Market Comment 4/18/13

The Advantage of Premium Bonds vs. Discount Bonds

Many individual investors favor discount bonds over premium bonds. Presumably they are attracted to the fact that discount bonds become par at maturity and thus experience price gains. In contrast, premium bonds would over time decline to par at maturity, and thus experience a price loss. While this may be the case, it is misleading and may lead to poor investment decisions.

As a quick explanation, a bond is priced at a premium simply because its coupon rate is higher than the prevailing tax-free interest rate in the market. The higher coupon stream that investors collect would compensate for the decline of the price premium. Likewise, a bond is priced at discount because its coupon rate is lower than the going rate in the market. Investors who buy the discount bond would be paid a lower coupon stream on the way to maturity while the price appreciates to par.

So, what to do? At a minimum, investors should compare bonds on a total return basis and analyze their risk profiles in order to make intelligent investment decisions.

An example based on total returns at maturity

Compare the following bond structures:

Bond A: 5% coupon, 4/15/2028 maturity, callable at par on 4/15/2023, yield 3.26%, price= $113.48

Bond B: 3% coupon, 4/15/2028 maturity, callable at par on 4/15/2023, yield 3.26%, price=$96.93.

Assume investors hold both bonds to maturity and that the bonds are never called. What are the respective cumulative total returns? On pre-tax basis, they are 54.2% vs. 49.6%. Clearly the premium bond is better in the example.

What about on after-tax basis? For the premium bond, it is still 54.2% as the loss of premium -$13.48 (=$100-$113.48) is not a capital loss for tax purposes due to tax rules on premium amortization. It is a pure loss and not tax deductible. For the discount bond, the price appreciation $3.07 (=$100-$96.93) at maturity is a capital gain for tax purposes, so the after-tax total return for the investor reduces to 48.9%.

The example leads us to another conclusion. With maturity date as the investment horizon, the premium bond above is UNDERPRICED compared to the discount bond. Indeed, in order to have the same after-tax total returns as the discount bond, the premium bond should be priced at $117.48 or a yield of 2.96%! Of course, the flip side is that the discount bond in question is OVERPRICED when compared to the premium bond.

This example demonstrates that for the same yield, an investor should buy the premium bond if the bond is going to be held to maturity. Typically an investor would not be offered two bonds to compare in this way. Still, if given a discount bond offering, they should at least look at comparable premium bonds to decide if the discount bond is fairly priced.

Premium callable bonds outperform discount bonds in a rising rate environment

Callable bonds may potentially be called before maturity. Thus the scenario used in the above comparison may not play out in the same way. For example, if an investor only plans to hold the bonds for a year or two, how do the two bonds in the example compare? This question is more complex because future interest rates are unknown. In order to make a sound investment decision, we must run a scenario analysis and model the performance of bonds.

We continue to use the bonds from the above example and calculate the horizon total returns for each under various yield change scenarios. We consider two horizon dates, 12 months and 24 months. Table 1 below shows the scenario analysis for a 12 month horizon and Table 2 shows the scenario analysis for a 24 month investment horizon. We can see that the premium bond underperforms the discount bond slightly in a market rally, and outperforms the discount bond significantly if interest rates rise. This is because the premium bond is, in general, priced to the first call date and has shorter duration than the discount bond. In other words, the premium bond is a more defensive play in a down market.

Table 1		**12 Month Senario**		
Horizon Yield	Yld Change (bp)	Total Returns for Bond A	Total Returns for Bond B	Difference
2.26	-100	10.85%	11.45%	-0.60%
2.51	-75	8.89%	9.33%	-0.44%
2.76	-50	6.97%	7.26%	-0.29%
3.01	-25	5.09%	5.24%	-0.15%
3.26	0	3.25%	3.26%	-0.01%
3.51	25	1.45%	0.48%	0.97%
3.76	50	-0.31%	-2.22%	1.91%
4.01	75	-2.03%	-4.82%	2.79%
4.26	100	-3.72%	-7.34%	3.62%

Table 2		**24 Month Scenario**		
Horizon Yield	Yld Change (bp)	Total Returns for Bond A	Total Returns for Bond B	Difference
2.26	-100	13.25%	13.90%	-0.65%
2.51	-75	11.50%	12.00%	-0.50%
2.76	-50	9.79%	10.14%	-0.35%
3.01	-25	8.11%	8.32%	-0.21%
3.26	0	6.47%	6.53%	-0.06%
3.51	25	4.85%	3.90%	0.95%
3.76	50	3.27%	1.35%	1.92%
4.01	75	1.72%	-1.12%	2.84%
4.26	100	0.20%	-3.52%	3.72%

In the current rate environment, the defensive characteristics of premium bonds are particularly relevant. While they sacrifice some upside in a bond rally, the protection they offer from rising rates is worthy of consideration. Bond structure is an important part of prudent investment decision-making.

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