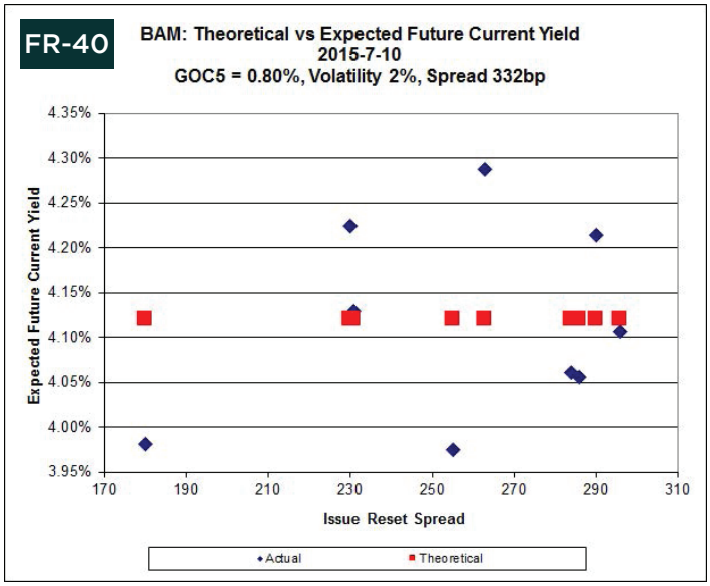
Table FR-8: Risk-Adjusted Option Exercise Probabilities for MFC FixedResets (Implied Volatility 11%, Spread 271bp)			
Ticker	Description	Price	N(d2) (Risk Adjusted Exercise Probability)
MFC.PR.F	4.20%+141	16.96	0.0%
MFC.PR.L	3.90%+216	20.21	4.0%
MFC.PR.K	3.80%+222	22.02	6.0%
MFC.PR.N	3.80%+230	20.61	7.7%
MFC.PR.M	3.90%+236	21.50	10.1%
MFC.PR.J	4.00%+261	23.70	23.2%
MFC.PR.I	4.40%+286	25.08	39.7%
MFC.PR.G	4.40%+290	25.05	42.3%
MFC.PR.H	4.60%+313	25.55	57.2%



The Bozo Spread

Assuming that Current Yield is a vital element of FixedReset valuation, it is reasonable to infer that retail – which is to say, the market – judges the relative valuation between FixedResets and PerpetualDiscounts by comparing their Current Yields: something only a bozo would do (this is the "Bozo Spread Hypothesis"). Hence, Charts FR-41, FR-42 and FR-43 show the historical evolution of:

- Current Yield FixedResets less actual yield FixedResets (the FixedReset Computation Spread)
- Current Yield PerpetualDiscounts less Current Yield FixedResets (the Bozo Spread)
- Actual yield PerpetualDiscounts less Current Yield PerpetualDiscounts (the PerpetualDiscount Computation Spread – an almost negligible figure)

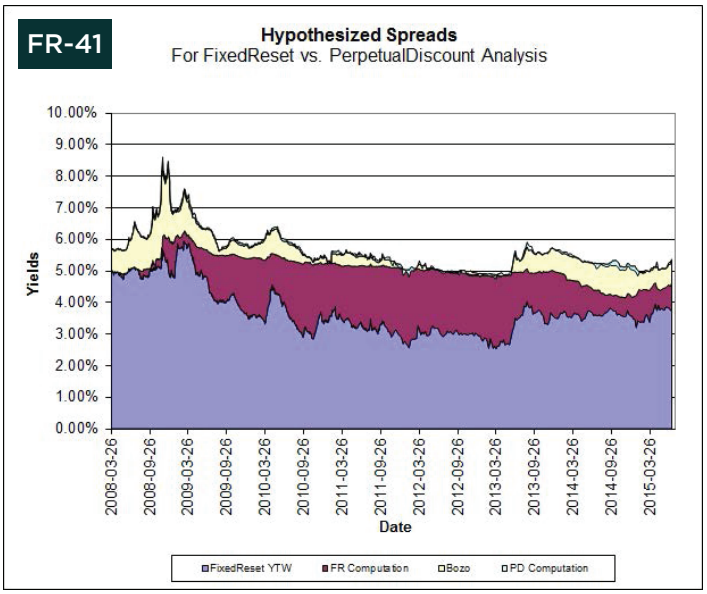
The Bozo Spread spiked during the 2013 downdraft, an effect which is also captured by Break Even Rate Shock, discussed above.

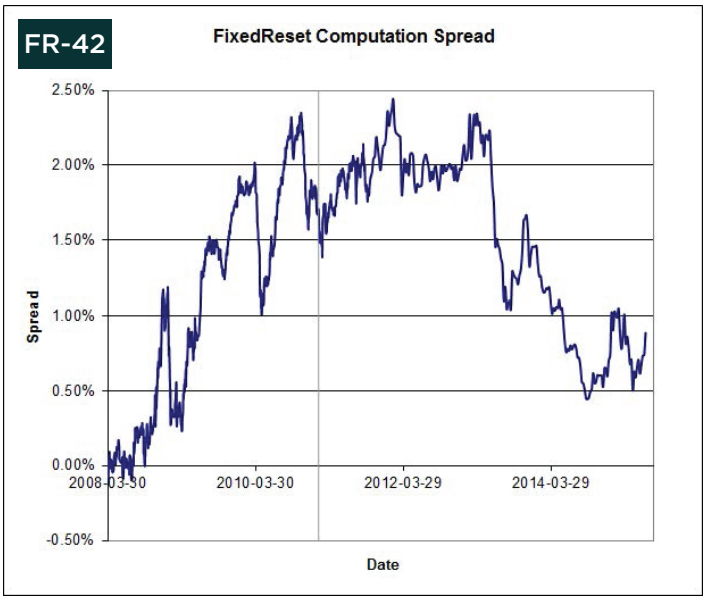
Table FR-9: Index Yield Comparisons		
HIMIPref Index	Current Yield (mean) 2015-7-10	Yield-to-Worst (median) 2015-7-10
PerpetualDiscount	5.43%	5.38%
FixedReset	4.68%	3.81%
DeemedRetractible	5.03%	3.18%

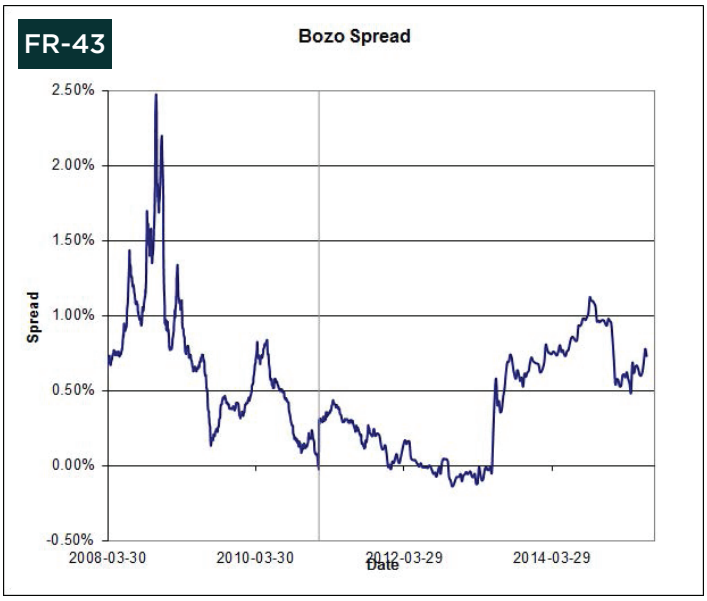
Table FR-9 compares the Current Yield and YTW for these three indices – Current Yields largely lost their comparability since early summer of 2013 as the tapering fears caused investors to reevaluate their holdings.

It will be very interesting to see what happens to the Bozo Spread as the FixedReset Computation Spread declines further – as it eventually must, when higher coupon issues are called and replaced with lower coupon issues; or when dividends are reset at the lower rate that is responsible for the lower YTW. The more recent new issues (see Table FR-5) imply a minimum Bozo Spread of 100bp; somewhat higher and consistent with the finding of a heightened BERS, but still below the currently observed figure. Eventually it will be possible to return permanently to the use of Break Even Rate Shock[97] as a gauge of value investors place on the reduced interest rate risk of FixedResets.

[97] See the June, 2009, edition of this newsletter







An Experimental Data Series

The recent violent reaction of FixedReset prices to changes in the GOC-5 yield has led me to speculate regarding the spreads that may be recognized by the marketplace. FixedResets have an inherent contradiction in their structure, as their yields are based on a short-term government bond, while their credit risk and liquidity are comparable to that of a perpetual instrument. The recent market action has led me to speculate that we are observing the same mechanism of price adjustments that was observed with Floating Rate issues during the Credit Crunch: at the same time as their dividend rate was decreasing (in tandem with Canada Prime) their required yield was increasing (in tandem with PerpetualDiscounts).[98]

To explore this idea further, I have prepared a data series which compares:

- Five Year Canada Yield
- FixedReset subindex Median Yield To Worst (interest-equivalent)
- PerpetualDiscount subindex Median Yield To Worst (interest equivalent)

[98] See my article *Some Preferreds To Float Your Boat*, on-line at http://www.himivest.com/media/moneysaver_0903.pdf

These series are graphed in Charts FR-44, FR-45 and FR-46. In addition, a chart has been prepared for the proportion of the total PerpetualDiscount Interest Equivalent (PDIE) less the GOC-5 yield that is accounted for by the FixedReset spread; i.e., the second item on the bulletted list divided by the sum of the second and third items. This relationship is plotted in Chart FR-47.

It is clearly observable that the spread between FixedResets and Five Year Canadas has been increasing lately; it is not so apparent that all the losses of the past month have merely offset the 20bp decline in five-year Canada yields. In fact, we may observe from Chart FR-48 that FixedReset yields have remained relatively constant since mid-2013, when they rose above 3.50%; since then declines in prices have served simply to offset the declines in the GOC-5 yield. This makes no sense; but the Canadian preferred share market often makes little sense!

However, this observation of a more-or-less constant yield suggests that investors as a group are targeting the Expected Future Current Yield (EFCY) of the index as a whole for issues that are deemed to be perpetual, in accordance with the equation:

EFCY = 25 * (GOC5 + IRS) / P

Where:
GOC5 = Government of Canada five year yield
IRS = Issue Reset Spread
P = Price

Which may be rearranged to:

P = 25 * (GOC5 + IRS) / EFCY
Which in turn implies that the derivative of Price with respect to GOC5 is

dP / dGOC5 = 25 / EFCY

which may be cast in terms akin to the fundamental fixed income equation as:

dP/P = [25 / (EFCY * P)] dGOC5

or

$\Delta P / P = (25 / P) * (1 / EFCY) * \Delta GOC5$

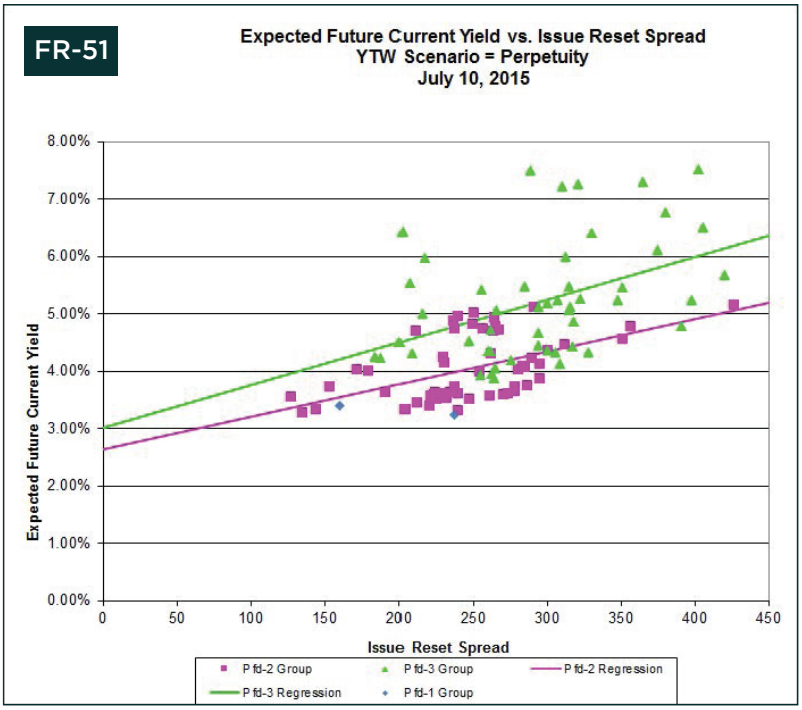
This hypothesis is startling for a number of reasons: first, this means that the Effective Modified Duration of these issues will be negative and second, this means that the price of these perpetual instruments is determined solely by reference to the GOC5 yield, without reference to the yield of other perpetual instruments.

It is not startling that lower-priced instruments are leveraged to changes in GOC5 by a factor of 25/P, but it is useful to bear in mind and comforting that the conclusion has been derived independently.

And finally, the factor (1 / EFCY) is expected since it is well known that the modified duration of a perpetual annuity is equal to the inverse of its yield.

This hypothesis is given some credence by Chart FR-51, which plots EFCY against the IRS for all FixedReset issues considered to be perpetual. The correlation of the Pfd-2 group is 25%, compared to 15% in the regression of YTW vs. IRS displayed in Chart FR-30; the correlation of the Pfd-3 group is 17%, roughly equal to the YTW regression.

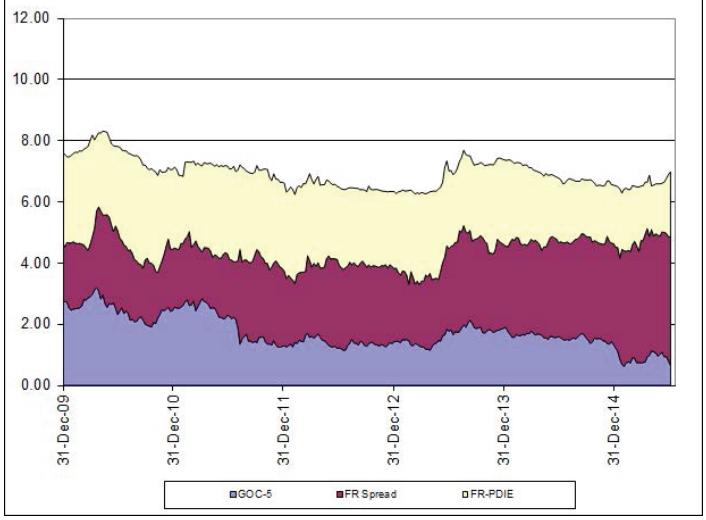
FR-51



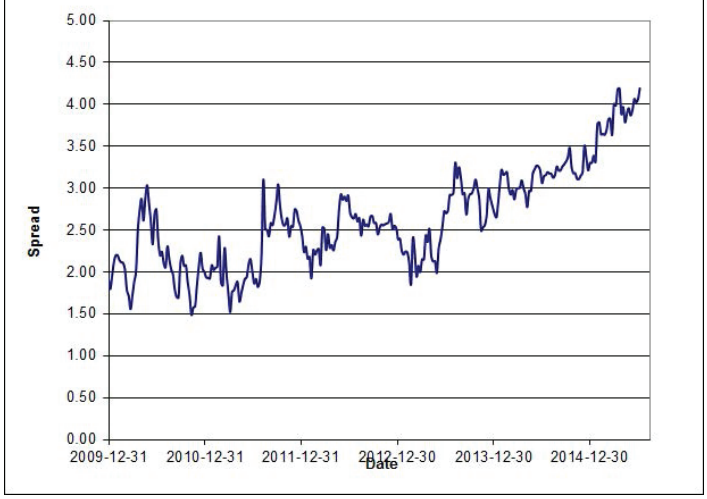
We may say that the interest-equivalent spread of FixedResets over five-year Canada's is near an all-time high; the yield pick-up available from swapping FixedResets for Straights is near an all time low; and the proportion of the GOC-5/PDIE spread earned by FixedResets is near an all-time high. What's not to like?

Just how much predictive or descriptive power this data series has remains to be seen; a few years of data and at least one full interest rate cycle will be required before any firm conclusions may be draw. But it's interesting to speculate!

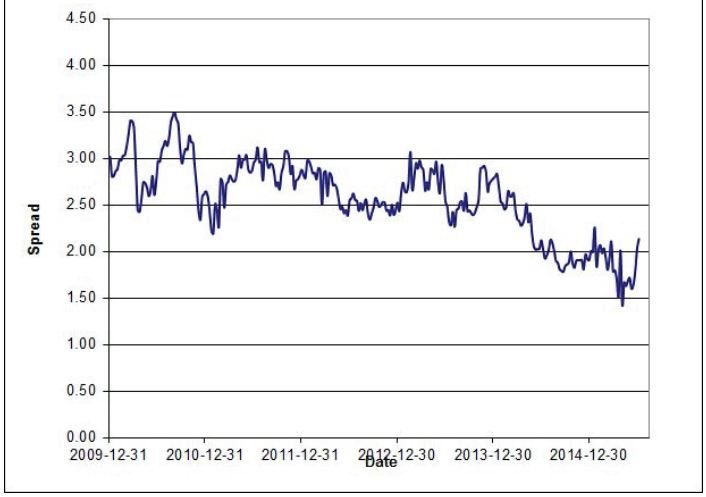
FR-44 Components of PerpetualDiscount Interest Equivalent Yield



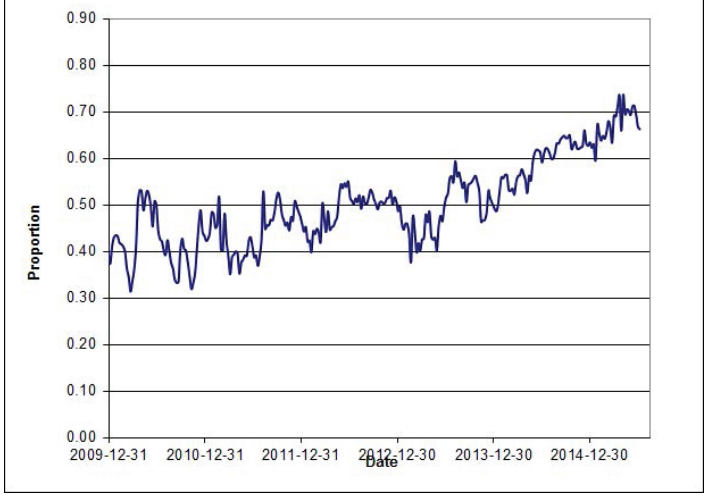
FR-45 FR-5YrCanada Spread

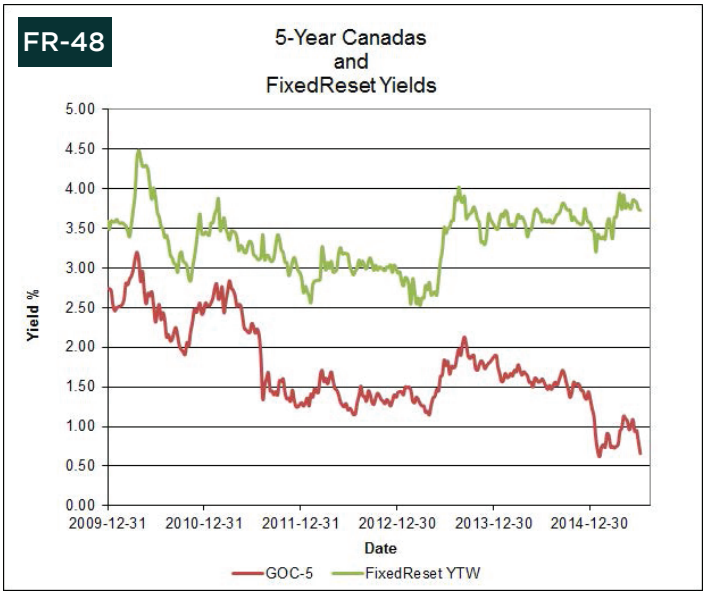


FR-46 PDIE-FR Spread



FR-47 FR Proportion





Upcoming Exchange Dates

Table FR-10 shows the issues which have Exchange Dates in the next six months.

To date, it appears that redemption proceeds are in fact being reinvested in the preferred market, with new issuance sufficient to soak up all the redemption money.

Table FR-10: Upcoming Fixed Reset Exchange Dates

Ticker	Current Dividend	Issue Reset Spread	Next Exchange Date	Next Ex-Dividend Date	Yield-to-Worst	Bid Price	Ask Price	Yield-to-Worst Scenario
EMA.PR.A	1.10	184	8/15/15	2015-7-29	4.30%	15.55	15.95	To be extended; reset rate unknown.[99]
NPI.PR.A	1.3125	280	9/30/15	2015-9-18	5.66%	16.05	16.25	To Perpetuity
ALA.PR.A	1.25	266	10/30/15	2015-9-12	5.10%	17.10	17.58	To Perpetuity
FFH.PR.G	1.25	256	10/30/15	2015-9-12	5.47%	15.50	15.60	To Perpetuity
GWO.PR.N	0.9125	130	12/31/15	2015-8-29	7.08%	16.70	16.88	To Deemed Maturity
CPX.PR.A	1.15	217	12/31/15	2015-9-15	6.15%	12.43	13.01	To Perpetuity
FFH.PR.I	1.25	285	12/31/15	2015-9-12	5.58%	16.69	16.70	To Perpetuity

FloatingResets

A FloatingReset forms a Strong Pair[100] with a FixedReset and interconversion between the two elements is available on a given date in the future unless they are called – these Exchange Dates are part of the prospectus. We may assume that the prices of the two instruments will be identical on the Exchange Date (or, to be precise, the last day of notification for the Exchange Date) because if the prices are not equal then arbitrage is possible – which is not to say it always happens, as discussed in the May, 2012, edition of this newsletter.

Given that the future prices will be equal and the dividend rate for the FixedReset element of the pair until that date is known, we may therefore calculate the required average dividend rate for the FloatingReset required in order for the expected future return of each element to be equal until the next Exchange Date – this is done with the Pairs Equivalency Calculator;[101] calculation of the breakeven dividend rate allows calculation of the breakeven three-month bill rate. If one's forecast of the actual average rate is less than this figure, then the FixedReset element may be considered to be the cheaper element of the pair; if one is forecasting a higher average rate, then this forecast necessarily implies that the FloatingReset element is the cheaper of the pair. For instance, consider the pair TRP.PR.A/TRP.PR.F, bid at 18.80 and 18.41 respectively. Since each element of the pair may be converted to the other on the next exchange date in 2019, the entire difference in price may be ascribed to a difference in dividends received; i.e., given that TRP.PR.F is $0.39 more expensive, it should receive $0.39 more in dividends over the next five years if these issues are to be considered equal valued (this ignores liquidity and other considerations, which I do not feel apply in this case; a number of adjustments have been disregarded in this brief explanation).

[99] Emera Incorporated, *Emera Incorporated Announces Conversion Privilege of Cumulative 5-Year Rate Reset First Preferred Shares, Series A*, Press Release, 2015-7-3, available on-line at http://investors.emera.com/file.aspx?IID=4072693&FID=30182188 (accessed 2015-7-12)

[100] See my article *Preferred Pairs* on-line at http://www.himivest.com/media/moneysaver_0710.pdf

[101] Available on-line via http://www.prefblog.com/?p=11288 (MS-Excel Spreadsheet)