SOA Research Paper on the IFRS Discussion Paper

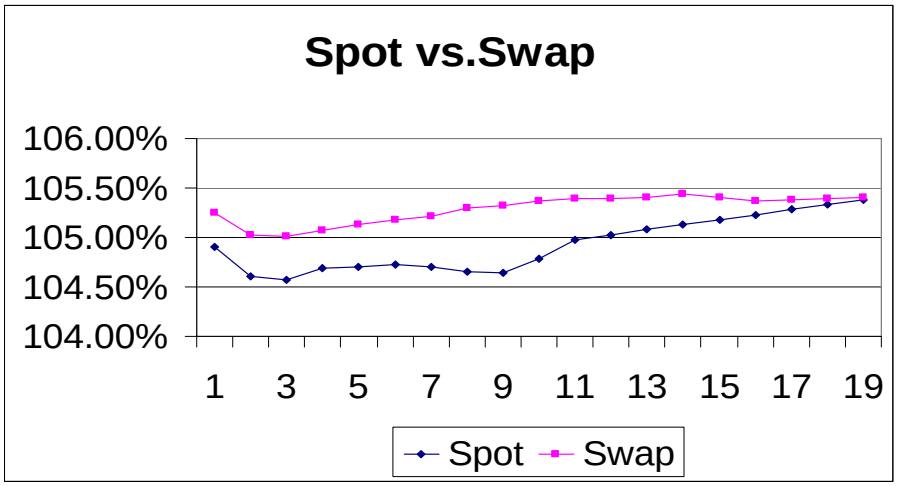
Observations, Questions and Answers

Through July 25, 2008

1. Income taxes
    a. How are income taxes treated?
        i. The report reflects income and balance sheet results on a pre-tax basis, as tax is treated separately in IFRS in accordance with International Accounting Standard 12 (IAS 12), *Income Taxes*. See section 1.2.2 of the report for more description of the reasoning used.
        ii. Tax here refers to U.S. federal income tax.
        iii. The IASB Discussion Paper describes "cash flows resulting from the contractual rights and contractual obligations created by insurance contracts" as what is being measured.
        iv. Also refer to responses to questions 4a) and 5a) of this document.

2. Asset-related risks
    a. Does the study assume all financial risks are hedgeable and no corresponding capital is required for these risks?
        i. This study focuses on insurance-related risks. The estimated effect of asset-related financial risks is assumed to be reflected elsewhere under IFRS.
        ii. Financial risks are partially reflected through the use of risk free discount rates to present value the cash flows. By following this approach, much of the expected investment related risks are removed from the determination of the liability.
    b. Asset / liability mismatch and asset default risks are important for several of the products reviewed. Why does the study not address these issues?
        i. The proposed IFRS liability does not explicitly reflect either asset/liability mismatch or asset default risks. Based on current discussions at the IAA, these risks would not be reflected in the economic capital used in the cost of capital risk margin method for inclusion in liabilities.
        ii. A mismatch of assets and liabilities is not directly related to the insurance risk being measured. Under the Discussion Paper proposal, the liability is intended to be independent of asset risks except when there is a direct link between them, such as for variable (unit-linked) contracts
        iii. Paragraph F3(d) of the Appendices to the Discussion Paper discusses these risks further.

3. Interest rates
    a. The appendix is not clear as to whether a yield curve was used to derive the discount rates.
        i. The 12/31/2006 US Treasury yield curve was used as the basis for the discount rates developed in this study.
    b. Provide a more complete description of the discount rates and spot versus swap curves shown in the appendix.
        i. The discount rate vector shown is based on the 12/31/2006 yield curve (actually those of December 29, the last trading day of the year). The vector is the product of the one year discount rates that would provide the yield to maturity for a zero coupon U.S. Treasury security or swap rate to that point. The first factor is determined as one half year to reflect the assumed mid-year nature of the cash flows.
        ii. The graph shows the one year forward U.S. Treasury security and swap rates in the form of 1+i.



        iii. The spot rates were derived from constant yield to maturity data available from U.S. Treasury bonds (derived from reported yields in the electronic version of the *Wall Street Journal*) with semi-annual coupons. In effect, these are zero-coupon yield equivalent.
        iv. The swap rates were determined by using information from Bloomberg as of 12/31/2006.
    c. Discount rates for participating whole life. Why were spot rates used in the baseline analysis, rather than the companies' expected yield rates?
        i. The baseline results used spot rates to be consistent with the discount rates used for other products. This approach was illustrated as it is consistent with other approaches; however, note that the Discussion Paper proposal seems to indicate that discounting consistent with actual and expected investment income may be more appropriate, which may be closer to that given under Variation 1.

ii. The effect of using expected yield rates, that appears to be referred to in the Discussion Paper, are shown under variation 1 in figures 3.9-2 and 3.9-3.

4. Risk margin -- capital
    a. Would income taxes impact capital in the cost of capital method used to deriving the risk margin for liabilities?
        i. In the determination of risk margins, income taxes were ignored, since the amount of capital required to be held is related to the underlying risks and not the after tax impact on income.
    b. Is 100% Risk Based Capital (RBC) the right level of capital, as that is the level at which a company would be taken over by a regulator?
        i. 100% U.S. RBC was used for illustrative purposes only for all products except for variable annuities. Its selection was a practical expedient, using readily available information, rather than taking a more rigorous economic capital approach that would have, in most cases, taken a significantly longer time to develop. There are differing views as to what the level of capital should or could be (e.g., economic, regulatory, and treatment of hedgeable risks). That is the reason why alternative results using 300% RBC are also shown for each product category in chapter 3. See section 5.2.1 of the report for further discussion.
        ii. The IAA and CEIOPS have suggested that it may be appropriate to use economic capital as the basis for calculating the cost of capital results. However, they have recognized that some smaller companies might instead use risk-related regulatory capital as a surrogate measure. This may lead to a relatively simple alternative approach where each risk component is assumed to be proportional to an exposure metric.
        iii. There are currently differing views as to what constitutes the most appropriate capital for this purpose. We suggest further research be conducted in this area.
    c. For the economic capital used in the risk margin calculation for variable annuities (VA), why wasn't the capital based on the type of guarantee involved rather than using a proxy?
        i. The cost of capital approach applied to VAs in the report was the difference between economic capital determined at a 90 CTE level and that at a 70 CTE level as a proxy for economic capital similar to a 100% RBC level. By using this derivation, the various guarantees were reflected implicitly.

5. Risk margins -- cost

a. The 12% cost seems too high (note that some have expressed the view that it is too low). What does it represent and how does it relate to the risk-free rate?
    i. The 12% is a pre-tax rate. It is gross of the risk-free rate. That is, given the 12/31/06 spot rates used of between 4.5% and 5.5%, the net cost rate would be between 6.5% and 7.5% if investment earnings on capital were to be reflected at the risk free rate. Since such investment earnings are not reflected, the modeled net cost of capital rate is 12%--the same as the gross cost of capital rate.
    ii. The choice of using a gross cost rather than a net add on to the risk free rates was judgmentally selected rather than based on a theoretical principle. Alternative results using 18% (a net cost of 18% pre-tax reduced by the applicable spot rate) are also shown for each product category in chapter 3.
    iii. There are currently differing views as to what constitutes a realistic rate for this purpose. In contrast, it has been suggested by some stakeholders that a somewhat lower rate provided here may be more appropriate. We suggest further research be conducted in this area.

6. Projection Period
    a. Would the choice of a different projection period have made a significant difference in the analysis?
        i. Given that the analysis was based on the present value at the time the contracts were issued (or time zero for the inforce projections), it was felt that results beyond the 20th year would have minimal impact on the initial liability. After the first year, the change in the risk margin should be minimally impacted as well. With that said, it is acknowledged that certain product lines might have considerable inforce in effect beyond twenty years (particularly for companies with superior persistency). The U.S. GAAP year 20 values were used, (assuming that any contracts still inforce at the end of twenty years would be terminated for their U.S. GAAP liability, which for SFAS 60 contracts includes a provision for adverse deviation).
        ii. The use of a period longer than twenty years would have increased the cost of capital risk margin somewhat as well as the liability, and therefore affected the initial profit shown, as the present value of the cost of holding capital after the twentieth year is somewhat understated. That is one of the reasons that two sets of risk margin sensitivities are given in the report.
        iii. See section 1.2.2 of the report for further description of the reasoning used.

7. General

a. Since the liability is supposed to be based on judgment, how can it be unbiased?
    i. Although judgment will likely be a factor applied in the course of the measurement of the liability, the Discussion Paper indicates that assumptions should be based, wherever practical and reliable, on an explicit, market consistent (where relevant market information is available), unbiased, probability-weighted current estimate of future cash flows.
b. Does "best estimate" refer to an optimistic view of the results for the company?
    i. No, it refers to the nature of the proposed assumption setting process that should use an unbiased, probability-weighted expected value of future cash flows. It should represent the expected (mean) value of the present value of future cash flows.
    ii. In some cases for expediency purposes, the best estimate did not include the expected cost of all options and guarantees. For example, the liabilities for the universal life insurance category do not include the expected cost of the interest rate guaranteed in the account value that would ordinarily be determined through use of a stochastic method. This was outside the scope of the resources available for this effort.
c. Why does the report only look at U.S. life, health and annuity products?
    i. The American Academy of Actuaries requested that the Society of Actuaries conduct this study, as described in the Executive Summary of the report, to provide insight into the possible effect of the current views of the IASB on representative U.S. life, health and annuity products. We encourage similar analyses to be conducted by or on behalf of insurers in other countries.
    ii. It was not intended that the report would address all types of insurance contracts, particularly property & casualty insurance products).
d. Section 2.3, *Alternative IFRS Approach*, discusses the application of a liability adequacy test when there is a loss at issue. Does the Discussion Paper indicate that the margin should be reduced to zero in this case?
    i. The Discussion Paper does not explicitly discuss the effect of a loss at issue on the Implementation A margin. The approach taken in the report is to reduce the margin as the gain at issue is reduced to zero, but not beyond zero. It was felt that if there is no risk margin to begin with (or if it emerges in subsequent years), the approach followed should be consistent with the subsequent elimination of the margin, but not allowed to go negative.

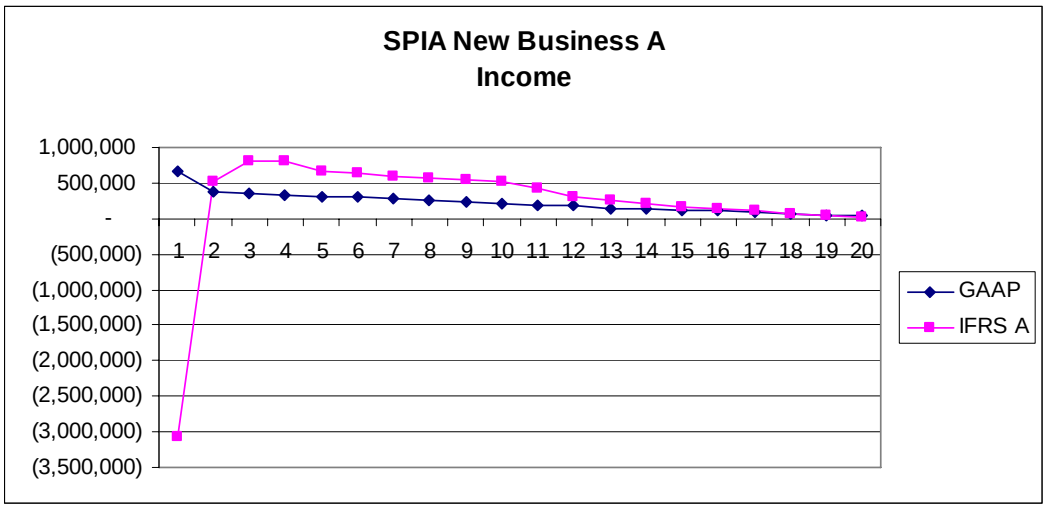
e. Will the IASB allow future accruals of revenue? For example under Universal Life or dividend paying participating life products?
    i. The IASB and the FASB are currently involved in a joint project on the recognition of revenue. At this time, the IASB has not expressed a final opinion. If they recognize insurance premium as revenue, then it will likely be accrued when received.
f. What is meant by the comment that IFRS income for in force business does not include the gain upon implementation?
    i. In showing the income pattern for an in force block of business at time zero (or at the time of an initial IFRS implementation), the effect of an IFRS transition is not reflected in the first year's income shown. By not showing a transition gain or loss when moving from US GAAP to IFRS the year by year income patterns can be viewed without this potential distortion in the initial year. The presumption is that what is done at first-time adoption of IFRS will not be recognized through income but as a one time adjustment. In the balance sheet section of the report, the liability balances are shown in their entirety.

8. Modeling
    a. The report indicates deterministic best estimates are used. Wouldn't this lead to potentially different conclusions and analysis than if unbiased, probability-weighted current estimates had been used?
        i. While the use of the 'best estimate' as used here is not exactly the same as the likely unbiased and probability weighted value, it was felt that the 'mean' of such weighted results would be similar to the best estimates used. In some cases, for expediency purposes, the best estimate did not include the expected cost of all options and guarantees, as in most cases it was thought that the expected cost of the options and guarantees not incorporated in the best estimates would be small. For example, the liabilities for the universal life insurance category do not include the expected cost of the interest rate guaranteed in the account value that would ordinarily be determined through use of a stochastic method. This was outside the scope of the resources available for this effort.
    b. Why are entity-specific expense assumptions used instead of market consistent assumptions as the Discussion Paper suggests?
        i. Given the potential variations in product assumptions and lack of a "market" standard for the expense assumptions, it was assumed that the experience of the entity was consistent with a likely market participant (or indeed, a

market-maker) and thus the assumptions are consistent with what another market participant would use.

9. Figures
    a. SPIA Implementation A in Figure 3.3-3 shows a large profit at issue, when the report mentions that a gain at issue should be eliminated. Why is this?
        i. In the original report this figure presented Implementation A results excluding the loss at issue. The gain shown in year one thus was the income after issue for that year.

        ii. A revised Figure 3.3-3 is shown below. The revised Figure 3.3-3 presents Implementation A results from the use of a liability adequacy test liability since there was a loss at issue. The revised figure shows the initial loss exceeding the gain during the rest of year one.



    b. Is Figure 3.8-3 missing one of the lines that should be indicated?
        i. The scale in the figure makes it appear that the Implementation A and IFRS Base case results are the same, which is approximately the case.
    c. Figure 3.9-3 compares IFRS variation 1 and 2 to the IFRS Base. What is variation 2?
        i. Variation 2 is similar to variation 1 except for the application of different discount rates. Variation 1 uses the expected investment earnings rate of the underlying portfolio provided by the model, whereas variation 2 uses U.S. Treasury securities based discount rates. In contrast, variation 2 is the same as the IFRS Base model, except for the exclusion of the risk margin, since dividends are of sufficient size that they are assumed to be sufficient to meet the relevant risks.