First Ascent Asset Management

# UNDERSTANDING TREASURY INFLATION-PROTECTED SECURITIES (TIPS)

**First Ascent Asset Management**
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## What Are TIPS?

Treasury Inflation-Protected Securities, or TIPS, are a type of bond issued by the US Treasury. They are backed by the full faith and credit of the US government and were first issued in 1997.

TIPS are issued with maturities of 5, 10, and 30-years and in multiples of $100. They can be purchased directly from the US Treasury or through secondary markets.

Like traditional Treasury bonds, TIPS pay interest every six months, and their prices and interest rates are determined at auction.

## The Problem That TIPS Solve

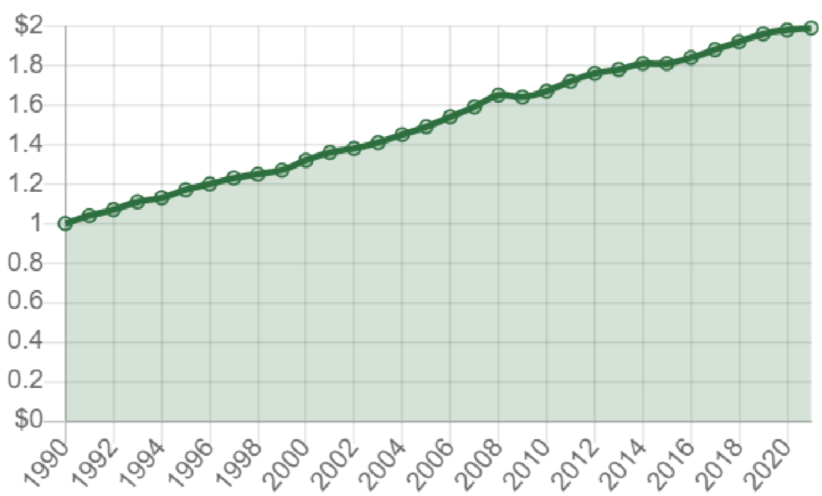
TIPS are designed to provide a low-risk way for investors to preserve purchasing power and protect against the adverse effects of rising prices (inflation) over the life of the bond.

Assume an investor purchases a 30-year bond with a 2% yield. If inflation over that 30-year period is 3%, the investor has a negative "real" (after inflation) rate of return. This can be devastating for someone whose capital may have to last through a 30-year retirement.

A dollar in 1990 was equivalent in purchasing power to about $1.98 at the end of 2020. The average inflation rate was only 2.30% during that period, yet that $1 lost almost half of its purchasing power in 30 years, according to the Bureau of Labor Statistics consumer price index.

**$1 in 1990, Adjusted for Inflation**

1990- 2020




Source: Bureau of Labor Statistics

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## How Do TIPS Work?

Like other Treasury bonds, TIPS are issued with a fixed coupon rate. But their principal value is indexed to inflation, as measured by the Consumer Price Index for all Urban Consumers (CPI-U). That means their principal value rises and falls with changes in the rate of inflation.

Although the coupon rate is fixed, actual coupon payments also rise and fall. This happens because interest is calculated on the changing principal value as it is adjusted for inflation. If the principal value is adjusted upward due to inflation, coupon payments increase. If the principal value is adjusted downward due to deflation, coupon payments decline.

Like other bonds, TIPS prices are subject to changes in interest rates. If rates rise, the price of TIPS will fall. If rates fall, the price of TIPS will increase. These price fluctuations can either offset or enhance the benefits of principal adjustments made due to inflation.

An investor who holds a TIPS to maturity receives the higher of the original principal amount or the inflation adjusted principal amount. This protects TIPS investors in two ways. They are protected against increases in inflation as well as decreases in principal value due to deflation.

However, investors who purchase TIPS in the secondary market may not be completely protected against the effects of deflation. An investor may purchase a TIPS after its principal value has already been adjusted upward due to inflation. If the principal value is subsequently adjusted downward due to deflation, the investor could suffer a loss of principal.

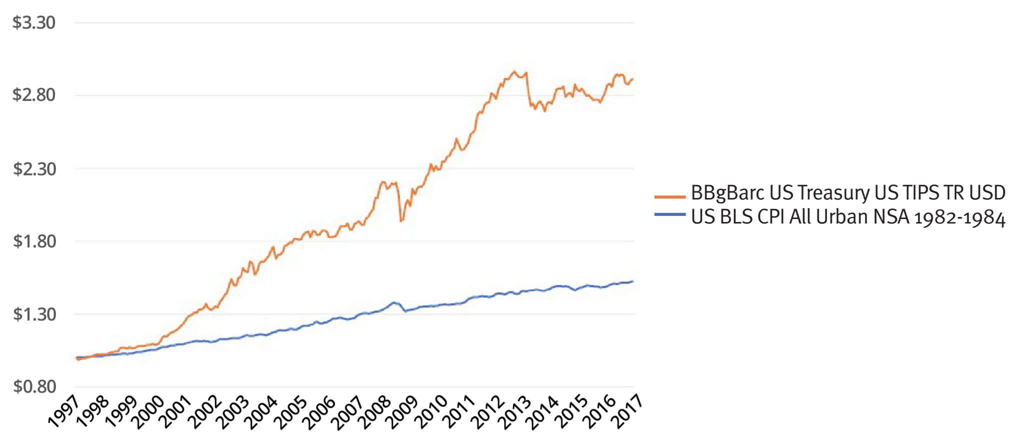
## How Well Do TIPS Protect Against Inflation?

In 2017 Morningstar published a research paper entitled **20 Years In, Have TIPS Delivered?** They asked the question: "Did the TIPS market as a whole acquit itself of this promise to beat inflation over the past 20 years?" They concluded: "The answer is a resounding yes."

The graphic below shows that, historically, the TIPS index far outpaced the growth of inflation.

**Inflation vs. TIPS**

1997-2017




Data source: Morningstar.

# UNDERSTANDING TIPS

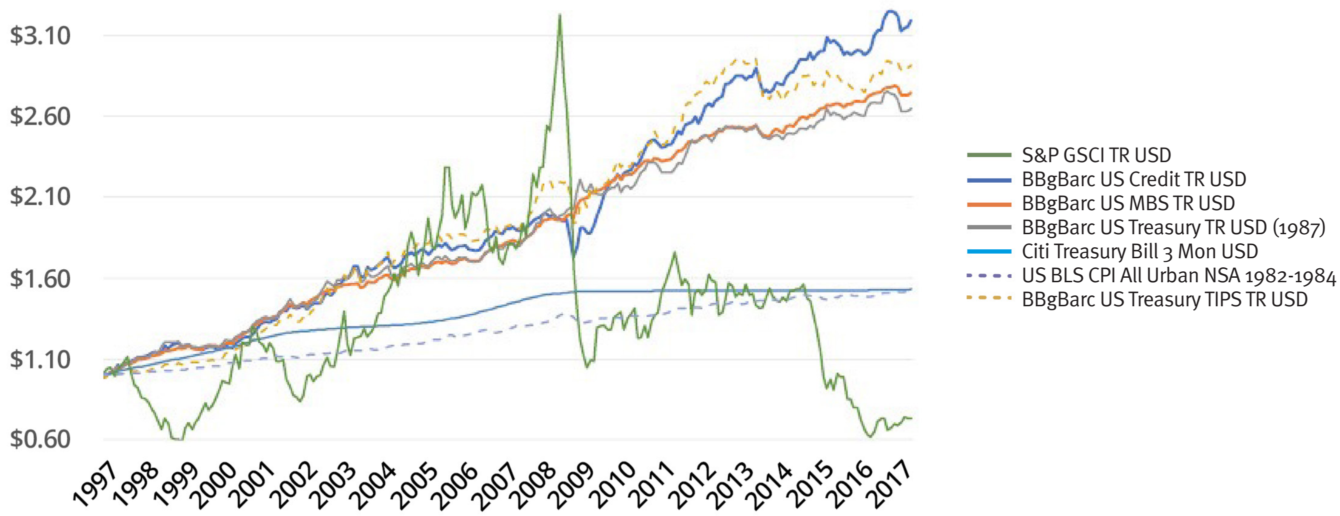
TIPS have protected investors against increases in inflation over the long-term. However, they have not been a consistent hedge against inflation over shorter time periods.

Morningstar found that the correlation of monthly returns between the TIPS index and inflation was only 0.09. That means TIPS returns do not track inflation closely enough to serve as an effective hedge over shorter time periods. In fact, Morningstar found that over one 63-month period—a period of over 5 years—the TIPS index underperformed inflation.

TIPS are not the only investment that has historically provided protection against inflation over the long-term. Stocks, real estate, and bonds have all done so.

As you can see from the graphic below, US Credit fixed-income securities provided even better protection than TIPS over the 20 years following their introduction in 1997. Mortgage-backed fixed income securities and traditional Treasuries also beat inflation by a wide margin.

**Investment Styles**
US Stock Market




Data source: Morningstar.

## The "Break Even" Rate as a Predictor of Future Inflation

The yield on TIPS is usually lower than the yield on traditional Treasury securities with a comparable maturity. That is because traditional Treasury securities have expectations about future inflation rates already built into their yields. TIPS, on the other hand, get the benefit of adjustments to principal and interest based on the actual rate of inflation as it occurs over time.

By comparing the difference in yield between the two, you can determine how much inflation would have to increase for the TIPS to break even against the traditional Treasury security.

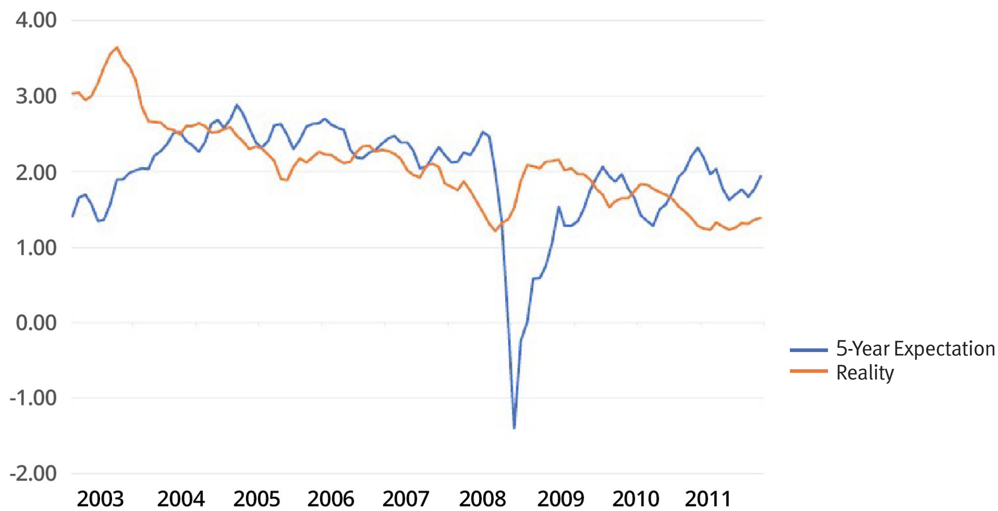
For example, assume a 30-year TIPS is offered with a yield of 1% and a 30-year Treasury bond is offered with a yield of 4%. The 30-year break even rate is 3%. If both are held to maturity and inflation averages more than 3% over that 30-year period, the TIPS would provide a higher return. If inflation averages less than 3%, the Treasury bond would provide a higher return.

The difference in yields for TIPS and Treasury bonds with comparable maturities is an indicator of the market's expectations about the future rate of inflation. Investors who believe inflation will be higher than the break-even rate should consider investing in TIPS rather than Treasuries.

The graphic below shows that, although the TIPS market is not a precise indicator of future inflation, it has done a reasonably good job tracking it, with some exceptions. Notably, it badly underestimated future inflation during the 2008 financial crisis.

**Inflation Expectations vs. Reality**

2003-2011




Data source: Morningstar.

## TIPS and Taxes

The principal value of TIPS is adjusted twice a year for inflation. Any adjustment is subject to ordinary federal income tax. You won't receive any increase in principal until the TIPS matures, but you will be required to pay taxes on those increases as the adjustments are made.

For this reason, it may be advisable to hold TIPS in an IRA or other tax-advantaged account.

TIPS mutual funds and ETFs generally pay out both interest and increases in principal as annual dividends. These dividends can provide cash flow to help pay taxes due on principal increases.

## A Final Word

TIPS can make sense in a portfolio when an investor has a strong opinion that current market expectations about the magnitude of future inflation are understated. History shows that the market has been very accurate at forecasting future inflation, but it has not been perfect. If inflation turns out to be greater than market expectations, TIPS can add value to a portfolio.