Risk, Reward and DeemedRetractibles

I didn't really want to write about this topic again, for the third time running, but it is important to the analysis of the Canadian preferred share market now and will probably remain important for the next ten years – so it's best if we get things started on a solid footing.

Additionally, it became plain to me from the response to the last edition[1] that not only did readers want to hear more about this big change in the markets, but that I was insufficiently clear in parts of my discussion for many – so I will commence this appendix with a recapitulation of OSFI's advisory and draft advisory released February 4, 2011 and how this affects analysis.

International Rule Changes

On January 13, 2011, the Basel Committee on Banking Supervision issued a press release[2] finalizing rules for inclusion of financial instruments in Tier 1 Capital, making the rules much more restrictive than they had been at the time of the original Sydney Press Release[3] in 1998. The reason for the new restrictions was stated as: *During the financial crisis a number of distressed banks were rescued by the public sector injecting funds in the form of common equity and other forms of Tier 1 capital. While this had the effect of supporting depositors it also meant that Tier 2 capital instruments (mainly subordinated debt), and in some cases Tier 1 instruments, did not absorb losses incurred by certain large internationally-active banks that would have failed had the public sector not provided support.*

These new rules provide that all non-common Tier 1 and Tier 2 instruments must have a provision that requires write-off or conversion into common stock upon the occurrence of the trigger event. The trigger event is the earlier of a decision "by the relevant authority" that without such a conversion the firm will become non-viable, or the decision to make a public sector injection of capital, without which the firm would have become non-viable, again "as determined by the relevant authority".

Thus, subject to enactment of similar provisions by the Office of the Superintendent of Financial Institutions (OSFI), a phase-out of these instruments' contribution to bank Tier 1 Capital was scheduled[4] to commence 2013-1-1 over a ten year period.

OSFI's Implementation of the New Standards

On February 4, 2011, OSFI released two documents outlining the Canadian implementation of the international standards.

The first introduced a new acronym: NVCC, which has the same meaning as the title of the Draft Advisory: *Non-Viability Contingent Capital*.[5] This draft advisory, if adopted, will set the new requirements for Canadian recognition of Tier 1 Capital equal to those outlined in the new international standards described above.

The second, an Advisory titled *Treatment of non-qualifying capital instruments*,[6] described the gradual phase-out of non-qualifying instruments over a ten year period commencing 2013-1-1 as envisaged internationally. The critical detail was: *Capital instruments issued before January 1, 2013 that meet the Basel III criteria for regulatory capital, except that they do not meet the NVCC requirements, will be considered non-qualifying capital instruments and subject to the phase-out described in this Advisory.*

To the surprise of many, there were no exceptions: currently extant preferred shares, currently included in Tier 1 capital, do not meet the NVCC requirement, will not be grandfathered and therefore are subject to the ten year phase-out.

---

1 Always feel free to eMail me at jiHymas@himivest.com

2 Bank for International Settlements, *Basel Committee issues final elements of the reforms to raise the quality of regulatory capital*, Press Release, 2011-1-13, available on-line at http://www.bis.org/press/p110113.pdf (accessed 2011-3-12)

3 Bank for International Settlements, *Instruments eligible for inclusion in Tier 1 Capital*, Press Release, 1998-10-27, available on-line at http://www.bis.org/press/p981027.htm (accessed 2011-3-12)

4 Basel Committee on Banking Supervision, *Basel III: A global regulatory framework for more resilient banks and banking systems*, ISBN web: 92-9197-859-0, available on-line at http://www.bis.org/publ/bcbs189.pdf (accessed 2011-3-12)

5 Office of the Superintendent of Financial Institutions, *Non-Viability Contingent Capital*, Draft Advisory, February 2011, available on-line at http://www.osfi-bsif.gc.ca/app/DocRepository/1/eng/guidelines/capital/advisories/nvcc_dft_e.pdf (accessed 2011-3-11)

6 Office of the Superintendent of Financial Institutions, *Treatment of non-qualifying capital instruments*, Advisory, February 2011, available on-line at http://www.osfi-bsif.gc.ca/app/DocRepository/1/eng/guidelines/capital/advisories/nqcibIII_e.pdf (accessed 2011-3-12)

Criticism of the Standards and OSFI's Implementation

The most serious affront given by the new rules is the breathtaking degree of authority it gives to the Superintendent of Financial Institutions, a single bureaucrat appointed by the Ministry of Finance (who, historically[7], is appointed to the board of directors of a major financial institution after leaving the civil service[8]). While the draft advisory *provides an overview of the criteria the Superintendent will consider prior to triggering the conversion of NVCC*, it is also careful to emphasize that the Superintendent has full discretion and, what's more, there is no appeal of the decisions.

It would be greatly preferable to allow failed institutions to go bankrupt, preserving the ability of creditors to squabble over the carcass in public under court supervision; my opinion is shared by Thomas M. Hoenig, President of the Federal Reserve Bank of Kansas City:[9] *In a major crisis, there will always be an overwhelming impulse to avoid putting such institutions through receivership. Always, it is feared that public confidence will be shattered, creditors or depositors at other institutions will panic, and that there are too many connections that will bring down other institutions. In addition, important services will be lost and the international activities will be too complex to resolve. Many of these fears are likely overstated. I maintain the view that the long-term consequences are much more severe if we fail to take action to end this cycle of repeated crises.*

There is also the question of the timing of the trigger, anticipated to be at the point of non-viability at which point the common shareholders have, at least in theory, lost everything. It has long been argued[10] that in order to avert a crisis (rather than cleaning one up after the fact), the trigger for conversion of contingent capital should be set high. This is the path taken by the Swiss,[11] who have good reason to wish to avert crises rather than punish creditors afterwards. There are also indications that the Bank of England favours a "high trigger", discussed by its Deputy Governor Paul Tucker:[12] *In practice, we are going to have to be open-minded, but also principled, about quasi-equity instruments contributing to [Greater Loss Absorbing Capacity] for [Systemically Important Financial Institutions] (sorry about the acronyms!). Currently, the leading candidate is so-called Contingent Capital bonds (CoCos), which convert from debt into equity in certain states of the world. It seems to me that to serve the purpose of [Greater Loss Absorbing Capacity] for large and complex firms, such instruments would need to convert when a firm was still fundamentally sound, which is to say that they should have high capital triggers. For a large and complex firm, a low capital trigger would be dangerous, as funders and counterparties would be likely to flee before reaching the point at which the firm would be recapitalised through the CoCos' conversion.*

Moreover, high-trigger CoCos would presumably get converted not infrequently which, in terms of reducing myopia in capital markets, would have the merit of reminding holders and issuers about risks in banking.

By adopting a "low-trigger" for Contingent Capital conversion, Canada risks becoming more vulnerable than necessary to a financial crisis, as well as losing step with the rest of the world in terms of crisis-avoidance. OSFI has not yet produced a defense of its egregious position; nor do I expect it to.

Finally, the damage that OSFI has done to confidence in Canada's capital markets by not grandfathering extant Tier 1 issues should not be underestimated. Given that most of the issues affected were likely to have been redeemed anyway over the ten-year phase-out period (due to maturity of subordinated debt and Innovative Tier 1 Capital; and of calls on some of the latter class and of preferred shares, particularly the FixedResets) the amount of money potentially saved by taxpayers in the unlikely event of a bail-out amounts to a few paltry billion – and it will be noted that the US Treasury has made a profit on the TARP infusions to financial institutions.estimated[13] to be $25.2-billion.

Naturally, the damage done to the US by the crisis greatly exceeds even this rather impressive figure – but this should only emphasize that forestalling a crisis (with a high trigger) is highly preferable to achieving vengeance afterwards (with a low trigger).

A side effect of OSFI's insistence on consistency with the accord and vengeance is a great deal of damage done to investor confidence As I have noted,[14] prices of Innovative Tier 1 Capital went on a six-month roller coaster ride when speculation started that issues might not be grandfathered, with some issues experiencing losses of over 18%. Some investors, nauseated by the turbulence, will now reject investment in hybrid instruments, due to an unwillingness to subject themselves to OSFI's whims again. OSFI's sanctimony regarding the legitimate expectations of long-term investors is belied by its insouciance towards the effects of its decisions on capital markets.

---

7 Nicholas D. Le Pan was OSFI Superintendent from 2001–06, and is now a director of CIBC (see http://people.forbes.com/profile/nicholas-d-le-pan/15028). John Palmer was OSFI Superintendent from 1994–2001, and is now a director of Manulife Financial (see http://www.manulife.com/public/about/index/0,,lang=en&navId=610010,00.html#palmer). Michael Mackenzie was OSFI Superintendent from 1987–94 and later was a member of the board of ING Canada (see http://www.actuaries.ca/asoc/Bio/MackenzieM_e.htm).

8 An important consideration when considering that capital rules can also be changed on a whim, as described by Tara Perkins, *Manulife's choice: Safety first*, Globe & Mail, 2009-8-6, available on-line at http://www.theglobeandmail.com/globe-investor/manulifes-choice-safety-first/article1243844/ (accessed 2011-3-12)

9 Thomas M. Hoenig, *Financial Reform: Post Crisis?*, Speech, 2011-2-23, available on-line at http://www.kansascityfed.org/publicat/speeches/hoenig-DC-Women-Housing-Finance-2-23-11.pdf (accessed 2011-3-12)

10 e.g., Standard & Poor's, *Standard & Poor's Response To The Basel Committee's Proposals on Bank Capital And Liquidity*, 2010-4-15, available on-line at http://www.standardandpoors.com/products-services/articles/en/us/?assetID=1245210157817 (accessed 2011-2-23)

11 Switzerland State Secretariat for International Financial Matters SIF, *Final Report of the Commission of Experts for limiting the economic risks posed by large companies*, 2010-9-30, available on-line via http://www.sif.admin.ch/dokumentation/00514/00519/00592/index.html?lang=en (accessed 2011-2-25)

12 Paul Tucker, *Discussion of Lord Turner's lecture, "Reforming finance – are we being radical enough?"*, Speech, 2011-2-18, available on-line at http://www.bis.org/review/r110308c.pdf (accessed 2011-3-12)

13 Yalman Onaran and Alexis Leondis, *Bank Bailout Returns 8.2% Beating Treasury Yields*, Bloomberg, 2010-10-20, available on-line at http://www.bloomberg.com/news/2010-10-20/bailout-of-wall-street-returns-8-2-profit-to-taxpayers-beating-treasuries.html (accessed 2011-3-12)

14 See http://www.prefblog.com/?p=13992

Which Issuers are Affected by the Announcements?

The Advisory *Treatment of non-qualifying capital instruments* states explicitly that it is not meant to apply to insurers and insurance holding companies, but I believe that the extension of the principles therein is a foregone conclusion. To its credit, OSFI has sought to harmonize the regulation of these sectors with that of banks[15]. for some time (to the extent possible) and I will be very surprised if a major divergence in regulation occurs with respect to preferred shares.

Thus, I argued in the February edition of this newsletter that the range of applicability of the Advisory could be presented as:

- **Banks:** A certainty. This has already been made explicit
- **Insurers:** Implementation is expected, but not yet certain
- **Insurance Holding Companies:** These are holding companies who conduct all their insurance business through regulated subsidiaries, and which are also regulated themselves. Implementation is expected but not yet certain; and should be considered slightly less certain than for Insurers.

It is also possible that conglomerates that include an insurance company will also be brought under the regulatory regime as a result of pressure from the US Treasury[16]. Julie Dickson, Superintendent of Financial Institutions, has indicated the possibility in a speech[17]. The regulators have been concentrating on reforming the banks, but I suspect they will turn their attention to insurers now that banking re-regulation has been largely agreed.

However, after some hesitation, I did not include these conglomerates in the pool, as explained in the February edition. Examples of such issuers are PWF (which holds a majority stake in GWO) and POW (holder of a majority stake in PWF). Another example is FFH, which is organized in much the same way as the Power group, but has no public issues from a regulated company; however, FFH is not investment grade and therefore will rarely be analyzed, or even mentioned, in this newsletter.

Thus, the affected issuers (of investment grade) are considered to be:

- **Banks:** BMO, BNS, CM, HSB, NA, RY and TD.
- **Insurers:** IAG
- **Insurance Holding Companies:** ELF, GWO, SLF and MFC

For convenience the latter two groups are typically referred to as Insurers, but it should always be kept firmly in mind that this nomenclature is imprecise and could, conceivably, lead to grievous error if indulged in indiscriminately.

Which Issues are Affected?

All Perpetual issues of the affected issuers are considered to be affected by the Advisory. It will be noted that the term "Perpetual" includes the FixedReset class of preferred shares[18] – just because interest-rate risk is reduced doesn't mean that credit risk can be ignored![19]

However, since the overwhelming majority of FixedResets were considered overwhelmingly likely to be called anyway due to economic considerations, there is very little practical effect on these issues. Additionally, since PerpetualPremium issues were similarly expected to be called, the effect is only small; it is, however, significant because, as we saw in 2008–09, a PerpetualPremium can become a PerpetualDiscount with disconcerting rapidity!

The greatest effect is on PerpetualDiscount issues, which were not expected to be called based on economic considerations.

How are the Issues Affected?

All affected issues are currently analyzed as if the call schedule specified in their prospectuses included a maturity date of 2022-1-31. This date was chosen since it marks the end of the transition period, after which no issues without a NVCC clause in their prospectuses will be includable in Tier 1 Capital.

The reason for this is based on the fact that issuers are willing to pay extra yield (e.g., the Seniority Spread) for instruments that are includable in Tier 1 Capital since, in comparison to common equity, it is a cheap source of such capital. However, once these issues can no longer be included, they are, from the perspective of the issuer's capital structure, simply another form of senior debt (and therefore should not include any premium over long term senior bonds).

Thus, derecognition of these instruments changes their status, in the eyes of the issuer, from cheap equity to expensive debt and, being expensive, the company is likely to redeem the issues and call them at par.

[15] Sun Life Financial alluded to this in *Management's Discussion and Analysis in the Annual Report for 2010*, available on-line at http://cdn.sunlife.com/static/global/files/Year%20end%20reports/pa_e_Q410_2010_MDA.pdf (accessed 2011-3-13): *In addition, it is expected that OSFI may align some insurance regulations with those that emerge for banks under the proposed new Basel Capital Accord.*

[16] See http://www.treasury.gov/press-center/press-releases/Documents/capital-statement_090309.pdf

[17] See http://www.osfi-bsif.gc.ca/app/DocRepository/1/eng/speeches/JDickson_09_Life_e.pdf

[18] See the taxonomy at http://www.prefletter.com/taxonomy.pdf

[19] See the August, 2009, edition of this newsletter.

What are the Risks to the Analysis?

Assumption Risk

The two most obvious risks are the most difficult to analyze: first, that OSFI will not, in fact, extend the scope of the advisories to insurers, and secondly that the rules could change again in some unpredictable manner between now and the deemed maturity date of 2022-1-31. However, with these two risks we simply have to accept that OSFI has inserted yet another layer of uncertainty into the investment process; all we can do is lobby our Members of Parliament and let them know, in no uncertain terms, that as long term investors we need long term stability in the rules governing the marketplace and that OSFI, a unit of the Ministry of Finance, has failed miserably in its duty to encourage market discipline to have a positive effect on financial stability.

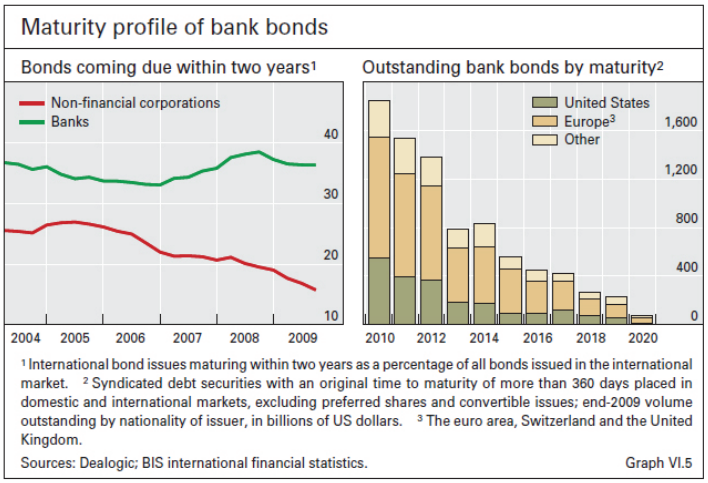
Yield Risk

Another risk is that the issuers elect not to call these issues even if they lose their status as Tier 1 Capital. It will be recalled from the section above that the analysis is predicated on the assumption that in the absence of Tier 1 status, the Straight Perpetuals will become expensive debt rather than cheap equity. But what if long term corporate yields rise substantially?

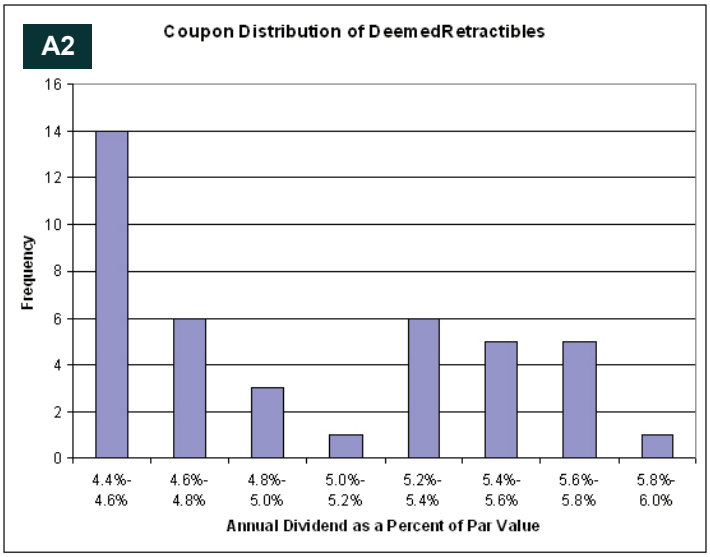
Royal Bank had a statutory tax rate of 30.3% in 2010[20] and its lowest coupon Straight Perpetual is RY.PR.F, paying $1.1125 annually, or 4.45% of par value. Therefore, this issue pays the equivalent of a long-term bond paying 6.38%.

It is difficult to assess the valuation of such a bond since, as illustrated in Chart A1, banks currently issue a relatively small amount of long-term debt[21] (which contributed to the liquidity squeeze during the Panic of 2007). This is likely to change to some degree due to the imposition of the Net Stable Funding Ratio which has, as an explicit objective,[22] *"To promote more medium and long-term funding of the assets and activities of banking organizations"*.

A1



A2



It is difficult to say just where such debt should be trading – since significant long-term senior bank debt issuance will be a major change to debt markets – but it will be observed[23] that long-term corporate debt in Canada currently yields about 5.6%. Thus, a relatively small change in long-term corporate debt yields could well result in RY.PR.F being competitive with potential long-term senior debt issues by Royal Bank.

Chart A2 shows the distribution of dividend rates on DeemedRetractibles – about one-third of these issues become competitive in this manner with long term senior bonds when these bond yields are in the range 6.3%–6.6%. Setting aside the period of the Credit Crisis, long corporates traded above this range as recently as 2003, so this risk cannot be disregarded.

[20] See http://www.rbc.com/investorrelations/pdf/ar_2010_e.pdf (accessed 2011-3-12)

[21] Bank for International Settlements, *80th Annual Report, Chapter VI. The future of the financial sector*, available on-line at http://www.bis.org/publ/arpdf/ar2010e6.pdf#page=6 (accessed 2011-3-12)

[22] Basel Committee on Banking Supervision, *International framework for liquidity risk measurement, standards and monitoring*, Consultative Document, December 2009, available on-line at http://www.bis.org/publ/bcbs165.pdf?frames=0 (accessed 2011-3-12)

[23] See http://www.canadianbondindices.com/ltbi.asp (accessed 2011-3-12)

Credit Risk

Closely related to the above concept of market-wide yield risk is the potential for issuer-specific credit risk. Any one – or many! – of the investment-grade issuers included in the DeemedRetractible index could run into difficulties and find that, although its competitors can issue long-term bonds at relatively favourable rates, it is unable to do so.

Consider, for instance, the Straight Perpetual issues of George Weston, Ltd;, listed in Table A1. These issues are rated Pfd-3 by DBRS (considered to be investment grade for a preferred share by many, although not by me) but are trading at a Current Yields in the range of 5.75%. Clearly, a multi-notch credit downgrade of any of the issuers could result in it electing to leave its Perpetual issues outstanding, notwithstanding their ineligibility for Tier 1 status.

Table A1: Current Yields of George Weston Issues

Ticker	Dividend	Quote 2011-3-11	Current Yield at bid
WN.PR.A	1.45	24.86-95	5.83%
WN.PR.C	1.30	22.62-73	5.75%
WN.PR.D	1.30	22.61-70	5.75%
WN.PR.E	1.1875	20.69-75	5.74%

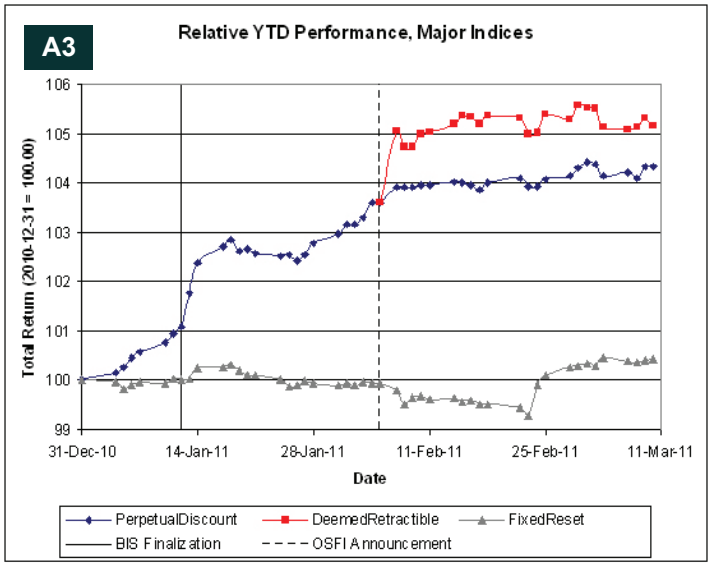
Idiotic Shareholders Risk

In the NVCC Draft Advisory, OSFI explicitly exhorted: *[Deposit Taking Institutions] are encouraged to consider amending the terms of existing non-common instruments that do not comply with the NVCC requirement to thereby achieve compliance, or to otherwise take actions, including exchange offers, which would mitigate the effects of such non-compliance.*

It is not entirely beyond the bounds of possibility that the issuers could obtain a shareholder vote in favour of the insertion of a NVCC clause into the terms of a currently non-complying issue, perhaps by offering a small one-time payment or a derisory increment to the annual dividend. Stranger things have happened, and preferred shareholders often vote in favour of changes that are contrary to their best interests. However, in the absence of any examples to date, the probability and severity of this risk is simply not quantifiable.

Recent Market Behaviour and Analysis

As shown in Chart A3, PerpetualDiscounts have done very well in the year to date and those issues considered to be affected by the announcements have done even better.



It is dangerous to speculate on the rationale underlying market behaviour over the short term, but it seems safe in this instance to ascribe the outperformance of PerpetualDiscount issues (and DeemedRetractibles, subsequent to OSFI's announcement and the segregation of the affected Straight Perpetuals into that index) to the OSFI releases and market expectations of calls at par in the medium term.

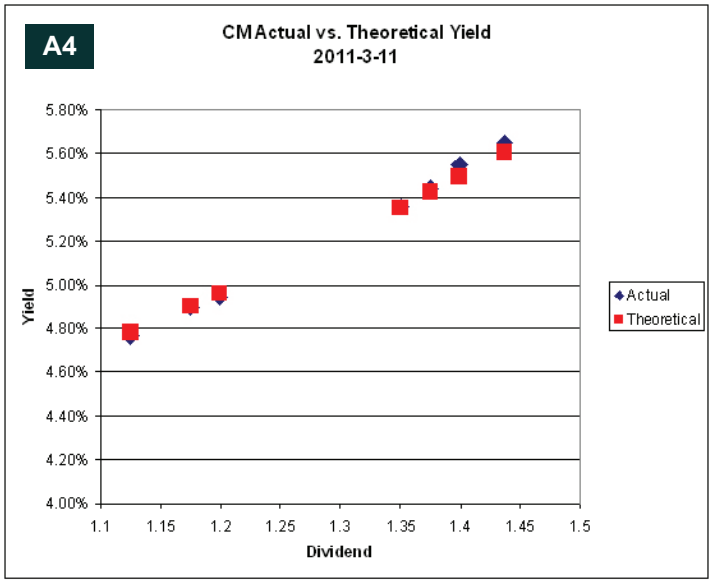
One reason for confidence in the diagnosis is the relative prices of Straight Perpetuals of the same issuer. As discussed in the January, 2010, edition of this newsletter, the relative pricing of such issues allows the computation of Implied Volatility, which allows for the analysis of the market price of each instrument into its component parts of Perpetual Annuity and Embedded Call.

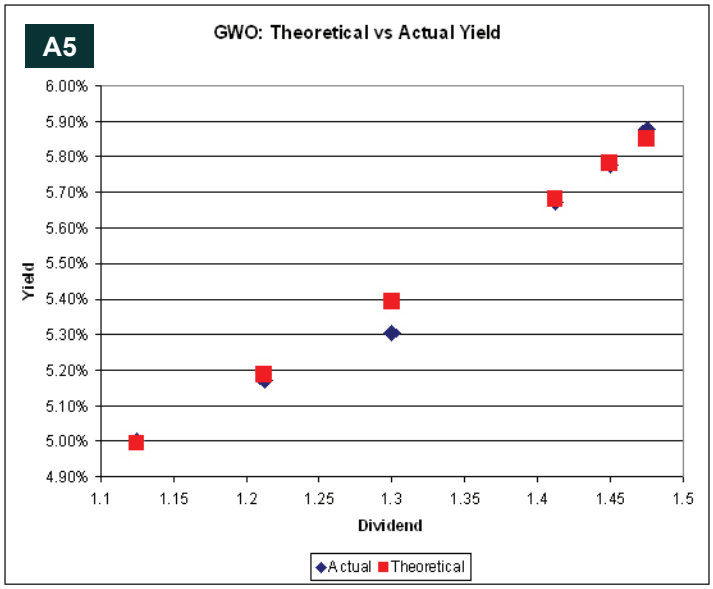
As frequent readers of this newletter will know, there are three issuers with issues outstanding that cover a wide range of annual dividends, allowing for greater confidence in the fitting of the data to theoretical relations – fortuitously, these three issuers come from groups expected to have reacted differently to the OSFI pronouncements. Table A2 shows the results of the calculations, with the goodness of fit illustrated in Charts A4–A6.

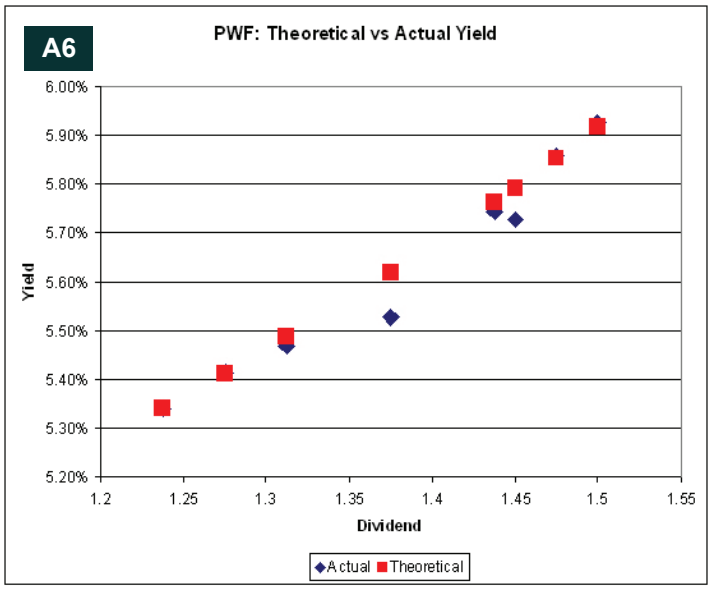
Table A2: Implied Volatility Calculations for 2011-3-11

Issuer	Group	Pure Yield	Implied Volatility	Implied Volatility 2011-2-11
CM	Bank	0.01%	41%	40%
GWO	Insurer	0.40%	45%	35%
PWF	Unaffected	3.70%	30%	22%
Calculations were performed with a constant term to call of three years. The calculator is available on-line at http://www.prefblog.com/xls/PDTheoreticalPricing.xls				

As discussed last month, the figures for GWO and CM can only be described as economically ridiculous: the calculation may be viewed as a reductio ad absurdum argument that shows that a central assumption of the Black-Scholes option theory is being violated: the expected change in market price is not random, but has a very definite directionality, in this case towards the $25 redemption price.



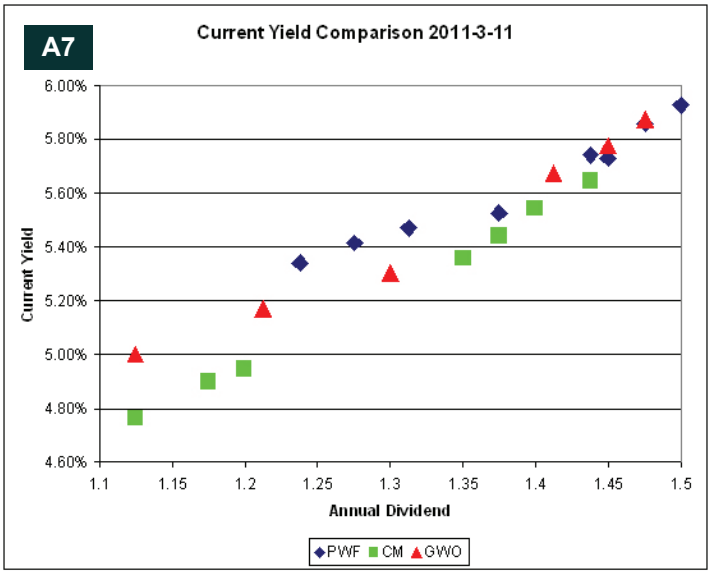


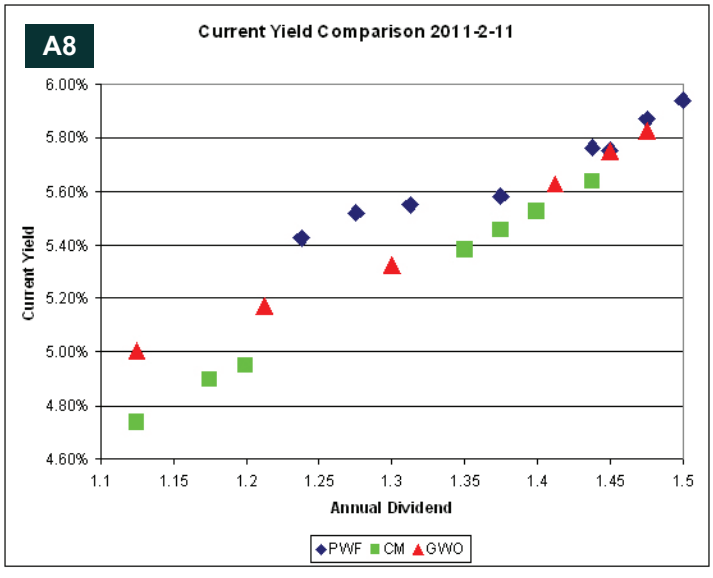


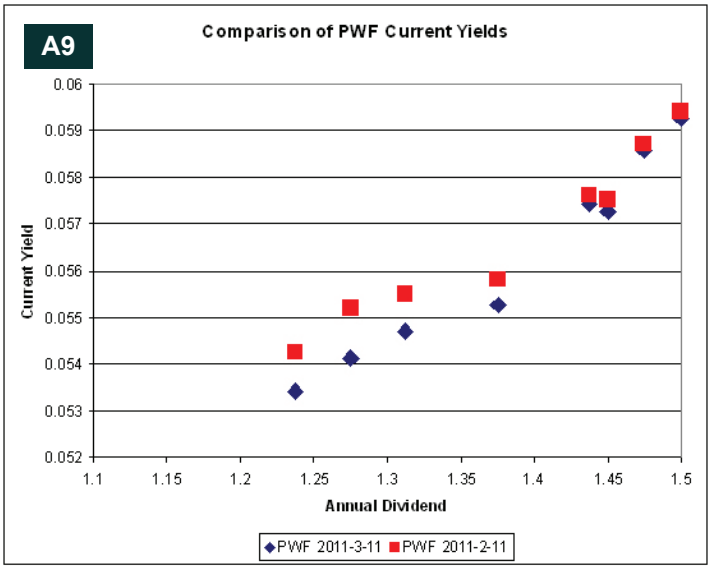
However, it is much more difficult to explain the behaviour of PWF, which I have deemed to be unaffected by OSFI's pronouncements. The Implied Volatility of 30%, while not completely ridiculous, is large enough to strain credulity in the underlying theory.

It would appear that there are a number of investors who, naively or otherwise, believe that each of these three issuers' preferred shares will be affected by the same economic and regulatory forces going forward: i.e. they believe either that none of the issues will be subject to a "forced" redemption, or that all of them will be. The latter is much more likely since the Implied Volatilities are too high for an economic rationale: confronted with these Implied Volatilities with no reason to believe in a forced redemption, a rational investor would purchase the near-par issues, flattening the curve and reducing Implied Volatility.

I believe that the rationale is naïve, and that investors are purchasing the lower-coupon PWF issues simply as a form of arbitrage, comparing the Current Yields on the basis that they are directly comparable. Charts A7–A9 show that the PWF issues have approached the curve defined by the other two issuers over the past month.
.



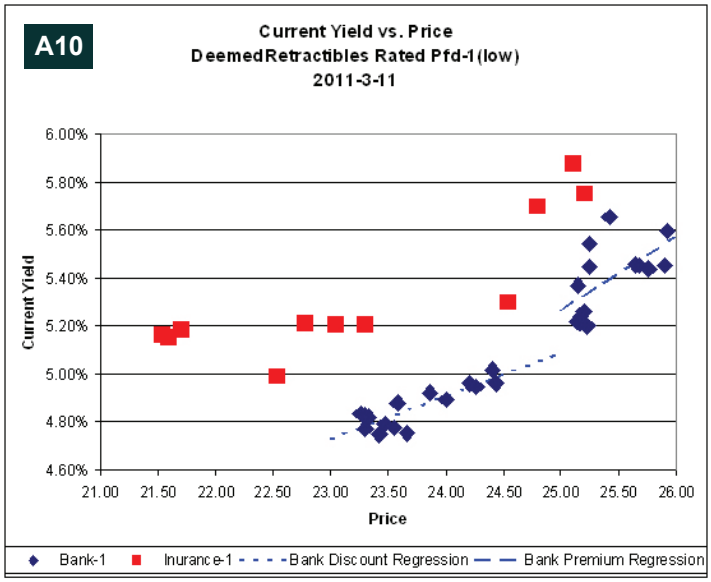


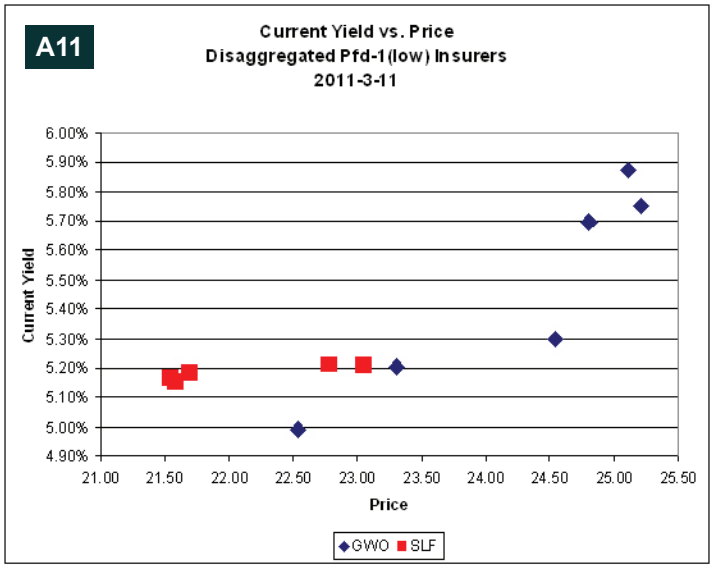


Banks and Insurers

Given the rather puzzling behaviour of PWF described in the section above, it is something of a relief to discover that the market is treating banks and insurers differently: this is well illustrated in Chart A10 – note that using price rather than annual dividend as the x-axis allows the difference between CM and GWO to be more apparent.

A hasty glance at Chart A10 might lead one to believe that the differences between these groups is quite large, given the virtually flat slope of the relationship for the lower coupon insurers, but disaggregating the insurer data to show SLF and GWO (the only two series in the group) reveals a much stranger relationship, as shown in Chart A11.





While the relationship between price and current yield for GWO is very steep – giving rise to the enormous value derived for Implied Volatility – there is essentially no effect on SLF issues. While it is expected that the curve will flatten significantly for the lower coupon / lower price issues, there should certainly be more effect than there is.

Comparing these results with those for PWF, one is tempted to speculate that the market believes that PWF is subject to the OSFI pronouncements and that SLF is not – but this is nonsensical because, whatever one might think of relative credit quality, SLF is structurally identical to GWO (an insurance holding company) and it is PWF that is the odd man out of the group.

What Drives Differences Between Issues?

As noted earlier, the Implied Volatility calculations serve mainly as a reductio ad absurdum argument, that has the main effect of showing that the underlying assumption of the Black-Scholes theory – that future prices will vary randomly, to a degree determined by volatility, but with no directionality – is not consistent with the observed data.

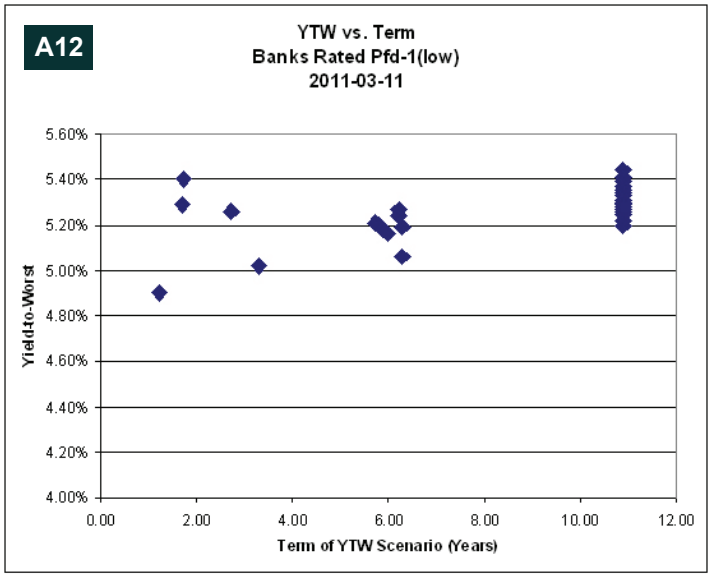
Instead, issues are expected to move towards their call price at a rate determined by their call date, which is presumed to be not later than 2022-1-31; in other words, we should be looking at Yield-to-Worst with this directionality in mind, not at Current Yield.

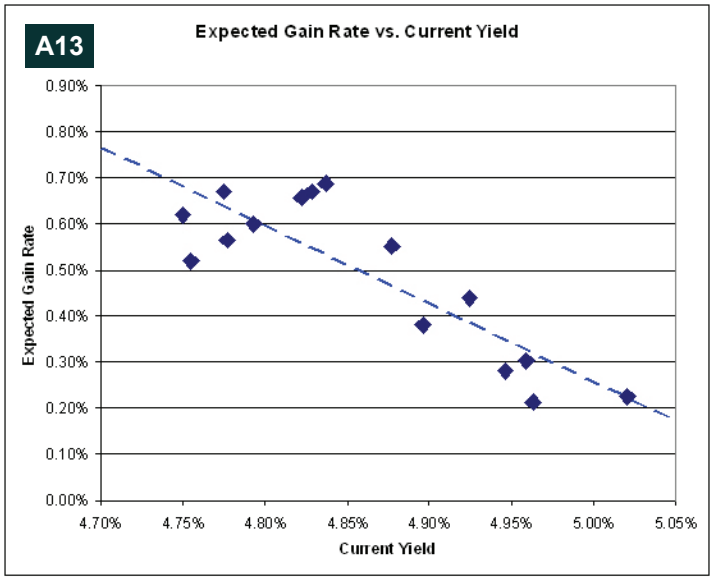
Unfortunately, as shown in Chart A12, there does not appear to be a strong relationship between YTW and term, even for a relatively homogeneous group comprised of all Pfd-1(low) bank issues; but, as the plotted regression lines in Chart A10 might have hinted to the alert reader, it appears that we can borrow some of our prior analysis of FixedResets to develop a pricing model for these issues.

By comparing the current price with par, we can determine the expected capital gain or loss on redemption for every issue; additionally, we can estimate the date of this redemption by determining the maturity implied by the Yield-to-Worst scenario (naturally, for all discount issues, this will be the last possible date, the deemed maturity of 2022-1-31).

Taking these two data together, we can derive an Expected Gain Rate, being the expected Capital Gain (Loss) per year, similarly to what was derived for FixedResets in the August, 2010 edition of this newletter.

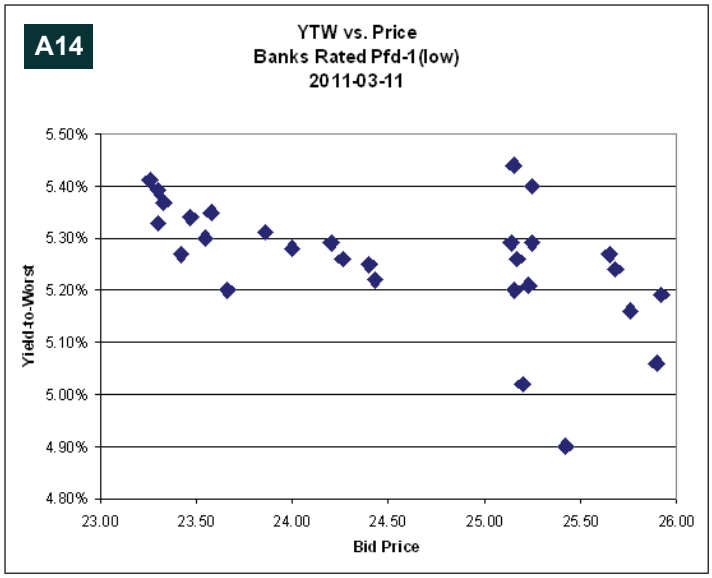
To our immense gratification (well, to mine, anyway), plotting the Expected Gain Rate against Current Yield shows a high degree of correlation: about 72%. The plot is shown in Chart A13.





Given that the slope of the regression line in Chart A13 is -1.69 (that is, an increase of 1% in Current Yield is associated with a decline of 1.69% in the Expected Gain Rate, it is clear that lower coupons (and therefore, lower prices) should be associated with higher Yields-to-Worst and this is indeed the case as shown in Chart A14. As also might be expected, this simple relationship breaks down when the price is above par: these issues are expected to be called prior to the uniform date of 2022-1-31, and therefore the Expected Gain Rate (which will be negative) will be as much influenced by the idiosyncrasies of each issue's call schedule as much as the price alone.

But why should a lower price be associated with a higher Yield-to-Worst? One might normally expect there to be a relationship between YTW and term, but term is not a particularly influential factor, as shown in Chart A12; tax effects are another possibility but, given that there is deferred taxation on the Capital Gain component of yield, one would expect lower prices to be associated with lower pre-tax yields, but precisely the opposite is the case as shown in Chart A14. The third possibility is risk.



Assumption Risk

As discussed earlier, a major risk to the analysis is Assumption Risk – the risk that all this analysis is a load of hooey and Hymas has been talking through his hat again.[24]

We cannot quantify such an imponderable from first principles, but we can attempt to derive relative amounts for each issue; if we're lucky, then this risk will related in some reasonable way to other observed variables and we might – possibly – be able to say something like 'the market is pricing in a risk of 10% that forced redemption will not, in fact, occur'.

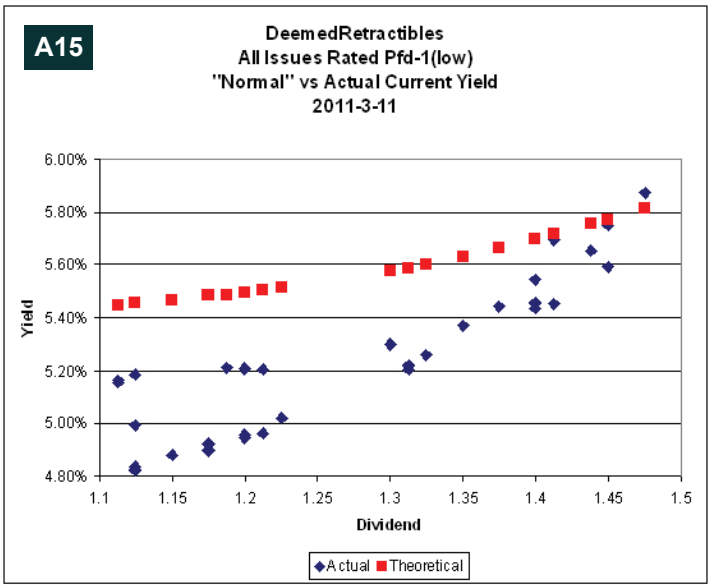
As has been shown above, the market has gained quite considerably over the past two months and this has been shown to be impossible to explain using standard, directionless economic models. On the other hand, there is considerable reason to believe that the recent gains are due to OSFI's pronouncements. But what will happen if OSFI announces they were just kidding and the market returns to the status quo ante?

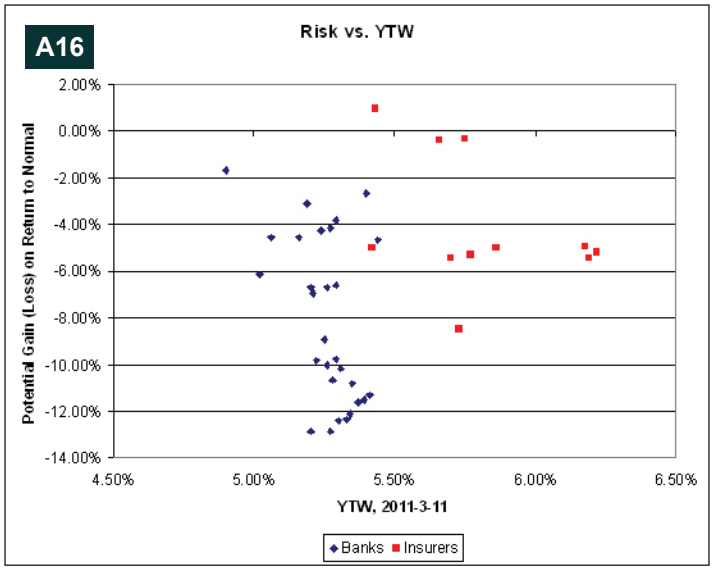
We could define risk as being equal to the gain that has been experienced, but this involves the selection of a base day and is intellectually unsatisfying since it does not account for changes in liquidity in the interim. Since Implied Volatility has been shown to provide a good pricing model – even under the current strained conditions, it provides good fits to the data, albeit with incredible parameterization – it seems reasonable to define "normal" based on this theory.

Accordingly, I decided more or less arbitrarily, that "normal" could be defined with a Pure Yield of 5.35%, an Implied Volatility of 14% and a term of three years – these are the values that account for the relative pricing of PWF issues on 2010-9-24, reported in Table 5 of the October edition. A plot of the normal curve compared to the actual situation on March 11 is shown in Chart A15: it is clear that the lower-coupon, lower-price issues are highly exposed to this risk – their Current Yields will change dramatically if the market returns to my definition of "normal".

Unfortunately, Chart A16 shows that there is no simple relationship between risk defined as the change in price given a return to normal and expected return, as defined by YTW using the assumption of forced redemption.

[24] Quite common. Just ask my girlfriend.





However, Chart A17 shows that there is a definite relationship between risk and bid price and that this method also distinguishes between insurers and banks; using this insight in an attempt to reconcile the data with the relationship shown on Chart A13 results in a plot of Risk vs. Current Yield shown on Chart A18, which has a stunning correlation of over 99%. In fact, the correlation is so good, that there is the possibility that a tautology has crept into this analysis. Will this happen whenever relative pricing on both the "normal" and spot day fits an Implied Volatility curve? Even when the data set contains more than one issuer? And if it does, does it matter?

The regression line is shown and plots the curve:

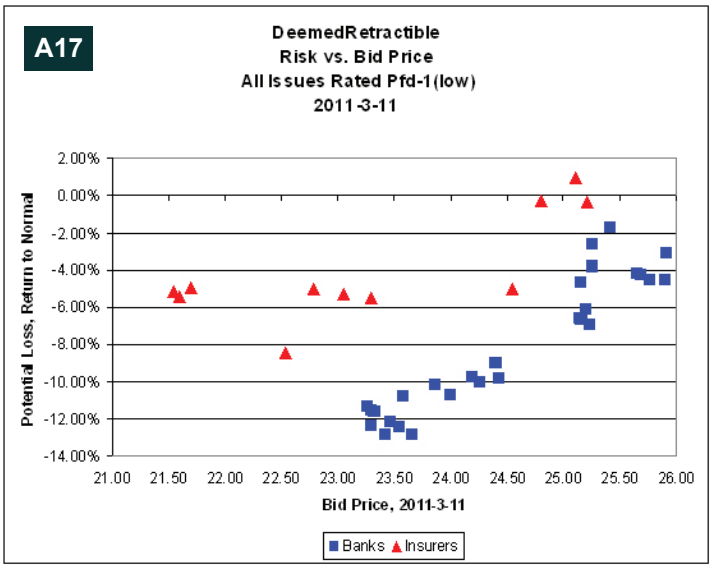
Risk = -69% + 11.98 * Current Yield (1)

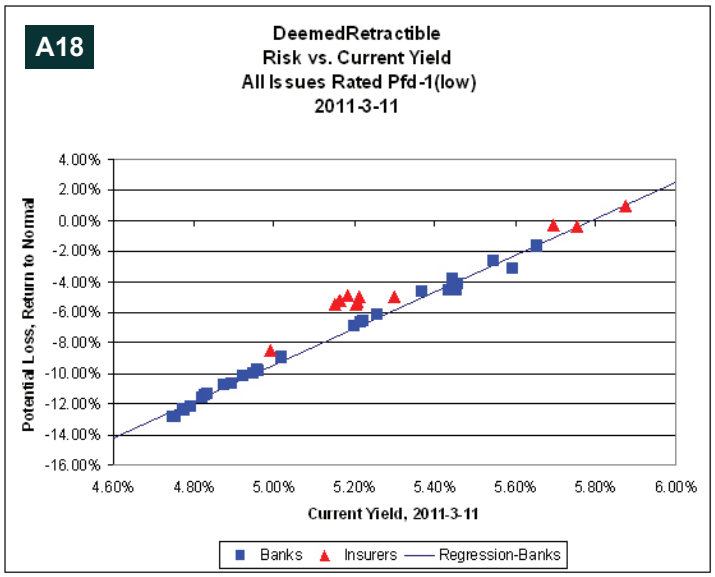
It will be noted that the regression line for Chart A13 has the form:

EGR = 8.7% – 1.69 * Current Yield (2)

So we can show that the Expected Gain Rate can be expressed in terms of Risk. However, determination of the meaning of this quantification is something that requires more pondering than I have yet been able to accomplish!

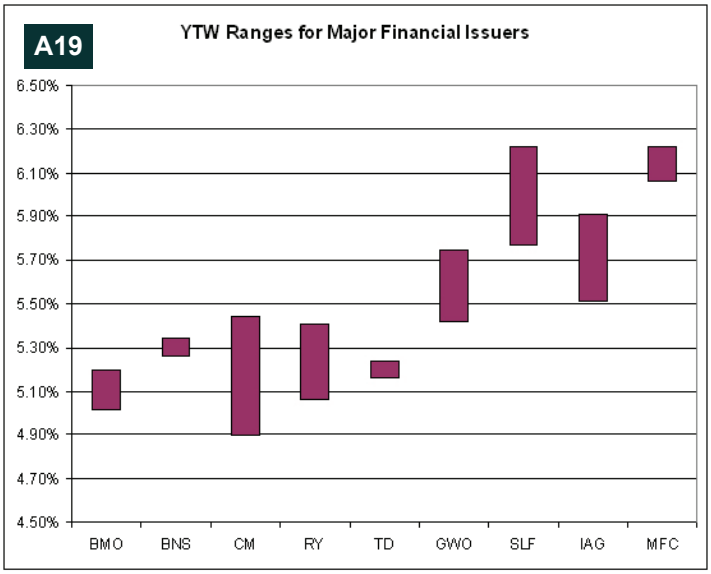
It will also be noted that the slope of the regression plotted in Chart A18 has the wrong sign: increasing risk is associated with decreasing return (as defined by Current Yield). However, it must be remembered that Chart A13 shows that a decrease in Current Yield is more than offset by an increase in the Expected Gain Rate





Credit Risk

Chart A19 shows the distribution of YTW according to issuer; this again clearly differentiates between insurers and banks; while the breadth of the range of YTWs may be explained by the Assumption Risk defined above.



Investment Conclusions

OSFI's recent pronouncements have resulted in a jump in prices of issues thought to be affected by these policies and those considered likely followups, but the market appears to be pricing in a significant fear that the policies will be reversed or otherwise have no effect on the market.

The DeemedRetractibles issues by insurers do not appear to have reacted fully to these pronouncements.

There appear to be strong relationships in the relative pricing of DeemedRetractibles, which become obvious when plotted using Current Yield as a valuation metric. Where there are strong relationships, there can be a pricing model; where there is a pricing model there will be outliers; and where there are outliers, there can be trading opportunities.

Some issues considered highly unlikely to be affected by the pronouncements have become more expensive in sympathy with the jump, a market shift that makes no apparent sense. These issues should be avoided.

DeemedRetractibles

Ticker	Dividend Rate	Next Ex-Date	Bid	Ask	YTW	Call Date
BMO.PR.H	1.325	04/28/11	25.20	25.28	5.02%	06/24/14
BMO.PR.J	1.125	04/28/11	23.66	23.75	5.20%	01/31/22
BMO.PR.K	1.3125	04/28/11	25.16	25.34	5.20%	12/25/16
BMO.PR.L	1.45	04/28/11	25.92	26.10	5.19%	06/24/17
BNS.PR.J	1.3125	04/01/11	25.17	25.21	5.26%	11/28/13
BNS.PR.K	1.20	04/01/11	24.20	24.40	5.29%	01/31/22
BNS.PR.L	1.125	04/01/11	23.55	23.60	5.30%	01/31/22
BNS.PR.M	1.125	04/01/11	23.47	23.58	5.34%	01/31/22
BNS.PR.N	1.3125	04/01/11	25.14	25.19	5.29%	01/31/22
BNS.PR.O	1.40	04/01/11	25.65	25.80	5.27%	05/26/17
CM.PR.D	1.4375	03/24/11	25.42	25.51	4.90%	05/30/12
CM.PR.E	1.40	03/24/11	25.25	25.34	5.40%	11/30/12
CM.PR.G	1.35	03/24/11	25.15	25.20	5.44%	01/31/22
CM.PR.H	1.20	03/24/11	24.26	24.37	5.26%	01/31/22
CM.PR.I	1.175	03/24/11	24.00	24.14	5.28%	01/31/22
CM.PR.J	1.125	03/24/11	23.47	23.64	5.34%	01/31/22
CM.PR.P	1.375	03/24/11	25.25	25.38	5.29%	11/28/12
ELF.PR.F	1.325	03/30/11	22.40	22.87	6.81%	01/31/22
ELF.PR.G	1.1875	03/30/11	20.56	20.74	7.28%	01/31/22
GWO.PR.F	1.475	06/01/11	25.11	25.23	5.43%	10/30/12
GWO.PR.G	1.30	06/01/11	24.54	24.65	5.42%	01/31/22
GWO.PR.H	1.2125	06/01/11	23.30	23.40	5.70%	01/31/22
GWO.PR.I	1.125	06/01/11	22.54	22.65	5.73%	01/31/22
GWO.PR.L	1.4125	06/01/11	24.80	25.05	5.75%	01/31/22
GWO.PR.M	1.45	06/01/11	25.21	25.35	5.66%	04/30/19
HSB.PR.C	1.275	06/11/11	24.34	24.64	5.42%	01/31/22
HSB.PR.D	1.25	06/11/11	23.85	24.00	5.57%	01/31/22
IAG.PR.A	1.15	05/24/11	22.40	22.50	5.91%	01/31/22
IAG.PR.E	1.50	05/24/11	25.36	25.45	5.76%	01/30/19
IAG.PR.F	1.475	05/24/11	25.61	25.64	5.51%	04/30/19
MFC.PR.B	1.1625	05/18/11	22.25	22.35	6.06%	01/31/22
MFC.PR.C	1.125	05/18/11	21.67	21.70	6.22%	01/31/22
NA.PR.K	1.4625	04/06/11	25.40	25.60	4.90%	06/14/12
NA.PR.L	1.2125	04/06/11	24.37	24.44	5.23%	01/31/22
NA.PR.M	1.50	04/06/11	26.25	26.41	5.17%	06/14/17
RY.PR.A	1.1125	04/24/11	23.42	23.47	5.27%	01/31/22
RY.PR.B	1.175	04/24/11	23.86	23.90	5.31%	01/31/22
RY.PR.C	1.15	04/24/11	23.58	23.74	5.35%	01/31/22
RY.PR.D	1.125	04/24/11	23.26	23.41	5.41%	01/31/22
RY.PR.E	1.125	04/24/11	23.30	23.40	5.39%	01/31/22
RY.PR.F	1.1125	04/24/11	23.30	23.35	5.33%	01/31/22
RY.PR.G	1.125	04/24/11	23.33	23.40	5.37%	01/31/22
RY.PR.H	1.4125	04/24/11	25.90	26.04	5.06%	06/23/17
RY.PR.W	1.225	04/24/11	24.40	24.50	5.25%	01/31/22
SLF.PR.A	1.1875	05/28/11	22.78	22.98	5.86%	01/31/22
SLF.PR.B	1.20	05/28/11	23.05	23.12	5.77%	01/31/22
SLF.PR.C	1.1125	05/28/11	21.54	21.61	6.22%	01/31/22
SLF.PR.D	1.1125	05/28/11	21.59	21.62	6.19%	01/31/22
SLF.PR.E	1.125	05/28/11	21.70	21.88	6.18%	01/31/22
TD.PR.O	1.2125	04/06/11	24.43	24.51	5.22%	01/31/22
TD.PR.P	1.3125	04/06/11	25.23	25.25	5.21%	12/01/16
TD.PR.Q	1.40	04/06/11	25.76	25.80	5.16%	03/02/17
TD.PR.R	1.40	04/06/11	25.68	25.74	5.24%	05/30/17