

Why the Fed Should Not Mess with the 30-year Treasury Bond

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In these uncertain times, the pressure is squarely on the Federal Reserve's shoulders to deliver policies that will prop up investors' confidence, so that the U.S. and other world economies can get back to the business of raising mankind's standards of living without excessive disruption. Policies that aim at easing credit are appropriate when they target short-term interest rates and are coupled with financial regulations that promote risk transparency and commensurate fair returns.

On the other hand, a policy that aims at flattening the yield curve and encouraging long-term borrowing, while it may originate from the best of intentions, is likely to have damaging economic effects. Firstly, it undercompensates lenders for the cost of expected inflation. At the top of the list are foreign governments who will not earn a fair return. Secondly, this policy depresses the stock market via its effect on what we call the fear premium.

Welcoming (Back) the Fisher Effect

Chairman Bernanke has long been a proponent of inflation targeting. Since the early 1990s, he has done research on the topic and at least since 2003 he has advocated that the Federal Reserve commit to a long-run annual inflation target of about 2%, similar to what the Bank of England and the European Central Bank are currently doing. Spelling out a clear inflation target is extremely useful for the economy. Businesses can make *stable* plans regarding pricing policies and investors can price assets to earn a real return without fearing inflationary jumps, which helps *reduce* asset price volatility.

Whereas the concern these days is that a protracted *deflation* will set in, a long-term commitment to a 2% inflation target, if credible, will diffuse that risk by setting the expectations of future inflation in the minds of economic agents. The Fed is correct in towing that line. In fact, about ten years ago (2008 Economics Nobel Prize winner) Paul Krugman put forth a similar argument to help Japan recover from its own decade long deflationary recession, with some moderate success.

On the other hand, Yale economist Irving Fisher in 1896 and UCLA's Michael Darby with Harvard's Marty Feldstein eighty years later have taught us that investors want to be compensated for the loss of purchasing power due to expected inflation *and* taxes. The contention is that all investors seek to earn a *positive* real after-tax return (the after-tax Fisher Effect). With the one-year Treasury yield currently at 0.5% nominal, there is no way that investors are earning a positive real return after-tax there. The Fed's action of pushing short-term rates down to kick start the credit market is right out of the playbook on modern monetary policy, which Bernanke helped to write.

On the other hand, the nominal yield on the 30-year Treasury stands at about 4.5%. This constitutes a miserly 1.38% real return after a 2% expected inflation and 24.1% interest income marginal tax rate. While we are still far from it, the break-even point would be at 2.63% nominal yield on the 30-year Treasury to provide a 0% expected real return after-tax.

Recently, a larger inflation risk premium has crept back in yields, possibly because the commitment to a 2% target does not seem prevalent in light of the Fed's focus on the immediate crisis. By my own estimation, the inflation risk premium is around 0.37 percentage points contained in the after-tax 30-year Treasury yield. In that case, the break even point is now about 3.12% nominal to yield a 0% expected real return after tax! The Fed must watch its steps carefully when it *artificially* shocks the supply of loanable funds away from its natural state, as this prevents lenders from receiving a fair return after taxes and inflation (see figure below). In particular, institutions seeking long-term risk-free investment vehicles, mainly foreign governments and U.S. large pension funds and mutual funds suffer as a result.

A Major Source of Stock Market Value Discounting: The Fear Premium

In a recent article entitled "A Required Yield Theory of Stock Market Valuation and Treasury Yield Determination", which appeared in *Financial Markets, Institutions and Instruments*, 18 (1), 2009: 27-88, we show that the 30-year Treasury yield plays a major role in the current short-term fluctuations of the S&P 500 index. While this may appear counterintuitive that *long-run* bonds should have a *short-term* impact on equity valuation, the reason is that the 30-year Treasury plays the role of a safe haven investment in the current financial crisis (along with gold).

The fear premium, as we define it, is the *shortfall* of the 30-year T-yield (after-tax, inflation and inflation risk premium) from a 2% constant real return. The 2% return corresponds to the historical average long-term real GDP/capita growth in the U.S., which we explain in our article, is an anchor for valuing the S&P 500 and Treasuries. Although it is beyond the scope of this essay, we argue that on an after-tax and real basis the equity premium is *zero* with respect to a 30-year instrument. We show that on an after-tax and real basis the 30-year Treasury has historically yielded about the same as the S&P 500's earnings yield...

In the context of the crisis, the fear premium is high when investors flee the stock market (S&P 500) and migrate in mass to buy the 30-year Treasury as a safe haven investment. The 30-year Treasury price is then driven up and the real after tax yield goes down. Due to flight to safety, the S&P 500 index then falls to the point where investors are indifferent between holding either type of asset. The fear premium leads investors to discount the S&P 500 index more heavily during the crisis. As the Fed pursues a policy of lowering the yield on the 30-year Treasury, it artificially *inflates* the fear premium, which undercuts the value of the S&P 500. While in this case the raised fear premium does not mean that investors are actually more fearful, lower yields on the 30-year Treasury offer less downside risk protection to investors. Thus, investors, who cannot hedge as well as before, will demand a higher yield on the S&P 500.

Now, it is true that we have seen 30-year T yields in the last year as low as 2.5% following the conflagration of the financial industry in September 2008. But these rates were justified then by investors' flight to safety behavior. By my own calculations, an *artificial* and instantaneous Fed cut of the 30-year Treasury yield by 0.5% to about 4% would have the effect of lowering the S&P 500 index from about 890 where it is today to about 766 or a 14% drop, assuming no change in other economic conditions!

All in all, it is crucial that the Fed's policy does not unfairly penalize long-term safe lenders as well as equity index shareholders.

What we see in the figure below is a representation of the after-tax Fisher effect on the market for long-term risk free loanable funds. Note that the supply is assumed infinitely elastic at the 2% real interest rate (denoted by r^*) which fulfills the Fisher effect (given the expected inflation π) minus the fear premium Φ (i.e. fear makes people bid up the price of these bonds). Our paper asserts that the 30-year Treasury has empirically been priced in response to three factors over the last 30 years. When the government artificially bids up the price of the 30-year Treasury it displaces the “natural” supply downward (as well as the demand because the purchase of Treasuries is offset by less U.S. borrowing at *any* price). The new equilibrium does not affect the quantity of loanable funds but the prevailing new real interest rate is now $r < 2\%$, which is suboptimal for lenders that are not the U.S. government. (Note that the natural supply S_0 is not static as it responds to changes in the expected inflation and the fear premium).

