**TIPS**

TIPS = Treasury Inflation Protection Securities

First issued in January 1997

Principal is adjusted semiannually

Annual inflation rate / 2

Inflation Rate = CPI-U = non-seasonally adjusted U.S. City Average All Items Consumer Price Index for All Urban Consumers

Inflation Adjusted Principal = Principal at beginning of 6 months (1 + semiannual inflation rate)

Coupon rate stays constant – but it is now a percentage of a higher amount, so semiannual coupon payments increase as CPI increases

Example:

10-year $1,000 TIPS purchased on 1/1/2015 with 2% coupon rate

Suppose annual inflation rate at end of March 2015 is 3.2%. This means that when the first coupon payment is to be received (3 months later), the face value of the bond goes up by 3.2%/2.

Inflation-adjusted principal = $1,000 (1 + .032/2) = $1,016

First coupon payment = .02/2 ($1,016) = $10.16

Now suppose that the annual inflation rate at the end of Sept. 2015 is 3.6%. When the next coupon payment is to be received (on 1/1/2016), the face value of the bond will be $1,016 (1 + .036/2) = $1,034.29

And the second coupon payment will be .02/2 ($1,034.29) = $10.34

Redeemed at greater of inflation-adjusted principal or initial par value (no risk of loss of principal if there is disinflation)

As with all bonds, the price of a TIPS is the present value of the expected future cash flows. Since these are real (not nominal) cash flows, their yield will be a real discount rate (not nominal).

The yield between TIPS and an otherwise identical Treasury can be used to infer investors’ inflation expectations. This can be seen when we look at the TIPS yield curve vs. the Treasury yield curve: <https://www.treasury.gov/resource-center/data-chart-center/interest-rates/Pages/Historic-Yield-Data-Visualization.aspx>