Investment Properties of Bond ETFs

Bond ETFs have gained in popularity in the decade[1] since their inauguration in Canada, but there are subtleties 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 labeled as bonds are, in fact, bonds
- Relative impact of ETF MER and individual bond mark-ups.
- Reported yields of bond ETFs

ETF Potential for Capital Loss

Many investors choose to hold individual bonds in preference to Exchange Traded Funds (ETFs) on the grounds that their principal is not at risk[2]: barring default, a bond will mature at par, which is presumed to be the price paid.

Naturally, it is very 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.[3]

Table 1 shows the investment results for two strategies: the "Ladder" strategy maintains a six year bond ladder while the "ETF" strategy sells holdings one year prior to maturity and buys a five-year. 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 It is assumed that coupon income is withdrawn.

[Insert Table 1 about here]

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[1] Richard Kang, *Market Concern: Hedge Funds, Bonds and ETFs,* available on-line at http://seekingalpha.com/article/31231-market-concern-hedge-funds-bonds-and-etfs (accessed 2010-1-27)

[2] See Financial Webring Forum, *Bond Ladders vs. Bond ETF's [sic],* Internet discussion group, available on-line at http://www.financialwebring.org/forum/viewtopic.php?f=33&t=110454 (accessed 2010-1-25)

[3] Allan Roth, *Bonds vs. Bond Funds? An Easy Choice!,* available on-line at http://moneywatch.bnet.com/investing/blog/irrational-investor/bonds-or-bond-funds-an-easy-choice/873/ (accessed 2010-1-21)

Table 1 shows that the rise in interest rates has indeed caused 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 that securities are included in any given index in such a way as to reflect both the indices 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 is equity. Additionally, most bond indices are developed and maintained by the sell-side, which had 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, similarly to the implicit guarantees on Money Market Funds, discussed in the October, 2009, edition of AER.

Perhaps the most cynical example of index constituent manipulation was the attempt by the UK Treasury to get the Lloyds Bank contingent capital issue included in various bonds indices[4]. This issue was even more risky for holders than the Tier 1 Capital issues discussed above, as there was no first-loss protection provided to holders from the equity outstanding at 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, 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; refusing to call the issue on the expected date can have grave consequences for the issuer as

[4] Duncan Kerr, eFinancial News, *Investor Threat Remains to Lloyds,* available on-line at http://www.efinancialnews.com/content/1055628320 (accessed 2010-1-26)

Deutsche Bank found out in December 2008.[5] It is becoming increasingly unlikely that regulators will allow banks to call such issues as expected if the issuing bank runs into trouble[6] - 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.

- Innovative Tier 1 Capital cannot be regarded as bonds by any stretch of the imagination. 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 often find that such a lackadaisical approach to investments can backfire! With this in mind, we can examine Table 2, which shows the composition of three popular bond ETFs.

[Insert Table 2 about here]

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 policies 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 Mark-ups vs. Management Expense

Many investors assume that individual bonds will have an advantage over ETFs due to the fact that dealer mark-ups on the purchase of individual bonds are only paid once, while the MER on ETFs is paid forever.

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[5] Jonathan Ratner, Financial Post, *Deutsche Bank move may transform subordinated debt market,* 2008-12-17, available on-line at http://network.nationalpost.com/np/blogs/tradingdesk/archive/2008/12/17/deutsche-bank-move-may-transform-subordinated-debt-market.aspx (accessed 2009-12-31)

[6] E.g. International Monetary Fund, *Global Financial Stability Report, October 2009,* "GSFR-0910" available on-line at http://www.imf.org/External/Pubs/FT/GFSR/2009/02/pdf/text.pdf (accessed 2009-11-6)

This is true as far as it goes, but a comparison can only be made fairly when we examine the size of the mark-ups 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 mark-ups, I examined the on-line bond offerings of a major discount brokerage for sixty-five short-term corporate bonds and eleven Canada bonds. Bid and offer yields were compared for the minimum tradable quantity of $5,000 par value. The results of this examination are shown in Table 3, while ETF MERs are shown in Table 4.

[Insert Table 3 about here]

[Insert Table 4 about here]

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[7] 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 calculations were 19.59 and 19.65, respectively,[8] a difference of 31bp in price which implies (given a duration of about 5.0[9]) 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 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.

Policies for CBO[10] [11] [12] [13] and ZCS [14] are similar

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[7] See http://ca.ishares.com/content/stream.jsp?url=/publish/content/related_documents/downloads/reports/MRFP/jun_2009/MRFP_XCB_EN.pdf

[8] See http://ca.ishares.com/content/stream.jsp?url=/publish/content/related_documents/downloads/reports/semi_annual_report_2009_EN.pdf

[9] See http://www.canadianbondindices.com/ubi.asp

[10] See http://www.claymoreinvestments.ca/libraries/literature_en/exchange-traded_fund_prospectus__clf__cmr__cow__cbo__gas.sflb.ashx

[11] See Interim Financial Statements filed Dec. 11, 2009, at http://www.sedar.com

[12] See http://www.claymoreinvestments.ca/etf/fund/cbo/history?ticker=cbo

[13] See http://www.claymoreinvestments.ca/etf/fund/cbo

[14] See http://www.bmoetfs.com/ETFConsumer/marketing/document?documentId=4

Chart 1, 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.

[Insert Chart 1 about here]

Chart 1 and Table 4 may be used to make estimates such as the following: 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 mark-up).

It should be noted, however, that 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 one and only a few elements of the evidence have been discussed here – these elements have been chosen with a view towards clarifying misunderstandings rather than their relative importance.

In general, however, Hymas Investment Management advises most clients to 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.

Table 1: Effects on Ladder and ETF of a Rise in Yields				
Year	Ladder Income	Ladder Value, Year End	ETF Income	ETF Value, Year End
1	24.00	586.59	24.00	586.38
2	25.00	590.92	25.43	590.27
3	26.00	594.46	26.86	592.93
4	27.00	597.19	28.29	594.29
5	28.00	599.05	29.71	594.29
6	29.00	600.00	29.71	594.29
Total Income	**159.00**		**164.00**	
Projected Income (5%)	**30.00**		**29.71**	

Table 2: Composition by Seniority of Three Popular Bond ETFs			
	XCB[15]	CBO[16]	ZCS[17]
Senior Debt (including securitizations)	87%	75%	78%
Regulatory Subordinated Debt	9%	13%	16%
Innovative Tier 1 Capital	4%	12%	7%

[15] See http://ca.ishares.com/product_info/fund_overview.do?ticker=XCB
[16] See http://www.claymoreinvestments.ca/etf/fund/cbo
[17] See http://www.bmoetfs.com/ETFConsumer/controller/funddetails/glance

Table 3: 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%

Table 4: Costs of Investing in Bond ETFs		
Fund	MER	Reported Yield Less Bid Yield (approximate)
XCB	0.40%[18]	6bp
CBO	0.25%[19]	10bp
ZCS	0.30%[20]	10bp*
* Estimate		

[18] See http://ca.ishares.com/publish/content/related_documents/downloads/prospectus/new_prospectus_EN.pdf
[19] See http://www.claymoreinvestments.ca/etf/fund/cbo
[20] See http://www.bmoetfs.com/ETFConsumer/controller/funddetails/glance

Chart 1: Relative Quoted Yields for Bonds