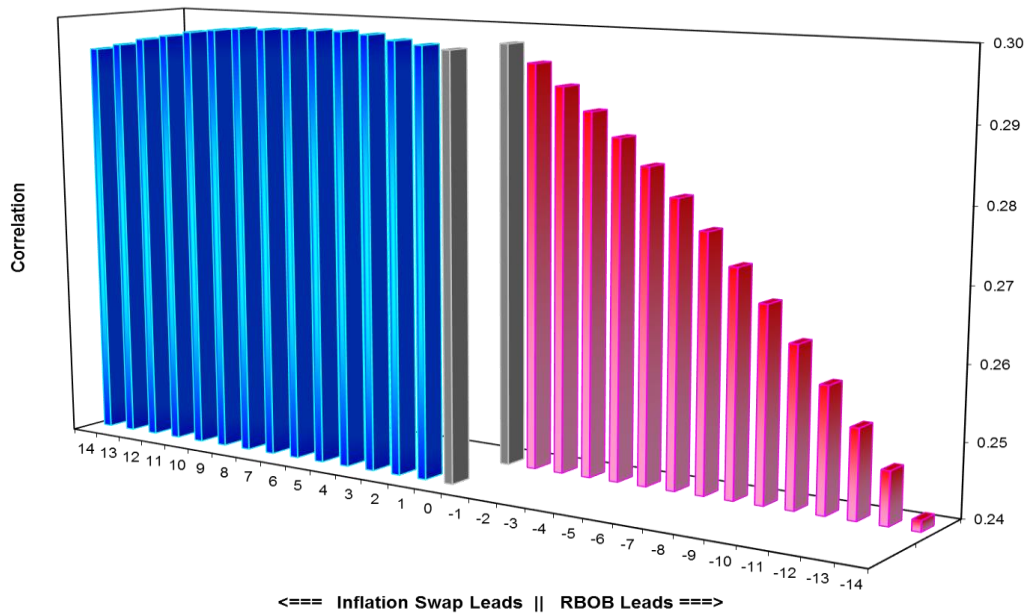


Source: Bloomberg

Now let's see whether one market leads or lags the other consistently. Here and in subsequent charts for gold and swap spreads, the blue columns will indicate the correlations for one-year inflation swap rates leading the external market, the red columns for the external market and the gray columns the correlation at lag zero. The lead times in both directions will be capped at three weeks.

Unsurprisingly, gasoline does not have a significant leading relationship to one-year inflation swap rates. The same is true in reverse with the odd attribute inflation swap rates have a higher leading correlation coefficient to gasoline than vice-versa. As refinery production schedules are set at least two months in advance, the notion a small change in one-year inflation expectations could lead the supply/demand balance for gasoline is not plausible.

No Leading Relationship Between Inflation Expectations And Gasoline



Source: Bloomberg

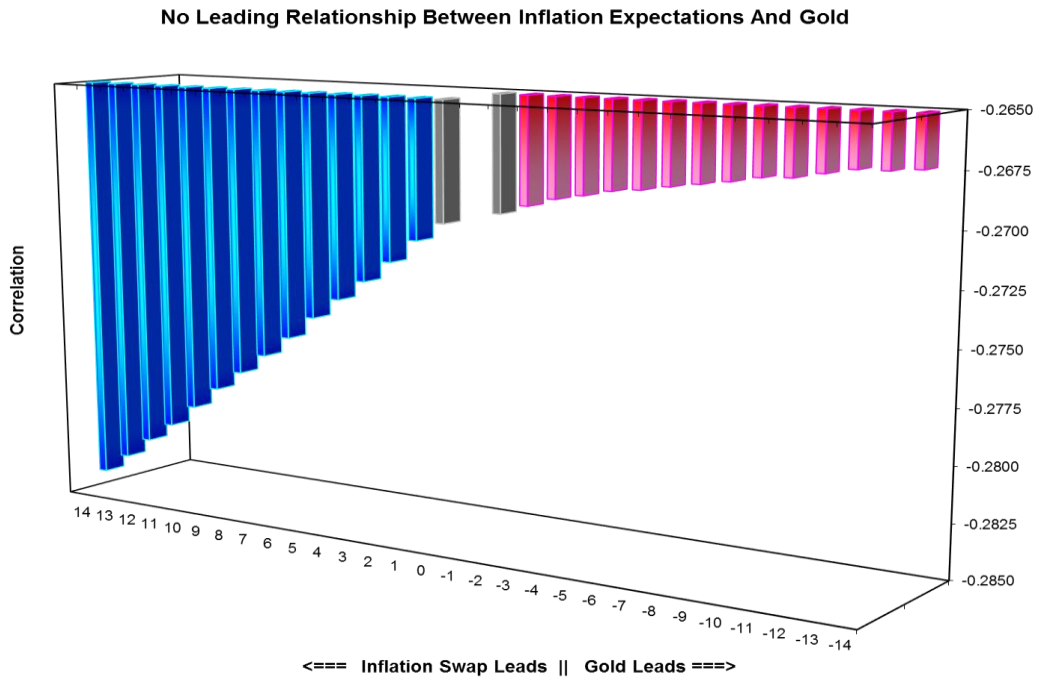
Now let's repeat the exercise for gold. Here the contemporaneous relationship is weaker visually and only slightly better statistically with an r-squared of 0.075. Gold's long bull market ended in September 2011. Its subsequent bear market ended in December 2015 as negative interest rates in numerous key markets not only made holding costs negative but raised the risk of cash disappearing as a protection from negative deposit rates. Gold rose and fell regardless of one-year inflation swap rates during both its bull and bear phases.

One-Year Inflation Swaps And Gold Prices



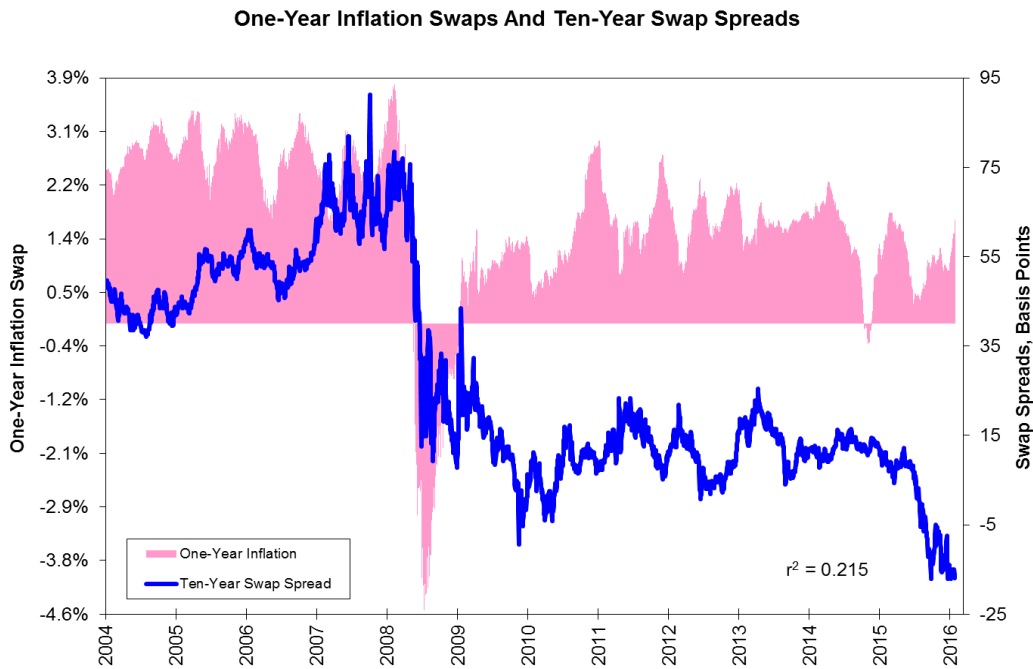
Source: Bloomberg

The lead/lag chart may be even more surprising as all values are negative. You read that correctly: Since July 2004 the lead/lag relationship between gold and one-year inflation swap rates has been negative; the commodity most associated with inflation protection declined as inflation expectations rose and vice-versa.



Source: Bloomberg

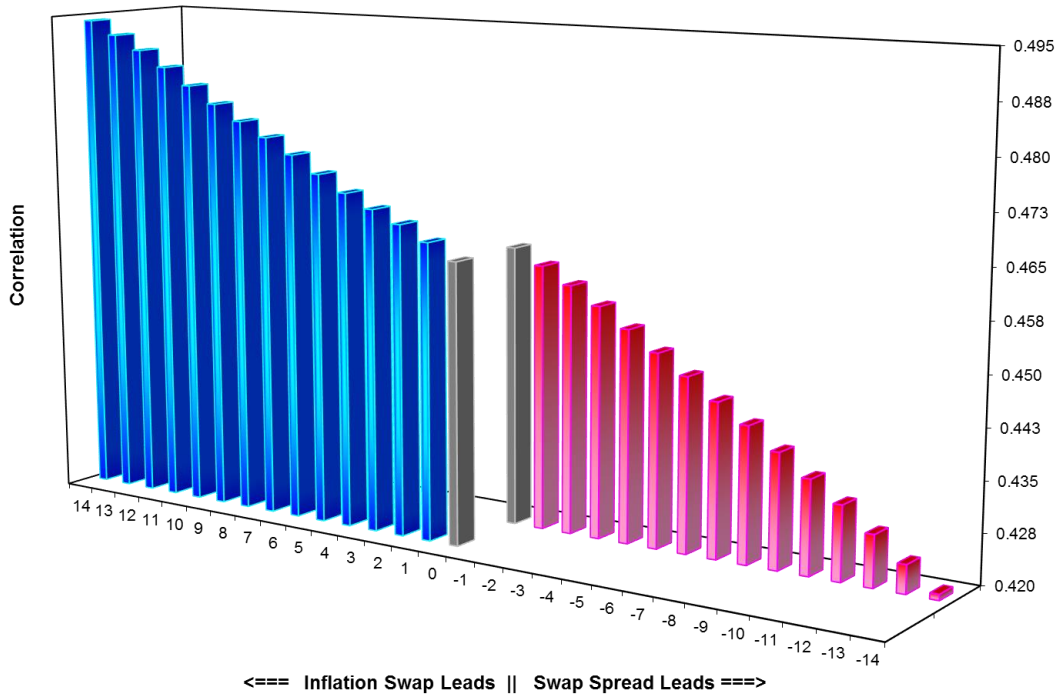
Now let's conclude with ten-year swap spreads. Here declining swap spreads, a bullish indicator for bonds and for risky assets, have a slightly better statistical fit with an r-squared of 0.215, but this hardly is enough to produce high-quality analysis or to serve as a basis for a trading model.



Source: Bloomberg

Moreover, the lead/lag relationship demonstrates very clearly inflation expectations are a more important factor for swap spreads than vice-versa. Rising inflation expectations lead higher swap spreads; this is equivalent to saying rising inflation expectations are bearish for bonds, a perfectly reasonable conclusion.

No Leading Relationship Between Inflation Expectations And Swap Spreads



Source: Bloomberg

The lack of strong external influence on the TIPS market should not be surprising. One of the surprising aspects of TIPS breakevens and inflation swaps over their history has been their small range. If we remove the financial crisis and its aftermath, we find inflation expectations have behaved in a mean-reverting manner. This does not stop them from being analyzed to death, of course; central bankers try to whip up deflation scares to justify money-printing and various worrywarts try to whip up inflation scares to make themselves feel important, but the market just sits there.

Some may attribute this to better understanding of inflation by central bankers, others may attribute it to just a fortunate consequence of economic history and others, such as this author included, to luck. Regardless, the only thing we have seen through thick and thin is external markets are poor indicators and explicators of both reported and expected inflation. This will stop no one from using them as such in the future.