Breakeven Rate Shock

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FixedReset (FR) preferred shares have been discussed often in this column (*CMS*: May 2008, January 2009 and June 2009) and are highly touted in some quarters for the inflation protection that they offer investors. These issues have an exchange date every five years, on which the issue is either called by the issuer or has its dividend reset to a known spread over the five-year Government of Canada yield (GOC5) at that time. Since it is assumed that the GOC5 rate will adjust rapidly to inflation, investors in FRs have exposure to prolonged inflation for a maximum of five years, unlike Straight Perpetuals, which have a fixed dividend that does not change. Most of the latter type are currently trading below their call price and are referred to as PerpetualDiscounts (PDs).

Inflation protection is a very grand and useful thing for a fixed-income investor to have, but two questions must be answered before investing:

- How much is the protection worth?
- How much does the protection cost?

To answer these questions, we must return to the roots of the concept: real return bonds (RRBs) were introduced by the U.K. government in 1981 and may be making something of a comeback as increased government deficits in the developed world fan fears that the governments may seek to inflate their way out of their problems.

Real Return Bonds

The basic rationale for a borrower to issue real return bonds is a modified Fisher equation:

$$Y = I + R + L + U$$

Where Y is the nominal Yield of a bond,
I is the Inflation rate,
R is the real rate of Return,
L is the Liquidity premium, and
U is the inflation Uncertainty premium.

This equation asserts that the nominal interest rate of a bond is determined by the four factors as stated. It is the Inflation Uncertainty Premium that is the driving force behind the issuance of RRBs. The rationale is that investors decide whether or not a given bond is attractive by guessing the rate of inflation (I) over its term. They then demand a little extra yield (U) to allow for the chance that their guess will be wrong.

By issuing RRBs, the issuer removes the guesswork from the equation, taking upon itself the risk that inflation will exceed expectations, but, at least in theory, not having to pay the Inflation Uncertainty Premium.

There have been many attempts to determine the size of each of the elements of the equation. The Federal Reserve Bank of Cleveland's efforts foundered at the height of the credit crunch in the fall of 2008 as financial markets demanded liquidity almost irregardless of its cost, causing the liquidity premium, L, to increase dramatically and upsetting all their carefully constructed and precisely back-tested theories.

In Canada, Bank of Canada analysts have suggested that the inflation risk premium is zero[1], which goes a long way towards explaining why Canadian issuance is so small relative to the rest of the world. If the issuer is not reducing its interest expense by capturing the inflation risk premium for itself, there's not much point in the exercise.

In the U.S., the best efforts to determine the value of U indicate that it is relatively small (0.1% to 0.2% or 10-20 basis points) and varies over time.

It would appear that Canadian investors may safely assume that the inflation risk premium is effectively zero and if desired they can gain protection from unexpected inflation for free by buying RRBs instead of nominal Canadas of like term.

How Should the Cost be Modeled?

I define a Rate Shock as an increase in nominal rates that hits all markets equally. This could be due to inflation or expected real return on bonds of all types. It is important to note that a rate shock does not include the concept of a flight to quality, in which it is credit spreads that change via a decline in government rates unmatched by corporates, an increase in corporate rates unmatched by Canadas, or a combination of the two.

It is fear of these shocks and the fact that FixedReset issues afford protection against them that attracts many investors to this type of preferred share.

Breakeven Rate Shocks

A Breakeven Rate Shock (BERS) is defined as the rate shock that must be experienced immediately in order for the total return of the FR and PerpetualDiscount (PD) issues examined to be equal.

To determine the BERS for a single FR trading at par:

- The YTW on the issuer's PDs is calculated.
- The difference between the initial fixed rate of the FR and the PD YTW is calculated.
  - It is assumed that the reset spread has been selected so that, given a constant five-year GOC rate, the dividend on the FR will be constant.
- A rate shock is applied to the discounting of the cash flows of both the FR and the PD.
- The capital loss on the PD due to the rate shock is calculated.
- The expected cash flows of the FR are discounted at the post-shock PD yield.
  - The dividend will not reset until T years following the rate shock.

An Example

On May 29, 2008, TD Bank announced a new FR issue that is now trading as TD.PR.S. This issue has an initial rate of 5%, resetting on every exchange date to GOC5+160bp. At the time, TD's PD issues were trading on the Toronto Stock Exchange at an average yield of 5.58%, approximately equal to their level at time of writing (they have had some adventures in the intervening period!).

The following discussion will ignore the effect of calls. Incorporating the possibility of issuer calls into the analysis will make the FR less attractive, since it is purchased at its call price, while the PDs, by definition, are trading at less than their call price and will realize a capital gain should a call be exercised.

An investor selling one of the TD Bank PDs to purchase the new issue gave up 58bp in yield. Fifty-eight basis points is a lot! If we assume for the moment that there is no rate shock and TD.PR.S pays a yield of 5.00% forever (i.e., if we assume that it was a PD with a dividend rate of 5%), its market price would be about $22.40. An investor in the new issue therefore paid $2.60, or more than 10% of his total investment for the protection against rate shocks.

The FR will turn out to be the better investment only if there is a rate shock of sufficient size. If we assume that the rate shock is experienced immediately and the dividends paid on TD.PR.S adjust on its first exchange date in five years' time, it turns out that the break-even point is 79bp. That is, should inflation jump by 79bp and all fixed-income instruments reflect this shock equally, the PD will decline in price by 12.4% to yield 6.37%. The yield on five-year Canadas will increase by 79bp (a loss in market value of about 3.55%) and the TD.PR.S dividend will be projected to increase on its reset date to 5.79% of par value or $1.4475 p.a. (per annum) from the initial rate of $1.25.

If a rate shock in excess of 79bp is experienced, the FR will outperform the comparable PDs; if the rate shock is less than 79bp, the PD will outperform. I have calculated the BERS for each FR issue and show how these values have changed over time in the accompanying chart.

The Question

The fact that a BERS exists and is relatively large does not mean that FR new issues are necessarily a bad investment.

The Pick of PrefLetter

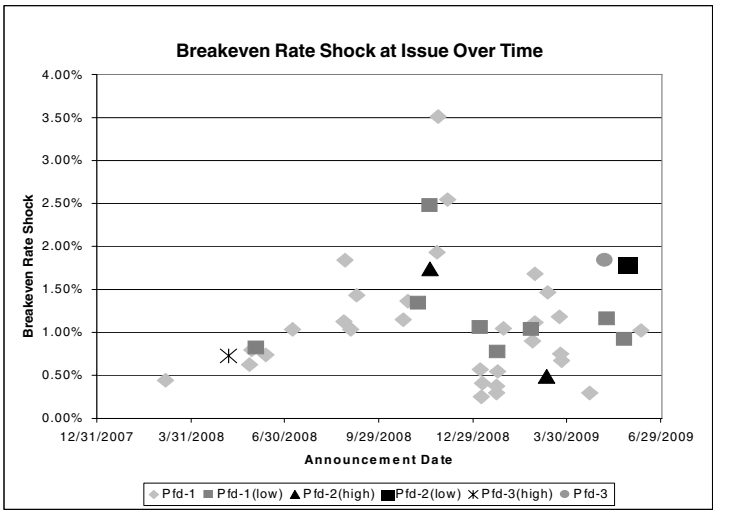
After the close on September 11, 2009, my monthly newsletter (www.prefletter.com) recommended MFC.PR.B among others for long-term, buy-and-hold investors.

Type of Preferred	PerpetualDiscount
Quotation (2009-9-11)	20.15-38
DBRS Rating	Pfd-1(low)
S&P Rating	P-1(low)
Moody's Rating	Not Rated
Annual Dividend	1.1625
Yield-to-Worst Scenario	LimitMaturity
Yield-To-Worst	5.80%
Modified Duration, YTW	14.25
Pseudo-Convexity, YTW	1.01

MFC.PR.B: Redeemable at $26.00 commencing 2010-3-19; redemption price declines by 0.25 p.a. until 2014-3-19; redeemable at $25.00 thereafter. Next ex-date 2009-11-14 (estimated). Manulife's issues have been relatively soft in the past month probably on credit concerns following the halving of the common dividend. Another factor may be the slow realization that the projected charge to earnings of up to half a billion dollars for the third quarter (see http://www.manulife.com/corporate/corporate2.nsf/LookupFiles/DownloadableFile2009Q2NewsRelease/$File/Q2newsrelease2009.pdf) is not a good thing – although the prospect of this charge has been strangely absent from media commentary. For all that, the company remains a good credit, particularly given the improved tone of global equity markets.

The BERS resembles an insurance premium: investors are giving up a certain amount of yield in exchange for a degree of assurance that a large rate shock will not ravage the value of their investment. But prior to investing, investors should understand how much they are paying for this insurance and ask themselves why they are paying it when the same insurance is available for free in the Canada bond market.

A MS-Excel spreadsheet that performs the calculation of BERS is available at http://www.prefblog.com/wp-content/uploads/2009/08/berscalculator.xls



[1] http://www.bankofcanada.ca/en/review/autumn04/reid.pdf Christopher Reid, Frédéric Dion and Ian Christensen, *Real Return Bonds: Monetary Policy Credibility and Short-Term Inflation*, Bank of Canada Review, Autumn 2004

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