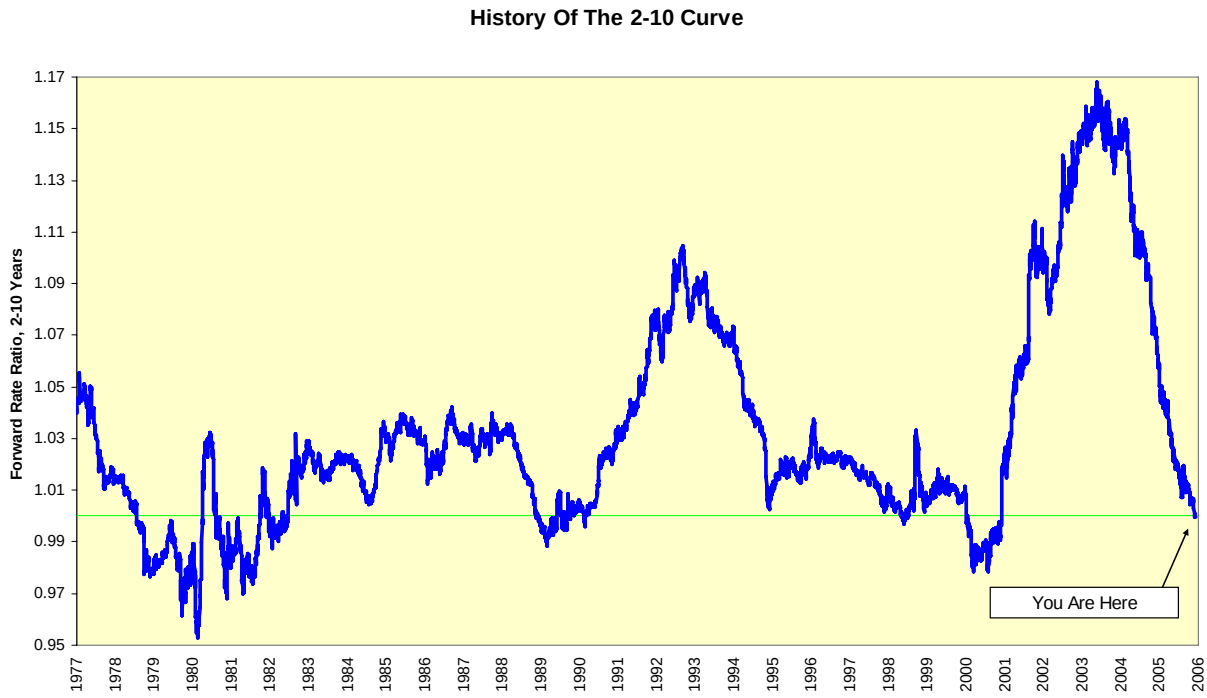
# Don’t Fear Inversion

If the proverbial Man from Mars had dropped by earth during the last trading week of the year, he would have marveled at the attention given to the inverted yield curve. Surely he would have concluded the whole affair had descended upon us suddenly and without warning, the pieces posted here in November and December notwithstanding. And judging from the hysteria on display on the daytime television stations not playing *Oprah*, he would have concluded previous occurrences of inversion had been nothing short of disastrous.

Why H.G. Wells did not incorporate a yield curve inversion into his 1898 classic *The War of the Worlds* is beyond me. Heck, modern videogame designers could incorporate it into some gore-filled thriller in which players have to prevent negative carry from eroding traders’ bonuses.

**Inversion Season. Profit From It**

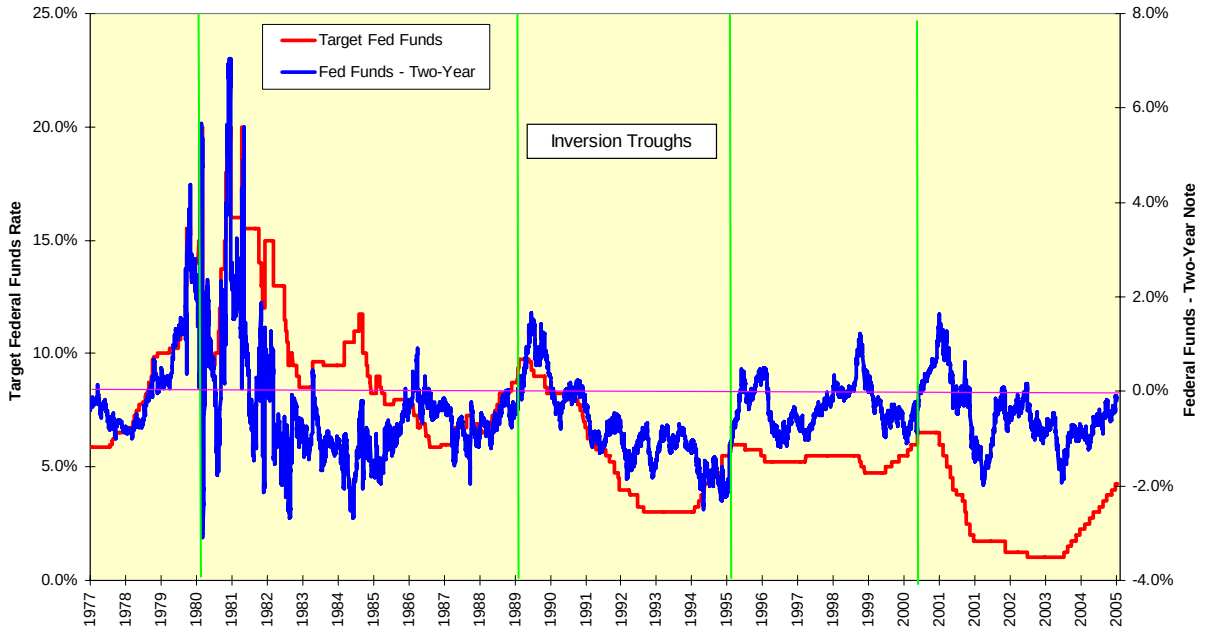
Relax, earthlings, the inversion comes in peace. First, not only have we have been through this before in most of our lifetimes, but the present inversion is barely noticeable in historic scale. If we measure the yield curve by the forward rate ratio between two and ten years, the rate at which we can lock in borrowing for eight years starting two years from now divided by the ten-year rate itself, we can see long periods when this ratio was below 1.00, indicating an inversion. The present inversion is scarcely visible here.




Second, and as noted here in November, both the steepening and subsequent flattening of the yield curve from 2001 onward is unprecedented. How anyone could look at the pace of flattening and somehow believe they could call a stop to it in terms of both extent and duration is beyond comprehension. Third, and as noted here in December, the present inversion has occurred during a trading range for bonds.

Given this information, what can we conclude about the behavior of the bond market when the Federal Reserve *does* make its last rate hike? Let’s take the history of both the federal funds rate and the spread between it and the two-year note. If we overlay the troughs of each inversion depicted on the chart above, something remarkable appears. The trough occurs right at the point of the Federal Reserve’s last rate hike and is followed by an inversion of the federal funds rate – two-year note spread.

**When The Fed Is Through, Two-Year Will Trade Under Funds**

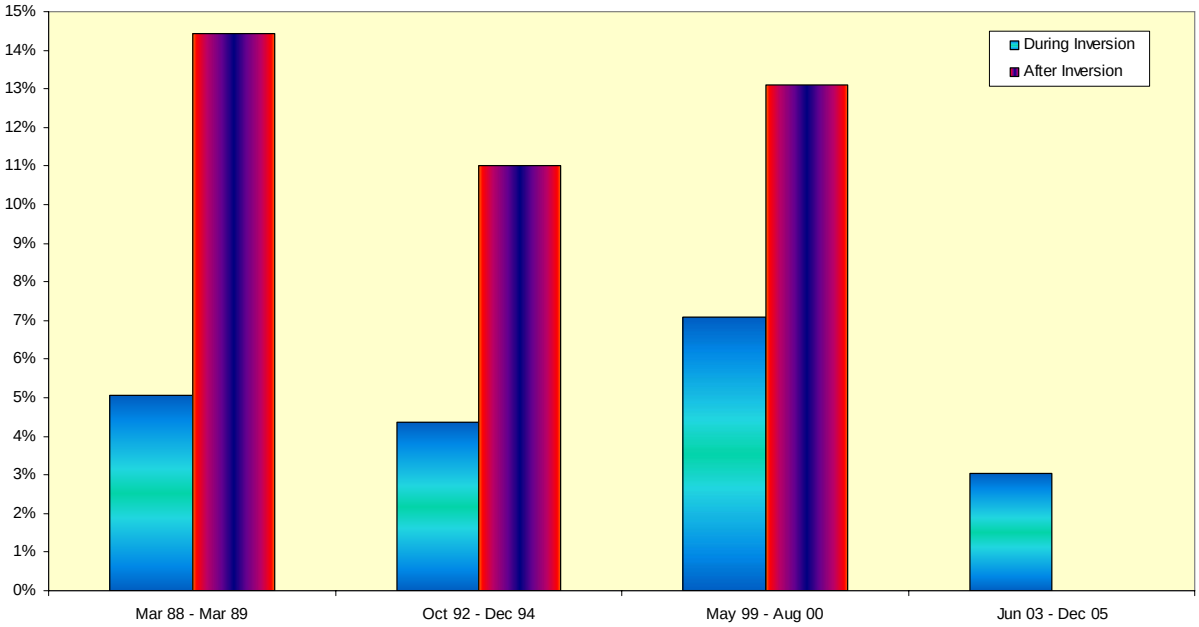



How will you know when this is happening? The next FOMC meetings are going to be on January 31st, March 28th and May 10th. If you see the two-ten spread start to steepen and the federal funds – two-year note spread continue to invert, then that rate hike will be the last of this cycle.

**Go Long, Young Man**

Knowledge may be power, but it is not money until you do something with it. And that special something, that New Year's resolution for 2006, should be to buy long-term bonds when the Federal Reserve is through. Let's take the average annual total returns for the Merrill Lynch Ten-Year+ Treasury/Agency index over the last four inversion periods on the chart above; the index did not exist during the first inversion shown. In each case, the average annual total return for the index jumped in the aftermath of the inversion relative to its pre-trough behavior. Just as borrowers should increase the maturity of their debt when the yield curve is steep, lenders should increase the maturity of their portfolios when the curve is flat.

**Average Annual Total Return On Long Bonds Pre- And Post-Inversion**

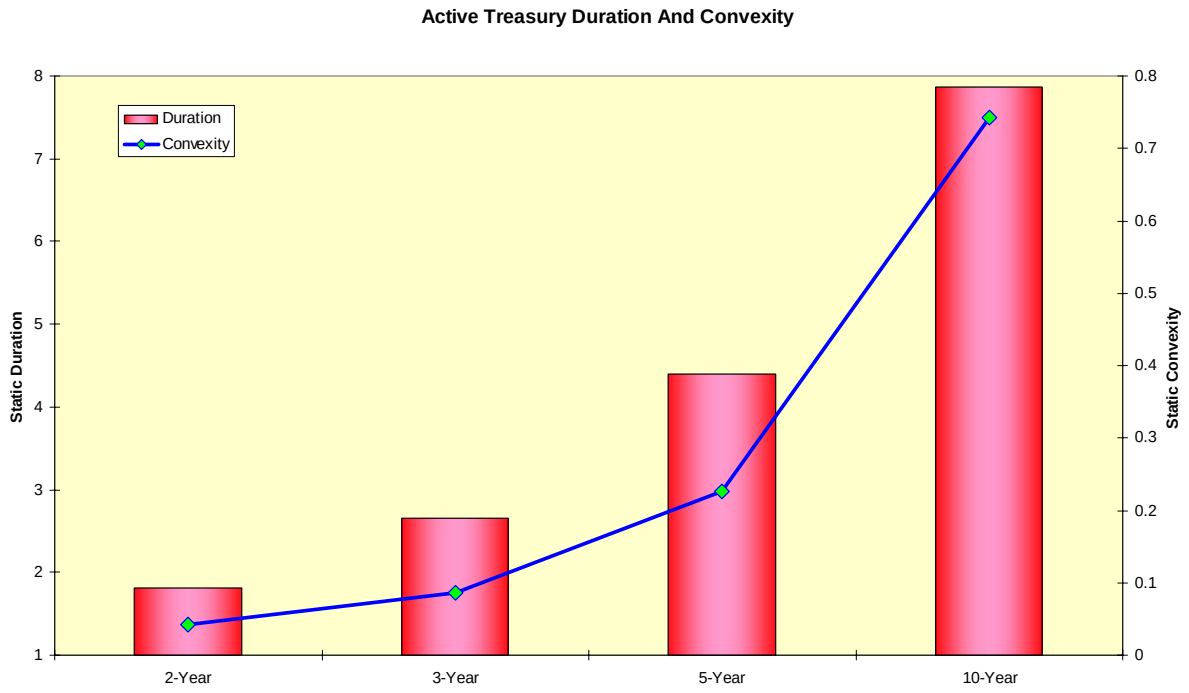


**Buy Convexity Where You Work**

Why should "going long" be a good idea in this context? Let's take a brief detour into fixed-income mathematics. One measure of a bond's risk is its duration, or the weighted average maturity of its cash flows; the present value of the payments serves as the weights. A normal bond's duration increases as its maturity increases and inversely to the coupon level. The rate of change of duration is the bond's convexity; a normal bond's convexity also should rise with its maturity and move inversely to its coupon level. The greater a bond's convexity, the more it will rise in price for a given fall in yields.

Investors familiar with options but unfamiliar with bonds may find it useful to think of duration and convexity as being parallel to delta and gamma. Delta is the expected change in an option's prices with respect to the stock's price, and gamma is the rate of change in delta with respect to the stock's price.

The bullish flattening of the yield curve has kept coupon yields low at the long end of the curve. As a result, the convexity of the bonds along the Treasury yield curve is rising rapidly with the bonds' duration.




We can construct a duration-neutral trade along the yield curve, sort of like a delta-neutral option spread. At the close of business on December 30, 2005, the static duration of the 4.50% Treasury due November 15, 2015 was 4.356 times greater than the 4.25% Treasury due November 30, 2007. A duration-weighted trade between these two notes, the active two-year with a convexity of .042 and the active ten-year with a convexity of .742, would result in a positive convexity of [.742 – 4.356 * .042], or .559.

Just as option traders learn quickly how "free" gamma is an important attribute for any trade, bond traders learn to seek convexity. The particular configuration of the market at present allows traders to borrow short and lend long at a small interest rate penalty and pick up convexity. When they cannot make this trade, the inversion will stop, the cost of financing long bond inventories will fall, and regular investors can make money the old-fashioned and simple way, just by buying bonds. Even a Martian could have fun with this one.