

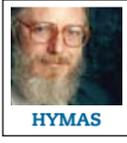
## INVESTMENTS

BY JAMES HYMAS

# Bond ETFs demystified

Subtleties in investment characteristics of bond ETFs are often misunderstood.

Bond ETFs have gained in popularity in the decade since their inauguration in Canada, but there are subtleties



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in their investment characteristics that are often misunderstood.

Four of these characteristics will be examined in this article:

- > the potential for capital loss in a bond ETF, relative to a buy-and-hold strategy;
- > not all ETF holdings labelled as bonds are, in fact, bonds;
- > relative impact of ETF MER and individual bond markups; and
- > reported yields of bond ETFs.

## Potential for capital loss

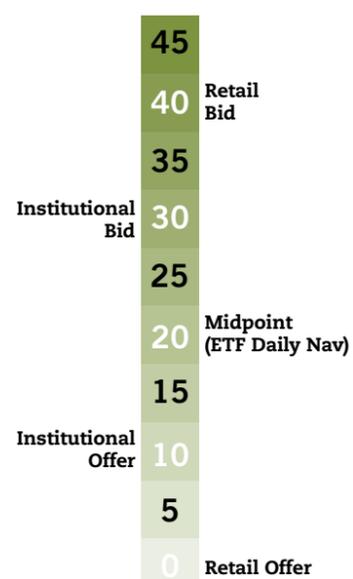
Many investors prefer individual bonds to exchange traded funds (ETFs) on the grounds that their principal is not at risk: barring default, a bond will mature at par, which is presumed to be the price paid.

Naturally, it is difficult to put a client portfolio together using only par bonds—this is part of the attraction of Guaranteed Investment Certificates (GICs), which are available in unlimited quantities from the chartered banks at any time.

Consider the case of an investor selling a bond below par in order to purchase a higher-priced issue with a higher coupon. In this case, there is downward pressure on the capital gain account but, since the higher coupon is received until maturity, this is balanced by upward pressure in the income account.

“Effects of a rise in yield on Ladder and ETF strategies” (this page) shows the investment results for two strategies: the “Ladder” strategy maintains a six-year bond ladder while the “ETF” strategy

## Basis points above Retail Offer Yield



sells holdings one year prior to maturity and buys a four-bond ladder. The six-year ladder is admittedly unusual, but the more standard five-year ladder has a lower duration than the ETF and will therefore normally outperform in the rising-yield environment we are about to examine—there’s nothing magical about that! The duration decision is exogenous to the choice of investment vehicle; and it is the choice of investment vehicle that is to be discussed.

In either case, the initial portfolio is created when all bonds yield 4%; immediately after creation there is a permanent parallel shift such that all bonds yield 5%. It is assumed that coupon income is withdrawn.

The increase in yields indeed causes a slight impairment of capital in the ETF, but what is often not accounted for is that the income in the intervening period has been higher—essentially, some of the income received from the ETF has been return of capital. Had this excess income been reinvested in the fund, the end-value of the fund holdings would have been \$599.73—the slight underperformance is due to the differing convexity of the two sets of holdings. Had the ETF portfolio constructed for comparison purposes been convexity matched as well as duration matched, the results, including reinvestment of excess income, would have been indistinguishable.

## Non-Bond Holdings of Bond ETFs

The concept of indexing has gained such credence in the past few years that investors are encouraged to assume securities are included in any given index in such a way as to reflect both the index name and the universe of potential investments indicated by that name.

Unfortunately, fixed income is not subjected to the same degree of public inspection, discussion and understanding as equity. Additionally, most bond indices are developed and maintained by the sell-side, which has a natural propensity to incorporate new structure in order to make them easier to sell. A culture of nod-and-wink expectations divorced from the terms of the generally unread prospectuses has arisen with respect to many fixed income investment vehicles, similar to the implicit guarantees on Money Market Funds, discussed in the

October 2009, edition of AER (“The future of money market regulation,” page 6).

Perhaps the most cynical example of index constituent manipulation was the attempt by the U.K. Treasury to get the Lloyds Bank contingent capital issue included in various bond indices. This issue was even more risky for holders than the Tier 1 Capital issues discussed below, as there was no first-loss protection provided to holders from the equity outstanding at the time of issue. The effort failed, but it was a near-run thing.

Bond indices generally include three tiers of bank debt (for more about the tiers of bank debt, see the March, 2008 issue of AER):

**Senior debt:** the inclusion of this tier is entirely proper. The securities are backed by the full faith and credit of the issuer; holders may place the bank in bankruptcy if payments are a day late or a dollar short of the commitments made in the prospectus;

**Subordinated debt:** These, too, may be regarded as actual bonds in terms of the holders’ remedies for default by the issuer, but these remedies only become effective upon the maturity of the bond. This may seem obvious, but such issues are sold and priced as if a call five years prior to maturity is certain. They are also incorporated into the indices and many portfolios on such a basis since refusing to call the issue on the expected date can have grave consequences for the issuer, as Deutsche Bank found out in December 2008. However, it is increasingly unlikely regulators will allow banks to call such issues as expected if the issuing bank runs into trouble—which is precisely the time a call would be most gratefully received by the holders. One of the great attractions of short-term debt is its ability to be allowed to run off the books as credit deteriorates and this attribute is made somewhat dubious when, by refusing to call, the issue has what is effectively an extension option.

**Tier 1 Capital:** Innovative Tier 1 Capital cannot be regarded as bonds. Their intent is to absorb losses while the issuer remains a going concern—completely antithetical to the degree of protection implied by the word bond. These instruments are equivalent to preferred shares, dressed up as bonds to seduce the unwary.

Index investors—complacently buying whatever is put in front of them by the index sponsor—can find such a lackadaisical approach to investments can backfire!

“Composition by seniority of three popular bond ETFs,” (this

page) shows the composition of three popular bond ETFs.

One may rationally include bank subordinated debt in an unconstrained bond portfolio on the grounds that it does meet the basic definition of “bond,” but there is less justification for including this type of debt based on the call date. Such a decision requires the belief that banks will continue to call their debt five years prior to maturity (even if this is uneconomic) and that regulators will continue to allow such a call (even if the bank has run into trouble).

In today’s secular world, it is indeed touching to see that ETF sponsors are setting their funds’ investment policy bases on such heartfelt faith. Investors made more cynical by the events of the credit crunch may wish to demand extra yield to compensate for the extension risk inherent in these instruments.

As for the Innovative Tier 1 Capital, well, these instruments are, quite simply, not bonds. Investors should reduce their direct allocation to preferred shares by the amount of their indirect IT1C holdings.

## Dealer markups

### vs. management expense

Many investors assume individual bonds will have an advantage over

ETFs due to the fact that dealer markups on the purchase of individual bonds are only paid once, while the MER on ETFs is paid forever.

This is true as far as it goes, but a comparison can only be made fairly when we examine the size of the markups and express this amount in terms of a yield. When expressed as a yield, the mark-up can also be thought of as a continuing annual expense, allowing an apples-to-apples comparison.

To quantify the effects of dealer markups, I examined the online bond offerings of a major discount brokerage for 65 short-term corporate bonds and 11 Canada bonds. Bid and offer yields were compared for the minimum tradable quantity of \$5,000 par value (see “Bid-offer spreads on brokerage bond offerings” on this page and “Costs of investing in bond ETFs,” page 9).

## Reported yields of ETFs

One nuance that must be considered when evaluating spreads is the manner in which the NAVs of the ETFs are calculated. XCB, for instance, uses the closing bid price for its financial statements but uses the poorly defined “price” from PC Bond for its daily reporting of NAV. On June 30, 2009, the NAVs resultant from the two

continued on page 9

## Effects of rise in yields on Ladder and ETF strategies

Year	Ladder Income	Ladder Value, Year End	ETF Income	ETF Value, Year End
1	24	586.59	24	586.38
2	25	590.92	25.43	590.27
3	26	594.46	26.86	592.93
4	27	597.19	28.29	594.29
5	28	599.05	29.71	594.29
6	29	600	29.71	594.29
<b>Total Income</b>	<b>159</b>		<b>164</b>	
<b>Projected Income (5%)</b>	<b>30</b>		<b>29.71</b>	

## Composition by seniority of three popular bond ETFs

	XCB	CBO	ZCS
Senior Debt (including securitizations)	87%	75%	78%
Regulatory Subordinated Debt	9%	13%	16%
Innovative Tier 1 Capital	4%	12%	7%

## Bid-offer spreads on brokerage bond offerings

Term	Corporate Bid-Offer Spread	Canada Bid-Offer Spread
< 1 year	0.82%	No offerings
1-2 years	0.74%	0.60%
2-3 years	0.57%	0.42%
3-4 years	0.44%	0.31%
4-5 years	0.41%	0.24%

## INVESTMENTS

### Bond ETFs demystified

continued from page 6

calculations were 19.59 and 19.65, respectively, a difference of 31bp in price, which implies (given a duration of about 5.0) a yield differential of about 6bp.

Thus, when examining XCB on any given day, it must be borne in mind that the reported yields are based on calculated yields approximately 6bp less than the bid yield—although this estimate could vary widely from day to day, as the company reports the bid-side NAV only when this is required by law. Further, the yield actually received by

the investor will be affected by his execution price (including commission) relative to the reported NAV.

**CBO and ZCS policies are similar**  
“Costs of investing in bond ETFs,” (this page) provides a visual representation of these effects on realized yield, which will serve as a rule of thumb in estimating the relative attractiveness of the vehicles available to retail, and may be used to make estimates such as: when investing in CBO and paying a price equal to the NAV, the yield received will be equal to the institutional bid, less 10bp (valuation at midpoint), less 25bp (MER), less

the effect of trading costs. When purchasing individual bonds, the yield received will be the institutional bid less 30bp (dealer markup).

It should be noted, however, the investor also has the ability to sell at the midpoint, rather than at the Retail Bid, favouring ETFs; while the purchase of new issues from the dealers (as opposed to paying the secondary market spreads examined here) will favour the purchase of individual bonds.

#### Conclusions

The decision regarding whether bond investments should be held directly or via an ETF is a complex

### Costs of investing in bond ETFs

Fund	MER	Reported Yield Less Bid Yield (approx.)
XCB	0.40%	6bp
GBO	0.25%	10bp
ZCS	0.30%	10bp*

\*Estimate

one and only a few elements of the evidence have been discussed here—these elements have been chosen with a view toward clarifying misunderstandings rather than their relative importance.

In general, however, most clients should base their holdings on ETFs, while opportunistically swapping into individual issues as these become available from

dealers on favourable terms. At all times, the important consideration is the purpose of the portfolio and whether a particular individual issue that becomes available is better able to advance that purpose than the ETF. <sup>AER</sup>

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