

The “Real” Story About Treasury Inflation-Protected Securities (TIPS)

William M. Healey, CFA. SVP – Interest Rate Products

Craig M. Varrelman, CFA. VP – Fixed Income Product Portfolio Manager

This white paper discusses Treasury inflation-protected securities (TIPS), beginning with a brief overview of the market, followed by a summary of the principal and interest mechanics of the securities and how TIPS are valued versus nominal bonds. This paper will conclude with an analysis of why TIPS are appropriate investments for a pension portfolio, both strategically and tactically.

Market Overview

The modern global inflation-linked securities market originated in the U.K. in 1981, followed chronologically by Australia, Canada, Sweden, the U.S., France and Italy. The global market represents approximately US \$500 billion in market value, including both government and corporate issuers. U.S. Government TIPS were introduced in early 1997, with 5-year, 10-year and 30-year maturities for the primary purpose of reducing the U.S. Treasury’s long-term financing costs. Due to the growing budget surplus in the late 1990s, Treasury limited its issuance of TIPS to 10-year maturities only. As the U.S. budget reverted back into a deficit, Treasury increased the size and frequency of its 10-year TIPS auctions. Supported by Treasury’s announced “commitment” to the TIPS market in 2003, the amount outstanding in this market has grown to roughly \$270 billion and expected new issuance of \$70-\$80 billion per year. Today, investors in TIPS include central banks, asset managers, corporations, insurance companies, pension and endowment funds, and hedge funds.

Security Mechanics and Valuation

U.S. Treasury inflation-protected securities are issued with the full faith and credit of the U.S. government paying a fixed semi-annual coupon, with both principal and interest payments adjusted for inflation. The real bonds are adjusted daily; however, the inflation accretion on the principal value is paid at maturity. The semi-annual coupon is paid on the inflation-adjusted principal. Treasury adopted a “deflation” floor to protect the principal value in the event of deflation. This floor guarantees the holder of the inflation-protected bond the greater of the inflation-adjusted principal or par value at maturity. TIPS are indexed to the Consumer Price All Urban Non-Seasonally Adjusted Index (CPI), with a three-month lag. For example, the May 2005 inflation accretion would be based on the February 2005 CPI. This index was chosen for three reasons: 1) it is released monthly in the Bureau of Labor Statistics CPI report, 2) it represents the broadest market basket of goods, and 3) it is also used in the Cost of Living Adjustment (COLA) used in pensions and labor contracts.



The yield on a nominal Treasury bond can be looked at as having three components: 1) a real yield, which investors demand before inflation, 2) an inflation expectation, and 3) a risk premium for the uncertainty of those inflation expectations. The market has simplified this by combining the second two components into one term regarded as the breakeven inflation rate as shown in the following simple equation:

$$\text{Nominal Yield} = \text{Real Yield} + \text{Breakeven Inflation Rate (BIR)}$$

Since Treasury inflation-protected securities have an inflation adjustment, their yields are considered to be real yields. So, interchanging the real yield in the above equation with the yield on a TIP security, we can solve for the breakeven inflation rate:

$$\text{Nominal Bond Yield} - \text{TIPS Bond Yield} = \text{Breakeven Inflation Rate (BIR)}$$

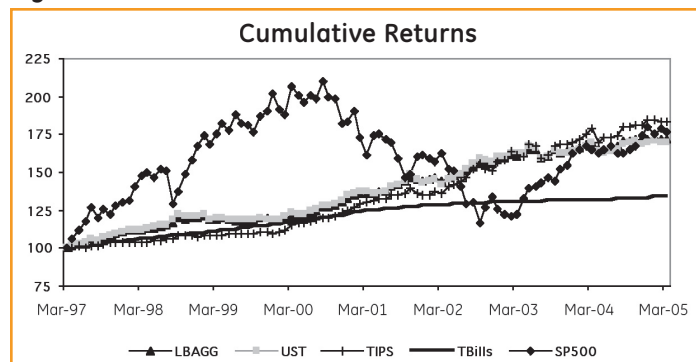
The breakeven inflation rate or yield spread between a nominal bond and an inflation-protected bond of equal maturity is the inflation rate over the life of the bonds, where an investor is indifferent to owning either issue. Looked at another way, as of May 31, 2005, the difference between the yields on the current 10-year Treasury and current 10-year Treasury inflation-protected bonds, or breakeven inflation rate, was roughly 2.4%. If an investor expects inflation to be higher/lower than 2.4% over the life of the bonds (10 years), then that investor would prefer owning the TIPS/nominal bond.

The price volatility of Treasury inflation-protected securities tends to be highly correlated with the change in real yields, which, in turn, are inclined to highly correlate with actual and expected monetary policy. Nominal bond prices are not only sensitive to the movement in real yields, but also to the change in inflation expectations. In general, TIPS tend to experience lower price volatility than nominal securities of equal maturity. The yield relationship and difference in expected price volatilities between nominal Treasuries and TIPS create relative value opportunities for portfolio managers, which will be discussed in the next section.

How Can TIPS Benefit a Pension Portfolio?

This section will first consider the argument for strategically investing in TIPS as a separate asset class within a total pension portfolio structure and then discuss TIPS from a tactical viewpoint. Inflation-protected securities have shown a favorable risk/return profile when compared to other major asset classes. **Figure 1** shows cumulative returns from March 1997 through March 2005 for TIPS, U.S. Treasury bills, U.S. Treasuries, U.S. high grade bonds (Lehman Brothers Aggregate Bond Index, LBAGG), and U.S. equities (S&P 500).

Figure 1



Source: Lehman Brothers



Figure 2 shows comparative returns of TIPS versus U.S. nominal bonds and equities. When compared to U.S. equities, TIPS have performed well with less volatility on both quarterly and rolling one-year bases.

Figure 2

	Quarterly			Rolling 4 Quarters		
	TIPS	LBAGG	S&P 500	TIPS	LBAGG	S&P500
Minimum	-3.1	-2.4	-17.2	1.9	-0.8	-26.6
Maximum	7.9	4.6	21.3	18.1	12.5	47.9
Average	1.9	1.7	2.3	8.3	6.9	7.6
Std. Deviation	2.2	1.8	9.7	4.6	4.2	20.5

Source: Lehman Brothers/Bloomberg

Inflation-protected security returns have also shown negative correlation with equities and nominal bonds and positive correlation with inflation (**Figure 3**). Historically, equities have been considered a good inflation hedge, yet the historical correlation between equity returns and inflation does not support this (**Figure 4**).

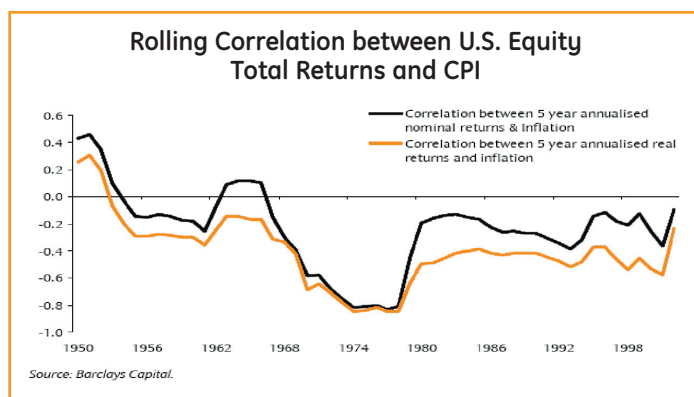
Figure 4 shows that correlations are actually negative for most of the observed period, suggesting that equity performance deteriorates as inflation rises, in both real and nominal terms. Pension funds, particularly those with liabilities sensitive to inflation, may consider a strategic allocation to TIPS as an inflation hedge.

Figure 3

Rolling 12-month Correlations (monthly data) Feb 1997 - Feb 2005				
	10yr UST	10yr TIPS	CPI	SP500
10yr UST	1.00			
10yr TIPS	0.58	1.00		
CPI	-0.20	0.34	1.00	
SP500	-0.38	-0.72	-0.22	1.00

Source: Barclays Capital, Bloomberg

Figure 4

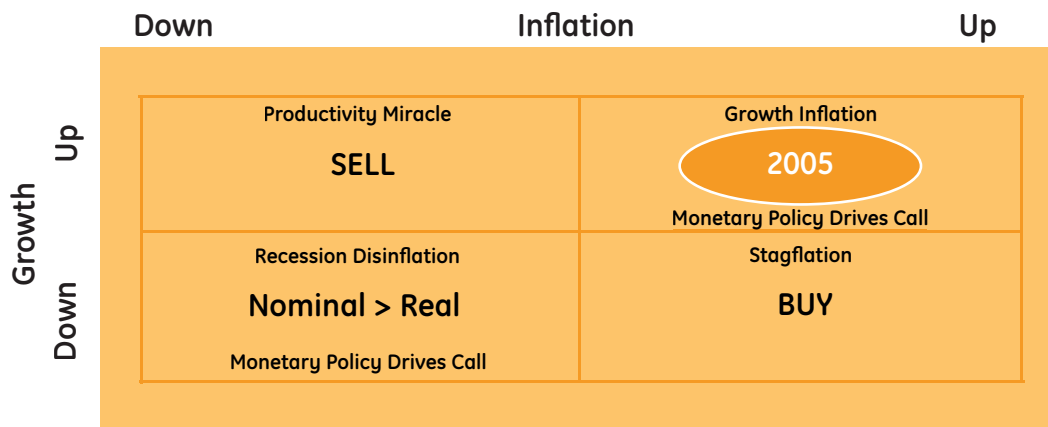


TIPS appear to make sense strategically when looking at risk-adjusted returns and their role in hedging inflation risk in a liability stream. From a tactical viewpoint, however, it is helpful to consider the macroeconomic factors, which drive TIPS performance versus nominal bonds and where current pricing is in the market.



The diagram below (**Figure 5**) offers a simple decision matrix for favoring TIPS over nominal securities based on an investor’s outlook for economic growth and inflation.

Figure 5 - When to Buy TIPS



Expected performance of TIPS vs. nominal Treasuries is more obvious in economic/inflation environments as depicted in the northwest and southeast quadrants in figure 5. If the outlook for inflation is up/down, an investor should prefer/not prefer investment in TIP securities. With the other scenarios, “growth/inflation” and “recession/disinflation,” the expected return of TIPS vs. nominal securities is not as obvious. Typically, these are periods when the investor must look to current and expected monetary policy to drive the decision. For instance, expectations for 2005 growth range between 3% and 4%. Although headline inflation has not increased significantly to date, the Federal Reserve maintains a position that the risks to inflation favor the upside. After policy moves to guard against deflation in 2004, the Fed has since increased short-term rates at a controlled pace, seemingly accepting mildly higher inflation. This economic environment should therefore favor a tactical position in TIPS. Observing the breakeven inflation rate implied by current TIPS pricing should indicate investor’s future inflation expectations. Currently, the breakeven inflation rate is modestly above the annualized CPI for the past 10 years (**Figure 6**), implying investors believe that inflation is more likely to rise from present levels.



Lastly, actual year-over-year inflation remains above the current breakeven inflation rate as shown in **Figure 7**. If CPI continues at its current annual growth rate or drifts higher, as we believe may occur, TIPS may appear attractive given a breakeven inflation rate below the current level.

Figure 6

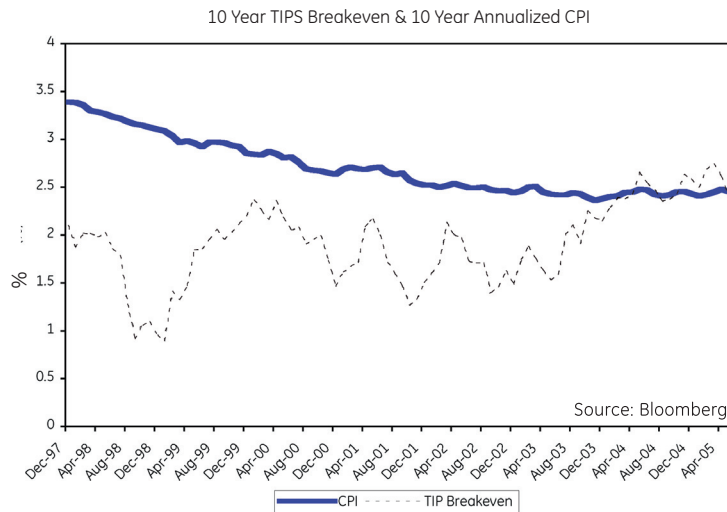
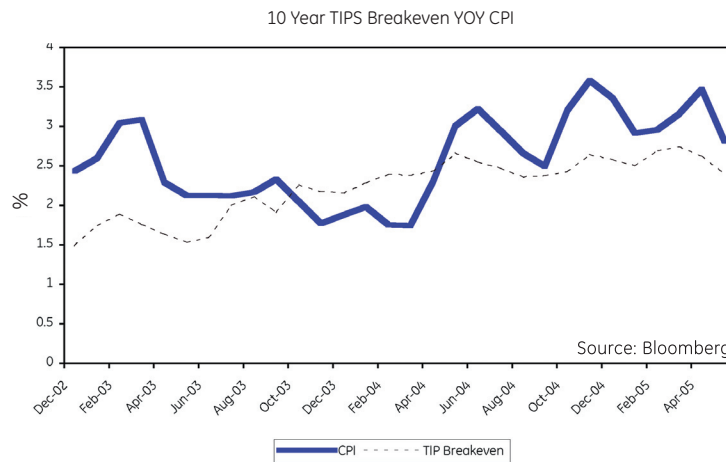


Figure 7



Conclusion

The unique return and risk characteristics combined with the size and growth of the market argue for TIPS as a separate asset class within a pension portfolio. These securities have shown the highest correlation to inflation and therefore represent the best inflation hedges among the investment universe. Also, their low correlation with other asset class returns supports a separate allocation to these securities. The near-term outlook for TIPS appears favorable given current pricing of breakeven inflation and the current economic environment, when considering the Federal Reserve's present resolve to remove accommodative policy by increasing its Fed Funds target rate.



GE ASSET MANAGEMENT

About GE Asset Management A wholly owned subsidiary of GE, GE Asset Management is the investment management arm of the business and is one of the largest managers of institutional assets in the United States. Our core investment capabilities include U.S. and International Equity, Fixed Income, Real Estate and Private Equity. We are a global investment organization and are increasing our client coverage around the world, with offices* in the U.S., Canada, Europe and Japan.

U.S. East Coast

3001 Summer Street
Stamford, CT 06912
203/708-3130

1000 Windward Concourse
Atlanta, GA 30005
770/999-6716

U.S. Midwest

500 West Monroe, 12th Floor
Chicago, IL 60661
312/463-2265

3113 W. 118th Street
Leawood, KS 66211
913/327-7124

U.S. West Coast

100 California Street, 10th Floor
San Francisco, CA 94111
415/277-7490

Canada

2300 Meadowvale Boulevard
Mississauga, ON L5N 5P9

GE Asset Management Canada Co.
1 Place Ville Marie
Suite 1401
Montreal, QC H3B 2B2

Europe

GE Asset Management Ltd.
6 Agar Street
London WC2N 4HR
Registered in England and Wales
under Number 3084561

Japan

GE Asset Management Japan
Shibuya Mark City West
1-12-1 Dogenzaka
Shibuya-Ku, Tokyo 150-043

For more information about our product offerings,
please contact us.

Institutional Investors, call:
Jack Boyce **203/708-3128**
jack.boyce@ge.com

Consultant Relations, call:
Eric Neustadt **203/708-3212**
eric.neustadt@ge.com

European Clients/Consultants, call:
Gary Walker
+44 (0) 20 7599 5234
gary.walker@ge.com

Canadian Clients/Consultants, call:
Keith Smith
905/858-6683
keith.smith@corporate.ge.com

www.geam.com

*GE Asset Management Incorporated; GE Asset Management Limited;
GE Asset Management Japan; GE Asset Management Canada Company

