

1) Flipping Tips (Deflation Protection)

Your question on “flipping” TIPS is an interesting one and is more complex than it appears on the surface. The simple answer is that during an extended period of deflation¹, *in most cases* investors who are willing to hold an issue to maturity are better off flipping to the issue with the lowest inflation factor.

Looking at the current market it is obvious that the most recent bond (TII 1.875% 7/15/2013) offers the best deflation protection.

| Issue | Coupon | Maturity Date | Issue Date | Current Factor | Months to Factor of 1 |
|-------|--------|---------------|------------|----------------|-----------------------|
| TII | 3.375% | 1/15/07 | 2/6/97 | 1.16552 | 62 |
| TII | 3.625% | 1/15/08 | 1/15/98 | 1.14302 | 54 |
| TII | 3.625% | 4/15/28 | 4/15/98 | 1.14171 | 54 |
| TII | 3.875% | 1/15/09 | 1/15/99 | 1.12598 | 48 |
| TII | 3.875% | 4/15/29 | 4/15/99 | 1.12328 | 47 |
| TII | 4.250% | 1/15/10 | 1/18/00 | 1.09757 | 38 |
| TII | 3.500% | 1/15/11 | 1/16/01 | 1.06099 | 24 |
| TII | 3.375% | 4/15/32 | 10/15/01 | 1.04034 | 16 |
| TII | 3.375% | 1/15/12 | 1/15/02 | 1.03996 | 16 |
| TII | 3.000% | 7/15/12 | 7/15/02 | 1.02703 | 11 |
| TII | 1.875% | 7/15/13 | 7/15/03 | 1.00542 | 3 |

Table 1: Current Floors at 3% Deflation

Assuming an annual deflation rate of 3% it would only take 3 months for the 7/15/2013 bond to enter the factor < 1 scenario. Conversely it would take 62 months (longer than the bond has left to maturity) for the 1/15/07 bond to have a factor of less than 1.

However, flipping into the bond with the least inflation accrual does not always work. The key to understanding why is the realization that while the U.S. Treasury guarantees a floor at redemption, the principal used to calculate the coupon can be less than par. In a deflationary environment the investor wants as little of the total bond return to come from coupon payments as possible.

For example, let’s compare two bonds using hypothetical real rates. The first is issued today when real rates are at 3.875% and matures on 11/1/2013. The second was issued a year ago when real rates were at 1.125%; this bond also matures on 11/1/2013.² This second bond would have a clean price, excluding inflation accrual, of \$77.39 and an inflation factor of 1.05 (5%

¹ The length and the severity of the deflation are important considerations. The last 10 year period of deflation ended in 1941 and was partly due to an extreme spike in inflation in 1920. In fact, the price level in June of 1920 would not be reached again until October of 1946, where as the price level in June of 1919 would not be crossed by deflation until the 1930’s.

² This is a very hypothetical scenario, but the illustration is valid.

inflation over its life). The flipping strategy would suggest that the first bond would offer the most deflation protection, but looking at the cash flows, we can see that this is not true.

| Date | Bond 1 | | | Bond 2 | | |
|-----------|--------|-----------|------------------|--------|-----------|-----------------|
| | Factor | Principal | CF | Factor | Principal | CF |
| 11/1/2003 | 1.0000 | 1,000,000 | \$(1,000,000.00) | 1.0500 | 1,050,000 | \$ (812,602.56) |
| 5/1/2004 | 0.9851 | 985,111 | \$ 19,086.52 | 1.0344 | 1,034,366 | \$ 5,818.31 |
| 11/1/2004 | 0.9704 | 970,443 | \$ 18,802.34 | 1.0190 | 1,018,966 | \$ 5,731.68 |
| 5/1/2005 | 0.9560 | 955,994 | \$ 18,522.39 | 1.0038 | 1,003,794 | \$ 5,646.34 |
| 11/1/2005 | 0.9418 | 941,760 | \$ 18,246.61 | 0.9888 | 988,848 | \$ 5,562.27 |
| 5/1/2006 | 0.9277 | 927,738 | \$ 17,974.93 | 0.9741 | 974,125 | \$ 5,479.45 |
| 11/1/2006 | 0.9139 | 913,925 | \$ 17,707.30 | 0.9596 | 959,621 | \$ 5,397.87 |
| 5/1/2007 | 0.9003 | 900,318 | \$ 17,443.65 | 0.9453 | 945,333 | \$ 5,317.50 |
| 11/1/2007 | 0.8869 | 886,913 | \$ 17,183.93 | 0.9313 | 931,258 | \$ 5,238.33 |
| 5/1/2008 | 0.8737 | 873,707 | \$ 16,928.08 | 0.9174 | 917,393 | \$ 5,160.33 |
| 11/1/2008 | 0.8607 | 860,698 | \$ 16,676.03 | 0.9037 | 903,733 | \$ 5,083.50 |
| 5/1/2009 | 0.8479 | 847,883 | \$ 16,427.74 | 0.8903 | 890,277 | \$ 5,007.81 |
| 11/1/2009 | 0.8353 | 835,259 | \$ 16,183.14 | 0.8770 | 877,022 | \$ 4,933.25 |
| 5/1/2010 | 0.8228 | 822,823 | \$ 15,942.19 | 0.8640 | 863,964 | \$ 4,859.80 |
| 11/1/2010 | 0.8106 | 810,572 | \$ 15,704.83 | 0.8511 | 851,100 | \$ 4,787.44 |
| 5/1/2011 | 0.7985 | 798,503 | \$ 15,470.99 | 0.8384 | 838,428 | \$ 4,716.16 |
| 11/1/2011 | 0.7866 | 786,614 | \$ 15,240.64 | 0.8259 | 825,945 | \$ 4,645.94 |
| 5/1/2012 | 0.7749 | 774,902 | \$ 15,013.72 | 0.8136 | 813,647 | \$ 4,576.76 |
| 11/1/2012 | 0.7634 | 763,364 | \$ 14,790.18 | 0.8015 | 801,532 | \$ 4,508.62 |
| 5/1/2013 | 0.7520 | 751,998 | \$ 14,569.97 | 0.7896 | 789,598 | \$ 4,441.49 |
| 11/1/2013 | 0.7408 | 740,802 | \$ 1,014,353.03 | 0.7778 | 777,842 | \$ 1,004,375.36 |

Table 2: Low Coupon Analysis

If we were to calculate the returns we would find that bond one has a return of 33.2% and bond two has a return of 35.5%. In this example, the second bond has the better return, even though it started with a higher inflation accrual factor.

Another factor limiting the efficacy of flipping is holding period. Since the deflation floor is only guaranteed by the Treasury at maturity, flipping TIPS does not necessarily work over shorter periods of time.

Using the current five year as our example (1/15/2009), we can illustrate this point. If in January 2004 the Treasury were to issue a new five year TIP, it would have a coupon of 1.25% (assuming yields stay where they are today) so its yield would be the same as the already issued bond. If deflation were to set in, the older bond would actually outperform the newer one for a considerable length of time. The newer issue would have to yield 8bps higher than the existing one for the new bond to outperform using a 2 year holding period. This is mainly due to the higher coupon being paid on extra principal the bond accrued since its issue date. It is important

