



Opportunities in TIPS

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If you are among those who believe inflation will be the price we pay for expansionary monetary policies and expanding Federal deficits, then Treasury Inflation Protected Securities (TIPS) today present a compelling opportunity.

Even if you number among those who forecast deflation, TIPS are likely to outperform many other asset classes.

As BU finance professor Zvi Bodie noted in a recent [article](#), TIPS are unquestionably the safest inflation hedge for a US dollar-based investor and are arguably the safest investment in the market today – period. All other traditional inflation hedges – equities, gold, commodities, and real estate – may work as a hedge but will introduce other risk factors. TIPS, on the other hand, are a pure inflation hedge.

TIPS are not riskless, and investors need to understand the market dynamics that drive their performance.

Background

TIPS were introduced in the US markets in 1997, although similarly structured securities have been available in non-US markets prior to that. When TIPS are issued, they are redeemable at par with a fixed coupon rate and maturity date. Each month the principal value is adjusted up or down depending on the inflation rate (the government uses the broad-based CPI-U figure with a three-month lag). Coupons are paid semi-annually and are determined by multiplying the coupon rate at issue times the adjusted principal value.

Although the principal value of TIPS can go below par over the life of the bond, their principal value at maturity is guaranteed to be at least par. Because they are protected at par, TIPS a good bet to outperform equities and commodities in a prolonged deflationary environment.

Taxable income from TIPS comes from coupon payments and the adjustment for an increase in principal value (in an inflationary environment). The latter creates a “phantom tax” and the belief that TIPS are tax-disadvantaged, since TIPS owners must pay tax on principal value increases, even though they receive no cash payments from these increases until the bond matures. Principal payments at maturity are not taxable.

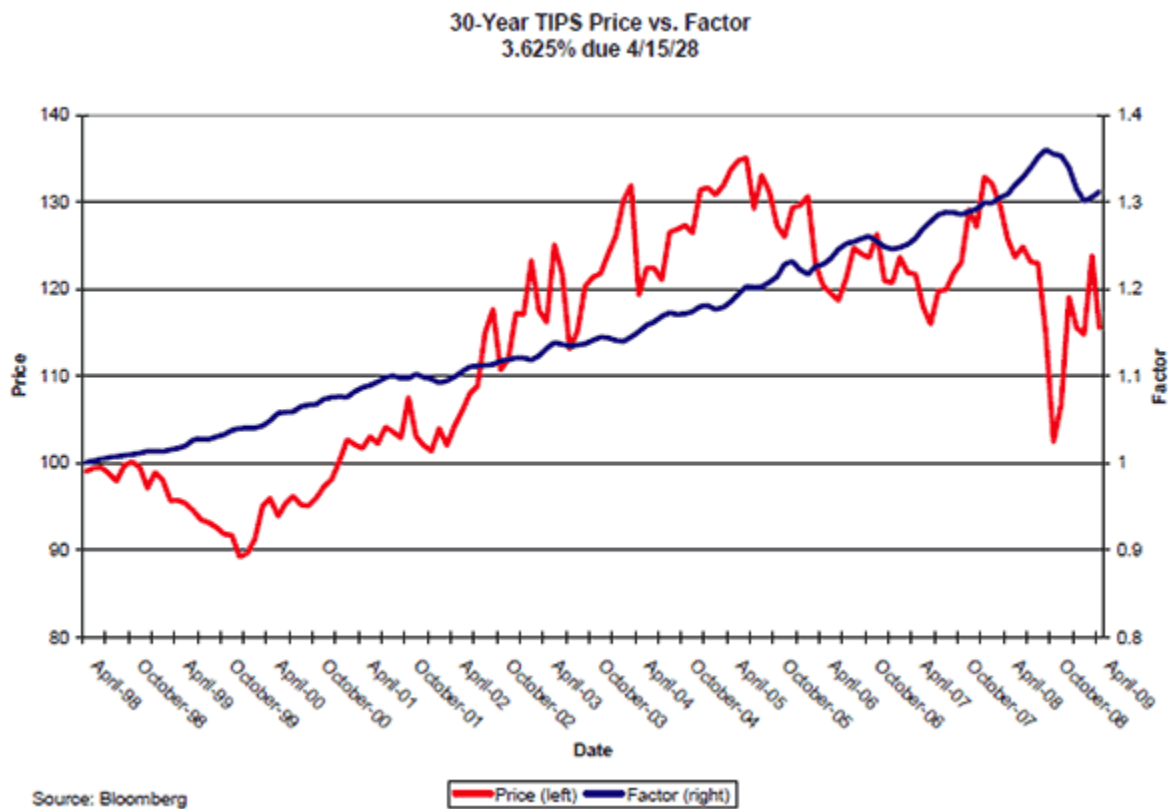


TIPS issuance has grown steadily over the last decade, but still comprises a relatively small portion of Treasury issuance – \$14 billion in the second quarter of 2009, compared to \$327.5 billion of nominal bonds. Initially, TIPS were purchased primarily by pension plans and asset managers whose goal was fund liabilities indexed to inflation, and the TIPS market was relatively illiquid. That problem has disappeared, as TIPS are now broadly owned in retail and institutional portfolios.

TIPS are riskier than you think

When held to maturity, TIPS yield their real interest rate adjusted for inflation. Price movements over the life of the bond, however, can be somewhat uncertain.

If real interest rates are stable, TIPS should trade near their accrued principal value. But real interest rates have been relatively unstable, and TIPS prices have fluctuated substantially. The chart below shows the market price (in red) and accrued principal value (in blue) for a 30-year TIPS issued 4/15/98 (the Treasury no longer issues 30-year TIPS; the longest maturity is now 20 years).





The market price fluctuated between 89.3 and 135, with a range of more than 30 points in 2008. Although the price is above the principal value roughly as long as it is below this value, the volatility is substantial.

TIPS have a long duration, because their cash flows grow over time, with a substantial portion due at maturity, and this is the underlying cause of the volatility. Unlike nominal bonds, the duration of TIPS is unknown, since its cash flows are contingent on future inflation rates. This uncertainty exaggerates the volatility of TIPS.

The duration of a 10-year nominal Treasury bond issued with a coupon equal to today's yield of 3.14% is 8.92. A 10-year TIPS issued with at today's real yield of 1.69%, assuming 3% average inflation over the next decade, would have a duration of 9.46.

Duration

Duration is a dimensionless number, and measures the sensitivity of a bond's price to changes in interest rates. The price of a bond with a duration of 10 will change twice as much as that of a bond with a duration of 5 for a given change in interest rates. The financial press often confuses duration with maturity. Duration and maturity happen to be equal for zero coupon bonds, but that is where the similarity ends.

The chart below shows the real interest rates for the same 30-year TIPS and the nominal interest rates for the corresponding 30-year Treasury bond:

30-Year Treasury Bond Due 11/15/27: Yield
%

30-Year Treasury Inflation Adjusted Bond Due 4/15/28: Yield
%



Source: Wall Street Journal /Haver Analytics

The correlation is very high for most of the period, with the exception of 2008, when real interest rates climbed. Although there was inflation at the time, the fall in real interest rates caused the value of TIPS to decline.

In an inflationary environment, two conflicting forces drive real interest rates. Bond investors, faced with rising nominal interest rates, demand higher risk premia, causing real interest rates to rise. These investors will also find TIPS a more attractive asset class, and supply and demand imbalances will push down real interest rates. With the relatively nascent TIPS market, during which time inflation has been well-contained, one cannot forecast which of these forces will be more dominant if inflation escalates.

Bonds versus ETFs

Investors can choose from two TIPS ETFs – Barclays' iShares TIP and State Street's IPE. The two ETFs are similar, with nearly identical performance records, expense ratios, and average maturities. TIP was the original entrant in the market, and has nearly \$12 billion under management, versus approximately \$225 million for IPE.

These ETFs differ from individual bonds in three important respects. The ETFs charge an expense ratio of approximately 0.20 which, while relatively modest, will eat up more than 10% of the fund's return in today's no-inflation environment with real interest rates



under 2.00% for 10-year bonds. Individual bonds can be purchased directly from the Treasury with no transaction costs. Second, the ETFs are managed to a constant maturity of just over nine years, whereas individual bonds have fixed maturities.

The crucial difference is that TIPS ETFs increase their monthly distributions above the level of their monthly coupons, to equal the amount by which their principal value accrues. This eliminates the phantom tax issue, making them preferable for taxable investors.

Of course, TIPS holders could do the same and sell a portion of their holdings each month, but having this done automatically justifies the expense ratio of the ETFs. This can be costly in other ways, though, since the ETFs may be forced to liquidate a portion of their holdings at depressed prices if real interest rates are rising due to inflation.

The two ETFs recently suspended their distributions, because the downward adjustments to principal due to deflation at the end of 2008 overwhelmed their coupon income. TIP has reinstated its distribution but IPE has not.

Scott Hein and Jeffrey Mercer of Texas Tech University [studied](#) the phantom tax, and found that *ex-post* after-tax yields on TIPS were about the same as the after-tax yields on nominal Treasury bonds, implying that the phantom tax is a non-issue. But it is a non-issue only if the investor has the cash to pay the tax. Otherwise, it's a real issue, especially if the investor must sell TIPS to pay the phantom tax.

Like any ETF, TIP and IPE can trade at a discount or premium to their NAV. In the fourth quarter of 2008, these discounts and premia were between 3% and 4%, but are much narrower now.

Who should own TIPS

TIPS remain the only pure hedge against inflation for a US-dollar based investor. Individual investors who have saved enough to fund their retirement at their desired standard of living based on the real interest rates offered by TIPS should be invested 100% in them. Any excess funds can be invested in riskier securities. But very few investors are this fortunate, and will own other riskier asset classes with inflation-hedging properties.

Investors funding retirement accounts should own TIPS with maturities that match those of their liabilities or, more precisely, with durations that match those of their liabilities. Therefore, individual TIPS are preferable to ETFs, which have a constant maturity and duration.

Ideally, TIPS should be held in a pension fund or other tax-sheltered account, eliminating the phantom tax issue and facilitating the ownership of individual bonds.



TIPS are volatile, and are best suited for investors that can hold them to maturity.

The two charts presented in this article are from Wachovia Securities. Their disclaimer follows:

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Bond prices fluctuate inversely to changes in interest-rates. Therefore, a general rise in interest rates can result in the decline of the value of your investment.

Yields and market value will fluctuate, so that your investment, if sold prior to maturity, may be worth more or less than its original cost.

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