



Treasury Inflation-Protected Securities

Who should consider TIPS strategies?

If overlooked, inflation can hinder the long-term growth of investment portfolios, or unnecessarily inflate the future value of liabilities. Pension plans, endowments, and insurance companies will all find Treasury Inflation-Protected Securities attractive as a hedge against future inflation. And through the insight provided by the analysis of breakeven rates, opportunistic investors with a divergent view of future inflation also find TIPS to be a useful instrument to express their outlook.

What are the potential benefits of investing in TIPS?

1. TIPS provide near-total protection of both principal and interest against the risk of inflation
2. TIPS have a “deflation floor”; at maturity, the investor receives the greater of the inflation-adjusted principal or par
3. No credit risk — TIPS carry the full faith and credit of the U.S. Government
4. Due to their higher correlation with inflation than other asset classes, TIPS can provide higher diversification benefits

5. Lower sensitivity to changes in interest rates (duration) than comparable nominal Treasuries due to the absence of inflation risk as a component of price
6. Alternative instruments or asset classes that provide inflation protection can be more scarce and less liquid
7. Over a 10-year time period, TIPS have outperformed nominal Treasuries on a total return basis (see below)

As the global economy struggles with the most significant financial crisis since the Great Depression, inflation would seem to be a secondary concern for most investors. Indeed, economic theory holds that sharp declines in the demand for goods and services will eventually lead to deflation (falling prices) as producers struggle to adjust their output. In today’s current economic environment, the recent and massive erosion of wealth coupled with rising unemployment, shrinking wages, and restrained lending would suggest that demand will remain weak for an extended period of time.

However, in their efforts to contain the crisis, governments around the world have injected massive amounts of liquidity into their financial systems through unprecedented fiscal and monetary stimulus. As with all economic cycles, the financial markets will eventually

recover; lending will pick up, the demand for goods and services will rise, and growth will resume. For a global financial system awash in excess liquidity, the orderly reversal of government support and a concurrent reduction in money supply will be crucial in preventing a sharp acceleration in inflation. As history has shown, however, the transition from government support to independently functioning markets is rarely as smooth as envisaged.

Long-term investors have always recognized the importance of safeguarding their investments against the threat of inflation. Equities often serve this role, although their returns are often volatile and dominated by other factors not explicitly related to inflation. In contrast, inflation-linked fixed income securities are explicitly benchmarked to price indices, and as such can provide a greater measure of inflation protection with much lower levels of volatility than equities.

Exhibit 1: Returns, Volatility, and Correlation for Various Asset Classes

	1 Year	3 Years*	5 Years*	10 Years*	Standard Deviation**	CPI-U Correlation***
Consumer Price Index	2.72%	2.28%	2.56%	2.52%	1.44	1.00
Barclays Capital U.S. TIPS Index	11.41%	6.69%	4.63%	7.69%	5.79	0.30
Barclays Capital U.S. Treasury Index	-3.57%	6.14%	4.84%	6.15%	4.14	-0.06
Barclays Capital U.S. Aggregate Index	5.93%	6.04%	4.97%	6.33%	3.62	-0.15
Standard & Poors 500 Index	26.46%	-5.63%	0.42%	-0.95%	18.11	0.34
Standard & Poors GSCI	13.48%	-6.95%	-3.00%	5.05%	31.34	0.75

*3-, 5-, and 10-year returns are annualized.

**Standard Deviation is calculated using rolling 12-month returns for the 10-year period ending December 2009.

***Correlation is calculated using monthly returns for the 10-year period ending December 2009. Correlation Coefficient is the statistical measure of the degree to which the movements of two variables are related.

Source: Barclays Capital, Bloomberg

If overlooked, inflation can hinder the long-term growth of investment portfolios, or unnecessarily inflate the future value of liabilities. And through the insight provided by the CIS limited duration investment team of breakeven rates, opportunistic investors with a divergent view of future inflation also find TIPS to be a useful instrument to express their outlook.

As can be seen in **Exhibit 1**, TIPS have outperformed traditional (nominal) U.S. Treasuries over a 10-year period on a total return basis. TIPS outperform both Treasuries and the broader Barclays Capital U.S. Aggregate Index over all time periods after taking realized inflation into consideration. Furthermore, TIPS exhibit similar correlation with the CPI as equities, with far lower volatility (annualized standard deviation) than either commodities or equities.

The U.S. Treasury began to issue securities explicitly linked to inflation in 1997. Since then, the issuance of TIPS has grown to comprise 7.8% of the \$7.25 trillion in total marketable public debt of the U.S. Government.

Inflation-protected securities are also issued by many other countries in several different currencies, including the United Kingdom, Australia, Canada, Sweden, France, Italy, Japan, Germany, and Greece. U.S. TIPS currently account for about 36% of the global market for inflation-linked securities.

What are U.S. TIPS?

TIPS are fixed income securities that carry the full faith and credit of the U.S. Government. Unlike traditional (nominal) U.S. Treasury Notes and Bonds, the principal value of TIPS is explicitly linked to inflation as represented by the Consumer Price Index for All Urban Consumers Non-Seasonally Adjusted (or CPI-U). The inflation adjustment to principal is reflected daily for trading and valuation purposes, though the accumulated adjustment is not paid in full until maturity.

TIPS pay a fixed semi-annual coupon on the inflation-adjusted principal. At maturity, the investor receives the greater of the inflation-adjusted principal or par,

in the event that consumer prices were to fall over the life of the bond. Though an inflationary economic environment is often the norm, this important factor provides the investor with an additional measure of protection in the event of deflation.

Within the fixed income markets, the vast majority of securities trade at nominal yields, which can be thought of as the “real” interest rate plus inflation. In contrast, due to their explicit link with inflation, TIPS trade at yields that approximate real interest rates.

The breakeven rate of inflation is approximated by the difference between the quoted yield on a particular TIPS and a similar maturity nominal Treasury. This rate provides valuable insight into the expectations of the market, as it represents the equilibrium inflation rate currently expected by investors over various future time periods. Exhibit 2 illustrates nominal yields, real yields, and the corresponding breakeven rates for benchmark Treasuries at the end of December 2009.

As can be seen in **Exhibit 2**, at current yields 10-year TIPS are priced with a breakeven rate of 2.41%, while longer-term TIPS are priced with a breakeven of about 2.60%. This implies that investors expect inflation to average around 2.50% over the next several decades. If realized inflation in the coming decades were to exceed this level, then TIPS can be expected to outperform their counterpart nominal Treasuries (all other factors being equal). As will be shown, the historical record for inflation in the U.S. suggests that higher levels should be expected.

Why buy TIPS Today?

Since their introduction in 1997, U.S. TIPS have outperformed most other asset classes with lower volatility and similar correlations with the Consumer Price Index than equities. Furthermore, with longer-maturity breakevens implying future inflation rates of 2.40-2.60%, TIPS appear relatively cheap when compared to realized historical inflation and fair value to historical breakevens. Of course, changing market conditions will alter this analysis over time.

Since the U.S. Bureau of Labor Statistics officially began tracking this measure in 1913, U.S. inflation has averaged 3.4%. Since World War II, U.S. inflation has averaged 4%. Chart 1 shows the year-over-year change in inflation that has taken place in the United States over the past 95 years.

Chart 2 illustrates the breakeven rate of inflation priced into 10-year TIPS over the past decade. Despite the recent increase, breakeven rates remain fair value by historical standards. All things equal, moderate breakeven rates represent a significant buying opportunity when current inflation expectations are low but have a strong chance to rise sharply.

Exhibit 2: Benchmark Treasury Yields as of 12/31/09

Maturity	Normal Yield	Real Yield	Breakeven Rate
2-Year	1.14%	-0.10%	1.24%
5-Year	2.68%	0.73%	1.95%
10-Year	3.83%	1.42%	2.41%
20-Year	4.56%	2.04%	2.52%
30-Year	4.63%	2.03%	2.60%

Source: Bloomberg

Chart 1: U.S. Inflation Since 1914

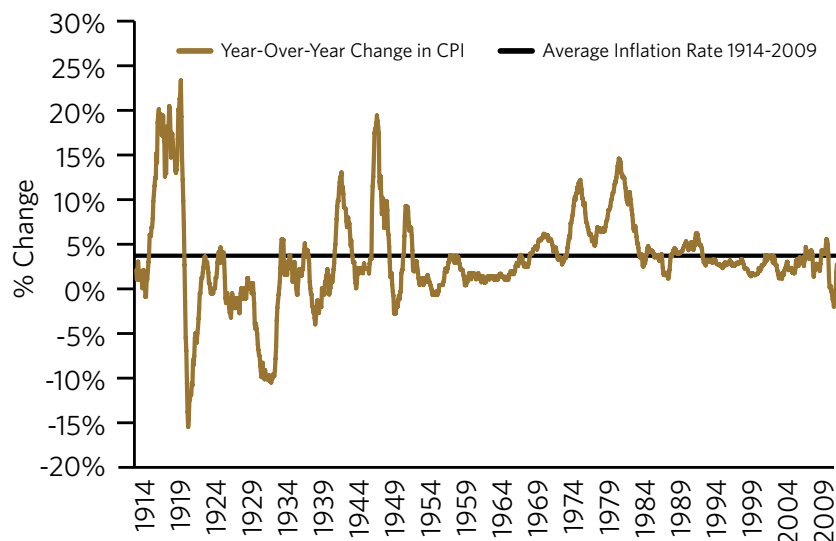
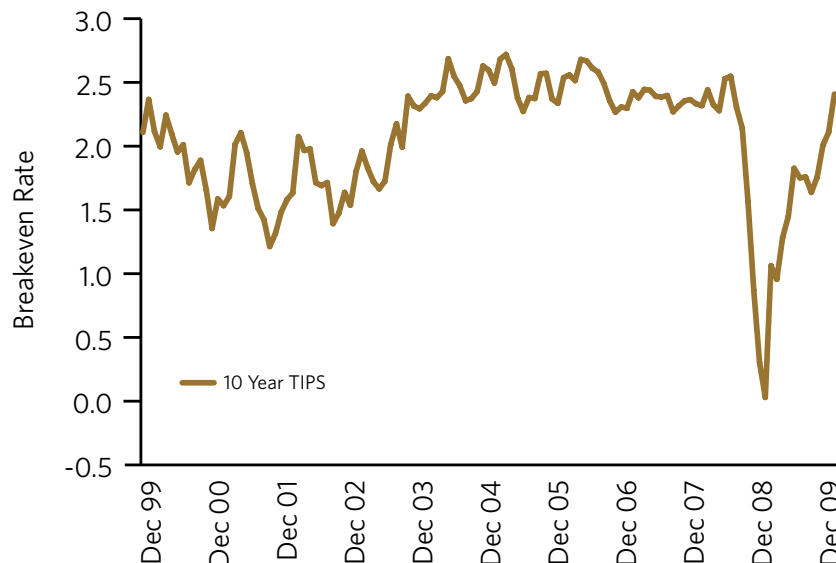


Chart 2: 10-Year TIPS Breakeven Rates



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