What You Should Know about Investing in TIPS

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Since their introduction in 1997, Treasury inflation-protected securities (TIPS) have played an increasingly important role in helping to protect fixed income portfolios from the effects of even moderate inflation (see table 1). As investors have become more comfortable with the mechanics of TIPS and their relationship to nominal Treasury bonds, demand has grown and so, too, has the Treasury’s supply of TIPS. The growing demand has come from a variety of sources including institutions, mutual funds, sovereign funds, retail brokers, and individual savers.

TIPS are issued in five-, 10-, and 30-year maturities and account for roughly 10 percent of all Treasuries outstanding. After nearly 13 years of issuance, issues now are available along nearly the entire TIPS yield curve. At mid-November 2010, the market was more than $500 billion in par outstanding, with an average trading volume approaching $10 billion per day. While liquidity is not quite as deep as the nominal Treasury market, trading costs are lower than most other investment-grade fixed income securities, including agencies, mortgages, and corporates.

How TIPS Work

TIPS provide investors with a level of protection against inflation through an adjustment of principal based on the Consumer Price Index (CPI). In other words, the par or redemption value of TIPS is adjusted monthly based on changes in inflation as measured by the nonseasonally adjusted Consumer Price Index for All Urban Consumers (CPI-U). If a TIPS is issued at a par value of $100 and CPI-U is measured at 3 percent in the first year, the par value of the TIPS will increase to $103. Just like a nominal Treasury bond, TIPS pay interest semi-annually at a fixed coupon rate. For a TIPS, this fixed rate is applied to the adjusted par amount so that interest payments also will vary with inflation, whether positive or negative (deflation).

Ironically, TIPS also help protect investors in a deflationary environment. When TIPS mature, they pay the investor the greater of the inflation-adjusted par or the original $100 par amount. Thus, even in the event of a sustained deflationary period, a TIPS investor still would receive the original at-issue par value at maturity. This feature creates a deflation floor, or “put,” for the TIPS investor. The closer a specific issue’s inflation-adjusted par is to its original $100 at-issue par, the greater the value of the deflation put.

The Difference between TIPS and Nominal Bonds

The difference between TIPS and nominal Treasuries lies in the monthly inflation adjustment that applies to TIPS but does not exist for nominal Treasuries. TIPS generally pay a lower coupon and yield because their yield does not compensate the investor for future increases in inflation; the CPI adjustment takes care of that.

Consider splitting the yield of a nominal Treasury into two parts:

Nominal Yield = Coupon Rate + Inflation (1)

A nominal bond yield is composed of the coupon plus a premium for expected inflation, while a TIPS yield is limited to the coupon rate. However, a TIPS yield comes with a principal adjustment to compensate for actual future inflation. In other words, when you invest in a nominal security, you know the coupon, the final maturity, and the beginning and ending principal value. But not knowing the future inflation rate means you cannot be sure of the real return. When you invest in a TIPS, you know the coupon, the final maturity, and the beginning par amount. What you don’t know with certainty is the ending inflation-adjusted par. In other words, you know with certainty what the real return will be, but not what the nominal return will be because that will depend on future inflation rates. (See figure 1.)

<table>
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<tr>
<th>TABLE 1: HYPOTHETICAL AVERAGE ANNUAL INFLATION RATE</th>
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<tr>
<td>$100 Today</td>
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<td></td>
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<td>5 Years</td>
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Over time, even small rates of annual inflation can have a large impact upon a portfolio's purchasing power. For illustrative purposes only.
Source: Eaton Vance. Hypothetical based on mathematical equations.

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Real Return, the Break-even Inflation Rate, Duration, and Real Interest-Rate Risk

TIPS investors should be familiar with the following three key concepts:

**Real return.** Real return is the true increase or decrease in the value of an asset after adjusting for inflation. As a hypothetical example, an investment that produces a return of 10 percent during a year in which inflation is 3 percent produces a real return of only 7 percent. Conversely, if inflation during the year is –3 percent (deflation), the real return increases to 13 percent. In essence, the real return measures an investment's increase or decrease in purchasing power adjusted for inflation.

This concept applies to any investment's return. Here is how it applies to bond yields: By rearranging equation 1, we can show that real yield is the amount of yield above the rate of inflation:

\[
\text{Real Yield} = \text{Nominal Yield} - \text{Inflation} \tag{2}
\]

**Break-even inflation rate.** The break-even inflation rate (BEI) is the inflation rate at which the total return of a nominal Treasury bond would be equal to the total return of a TIPS (see figure 2). More importantly, it represents the market’s best estimate of future inflation. Think of it this way: Let’s say you have the choice of investing in either a 10-year Treasury note offering a 2.50-percent yield or a 10-year TIPS offering a 0.50-percent yield. Remember that at the time of purchase you have no idea what future inflation will be. Because TIPS receive a principal adjustment for inflation, the difference in the two yields is the break-even inflation rate. In this case, if inflation averages more than 2 percent (2.50% – 0.50%) over the 10 years between purchase and maturity, you would be better off owning the TIPS. If inflation averages less than 2 percent between purchase date and maturity, you would be better off owning the nominal Treasury bond.

**Duration.** Duration is an estimate of a bond’s interest-rate sensitivity, or risk, as it measures the approximate percentage change in a bond’s price for a given change in interest rates. A bond with a longer duration will be more sensitive to interest rates than a bond with a shorter duration. For example, assume that the TIPS 1.25% of July 15, 2020, has a duration of approximately 9 years and that the TIPS 2% of April 15, 2012, has an approximate duration of 1.4 years. In this hypothetical example, if rates were to increase 100 basis points (1 percent), the value of the 2020 security would be expected to decline by roughly 9 percent, while the 2012 security would be expected to decline by approximately 1.4 percent.

When rates are falling, long-duration TIPS will tend to produce more total return than short-duration TIPS, but when rates are rising, short-duration TIPS will tend to limit the magnitude of the price loss. For instance, in 2006, both interest rates and inflation increased, but many longer-duration TIPS produced negative total returns because the loss of value due to rising rates outweighed the positive effect of the inflation adjustment.

While TIPS do provide an effective inflation hedge, they also carry real-rate risk. At the same time, all TIPS accrue...
investors who bought intermediate and long TIPS to hedge against inflation may find that losses due to rate risk overwhelm gains due to the inflation accrual."

Shouldn't TIPS and Nominal Bonds Produce the Same Return?

A nominal bond's yield comprises a real-rate component and an inflation premium to help protect against an assumed inflation rate between the purchase date and maturity. On the other hand, a TIPS yield consists of a real rate and the knowledge that the inflation adjustment to principal likely will compensate for expected inflation between issue and maturity. In theory, assuming no difference in market condition and trading costs, the total return should be the same. Truth is, they seldom are. In fact, the only way for them to be the same is for the market to correctly predict inflation over the holding period. Historically, expected and realized inflation rates have varied significantly. (See figure 3.)

Some Final Thoughts

TIPS and other inflation-sensitive asset classes have been a popular topic lately as central banks throughout the developed world have implemented extraordinary policy measures to address the after-effects of the 2008 credit crisis. These moves toward accommodative monetary policy have dramatically increased money supply in most developed markets to stimulate economic growth. This approach often results in downward pressure on the value of the currency, which, in turn, inflates prices and reduces purchasing power. The markets' concerns about this dynamic clearly have been reflected in the increase in inflation expectations recently. For example, here in the United States, the 10-year TIPS BEI rose from 1.7 percent in August 2010 to 2.16 percent by mid-November 2010. This increase in inflationary expectations was triggered by Federal Reserve Chairman Ben Bernanke’s August 2010 Jackson Hole speech, in which he telegraphed the Fed’s plans for a second round of quantitative easing, or...
adding liquidity through open-market purchases of Treasuries. In the context of such extraordinary monetary policy measures in many of the developed markets, we view TIPS as a hedge, or insurance policy, that helps address the risk that central bankers may err on the side of higher-than-expected inflation and its attendant loss of purchasing power. But TIPS investors also should be mindful that TIPS can effectively shield their portfolios from inflation but may increase interest-rate risk at the same time. This is particularly important given the level of interest rates in developed markets today.

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