BY JAMES HYMAS

It's all about sequence

Total returns not the only variables that impact a portfolio's value


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Thanks to the SEC's efforts, investors now understand the perils of parking money in leveraged ETFs.

Such products defy market wisdom because they buy high and sell low. When the market rises, the fund's equity rises faster than the underlying price, so the fund must buy more of the underlying at the increased price to re-establish its leverage. When the market declines, the opposite holds true and the fund sells at the lower price. A highly volatile market results in losses to the investor — often overwhelming any gains that might have been expected from correctly projecting the overall market trend.

Sequence-of-returns risk

This effect is another example of the sequence-of-returns risk popularized by William Bernstein and Dr. Moshe Milevsky: in the presence of cash flows, it is not simply the total return over an entire planning horizon that affects the ending value of the portfolio. The order in which sub-period returns are experienced is also important, as is the volatility of these sub-period returns.

Let's say we have a planning horizon of two years and intend to make cash withdrawals at the end of each year. If these withdrawals are not covered by portfolio income, you'll have to sell securities to raise cash at the end of the first year. If the market has declined, you'll have to sell a greater number than anticipated to raise the same amount of cash.

Those sold securities will not participate in a market recovery, even if the total return for the underlying portfolio for the two years exactly matches the initial projection.

This fits with the observation of volatility effects in leveraged ETFs, when you consider cash flows rather than market prices, to drive the funds' purchases or sales. And, in the case of these funds, the Sequence of Returns is actually guaranteed to generate the worst possible result for the security holder.

These effects of sequence-of-returns risk are intimately related to the credit quality of preferred shares issued by Split Share Corporations (SSCs). Such a corporation is very similar to a mutual fund — in fact, they are legally described as "mutual fund corporations" and are subject to the provisions of National Instrument 81-106, among others.

The difference is, SSCs issue two classes of investment: capital units and preferred shares. Potential buyers of the preferred shares are offered preferential dividends and preferential repayment of principal when the company is wound up on a set date; capital unitholders get whatever is left over and have a de facto leveraged investment in the underlying portfolio.

In most cases, the corporation's promised cash distribution greatly exceeds the cash income derived from the underlying portfolio. The prospectus for Financial 15 Split Corp. (FTN) states the investment objectives are to distribute $0.525 p.a. to preferred shareholders and $1.20 p.a. to capital unitholders, for a total of $1.725 per whole unit — with the whole units initially sold for $25.

This implies that, even in the absence of fees, the underlying portfolio had to return 6.9% annually to meet the fund objectives; once fees are included, that required return rises to an average of 8.58%. That could be considered aggressive, but not completely unreasonable by the standards of the time. The gigantic CalPERS pension fund was using 8.25% at the time FTN came to market.

But the dividend yield of the underlying portfolio was less than half this figure, implying a cash drag. While the company engages in covered-call writing to generate cash income and reduce this cash drag, neither it nor any other SSC I know has ever published figures demonstrating this strategy works.

In fact, the company's total return from the commencement of investment operation (November 2003) to the most recent annual financial report date of November 2011 has been only 0.80% p.a. Plus, the NAV has suffered; the total NAV on May 15, 2012 was only $13.60. It should be clear the company's promise to repay $10 to the preferred shareholders on windup is less credible now. DBRS has gradually downgraded the credit rating of the preferreds from Pfd-2 at time of issue to their current Pfd-4(high).

What's a default?

However, DBRS, like all other rating agencies, considers only the potential for default in assigning a primary credit rating. If the company should find it can only pay $9.99 to preferred shareholders on the scheduled December 2015 termination date, this will be considered a default — but these shareholders, having received only a penny less than promised, will doubtless consider the default a mere peccadillo.

Investors contemplating a purchase at the current price of $9.80 given the current NAV of $13.60 will, however, want to understand the risks they face. To this end, I have developed a spreadsheet for the analysis of Split Share preferred credit quality (see www.advisor.ca/hymas-sept12).

The spreadsheet models the more common factors differentiating SSCs, with the underlying portfolio return for each month chosen randomly, given an expected average annual return and the expected distribution (volatility) of monthly returns.

Each monthly return is comprised of relatively constant dividends and volatile price changes. The fund's cash position is adjusted by its distributions and MER, and its NAV on maturity is calculated after a sufficient number of months have passed. This simulation is repeated over 8,000 times to arrive at a distribution of probable end-values, given the specified parameterization (see "Parameterization of Split Share Credit" and "Output of Split Share Credit," this page).

The parameters of the model listed in Table 1 can be adjusted to chart many interesting relationships. What if, for instance, we vary the current NAV of the SSC? How should changes in NAV influence the price we are willing to pay for the preferred share? (For these variations in relationship see www.advisor.ca/hymas-sept12).

As may be seen from the data, the expected maturity price — and therefore the fair value of FTN.PR.A, if it is to be expected to yield 5.45% until maturity — is currently relatively insensitive to changes in NAV at the current NAV of 13.60.

The fair value of FTN.PR.A has been plotted with a constant desired yield of 5.45%, equal to its current yield to the expected maturity price.

However, as the chart shows, the sensitivity of the expected maturity price to changes in NAV (or, to put it another way, the exposure of the preferred shareholder to the performance of the underlying portfolio) increases as the NAV ▶21

TABLE 1: PARAMETERIZATION OF SPLIT SHARE CREDIT QUALITY MODEL FOR FTN / FTN.PR.A

Parameter	Value	Comments
Distribution Template	XFN.to 2002-12-8 to 2010-12-8	XFN.to is an Exchange Traded Fund of financial companies; this portfolio is an appropriate benchmark for the FTN underlying portfolio. The time period of the distribution captures the extreme volatility of the credit crunch.
Expected Annualized Return	7.00%	A reasonable guess!
Underlying Dividend Yield	3.35%	Calculated from FTN financial statements
Initial NAV	13.60	Published by FTN as of 2012-5-15
Pfd Redemption Value	10.00	Prospectus
Pfd Coupon	0.525	Prospectus
MER	1.11%	Financial Statements
Capital Unit Dividend (above test)	1.20	Prospectus
Capital Unit Dividend (below test)	0.00	Prospectus
NAV Test	15.00	Prospectus. When the NAV is over 15.00, the Capital Unit dividend is 1.20 p.a.; when below 15.00, the Capital Unit dividend is eliminated.
Whole Unit Par Value	25.00	Any excess is assumed to be distributed to Capital Unitholders annually
Months To Redemption	42	June 2012 to December 2015

TABLE 2: OUTPUT OF SPLIT SHARE CREDIT MODEL, GIVEN INPUTS FROM TABLE 1

Analytical Output	Value	Comments
Probability of Default (PD)	12.8%	This is the determinant of the Credit Rating
Loss Given Default (LGD)	14.6%	If the preferred share defaults, the severity is estimated to be as shown
Expected Loss (EL)	1.9%	EL = PD * LGD It is prudent to expect a maturity value of $9.81, not the promised $10.00

The results shown in Table 2 may then be used to calculate the expected yield to maturity of the instrument. Given the current price of $9.80 for FTN.PR.A, the unwary might be tempted to calculate a yield of 5.95% given a maturity price of $10.00. However, it is more prudent to assume that the value at maturity will be only $9.81, which results in a realized yield of 5.45%. That's quite a difference and might quite often result in a different investment decision!

declines. Rational investors will demand a higher expected yield commensurate with increased risk.

Volatility has influence

So it's not sufficient to project the expected total return of the underlying portfolio of an SSC when making an assessment of credit quality.

In the presence of portfolio cash flows, the volatility of the underlying portfolio has a significant influence, which is simply another instance where we see sequence-of-returns risk.

This sensitivity to sequence-of-returns risk increases sharply as the NAV of the underlying portfolio declines. The SSC quality model allows for the quantification of these effects, which may be used by investors to gauge fair values for the preferred shares based on their own assessments of these prospects for the underlying security. AER

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