

A Call, too, Harms

Forced redemptions for preferred shares require yield-to-worst analysis

BY JAMES HYMAS

There's no getting around it: almost every preferred share on the market is issued with embedded call options, enabling the issuer to redeem the shares at a specified

price at a specified time, or within a specified period.

Since issuers are not known for their altruistic principles, such calls may be expected to occur at the

worst possible time for the owner of the shares, resulting in investment returns lower than would otherwise be the case. It would be wonderful to go back to the 1980s and

Call Experience of Worst YTW Issues for Year-ends 2000-2004

Date	Issues examined (lowest yields-to-worst)	Number called in next year	Number called in succeeding years	Number still listed
2000-12-29	15	4	10	1
2001-12-31	15	2	13	0
2002-12-31	20	4	12	4
2003-12-31	20*	9	5	6
2004-12-31	20*	7	0	13

*Not including split-share corporations

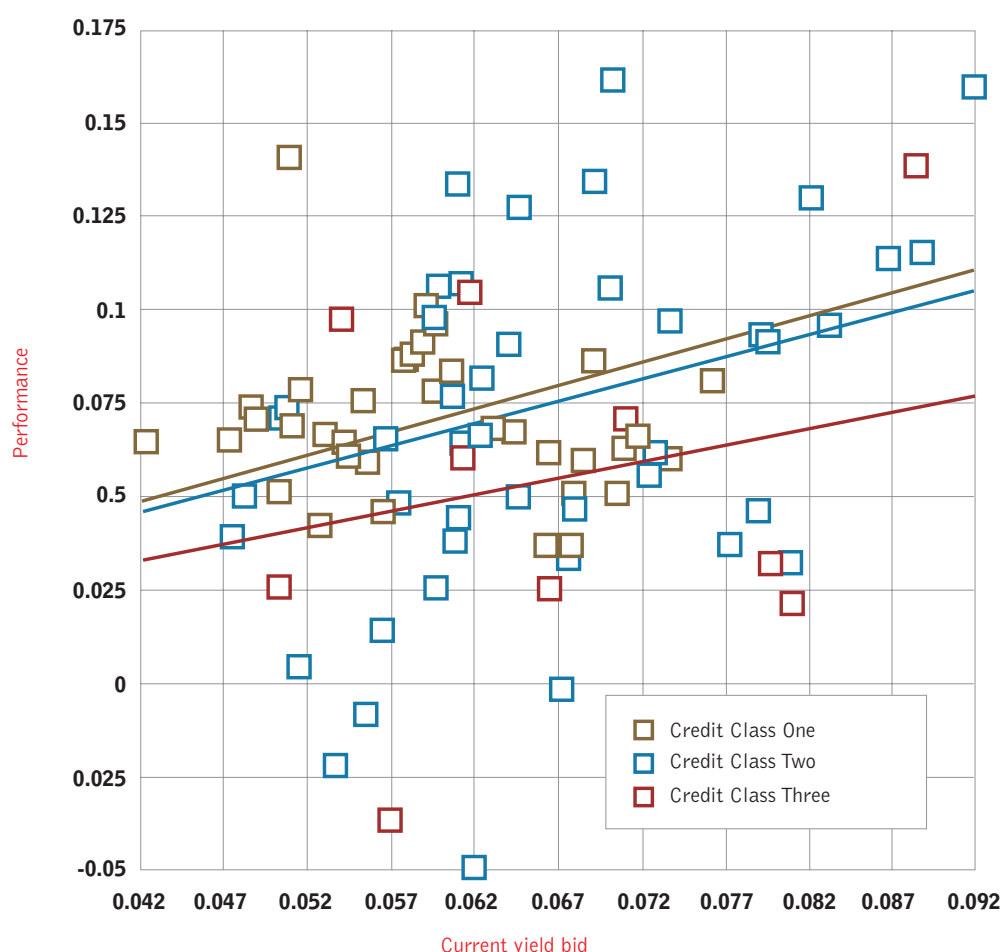
Characteristics of "Called" and "Not-Called" Low YTW Issues

Period of YTW Sample (commencing end of prior year)	Called			Not called		
	Floater	Retractables	Fixed-rate straight	Floater	Retractables	Fixed-rate straight
2001-2003	3	39	3	2	3	0
2004-2005	2	13	6	6	6	7

Yields as Predictors of Performance

Year	Regression of year's return vs. yield-to-worst		Regression of year's return vs. current yield	
	Slope, Pfd-1	Explained variance	Slope, Pfd-1	Explained variance
2001	2.1	29%	1.2	11%
2002	2.4	46%	0.5	7%
2003	2.4	70%	0.3	12%
2004	1.0	42%	1.1	25%
2005	0.4	22%	0.3	10%

1. Current Yield, Dec. 29, 2000, Versus Performance, 2001



With data from TSE (c) 1993-2006 Toronto Stock Exchange

purchase a stack of "perpetual" preferred shares at the then-prevailing dividend rates – but alas, all these issues with their mouth-watering yields have been called away, replaced with issues that now, if we focus strictly on the new-issue market, yield less than 5%. "Perpetual" can mean, unfortunately, "five years."

It is due to the influence of calls that we cannot use "current yield" as the basis for evaluation of the relative worth of preferred shares. Current yield – sometimes referred to as "cash-on-cash" yield – is simply the expected annual dividend divided by the current market price. Instead, the basis for proper evaluation of preferred shares is yield-to-worst.

Yield-to-worst is calculated for a preferred share by examining the redemption schedule (and retraction schedule, if it exists) and the current price. Each call scenario is examined, and the sequence of events that is worst for the holder is deemed to be the only scenario of interest. This process has its faults in that it assumes that the yield curve will not change over the entire period examined and that there are only two possible settings for each scenario examined: certain and impossible.

These defects are largely outweighed by its merits: the investor is taking a more realistic view of the investment risks than that provided by current yield and yield-to-worst is easy, if somewhat tedious, to calculate.

A comparison of the two measures is shown on the accompanying graph: information for this graph has been drawn solely from instruments rated Pfd-1(low) or better by the Dominion Bond Rating Service. Alert readers will note that on occasion the yield-to-worst will exceed current yield; this is due to "retraction" options, which enable the investor to force the issuer to redeem the issue. In such a case, yield-to-worst may include a bonus due to amortization of the discount, if the issue is trading at a discount to its worst-case redemption price.

Mathematical calculations of doomsday scenarios are all very well, but investors tend to be more concerned with their returns. It should also be noted that the term "yield-to-worst" is something of a misnomer: if the market changes, the worst-case scenario may also change, even in the gloriously default-free universe the calculations assume.

In order to compare the predictive effect of yield-to-worst with that of current yield, let's look at some multilinear regressions for

the past five years. On the date immediately preceding the year, we'll measure the yield-to-worst and the current yield and plot these values against the subsequent year's performance.

The plots for the year commencing Dec. 29, 2000, are shown; due to space considerations the reader will have to exercise his imagination regarding the plots for the other years. Naturally, there is a fair amount of scatter in these plots, since we are attempting to explain a very complex phenomenon (total returns on each issue of preferred shares over an entire year) with only two determining factors: either yield-to-worst or current yield as the case may be; and a broad indicator of credit quality (the credits are determined according to the DBRS credit rating at the beginning of the period; "high" and "low" modifiers are ignored).

There is a lot of available information that's being ignored in these plots: the type of issue (floating rate, perpetual, retractable) is not captured; the term over which the yield-to-worst is measured is not specified; the likelihoods of the various call scenarios are constrained to be either "certain" or "impossible" in accordance with traditional analytical practice . . . the list of possible explanatory data thrown away in these regressions may not be endless, but it's lengthy!

In the light of the great simplicity of these plots, the wonder is that the "fit" (as measured by R-squared, a statistical measure of how much of the variance of one variable can be explained by the other variables) is so good. If these yields were irrelevant to future performance R-squared would be zero (see *Yields as Predictors of Performance, left*), but 29% of the variability of returns in 2001 can be explained simply by measuring the yield-to-worst at the end of 2000 while even current yield is able to explain 11% of the variance.

The better explanatory power provided by yield-to-worst is not just a fluke, nor is it due to data mining. For each of the past five years, yield-to-worst has been a far better indicator of future performance than has current yield when tested against the HIMIPref™ analytical universe. These findings are summarized in the table "Yields as Predictors of Performance."

A good part of the reason that yield-to-worst is such a good predictor of future returns can be explained by examination of the table "Call experience of Worst

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YTW Issues for Year-ends 2000-2004.”

In order to prepare this table, all preferred shares and preferred securities in the HIMIPref™ universe on the analytical date were ranked according to their pre-tax yield-to-worst and the worst portion selected for further analysis – these issues comprised about one-eighth of the total number of issues. A little cheating was done in the selection of issues from the last two years: preferred shares issued by split share corporations were removed from the sample.

This exception is due to the potential for partial calls that exists under the covenants for many split-share preferreds – speaking generally, there is often a provision that holders of the capital shares have an annual option to “put” their shares to the company on an annual basis. This provision often involves the right (or obligation) of the company to call an equivalent number of the preferred series for redemption at a set price.

A prudent preferred share investor will include in his calculations the potential for all the preferreds to be called on each successive capital share retraction date, which may lead to a low yield-to-worst on the date of calculation. There are inevitably a large number of these options not exercised, however, and there will often be a partial call on such dates.

Besides being a nightmare for those investors who find that their board lots have been transformed into odd lots, these partial calls lead to a survivorship bias in the HIMIPref™ return calculation, since partial calls are not recorded in the HIMIPref™ database. This effect has been ignored in the preparation of the graphs and the correlation table, but such issues have been removed from further consideration. The effect should be remembered, though, when we start to examine outliers from the data!

That's because it is the outliers in which we are interested! In yield-to-worst, we have what appears to be a good predictor of subsequent returns, but before we actually go and put any money on the table it would be a good idea to gain a better understanding of it.

We've already had a glance at the table “Call experience of Worst YTW Issues for Year-ends 2000-2004,” which appeared to provide a good explanation of just why yield-to-worst works well as a predictor of returns: issues with a low yield-to-worst tend to be called,

which implies that, in many cases at least, yield-to-worst can be regarded as “yield-to-actual.” But the table also shows that there were some issues calculated as having a low yield-to-worst as long ago as December 2000 that are still outstanding!

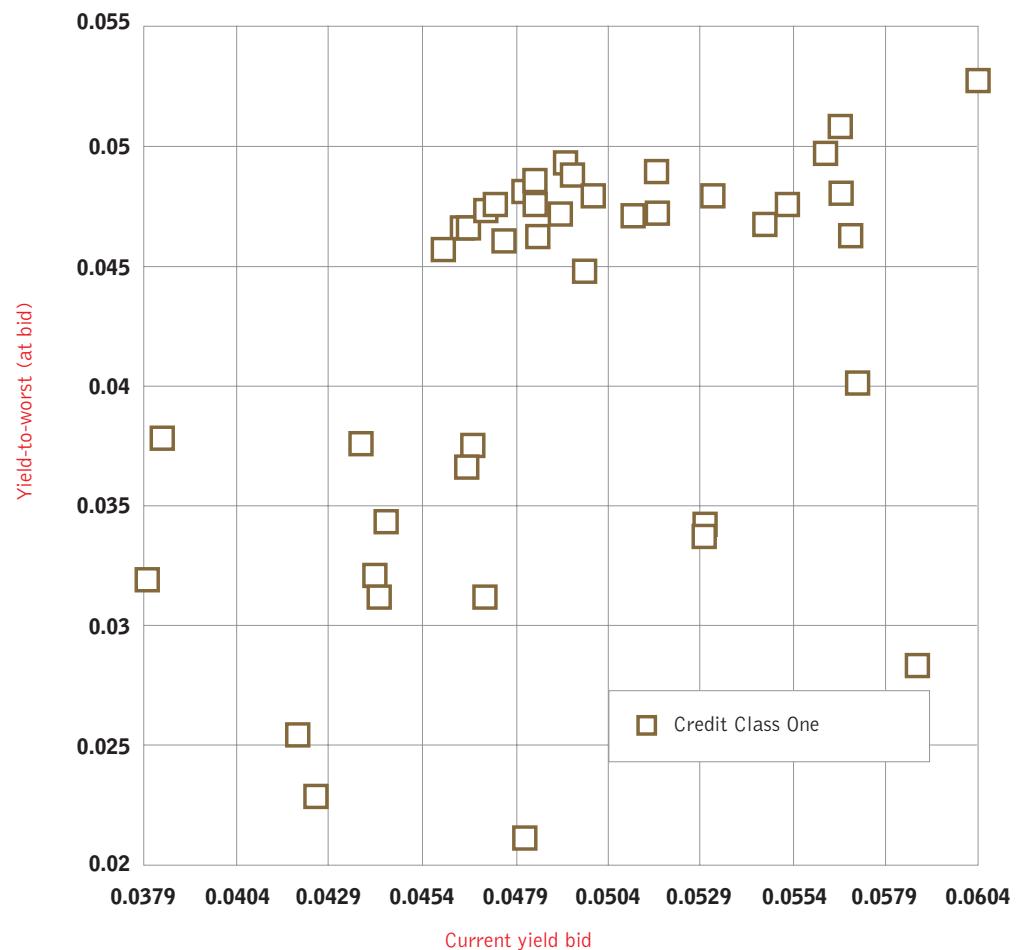
Remember December 2000? Those were the good old days, at least for fixed income investors. The Scotia Capital Universe Bond Index had an average yield to maturity of 5.75%, compared to a measly 4.45% at the end of March, 2006. The yield on this index had declined to 4.61% at the end of 2002, while every single month-end in 2005 reported an overall yield of less than 4.25%. One might think that these low yields would provide issuers with an opportunity to convert all of the worst yield-to-worst cases to actual experiences, but there were some exceptions and it is necessary to understand what they might be.

Of the fifty issues determined to have low yield-to-worsts in 2000-2002, five are still listed. The table “Characteristics of ‘Called’ and ‘Not-Called’ Low YTW Issues” provides a breakdown of these issues: there were two surviving floaters and three surviving retractables. Two of these retractables were split-share corporations with annual redemption possibilities: BSN.PR.A and FBS.PR.A. At the redemption time subsequent to the year-end on which they were found to have low yield-to-worsts, these shares experienced calls representing 60.879% and 46%, respectively, of their outstanding float. Clearly, the worst case scenario for these issues was largely, albeit not entirely, experienced – which is why such issues have been removed from consideration from the 2003-04 start-date analyses.

The other retractable in the low yield-to-worst lists for 2000-2002 that was not called was RY.PR.K. Although it managed to avoid the worst case scenario (a call nine months subsequent to its appearance in the list), it underperformed the index by a cumulative total of about 6% in the following three years. Clearly, dodging the redemption bullet was not, in and of itself, a great cause for celebration!

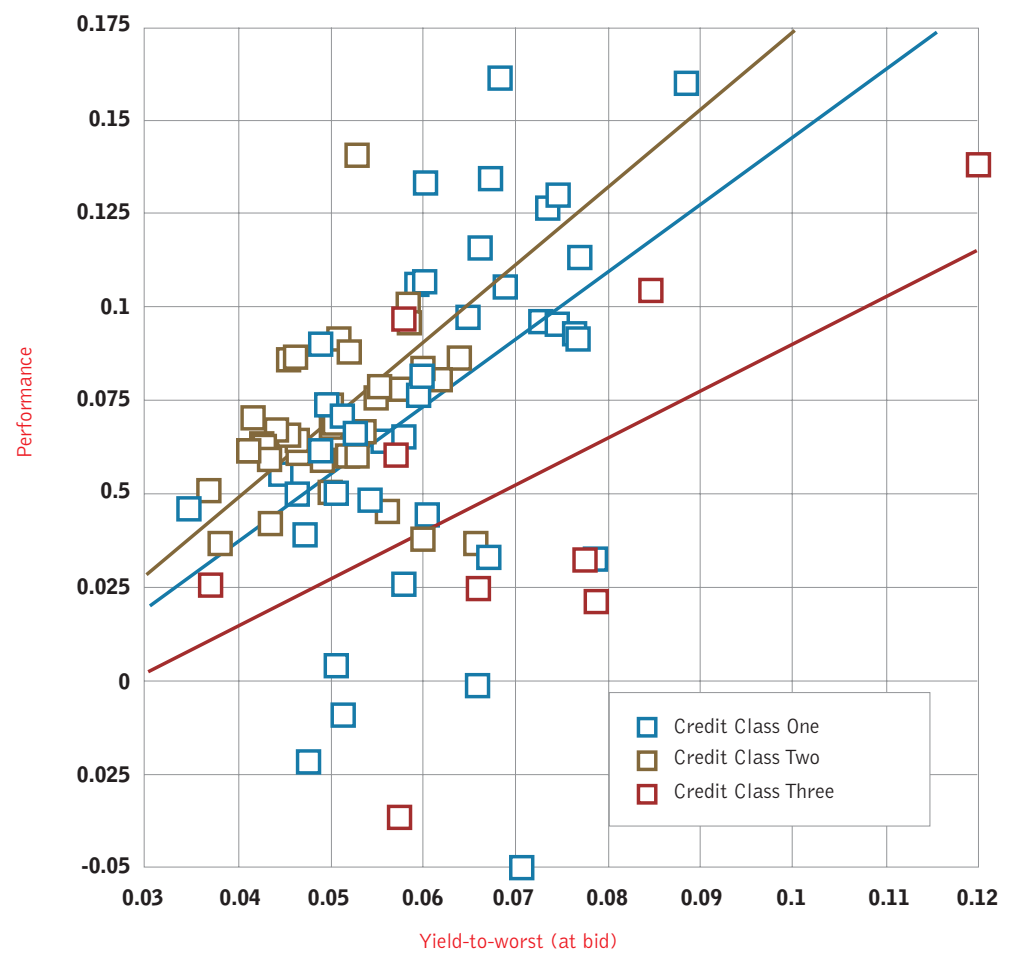
The final exception to the rule that these issues would be called was AL.PR.E, a floating rate share that actually slightly outperformed the index in the five years subsequent to its first appearance in 2000 (by a total of about 2%) and managed to more or less break even versus the index in the three years subsequent to its second

2. Current Yield Versus Yield-To-Worst, April 26, 2006



With data from TSE (c) 1993-2006 Toronto Stock Exchange

3. Yield-To-Worst, December 29, 2000, Versus Performance, 2001



With data from TSE (c) 1993-2006 Toronto Stock Exchange

appearance (in 2002). This issue has been callable at \$25 since the beginning of 1993, but nevertheless has survived, with a price of \$25.35 at year-end 2000, \$25.20 at year-end 2002 and, shockingly, \$26.26 at year-end 2005.

The question of redemptions of floating rate issues is too complex to be addressed in this article; an historical review that will examine the call behaviour of these issues and the implications of this behaviour on overall investment returns will be published shortly. In this

article, however, it has been shown that: Yield-to-worst is a much better measure of investment desirability than is current yield. Those issues with low yields-to-worst relative to their peers have tended (in the past five years of declining yields) to fulfill gloomy expectations by being called (sometimes partially, in the case of certain split-share corporations).

There appears to be some odd behaviour of floating rate issues, which needs to be investigated further.

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