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Reinsurance Considerations in Developing an Insurance Accounting Standard

By Albert Li, Andy Ferris and Darryl Wagner

The International Accounting Standard Board (IASB) and the Financial Accounting Standards Board (FASB) continue their work to develop an accounting for insurance contracts. In 2010 the IASB released an Exposure Draft (ED) and the FASB released a Discussion Paper (DP). A formal comment period was held shortly thereafter, and a wide range of comments were made. In February 2011, the boards began re-deliberations, and have since made a number of key tentative decisions, some of which are substantially different from the original ED/DP documents.

Our article in the June 2011 edition of the Financial Reporter briefly analyzed the redetermination of the residual margin, which was one of the topics being considered by the IASB at that time. In this month's edition, we briefly present some of the key reinsurance aspects, including those in the original ED/DP and related subsequent considerations and decisions. In particular we will illustrate alternative approaches to recognizing the gains and losses associated with reinsurance, as this is one area in which their current tentative decisions are substantially different from the original ED/DP.

DRAFT GUIDANCE FOR TREATMENT OF REINSUR-**ANCE**

In the ED, the topic of reinsurance was addressed in paragraphs 43 – 46, with an example in paragraph B36. In the DP, reinsurance was addressed in paragraphs 108 – 111. Overall, the proposed treatment of reinsurance was generally consistent between the two documents.



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Mark Yu, Council Member
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Content Managers

Lisa Markus, Newsletter Editor e: lisa.markus@pacificlife.com

Michael Fruchter, Associate Editor e: mfruchter@kpmg.com

SOA Staff

Sam Phillips, Staff Editor e: sphillips@soa.org

James Miles, Staff Partner e: jmiles@soa.org

Christy Cook, Project Support Specialist e: ccook@soa.org

Julissa Sweeney, Graphic Designer e: jsweeney@soa.org

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Chairperson's Corner

By Rob Frasca

very year, at the Society of Actuaries Annual Meeting, the Financial Reporting Section Council meets to begin planning a new year of activities for the section membership. The meeting is a transitional one during which we welcome newly elected council members to the beginning of their three-year terms and say goodbye to departing members. This year's new council members are Henry Egesi, Craig Ryan and Bill Sayre. We look forward to their contributions to leading the Financial Reporting Section in the years ahead. Council members completing their terms are outgoing chair Craig Buck, treasurer Mark Davis and secretary Mike Sparrow. We thank them for their work and dedication in leading the section over the last three years. I am pleased to be filling the role of chair of the section council for the upcoming year with Matt Clark serving as vice chair and Dan Harris as secretary/treasurer.

As we look forward to 2012, several developments are emerging that will be of great interest to large numbers of the Financial Reporting Section members. The IASB and the FASB continue down paths towards the wholesale revision of insurance accounting with exposure drafts and maybe even a final standard on tap for 2012. Insurance regulators around the world are revising capital and solvency requirements with significantly revised methods on the horizon in Europe and elsewhere. Principle-based approaches to statutory reserving continue to gain momentum as controversies around U.S. statutory reserve practices seem to emerge with increasing frequency. All the while, the economic environment both in the United States and abroad presents surprises and challenges unforeseen just a few years ago.

These developments require us, as financial reporting actuaries, not only to keep up with the changes, but also to lead and to define the direction they take.

In order to assist our membership, the Financial Reporting Section Council will be organized in 2012 to focus clearly on its two main objectives: research and education.

Council member Mark Alberts will lead research efforts for the section in 2012. There are currently seven research projects underway or in proposal status that are either fully funded or partially funded through the Financial Reporting Section. Topics range from IFRS to credit risk to fair value accounting with additional topics under consideration in the pipeline as well. With the movement towards clarity of approach from the FASB and IASB in 2012, we expect the need for research into the implications of accounting change and the potential interpretations of emerging guidance to increase greatly, and we look to focus our research investments in those areas of most immediate interest to the section membership.

Rapid change will likely increase the needs of our members for education as well. Council member John Roeger will be leading our education efforts in 2012. Over the years, the Financial Reporting Section has sponsored educational programs using a number of delivery methods, from sessions at the Society of Actuaries Annual Meeting to full-day workshops on specific technical topics to one hour webcasts on emerging issues. John will be looking to organize

the section's education offerings under a single planning umbrella and bring the right balance between delivery methods and content offerings. The goal is to ensure that each section member has the opportunity to obtain education on the most important emerging issues of the day and has options in terms of timing, depth of content and delivery method. Also in 2012, work will continue on the planning and development of a new text book on insurance accounting, similar to the popular US GAAP textbook developed under the sponsorship of the section several years ago, to be published following the release of final guidance by the IASB and the FASB.

In addition to these primary objectives, the section council aims to expand its reach in 2012 in a number of ways. Geographically, the section council continues to look for ways to offer educational and research content that is of interest beyond the U.S. industry. Special focus is being placed on Canada and Asia where high and growing concentrations of our membership reside. With respect to content, we are looking to expand offerings by collaborating with other sections on issues that cross actuarial disciplines. The year-end financial reporting update webcast, co-sponsored by the Small Insurance Company Section, as well as the joint sponsorship of several of our current research projects are examples of how we can expand the issues we cover as well as the breadth of the audience we reach through interaction with other sections. Council member Mark Yu will lead our efforts to expand our reach in a special role examining our strategic direction.

Finally, as we look forward to 2012, the Section Council continues to ask section members to support our efforts. The Section Council's work is greatly enhanced through the contributions of numerous "friends of the council" who assist in many of the section council's educational and research activities. First on this list is Lisa Markus, who serves as editor of our quarterly section newsletter, The Financial Reporter. Though the list of other volunteers is too long to include here, we thank each of them for the work they provide and the invaluable assistance they are to the council. We also continue to look to the Financial Reporting Section membership to inform the section council of ideas and needs for education and research. The Council is only effective if it is addressing the needs of the membership, and without input from the members, we will never be entirely certain that those needs are being met. So please reach out to myself or to any section council member with ideas on how we can be more effective. We all would welcome the input.

2011 has been an interesting year for financial reporting actuaries characterized both by change and by delays in anticipated change. We don't know yet how 2012 will unfold, but it's a fair bet that it will offer ample surprises to keep things interesting. The Financial Reporting Section Council looks forward to serving in 2012 and in helping the Financial Reporting Section membership to navigate whatever challenges may develop.



Rob Frasca, FSA, MAAA, is executive director for Ernst & Young LLP. He can be contacted at rob. frasca@ey.com.

The ED called for the cedant to value a reinsurance contract at initial recognition as the sum of:

- The present value of the reinsurance fulfillment cash flows (the expected present value of the cedant's future net cash inflows and outflows plus the risk adjustment); and
- A residual margin.

It called for the reinsurance fulfillment cash flows to be measured using the same methodology as that for the underlying insurance contracts, but to also reflect the risk of non-performance by the reinsurer.

Note the presentation requirements of the ED/DP did not allow an insurer to offset reinsurance assets against insurance liabilities. Instead the approach is to value the insurance liability before the reinsurance, and then explicitly value the impact of the reinsurance. This is because the liability would not be extinguished and typically there would be no legal right of offset.

The requirements of the ED/DP then varied depending on whether the expected present value of the reinsurance fulfillment cash flows was positive or negative.

Scenario	Expected PV of Reinsurance Fulfillment Cash Flows	Approach Proposed by ED/DP
Reinsurance Gain	Positive (expected PV of fu- ture reinsurance cash inflows plus risk adjustment (ED) is greater than expected PV of future reinsurance cash outflows)	The cedant should recognize that full amount as a gain immediately at initial recognition of the reinsurance contract.
Reinsurance Loss	Negative (expected PV of future reinsurance cash inflows plus risk adjustment is less than expected PV of future reinsurance cash outflows)	The cedant should establish that amount as a distinct reinsurance margin, and recognize it over the coverage period (ED) or coverage and claims settlement period (DP) of the underlying insurance contract

At their meeting on May 31, 2011, the boards declared tentative decisions to change the requirements for reinsurance. Those tentative decisions are summarized below:

Scenario	New Approach Required by Tenta- tive Decisions
Reinsurance Gain	Declared on May 31 The cedant should establish that amount as a residual margin or composite margin, and recognize over the coverage period of the underlying insurance contract.
Reinsurance Loss, and the reinsurance coverage is for future events	The cedant should establish that amount as a reinsurance recoverable, representing a prepaid reinsurance premium, and recognize that cost over the coverage period of the underlying insurance contract.
Reinsurance Loss, and the reinsurance coverage is for past events	The cedant should recognize the loss immediately.

PRODUCT DESCRIPTION

To illustrate some of the reinsurance considerations in a transparent manner, we have intentionally utilized a simple term life insurance model:

- A single cell, male issue age 45 with face amount of \$50,000
- Guaranteed fixed level annual premium payments for 10 years
 - \$4.5 per \$1000 of face (\$225 annually)
 - No explicit policy fee used to determine annual premiums
- Commission of 75 percent in year 1 and 5 percent thereafter
- No cash value
- YRT Reinsurance Arrangement at 40 percent
 - Annual YRT Reinsurance Premiums per \$1000 Face
 - Expense Allowance (100 percent incremental) — 50 percent of Acquisition, Maintenance and first year Commissions



Note this is the same model that we used in our June 2011 article to illustrate the residual margin redetermination concepts.

SELECTED KEY ASSUMPTIONS AND MODELING APPROACH

In this article, we have elected to show results in the single (composite) margin format preferred by the FASB, rather the dual margin format preferred by the IASB. Furthermore, all of our analysis is from the perspective of the cedant, not the reinsurer.

In determining the fulfillment cash flows, the DP calls for all assumptions to be best estimate without provision for adverse deviation (PADs), unlike US GAAP FAS 60 which utilizes PADs. Selected key assumptions used include the following:

Selected Key Assumptions	Best Estimate Value
Investment Yield	6 percent
Mortality	75 percent 2001 CSO
Lapse	5 percent annually
Non Commission Acquisition Expense	\$75 per policy (75 percent deferrable)
Maintenance Expense	\$10 per policy with 3 percent inflation

Just as we did for our June article, we have elected to use only a single scenario, primarily to keep the model simple enough to isolate certain aspects. The implicit assumption is that the single scenario reflects the mean of multiple scenarios, in keeping with the tentative decisions to clarify the requirements of the ED and DP with respect to cash flows.

Deferrable refers to whether or not the acquisition costs are eligible for inclusion in the fulfillment cash flow projections.

Furthermore, we have continued a simplified approach to interest discounting by utilizing a single fixed rate to discount all cash flows, regardless of duration. In addition, we have assumed the risk of non-performance by the reinsurer is not material.

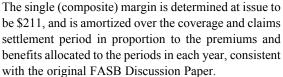
In the model, invested assets are equal to baseline statutory reserves and required capital, with distributable earnings released as earned. Investment income is then modeled as an earned rate (we assume 6 percent as noted above) applied to those invested assets.



Albert Li, FSA, MAAA, is manager, Actuarial, Risk, & Analytics, for Deloitte Consulting LLP. He can be contacted at ali@deloitte.com

MODEL RESULTS - BASE CASE (DI-RECT GAIN, REINSURANCE LOSS)

In the base case, all future experience is assumed to emerge consistently with the initial assumptions. In the base case, the total net income for the 10-year period before reinsurance is \$378, which is unchanged from our June article. After incorporating reinsurance in the base case, as shown in Chart A below, the total net income to the cedant is \$226. This implies there is a gain before reinsurance and the reinsurance fulfillment cash flows are a net loss to the cedant.



Consistent with the ED/DP, the non-deferrable acquisition expenses (\$19 in this example) in the first year are expensed immediately, creating a drag on income in the first year. We assumed all expense allowances and ceding commissions were part of the cash flows and thus the non-deferrable acquisition costs continued to be \$19.

The reinsurance reduced the cedant's investment income, due to a reduced magnitude of net cash flows to be invested by the cedant. The interest on insurance contract liabilities, which one would intuitively expect



Andy Ferris, FSA, MAAA, is senior manager for Deloitte Consulting LLP. He can be contacted at anferris@deloitte.com



FSA, MAAA, is principal & chief life actuary, Actuarial, Risk & Analytics, for Deloitte Consulting LLP. He can be contacted at dawagner@deloitte.

to be negative (as the discounting of insurance contract liabilities unwinds), is actually positive in some years since the present value of cash flows is negative in those years.

Chart A (ED/DP Approach)

Direct Gain, Reins Loss	Yr 1	Yr 2	Yr 3	Yr 4	Yr 5	Yr 6	Yr 7	Yr 8	Yr 9	Yr 10	Total
(a) Underwriting margin											
Amortization of Composite Margin - Direct	24	23	22	22	21	20	20	20	20	20	211
Amortization of Composite Margin - Reins.	(10)	(11)	(11)	(11)	(11)	(11)	(11)	(12)	(13)	(13)	(114)
(b) Gains / losses at initial recognition											
Loss recognition of an insurance contract	-	-	-	-	-	-	-	-	-	-	-
Gains on reinsurance contracts	-	-	-	-	-	-	-	-	-	-	-
(c) Non-incremental acquisition costs	(19)	-	-	-	-	-	-	-	-	-	(19)
(d) Interest on insurance contract liabilities	6	9	7	5	3	2	1	0	(0)	(O)	33
(e) Investment Income	2	12	13	15	15	15	14	12	10	7	115
Net Income	2	33	32	30	28	26	24	20	17	12	226

Finally, we note that this is a reinsurance loss scenario, which was impacted by the May 31 tentative decisions. As described above, those call for an insurer to set up a reinsurance recoverable and recognize that cost over the coverage period of the underlying contract. We did not explicitly model the reinsurance asset as required by that approach. We believe, however, that the composite margin amortization approach in Chart A above is likely not materially different from the amortization pattern resulting from the reinsurance asset approach, and, therefore, have amortized the reinsurance asset on the same basis as the composite margin.

MODEL RESULTS – SENSITIVITY 1 (DIRECT GAIN, REINSURANCE GAIN)

To illustrate the scenario of a direct gain and a reinsurance gain, we decreased the reinsurance premium rates by approximately 65 percent so as to generate a reinsurance gain scenario. In this case, the impact of reinsurance is to increase the income to the cedant. As noted above, the total 10-year income to the cedant before reinsurance was \$378. Now, after incorporating a reinsurance gain, the total net income to the cedant is \$489.

As described above, the original ED and DP called for any reinsurance gain to be fully recognized immediately upon recognition of the reinsurance contract. That approach is illustrated in the chart below, in which \$131 is shown in the first year as a gain on reinsurance.

Chart B (ED/ DP Approach)

Direct Gain, Reins Gain	Yr 1	Yr 2	Yr 3	Yr 4	Yr 5	Yr 6	Yr 7	Yr 8	Yr 9	Yr 10	Total
(a) Underwriting margin											
Amortization of Composite Margin - Direct	24	23	22	22	21	20	20	20	20	20	211
Amortization of Composite Margin - Reins.	-	-	-	-	-	-	-	-	-	-	-
(b) Gains / losses at initial recognition											
Loss recognition of an insurance contract	-	-	-	-	-	-	-	-	-	-	-
Gains on reinsurance contracts	131	-	-	-	-	-	-	-	-	-	131
(c) Non-incremental acquisition costs	(19)	-	-	-	-	-	-	-	-	-	(19)
(d) Interest on insurance contract liabilities	6	9	7	5	3	2	1	0	(O)	(0)	33
(e) Investment Income	4	14	15	16	17	17	16	14	12	9	133
Net Income	146	45	44	43	41	39	37	34	31	28	489

Another possible approach, which was mentioned in several comment letters, would be to measure the composite margin on a net after reinsurance basis, without showing the separate direct and reinsurance components. In Chart C below, we show this approach. Note that by netting the direct and reinsurance cash flows, the \$131 first-year gain from reinsurance is eliminated and spread into the composite margin over time. We acknowledge that this approach was not adopted by either board, and have shown this only for the purpose of illustrating potential alternatives.

Chart C (Sample Comment Letter Approach)

Net after Reinsurance Building Block

Direct Gain, Reins Loss	Yr 1	Yr 2	Yr 3	Yr 4	Yr 5	Yr 6	Yr 7	Yr 8	Yr 9	Yr 10	Total
(a) Underwriting margin											
Amortization of Composite Margin - Direct	24	23	22	22	21	20	20	20	20	20	211
Amortization of Composite Margin - Reins.	(10)	(11)	(11)	(11)	(11)	(11)	(11)	(12)	(13)	(13)	(114)
(b) Gains / losses at initial recognition											
Loss recognition of an insurance contract	-	-	-	-	-	-	-	-	-	-	-
Gains on reinsurance contracts	-	-	-	-	-	-	-	-	-	-	-
(c) Non-incremental acquisition costs	(19)	-	-	-	-	-	-	-	-	-	(19)
(d) Interest on insurance contract liabilities	6	9	7	5	3	2	1	0	(0)	(0)	33
(e) Investment Income	2	12	13	15	15	15	14	12	10	7	115
Net Income	2	33	32	30	28	26	24	20	17	12	226

A third approach is that of the May 31 tentative decision described previously. In this approach, the dual direct and reinsurance composite margins are maintained, and the reinsurance gain is amortized over time by the reinsurance margin. This approach is illustrated below in Chart D. By comparing this approach with that shown in Chart C above, we note that the combined approach in Chart C recognizes profits earlier due to smaller net after reinsurance cash flows in the later years.

Chart D (May 31 Tentative Decision Approach)

Direct Loss, Reins Gain	Yr 1	Yr 2	Yr 3	Yr 4	Yr 5	Yr 6	Yr 7	Yr 8	Yr 9	Yr 10	Total
(a) Underwriting margin											
Amortization of Composite Margin - Direct	-	-	-	-	-	-	-	-	-	-	-
Amortization of Composite Margin - Reins.	-	-	-	-	-	-	-	-	-	-	-
(b) Gains / losses at initial recognition											
Loss recognition of an insurance contract	(56)	-	-	-	-	-	-	-	-	-	(56)
Gains on reinsurance contracts	116	-	-	-	-	-	-	-	-	-	116
(c) Non-incremental acquisition costs	(19)	-	-	-	-	-	-	-	-	-	(19)
(d) Interest on insurance contract liabilities	(1)	2	1	(0)	(1)	(1)	(2)	(2)	(2)	(1)	(8)
(e) Investment Income	2	11	13	14	15	15	14	12	10	7	112
Net Income	42	13	13	14	14	13	12	11	9	6	146

MODEL RESULTS – SENSITIVITY 2 (DIRECT LOSS, REINSURANCE GAIN)

To construct a scenario of direct loss and reinsurance gain, we decreased the direct premium rates by approximately 20 percent and decreased the reinsurance premium rates by approximately 65 percent relative to the base scenario. In this direct loss/reinsurance gain situation, there would be no margin established under the ED/DP approach, which is illustrated in Chart E below.

Chart E (ED / DP Approach)

Direct Loss, Reins Gain	Yr 1	Yr 2	Yr 3	Yr 4	Yr 5	Yr 6	Yr 7	Yr 8	Yr 9	Yr 10	Total
(a) Underwriting margin											
Amortization of Composite Margin - Direct	-	-	-	-	-	-	-	-	-	-	-
Amortization of Composite Margin - Reins.	-	-	-	-	-	-	-	-	-	-	-
(b) Gains / losses at initial recognition											
Loss recognition of an insurance contract	(56)	-	-	-	-	-	-	-	-	1	(56)
Gains on reinsurance contracts	116	-	-	-	-	-	-	-	-	-	116
(c) Non-incremental acquisition costs	(19)	-	-	-	-	-	-	-	-	-	(19)
(d) Interest on insurance contract liabilities	(1)	2	1	(0)	(1)	(1)	(2)	(2)	(2)	(1)	(8)
(e) Investment Income	2	11	13	14	15	15	14	12	10	7	112
Net Income	42	13	13	14	14	13	12	11	9	6	146

If we combine the direct and reinsurance net fulfillment cash flows as suggested by some comment letters, we have a stream of net fulfillment cash flows that are positive to the cedant. Those cash flows are set up as a combined margin and recognized over time in this approach, as shown in Chart F.

Chart F (Sample Comment Letter Approach)

Net after Reinsurance Building Block

Direct Loss, Reins Gain	Yr 1	Yr 2	Yr 3	Yr 4	Yr 5	Yr 6	Yr 7	Yr 8	Yr 9	Yr 10	Total
(a) Underwriting margin											
Amortization of Composite Margin - Combined	7	7	7	6	6	6	6	5	5	5	60
(b) Gains / losses at initial recognition											
Loss recognition - net of reinsurance	-	-	-	-	-	-	-	-	-	-	-
(c) Non-incremental acquisition costs	(19)	-	-	-	-	-	-	-	-	-	(19)
(d) Interest on insurance contract liabilities	(1)	2	1	(0)	(1)	(1)	(2)	(2)	(2)	(1)	(8)
(e) Investment Income	2	11	13	14	15	15	14	12	10	7	112
Net Income	(11)	20	20	20	20	19	18	16	14	11	146

Finally, under the May 31 tentative decision approach shown in Chart G, income recognition is deferred relative to the approach in Chart F. This is because in Chart G the direct loss is recognized immediately, while the reinsurance gain is recognized over time.

Chart G (May 31 Tentative Decision Approach)

Net after Reinsurance Building Block

	1	2	3	4	5	6	7	8	9	10	
Direct Loss, Reins Gain	Yr 1	Yr 2	Yr 3	Yr 4	Yr 5	Yr 6	Yr 7	Yr 8	Yr 9	Yr 10	Total
(a) Underwriting margin											
Amortization of Composite Margin - Direct	-	-	-	-	-	-	-	-	-	-	-
Amortization of Composite Margin - Reins.	11	11	11	11	11	11	12	12	13	14	116
(b) Gains / losses at initial recognition											
Loss recognition of an insurance contract	(56)	-	-	-	-	-	-	-	-	-	(56)
Gains on reinsurance contracts	-	-	-	-	-	-	-	-	-	-	-
(c) Non-incremental acquisition costs	(19)	-	-	-	-	-	1	-	1	-	(19)
(d) Interest on insurance contract liabilities	(1)	2	1	(0)	(1)	(1)	(2)	(2)	(2)	(1)	(8)
(e) Investment Income	2	11	13	14	15	15	14	12	10	7	112
Net Income	(64)	24	24	25	25	24	24	23	21	20	146

MODEL RESULTS – SENSITIVITY 3 (DIRECT LOSS, REINSURANCE LOSS)

To construct a scenario of direct loss and reinsurance loss, we decreased the direct premiums by approximately 20 percent and left the reinsurance premium rates unchanged relative to the base case. In this dual-loss scenario under the ED/DP approach, there would be no margin established for the direct fulfillment cash flows as that loss would be recognized immediately. There would be a margin established for the reinsurance fulfillment cash flows, with that loss recognized over time as shown below in Chart H.

Chart H (ED / DP Approach)

Direct Loss, Reins Loss	Yr 1	Yr 2	Yr 3	Yr 4	Yr 5	Yr 6	Yr 7	Yr 8	Yr 9	Yr 10	Total
(a) Underwriting margin											
Amortization of Composite Margin - Direct	-	-	-	-	-	-	-	-	-	-	-
Amortization of Composite Margin - Reins.	(12)	(12)	(12)	(12)	(12)	(13)	(13)	(14)	(14)	(15)	(129)
(b) Gains / losses at initial recognition											
Loss recognition of an insurance contract	(56)	-	-	-	-	-	-	-	-	-	(56)
Gains on reinsurance contracts	-	-	-	-	-	-	-	-	-	-	-
(c) Non-incremental acquisition costs	(19)	-	-	-	-	-	-	-	-	-	(19)
(d) Interest on insurance contract liabilities	(1)	2	1	(0)	(1)	(1)	(2)	(2)	(2)	(1)	(8)
(e) Investment Income	1	9	11	12	13	13	12	11	8	5	94
Net Income	(88)	(1)	(1)	(0)	(1)	(1)	(3)	(5)	(8)	(11)	(118)

If we combine the direct and reinsurance net fulfillment cash flows as suggested by some comment letters, when both are negative to the cedant, there is no margin established as the full loss is recognized immediately as show in Chart J.

Chart I (Sample Comment Letter Approach)

Net after Reinsurance Building Block

Direct Loss, Reins Loss	Yr 1	Yr 2	Yr 3	Yr 4	Yr 5	Yr 6	Yr 7	Yr 8	Yr 9	Yr 10	Total
(a) Underwriting margin											
Amortization of Composite Margin - Combined	-	-	-	-	-	-	-	-	-	-	-
(b) Gains / losses at initial recognition											
Loss recognition - net of reinsurance	(186)	-	-	-	-	-	-	-	-	-	(186)
(c) Non-incremental acquisition costs	(19)	-	-	-	-	-	-	-	-	-	(19)
(d) Interest on insurance contract liabilities	(1)	2	1	(O)	(1)	(1)	(2)	(2)	(2)	(1)	(8)
(e) Investment Income	1	9	11	12	13	13	12	11	8	5	94
Net Income	(205)	11	12	12	12	11	10	9	7	4	(118)

Finally, the May 31 tentative decisions call for a reinsurance asset such as prepaid reinsurance premium to be established and recognized over the coverage period in the case of a reinsurance loss. We did not explicitly model the reinsurance asset, however, since we believe the composite margin approach in Chart J is likely not materially different from the reinsurance asset approach. Naturally, this defers recognition of the loss relative to the prior approach.

Chart J (Approximation to May 31 Tentative Decision Approach)

Direct Loss, Reins Loss	Yr 1	Yr 2	Yr 3	Yr 4	Yr 5	Yr 6	Yr 7	Yr 8	Yr 9	Yr 10	Total
(a) Underwriting margin											
Amortization of Composite Margin - Direct	-	-	-	-	-	-	-	-	-	-	-
Amortization of Composite Margin - Reins.	(12)	(12)	(12)	(12)	(12)	(13)	(13)	(14)	(14)	(15)	(129)
(b) Gains / losses at initial recognition											
Loss recognition of an insurance contract	(56)	-	-	-	-	-	-	-	-	-	(56)
Gains on reinsurance contracts	-	-	-	-	-	-	-	-	-	-	-
(c) Non-incremental acquisition costs	(19)	-	-	-	-	-	-	-	-	-	(19)
(d) Interest on insurance contract liabilities	(1)	2	1	(0)	(1)	(1)	(2)	(2)	(2)	(1)	(8)
(e) Investment Income	1	9	11	12	13	13	12	11	8	5	94
Net Income	(88)	(1)	(1)	(0)	(1)	(1)	(3)	(5)	(8)	(11)	(118)

CONCLUSION

We hope this analysis has been informative in illustrating some of the alternative potential approaches to recognizing gains and losses from reinsurance from the perspective of the ceding company. One observation we have made is that in some respects the guidance for reinsurance appears to be more from the perspective of short duration contracts than long duration contracts. The FASB has existing guidance on reinsurance, namely that of FAS 113—Accounting and Reporting for Reinsurance of Short-Duration and Long-Duration Contracts, which also has been characterized by some as having primarily arisen from and being primarily oriented toward reinsurance issues for short duration contracts.

For example, in the case of a reinsurance gain, the approach by the ED/DP (recognizing the gain immediately) was not intuitive for long duration contracts and likely created unintended earnings volatility in the first year. The tentative decision to establish a reinsurance residual or composite margin and recognize the gain over the coverage period serves to more ratably spread the earnings pattern for long duration contracts relative to the approach in the ED/DP.

In the case of the dual direct loss and reinsurance loss, one could question whether the tentative decision approach goes too far, as it defers the recognition of the loss even where there is no future profit in either the direct or the reinsurance fulfillment cash flows. One might argue that the netting of the cash flows approach in that scenario may be the more diligent approach. One possible solution to these seemingly inconsistent results would be to have the net (of reinsurance) position of gain/loss on the contract serve as the trigger for how that gain/loss is recognized.

Stay tuned to future editions of the *Financial Reporter*, as we continue to analyze and present some of the challenges involved in developing a new accounting standard for insurance.

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GAAP/IFRS Accounting Projects—More Than Just Insurance Contracts

By Leonard J. Reback



Leonard Reback, FSA, MAAA, is vice president and actuary, Metropolitan Life Insurance Co. in Bridgewater, NJ. He can be contacted at Ireback@metlife.com.

ost of the focus on possible changes to US GAAP and IFRS guidance has understandably been on the insurance contracts project. However, a number of other projects are likely to impact actuaries in both the near- and long-term. Among these is a recently completed project on fair value, as well as ongoing projects on financial instruments and revenue recognition.

FAIR VALUE

In 2006, the Financial Accounting Standards Board (FASB), which promulgates US GAAP guidance, adopted FAS 157 "Fair Value Measurements." In 2011, the International Accounting Standards Board (IASB) adopted its fair value measurements standard, IFRS 13. The fair value guidance in IFRS 13 is generally consistent with that of FAS 157. FASB eliminated many of the remaining differences by issuing Accounting Standards Update 2011-04 (ASU 2011-04), which revises the US GAAP fair value guidance. ASU 2011-04 takes effect in 2012, so even though the changes are probably not too onerous to adopt there is not much time to make these changes.

Most of the changes from ASU 2011-04 that will impact actuaries are increased disclosure requirements. For fair value measurements that involve unobservable inputs (i.e., level 3 measurements), a narrative will be required describing how the fair value is calculated. including controls over the process and validation of the assumptions and results. In addition, quantitative disclosures, including ranges of unobservable inputs used, will be required. Further, a narrative will be required describing the sensitivity of the measurement to changes in unobservable inputs. Since many actuarial fair value calculations involve unobservable inputs such as mortality, surrender rates and long term equity price volatility, these additional disclosures will apply to many actuarial calculations.

Finally, certain financial instruments are not measured at fair value, and current GAAP requires disclosure of their fair value. ASU 2011-04 requires these disclosures to be categorized within the "fair value hierarchy." That is, level 1 for quoted prices in active markets, level 2 for measurements that use observable inputs and level 3 for measurements that use significant unobservable inputs.

FINANCIAL INSTRUMENTS

FASB and IASB have been working for several years on a joint project covering financial instruments. Although this is technically a joint project, the boards have been working at different paces and have come to some very different tentative decisions in the project. The project will impact the accounting for many of the assets used to back insurance contracts. It will also impact the accounting for investment contracts which do not meet the definition of insurance, such as some guaranteed investment contracts. It may also impact the accounting for financial elements of insurance contracts that the boards decide to "unbundle" from the insurance contracts for accounting purposes; items that have been discussed for such unbundling include embedded derivatives, certain account balances and policy loans. Results of this project may also impact decisions in the insurance contracts project. For example, the extent to which "other comprehensive income" is permitted or required in the financial instruments project may impact the extent to which it can be used for insurance contracts. In addition, the impairment model developed for financial instruments may be required for valuing impairments of ceded reinsurance receivables.

There are four main elements to this project:

- Classification and measurement,
- Impairment,
- Hedge accounting, and
- Offsetting.

Offsetting covers the balance sheet presentation of financial instruments that meet certain criteria and will not be discussed further here. On the other three elements, the boards have not only made some different decisions, but are following different pathways to develop the financial instruments model.

FASB is attempting to develop a single comprehensive model for financial instruments to be issued all at the same time. IASB is developing the model in stages, issuing each piece when that piece is complete. Thus, IASB has already issued a standard covering classification and measurement, IFRS 9. As other elements are finalized, the new guidance will be added to IFRS 9.



Classification and measurement

IFRS 9 basically permits two possible measurement approaches for financial assets: (1) fair value with all changes in fair value flowing through net income, or (2) amortized cost. Fair value with some changes in fair value flowing through other comprehensive income the method currently used for "available for sale" assets under current accounting—is limited to equities held for strategic purposes, and thus would rarely, if ever, be used for assets backing insurance contracts.

In order to determine which measurement model applies to a financial asset, a two pronged test is used:

- Business model—is the business model for the asset to collect contractual cash flows?
- Asset characteristics—are the contractual cash flows solely repayments of principal and payments of interest on outstanding principal?

If the answer to both of these questions is "yes," the asset qualifies for amortized cost. Otherwise, fair value through net income is required. If amortized cost would create an accounting mismatch, a fair value option is permitted for assets that would otherwise be measured at amortized cost.

Note that the business model test would likely exclude assets held in portfolios whose business model is to maximize total return from qualifying for amortized cost. Also, the asset characteristics test would exclude equities and derivatives from amortized cost. It may also exclude lower tranches of structured securities from amortized cost, since some of the cash flows are compensation for bearing the risks that would otherwise be borne by the higher tranches.

For financial liabilities, the IASB model is somewhat simpler. Derivatives and financial liabilities held for trading would be at fair value through net income. Other liabilities would be at amortized cost, except for certain embedded derivatives that would have to be bifurcated and held at fair value through net income. A fair value option is available for liabilities that meet certain criteria.

FASB's position on classification and measurement of financial instruments is different. For financial assets, only loans that meet certain criteria (i.e., having a direct relationship with the debtor) would be eligible for amortized cost. Other financial assets would be at fair value on the balance sheet. Most debt instruments would be at fair value through other comprehensive income, similar to current "available for sale" accounting. Equities and derivatives, as well as debt instruments held for trading as of when the asset was acquired, would be held at fair value through net income. In addition, for assets that are at amortized cost or at fair value through other comprehensive income, embedded derivatives would be bifurcated and held at fair value through net income (or alternatively, the entire instrument could be carried at fair value through net income).

FASB's position on financial liabilities is generally similar to IASB's. Derivatives, short sales and liabilities held for trading as of inception of the liability would be at fair value through net income. Other financial liabilities would be at amortized cost, with embedded derivatives bifurcated and held at fair value through net income (or alternatively, the entire instrument could be carried at fair value through net income).

FASB would permit a fair value option for financial assets and liabilities under some circumstances. However, FASB's criteria for permitting a fair value option are more restrictive than IASB's.

With all the differences between the two boards on classification and measurement, it remains to be seen how these differences will be bridged. The reconciliation may be made more difficult by the fact that IASB has already issued its guidance under IFRS 9. However, the mandatory effective date for IFRS 9 is not until 2013, and in August IASB published an exposure draft proposing deferring the mandatory effective date until 2015.

Impairment

Both boards have been working together to develop a new model to determine when a financial asset held at amortized cost (or fair value through other comprehensive income) is impaired, and how to measure the impairment. The boards are attempting to address concerns raised during the financial crisis that banks were too slow in recognizing asset impairments. So the goal of the impairment phase of the financial instruments project is to recognize impairments sooner. The boards are trying to determine how to do this in a practical manner.

There have been some concerns expressed by the insurance industry about the suggested proposals. One concern has been that the proposals that may be more practical to implement involve recognizing some impairment loss upon inception of the financial asset. Another concern is that the proposals are largely geared to dealing with originated loans and less appropriate for purchased securities.

Hedge Accounting

Hedge accounting is an accounting convention by which matched accounting is provided to a hedged risk and a hedged instrument, even if those items would not normally qualify for matched accounting. Currently, the rules to qualify for hedge accounting are very restrictive, and substantial and costly documentation and testing is required. Further, due to the restrictions, it can be virtually impossible to attain hedge accounting treatment for many risks in insurance contracts.

Both IASB and FASB have proposed relaxing some of the restrictions and requirements to achieving hedge accounting. IASB is much further along in the process. IASB is planning to release a standard on general hedge accounting in 2011. The proposed standard would permit hedge accounting to be applied to risks within individual contracts or within groups of contracts with fewer restrictions than are in place today. IASB has also begun working on a standard on macro hedge accounting to deal with hedging risks within open portfolios, in which contracts containing the hedged risk can be acquired or terminated over time.

FASB has proposed some relaxation of the hedge accounting restrictions. However, as of September 2011, its proposals do not go as far as IASB's. In particular, FASB has not proposed relaxing the restrictions around attaining hedge accounting for risks within groups of contracts, which often prevent risks within certain insurance contracts such as variable annuities from attaining hedge accounting. It remains to be seen whether FASB will be persuaded to move to a position similar to IASB.

FINANCIAL INSTRUMENT DISCLO-**SURES**

As part of its financial instrument project, FASB has also recently proposed additional disclosures for financial instruments. Many of these additional disclosures would also apply to insurance contracts. Some disclosures would be limited to financial institutions, which would include insurance companies.

The intent of the new disclosures would be to provide readers of GAAP financial statements with additional information about liquidity risk and interest rate risk. The proposals regarding liquidity risk disclosures include tables showing the expected timing of cash flows from both financial assets and financial liabilities (including insurance contracts). The interest rate risk disclosures would include tables showing when financial assets and liabilities (including insurance contracts) are subject to interest rate resets. The proposed disclosures also include impacts from specified parallel and non-parallel yield curve changes.

REVENUE RECOGNITION

IASB and FASB have been working jointly on a

project for accounting for revenue recognition from contracts with customers. A final standard is expected to be issued in 2012. Insurance contracts are explicitly exempted from this project. However, the project may impact the valuation of contracts sold by insurance companies that do not qualify for accounting under the insurance contracts or financial instruments standards. An example would be administrative services only contracts. In addition, the revenue recognition may impact the valuation of features that are "unbundled" from insurance contracts that are not considered financial instruments. Items that the boards have considered for such unbundling include administrative services in contracts that combine administrative services with stop loss insurance, and investment management fees within insurance contracts.

The proposed revenue recognition model is basically an unearned premium model. There are new principles to determine how much premium or consideration is earned as goods or services are provided to the customer. Any unearned amounts would be accrued as a liability, or possibly as an asset if future required payments from the customer exceed the unearned amounts. The earnings pattern is generally locked in at inception of the contract unless the contract becomes "onerous," i.e., a loss recognition event. The earnings pattern may differ from that under current US GAAP or IFRS. There is also guidance for deferring costs associated with acquiring contracts. This guidance is generally more restrictive than the allowance for acquisition costs proposed by either board within the insurance contracts joint project.

In the case of investment management fees, it is possible that if the boards decide that such fees should be unbundled from insurance contracts, the revenue recognition model would provide a more stable earnings pattern than the proposed insurance contracts model. That is because the proposed insurance contracts model would effectively fair value the fees on variable contracts—when markets go up, the present value of future fees increases, reducing the liability and increasing income, and vice versa. Treating the fees under the revenue recognition model may reduce this volatility. But it remains to be seen what the boards will decide with respect to unbundling these fees.

As you can see, there are many changes coming in the US GAAP and IFRS accounting world besides the insurance contracts project that may impact actuarial work for years to come. And in addition to the projects discussed here, some actuaries may be impacted by changes to lease accounting, consolidation, employee benefits and other projects. The next few years are likely to be very interesting for actuaries working on GAAP or IFRS reporting.

END NOTES

¹ Under Accounting Standards Codification, the US GAAP fair value measurement has since been renamed "Topic 820."

U.S. ORSA Developments

By Seong-min Eom



Seong-min Eom, FSA, MAAA, is a manager for KPMG in New York, N.Y. She can be contacted at seom@kpmg.

n the United States, an Own Risk and Solvency Assessment (ORSA) Guideline is being developed by the NAIC Group Solvency Issues (EX) Working Group co-operating with the Corporate Governance (EX) Working Group as a part of the Solvency Modernization Initiative (SMI). According to the SMI roadmap,1 an ORSA guideline is scheduled to be adopted by the end of this year, and an ORSA model law is planned to be developed and implemented by December 2012. This article is based on the ORSA draft exposed on Oct. 14, 2011.

The Solvency Modernization Initiative is a critical self-examination launched in June 2008 by the NAIC to update the U.S. insurance solvency regulation framework. It includes a review of international developments regarding insurance supervision, banking supervision, and international accounting standards and their potential use in U.S. insurance regulation.

The workplan² for SMI includes:

- Articulation of the U.S. solvency framework and
- Study of other sector's and others countries' solvency and accounting initiatives and the tools that are used and proposed;
- Improved tools for risk-focused examinations;
- Creation of a new reinsurance regulatory frame-
- Movement to principle-based reserving for life insurance products;
- Consideration of possible change to group supervisory methods; and
- Implementation of new ideas to incorporate into the U.S. solvency system.

The ORSA is linked to most of the items in the SMI work plan as the ORSA covers overall enterprise risk management framework and processes. Through ORSA, U.S. insurance regulators would require insurers to establish a proper level of enterprise governance and a comprehensive risk management framework; this would involve processes, functions, and allocation of proper resources integrated with risk capital management adequate for the recognized risks under various business conditions including stress scenarios to support the insurer's solvency. The ORSA should be prepared consistently with how the business is managed, either on a group, legal entity, or other basis.

Many interested parties are concerned with the NAIC's timeline of developing an ORSA-type guideline by December 2011. These parties suggest extending the timeline so that the ORSA guidelines will be able to incorporate the broad range of ERM practices and other jurisdictions' ORSA development processes. In addition, they would like the ORSA guideline to be better harmonized with the U.S. legal framework and regulatory requirements, which are currently evolving significantly such as the Dodd-Frank Wall Street Reform and Consumer Protection Act (the Dodd-Frank Act), development of the Federal Insurance Office (FIO) proposed under the Dodd-Frank Act, or the addition of Form F, a new annual reporting requirement for insurance holding company systems in the amendment of the Model Act. There is a concern that a rapid introduction of an ORSA guideline could unnecessarily add another dimension of complexity and compliance to the insurance industry.

THE PURPOSE OF THE ORSA

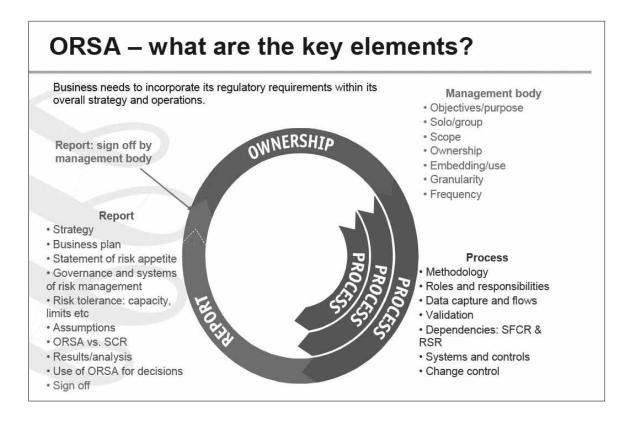
The purpose of an ORSA is to promote insurers to have:

- a comprehensive risk management framework;
- risk management processes that identify, prioritize, measure, monitor and manage risks with forward-looking views;
- well-established internal control of risks that are reflected in stress-testing scenarios, assumptions, or internal models;
- good risk management reports and communication protocols; and
- capital management and capital actions that are integrated with risk management and internal controls.

The purpose and general characteristics of the U.S. NAIC ORSA and the EU Solvency II ORSA are very similar. It is intended that insurance companies will be able to connect their business strategy and risk measurement to capital planning and management. Both ORSAs support a robust company risk management

framework with risk appetite and risk tolerance influencing the day-to-day business operations. The ORSAs request clearly established roles and responsibilities of the board of directors and senior managers of the company for risk management processes and suggest having a full picture of the risks of the company. They are not static formula-based approaches. ORSA is a flexible and dynamic enterprise risk management tool, reflecting the view of the company's business from the management group, the objectives of the company, nature of the business and the complexity of the products.

KEY ELEMENTS OF THE ORSA



The picture above exhibits the elements of ORSA and how the elements flow to meet the ORSA requirements. Because it is extracted from an FSA Solvency II educational briefing,3 the ORSA elements in the picture are more oriented to the ORSA concepts under Solvency II. Still, most of the elements are directly applicable to the U.S. NAIC ORSA. This illustrates that the major elements of ORSA are linked to each other. The risk management governance of the insurer can directly impact the risk management processes and controls in each business unit, and these processes and controls will be reflected in risk management reporting. Then, based on the reports, management will again review the risk management framework including the individual processes.

THE THREE SECTIONS OF THE NAIC **ORSA**

The NAIC ORSA is composed of three sections:

- Section 1: Description of the Insurer's Risk Management Framework;
- Section 2: Insurer's Assessment of Risk Exposure;
- Section 3: Group Risk Capital and Prospective Solvency Assessment.

Section 1 guides insurance companies/groups in establishing a holistic enterprise risk management framework. The ORSA requests insurers to submit a document describing the insurer's risk management framework and principles. Section 1 is intended to support qualitative risk management. The risk management policies should include the insurer's tailored risk categories, how the risks in each category are identified, assessed and monitored in the insurer's regular business operation. The risk management policies should describe the risk control and mitigation activities. The group risk management process and policies need to be disclosed. Section 1 of the ORSA also requests information about the risk management processes and risk assessment tools that are used to respond to the changes in the insurer's internal and external business circumstances or business strategy.

Section 2 covers quantitative risk exposure measurement in both normal conditions and in a stressed environment. Insurers should show the appropriateness of the risk exposure measurement methodology based on the nature, scale and the complexity of the risks with well documented explanations of the approaches and reasonableness of the assumptions. The process of determining qualitative and quantitative risk tolerance limits needs to be described. Setting reasonable risk relationships is expected to be one of the most difficult parts in quantifying the risks. The risk correlations should not be based on historical data alone. Insurers may need to develop a more sophisticated procedure for the forward-looking risk correlation analysis associated with evolving industry conditions, risk positions, the insurer's business strategy, and projection of the business.

Section 3 brings together the qualitative part of enterprise risk management in section 1 and the quantitative measurement of risks from section 2, connecting business strategy and capital planning. For risk management purposes, group risk capital is assessed taking into account multiple dynamic risks; this is different than the regulatory capital that is the minimum capital amount before any regulatory action is taken. Insurers need an adequate amount of capital to be solvent and to achieve the insurer's business objectives for an appropriately long time horizon. For the group risk capital, insurers should present the solvency basis, time horizon, modeled risks, risk quantification methodology, target level of capital, and any benefit from diversification. For the prospective solvency assessment, the insurers will also have to include information on the quality of the capital, current exposure, how adequate capital is allocated to each operation, and the projected business plan, including any management action plan if the capital falls below the target level.

ISSUES WITH THE CURRENT U.S. **ORSA DRAFT**

Currently the U.S. NAIC ORSA and the EU Solvency II ORSA require a different degree of involvement of management in the ORSA process. During a presentation⁴ at the Groupe Consultatif Summer School in May 2011, EIOPA Chairperson Gabriel Bernardino noted that ORSA changes the viewing angle from bottom-up to top-down and that ORSA will change the way boards of directors approach the risk and capital management processes. The current U.S. NAIC ORSA guidance manual draft does not consistently distinguish the role and responsibilities of board of directors and senior management for the holistic enterprise risk management processes.

While ORSA assesses the company's risk management process, at the end of the day insurers will have to show supervisors that they comply with the ORSA process requirements properly and that they have adequate capital. Currently in Solvency II, the ORSA guidance requests annual reporting. For the U.S. NAIC ORSA, the reporting frequency is not explicitly established yet. In the introduction of the NAIC ORSA guidance manual draft, it says that "...an insurer who is subject to the ORSA requirement will be expected to regularly conduct an ORSA to assess the adequacy of its risk management and current, and likely future, solvency position, internally document the process and results,

and provide a high-level summary report annually to the domiciliary regulator, if requested. Whether an applicable state insurance regulator chooses to request the confidential filing each year may depend on a myriad of factors, such as the nature and complexity, financial position, and/or prioritization of the insurer/group, as well as the economic environment considerations." Reporting frequency was one of the topics discussed in the recent discussion of the August 2011 NAIC ORSA draft. Some suggest that regulators request only an initial ORSA submission with updates when there are any significant changes, while others recommend more regular ORSA submissions. In EU Solvency II, an ORSA report is required at least on an annual basis, but more frequently if there are any changes in the business of the insurer such as mergers and acquisitions. In addition to the ORSA reporting frequency, insurers suggest a consolidated reporting structure so that each group ORSA is submitted to the leading supervisor and reviewed once instead of multiple submissions to individual regulators followed by multiple repetitive reviews and questions.

For the group risk capital assessment, some companies expressed a caution in how the capital will be assessed for the foreign insurers. The companies appealed for the NAIC to set the group capital on a compatible basis for U.S. domestic insurers, U.S. insurers with subsidiaries abroad, and U.S. subsidiary insurers with foreign parents.

One of the major concerns of U.S. insurers is confidentiality. While some companies support the ORSA, others are very opposed to it out of concern that the ORSA will require the disclosure of material management and financial information into a public forum. Solvency II may raise expectations regarding transparency.

Another issue raised was whether the NAIC ORSA guideline is meant solely for insurers or whether it provides views for examiners. Proponents argue that by including more of the examiner's evaluation viewpoint, the guidance manual would be more useful to insurers and be a helpful reference for examiners. Others note that examiners have their own evaluation manual and reference documents, so it would be redundant to include examiners' views in the insurers' guideline.

While the NAIC will continue to use risk-based capital (RBC) as the minimum required regulatory capital, insurer's risk capital assessment will be required by ORSA.

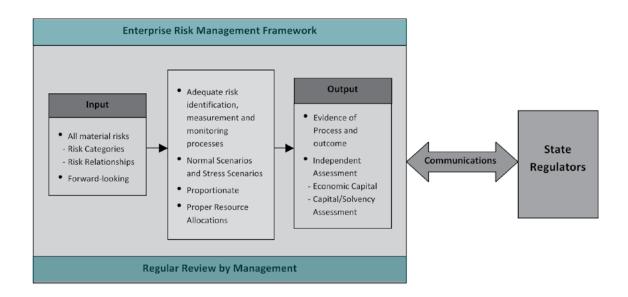
CAPITAL MANAGEMENT UNDER ORSA

While the NAIC will continue to use risk-based capital (RBC) as the minimum required regulatory capital, insurer's risk capital assessment will be required by ORSA. For this capital assessment purpose, the NAIC focuses on group economic capital, determined based on the nature, scale, and complexity of the risks within the group. For the group capital assessment, either the consolidated or aggregated approach can be selected as long as each legal entity or affiliated insurer under the same group utilizes a consistent methodology.

The NAIC ORSA guideline needs to consistently declare that it is the economic capital that the insurance holding company (group) will assess. Regulatory RBC capital has to be clearly distinguished from economic capital that will be examined under ORSA.

STATES' OUTLOOK OF ORSA

States are expected to take actions in line with the NAIC's ORSA development progress. Some states could initiate a movement tied to ORSA before the ORSA model law is developed by NAIC. For example, New York recently issued a proposed circular letter⁵ that encourages insurers to maintain a formal ERM function to "identify, measure, aggregate, and manage risk exposures within predetermined tolerance levels, across all activities of the insurer or group of insurers." According to the letter, New York has developed evaluation criteria to assess insurers' ERM practices. ORSA is mentioned in the brief descriptions of the evaluation criteria. The letter states that "the insurer should perform an ORSA on a regular basis and should share the results of the assessment with senior management and its board of directors" and "an insurer



should address as part of its ERM/ORSA all reasonably foreseeable and relevant material risks including, at a minimum: insurance; underwriting; asset-liability matching; credit; market; operational; reputational; liquidity; and any other significant risks associated with group membership."

INSURER'S CONSIDERATIONS FOR **ORSA**

To respond to all the ORSA requirements from the NAIC and state insurance departments, insurers will consider:

- Gap analysis—current ERM framework and process vs. ORSA requirements;
- Clearly defined risk management strategy and action plan;
- Stress test scenarios/assumptions review and documentation;
- Risk measurement and approach analysis and documentation;
- Model assumption maintenance and documentation;
- Risk appetite and risk tolerance linked to business operation;
- Capital allocation methodology and its interaction with business risk management; and
- Changes to reporting processes.

ORSA is an evolving and dynamic process. When the ORSA guideline is adopted, it will reflect feedback from industry, guidelines from other jurisdictions, and new IAIS principles. It will evolve continuously over several years.

Insurers should begin considering what information would need to be included in an ORSA, whether their information and reporting systems can provide the information, and whether the company's resources are sufficient for the task. An ORSA requirement of some form is likely and companies should be learning about what may be required and what needs to be done to satisfy it.

END NOTES

- http://www.naic.org/documents/committees_ex_isftf_smi_roadmap_110520.pdf
- http://www.naic.org/documents/committees_ex_isftf_smi_over-
- http://www.fsa.gov.uk/pages/About/What/International/pdf/solvency_2_educational_briefing.pdf
- https://eiopa.europa.eu/fileadmin/tx_dam/files/aboutceiops/ Summer-School-ORSA-The-heart-of-SolvencyII.pdf
- http://www.ins.state.ny.us/circltr/propose/ERM_Circular_Letter.

PBA Corner

By Karen Rudolph and Ken Vande Vrede

uring third and fourth quarter 2011, the NAIC received the results of Phase I and Phase II of the NAIC's VM-20 Impact Study. The focus of Phase I was implementation of VM-20 through model building, selection of assumptions and generation of the three principle-based reserve building blocks (the stochastic, deterministic and net premium reserves) at early durations for cohorts of newly-issued business to provide an initial assessment of the methodology. Phase II builds on Phase 1 by using those models to evaluate the sensitivity of the reserves to various modifications of the assumptions and economic scenarios to permit calibration of the methodology, assumptions and margins.

As a result of this testing exercise, companies are gaining firsthand experience calculating reserves under the VM-20 requirements and are better able to understand what it will mean to have to perform VM-20 valuations. Further, suggestions for refinements to the VM-20 methodology are being advanced as companies grapple with the implementation and recognize the need for clarification in the language or in the methodologies prescribed in VM-20. This article draws on certain experiences of companies participating in the study effort and discusses one aspect of the VM-20 requirements that may go unnoticed without digging into the details. The topic is the methodology involved in determining the Deterministic Reserve.

THE DETERMINISTIC RESERVE

At a high level, the three PBR building block reserves are intended to serve unique purposes. The Stochastic Reserve (SR) is designed to capture any significant interest rate/equity return tail risk. The role of the Deterministic Reserve (DR) is to assure premium adequacy under a moderately adverse economic scenario. The Net Premium Reserve (NPR) serves as a formulaic floor and the basis for the tax reserve. The reported reserve would be the greatest of the three.

To meet the premium adequacy test objective, VM-20 prescribes the DR as a gross premium valuation (GPV) calculation with discount rates equal to the net asset earned rates (NAER) derived from an integrated asset-liability cash flow projection model. Rules and guidance for setting the asset and liability modeling assumptions and margins are set forth in VM-20. The DR interest rate/equity return scenario is also specified by VM-20 and is intended as a conservative scenario.

VM-20 requires the value of the starting assets used in the cash flow projection model be approximately equal to the final GPV reserve, specifically, within 98- to 102-percent of the final modeled reserve amount. This typically requires selecting a set of initial trial assets to be modeled, running a projection using those assets under prudent estimate assumptions and the economic scenario prescribed by VM-20, and then calculating and aggregating the present value of all cash flows using the NAERs from that projection. Depending on whether the result is higher or lower than the value of the initial starting assets, the starting assets would be increased or decreased, and a new projection would be run. The process is repeated until the value of the starting assets is within the prescribed tolerance.

It can also be said that an integrated asset-liability cash flow projection model can directly project, given an initial set of assets, whether the modeled liability obligations are fully liquidated by the end of the projection horizon and whether sufficient levels of assets are available at any or all intermediate durations. The function of finding this "equilibrium amount" of starting assets whereby the amount of initial starting assets will result in all modeled liabilities being liquidated over the projection horizon with no material asset balances remaining, seems to align with the objective of the DR. When a starting asset amount greater than or less than this initial equilibrium amount are projected, excess assets or asset deficiencies will develop by the end of the projection horizon, violating the desired objective. In other words, the amount of the excess or deficiency is a function of the starting level of the specified set of assets. Modeling constraints to ensure that asset levels do not go negative over the projection horizon may be specified and desirable for the exercise. Margins built into the assumptions and the prescribed deterministic scenario allow for conservatism.

DETERMINISTIC RESERVE CALCULA-TION ISSUES

In theory, the GPV approach specified and required by VM-20 should result in a starting asset amount approxi-



Karen Rudolph, FSA, MAAA, is consulting actuary, Milliman, Inc., Omaha, Neb. She can be reached at Karen.rudolph@ milliman.com.



Ken Vande Vrede. FSA, CERA, MAAA, is director, Corporate Actuarial, Genworth Financial. He can be contacted at kenneth.vandevrede@ genworth.com.

mately equal to the equilibrium amount described above. In work performed by some participating companies, the starting asset amount used in the GPV approach (i.e., the amount within the 2 percent tolerance) was indeed a fair approximation for the equilibrium amount of starting assets (i.e., the amount resolving to a zero asset value at the point liabilities are exhausted). Another participant observed, however, the GPV methodology seemed flawed. Once an asset amount was determined within the 2 percent tolerance, the integrated asset-liability model did not necessarily end up with a near \$0 asset value at the end of the projection horizon. Why would there be a disconnect between these two approaches?

- · When determining the starting assets for the DR calculation, VM-20 requires that a pseudo-asset with a negative or positive value be included with real assets to arrive at the total starting asset level. This pseudo-asset, called the Pre-tax Investment Maintenance Reserve (PIMR) is calculated similarly to the Investment Maintenance Reserve (IMR), but on an assumed pre-tax basis. If, at a valuation date, there exists a PIMR with a positive balance (e.g., due to the past deferral of the recognition of capital gains) that was assigned to the model segment, then the "real" assets included in the starting assets are increased by the PIMR amount due to the inclusion with the starting assets of a "negative" PIMR pseudo-asset. All things being equal, this introduces more or less assets than are actually needed to liquidate liabilities within the projection on a cash flow basis.
- PIMR has a direct impact on the calculation of the NAERs. Section 7H.2. of VM-20 defines the net asset earned rate (NAER) as the ratio of net investment earnings divided by the invested assets. It defines net investment earnings to include:
 - Investment income plus capital gains and losses (excluding capital gains and losses that are included in PIMR), minus appropriate default costs and investment expenses;
 - Income from derivative asset programs; and
 - iii. Amortization of the PIMR.

The denominator of the ratio is adjusted (increased or decreased) by the negative of the outstanding PIMR. Because of the differences in both the numerators and denominators, the NAERs may differ from the actual investment returns on a cash flow basis to some unknown and possibly significant degree.

- The allocation of the company's PIMR existing on the valuation date to the model's starting assets is subjective, and introduces the possibility of reserve manipulation at future valuation dates as assets and associated PIMR might be swapped in and out of models.
- Similar comments apply to PIMR which develops in the model subsequent to the valuation date. Given the right scenario and liability cash flow combination, PIMR amounts may become significant, thus affecting the NAER calculation for reasons similar to allocated PIMR on the valuation date.
- The impact of policy loans must be excluded from investment income in the numerator of the ratio and consequently from the invested asset total in the denominator. The impact of policy loans in the modeling, however, would work to increase or decrease the equilibrium amount for the block, a source of disconnect between the aggregate rates at which the model system accumulates assets and the prescribed NAER.
- · There may be differences in the solutions under a GPV-based methodology versus an equilibrium amount methodology by virtue of the nature of the calculations themselves. As an example, assume there are two methods of getting at the NAER:
 - Extract the investment income and invested asset balances from the model out to spreadsheet to determine NAER outside the system and discount net cash flows outside the system as well. Assume all required adjustments (PIMR, policy loans, etc.) are made to the extracted values.
 - ii. Use mechanisms internal to the modeling system to discount net cash flows on the fly.

VM-20 requires the company to determine NAER in a manner consistent with the timing of the cash flows and the length of the projection interval of the model. Given this constraint, it would seem method ii above would be the best choice, but may not be widely available from every system, at least initially. Difficulties in extracting the data necessary to determine an average NAER representative of what the system would use in method ii may be another source of disconnect inherent in the GPV approach. Also, under the GPV approach of VM-20, method ii may require customizations to the system to adjust for the items of PIMR, policy loans and the like as specified by VM-20.

· Differences between the two methods may seem minor on the surface, but cash flows are discounted over long periods of time. For certain products, this cumulative impact accentuates the disconnect of the two methods

MODELING EXAMPLE

Consider the data in Table 1 below. It represents several modeling outcomes for a model used in the VM-20 Impact Study and exhibits the relationship, at the valuation date, of the starting asset value, the VM-20 GPV, the ratio of starting assets to GPV, and the ending asset

Table 1

Amounts in \$Millions											
Run	Starting Asset Amount	GPV Result	Ratio of Starting Assets to GPV	Ending Asset Amount							
1	\$146.0	\$152	96%	\$4,679							
2	102.2	193	53%	124							
3	100.4	194	52%	20							
4	100.0	195	51%	(0.5)							
5	99.3	196	51%	(40)							
6	94.9	201	47%	(253)							
7	87.6	208	42%	(575)							
8	73.0	222	33%	(1,167)							

level. The model is running over the deterministic scenario.

Note that the DR would be approximately \$152 million determined from run 1 since this is the level where starting assets just about equal the GPV for that run. Although this series of eight runs did not quite make the 2 percent collar requirement (closest is 96 percent), it illustrates that even with a 96 percent starting assetto-GPV ratio the model accumulates a fairly large amount of asset value by the time all liabilities are exhausted. This translates into an initial asset redundancy of \$46 million (or 46 percent) over that required by the equilibrium solution of run 4.

In interpreting these results, it should be noted that the plan type modeled has a long horizon and significant cash flows are projected in later durations. This exacerbates the impact of the differences between the modeling system's internal projected earnings rates and the modeled NAER discount rates. While no PIMR was allocated to the block at the valuation date, PIMR was considered by the model on an on-going basis. Supplementary analysis provided evidence that PIMR was one of, but not the primary driver for, the results observed. It appears that the combination of these conditions, including PIMR nuances, combine to produce the variances in ending assets shown above.

CONCLUSION

Following the VM-20 DR method cannot always be relied on to provide a result that reasonably approximates the equilibrium amount. This means that the VM-20 DR might produce starting reserves that could be redundant or deficient when tested in the cash flow model. The Impact Study results suggest caution.

In practice, when calculating the DR under VM-20, the company should consider if this method produces a reasonable approximation of the equilibrium amount. If not, supplement the approach with one that permits direct iteration for the level of starting assets which results in a nominally \$0 amount of assets at the end of the projection horizon to permit quantification of the difference. In all other respects, the calculation retains all of the requirements specified in VM-20, including the requirements for using the DR scenario.

From a theoretical perspective, the benefits of the equilibrium approach include:

- 1. NAERs no longer necessary—Doing away with the need to calculate NAERs avoids many issues with interpretations of the NAER and the distortions introduced by various timing and averaging issues. In its place, the company will use an iterative approach to resolve the starting asset amount to the equilibrium amount. Technology should be available (or nearly available) in vendor systems to derive this amount using only one run.
- 2. Assurance that initial asset levels will provide for liabilities—Determining the equilibrium amount directly assures that the required initial assets are optimal; i.e., all projected liabilities are liquidated by the end of the projection horizon without pro-

jected asset deficiencies or excesses. Further, the placing of an additional constraint providing that interim asset levels cannot be less than zero can be easily incorporated in this methodology, if desired.

Lastly, PIMR allocations, PIMR amortization and artificial adjustments to assets and to NAER because of PIMR will be problematic to address in practice. It will also require additional tracking of these amounts that is not necessarily in place today. Justification for allocations and special reporting will be required to treat PIMR amounts consistently from one reporting period to the next. This aspect of the VM-20 requirements may distort the determination of an appropriate DR; it is open for manipulation and arguably has little theoretical basis in practice.



A Slow Quarter

By Henry Siegel

've always maintained that the difference between accountants and actuaries is that accountants emphasize the past while we actuaries emphasize the future. It's not surprising, therefore, that when accountants look at financial statements they are primarily interested in information about the current status of a company, while actuaries are more interested in where the company is headed in the future.

In looking at the most recent discussions between the Financial Accounting Standards Board (FASB) and the International Accounting Standards Board (IASB) on risk margins and disclosures (see below for more on this), an important area of disagreement between the boards and actuaries is how to look at the riskiness inherent in an insurance liability. The standard setters want a statement of the confidence interval that the reserve/liability falls within. This is a current perspective; it answers the question of how reliable the reserve is today.

An actuary would realize that such a measurement or statement is not the most meaningful information to be provided. Providing a clear statement of the assumptions used, how those assumptions compare to past experience and, most importantly, the sensitivity of the liability to changes in those assumptions give a far more meaningful package of information for evaluating the reliability of the reserve. If changing the discount rate by 10 basis points erases half your earnings, you know that those earnings are very subjective. Furthermore, these disclosures give users the information they would need to adjust the results should they disagree with the assumption chosen.

Actuaries disagree whether a confidence interval is even possible to determine for many reserves. In particular, for life reserves there are so many variables that determining a probability distribution that is usable and meaningful for all of them is highly questionable. Of course, as one actuary mentioned, no one will ever know if the confidence interval is correct since even if the reserve proves to be inadequate, it could simply be one of the scenarios outside the confidence interval.

The boards claim they are simply looking for a way to compare the reserves among companies, to identify

those whose liabilities are less reliable than others. It would seem, however, that they don't appreciate that the tools to do this are already in other disclosures in the financial package.

THE MONTHLY MEETINGS

At the July IASB/FASB joint meeting, the first under the leadership of Hans Hoogervorst, the boards discussed various issues but reached no conclusions. There were no meetings in August. It appears that under the new leadership the progress on the insurance project is going to slow down as other projects, particularly leasing, revenue recognition and financial instruments, get a higher priority.

SEPTEMBER JOINT MEETING

In September, the IASB and FASB once again took up their discussions on insurance contracts, talking about the risk adjustment and disclosures. In addition, the IASB heard a report on the FASB's recent decisions on the single margin approach.

Disclosures

The IASB and FASB tentatively ed to retain the disclosures proposed in paragraphs 90-97 of the IASB's exposure draft (ED) Insurance Contracts, with changes as follows:

- Delete the requirement that an insurer should not aggregate information relating to different reportable segments (i.e., paragraph 83 of the ED) to avoid a conflict with the principle for the aggregation level of disclosures. The level of aggregation could thus vary for different types of qualitative and quantitative disclosures. However, the standard would add to the examples listed in paragraph 84 of the ED by stating that one appropriate aggregation level might be reportable segments.
- Require the insurer to disclose separately the effect of each change in inputs and methods since the last financial statement, together with an explanation of the reason for the change, including the types of contract affected. It's not clear, however, how they expect this to be carried out. Presumably both a description and some type of numerical analysis



Henry W. Siegel, FSA, MAAA, is vice president, Office of the Chief Actuary with New York Life Insurance Company in New York, N.Y. He can be reached at Henry_Siegel@ newyorklife.com.

The International Actuarial Association is currently beginning a project to write a monograph on methods for calculating a risk margin for financial reporting and other purposes.

> will be needed. This is an area where actuarial practice will no doubt be an important issue.

- Contracts in which the cash flows do not depend on the performance of specified assets (i.e., nonparticipating contracts) require disclosure of the yield curve (or range of yield curves) used. For contracts where stochastic methods are used, some explanation of how the various scenarios were determined would seem to be appropriate. This requirement still does not deal with the issue of how that yield curve should be determined.
- Require the maturity analysis of net cash outflows resulting from recognized insurance liabilities proposed in paragraph 95(a) of the ED to be based on expected maturities, and to remove the option to base maturity analysis on remaining contractual maturities. Furthermore, within the context of time bands, require the insurer to disclose, at a minimum, the expected maturities on an annual basis for the first five years and in aggregate for maturities beyond five years.

In place of these disclosures, the FASB would rely on its tentative decisions relating to risk disclosures for financial institutions. These tentative decisions had been made in its project on financial instruments at the FASB board meeting held on Sept. 7, 2011. Those disclosures would apply to insurance entities.

In addition, the IASB tentatively decided to delete the proposed requirement in paragraph 90(d) of the ED to disclose a measurement uncertainty analysis and to align that disclosure with the disclosure for fair value measurements in IFRS 13 Fair Value Measurement, as

appropriate. Making this happen, of course, will require more discussion by the IASB. The FASB decided to retain the proposed disclosure. These disclosures, along with b. above, should give users a good sense of the risk inherent in a company's financial statement.

Risk adjustment: Objective and confidence level disclosure

The FASB listened to, but did not participate in, this part of the discussion since it has endorsed a single margin approach in which there is no explicit risk margin. The IASB tentatively decided that:

- the objective of risk adjustment should be the "compensation the insurer requires for bearing the uncertainty inherent in the cash flows that arise as the insurer fulfils the insurance contract"; and
- the application guidance should clarify that:
 - the risk adjustment measures the compensation that the insurer would require to make it indifferent between: (1) fulfilling an insurance contract liability that would have a range of possible outcomes; or (2) fulfilling a fixed liability that has the same expected present value of cash flows as the insurance contract. For example, the risk adjustment would measure the compensation that the insurer would require to make it indifferent between:
 - (1) fulfilling a liability that has a 50 percent probability of being 90 and a 50 percent probability of being 110; or
 - (2) fulfilling a liability of 100.
 - in estimating the risk adjustment, the insurer should consider both favorable and unfavorable outcomes in a way that reflects its degree of risk aversion. The boards noted that a riskaverse insurer would place more weight on unfavorable outcomes than on favorable ones. This was a key concern of actuarial commentators since it sounded from the ED that only adverse scenarios were to be considered, resulting in a higher compensation and therefore a higher risk charge.

jIn addition, the IASB tentatively decided to retain the confidence level equivalent disclosure that had been proposed in paragraph 90(b)(i) of the ED. As I discussed above, this is a huge issue for actuaries.

Risk Adjustment: Techniques and Inputs

The IASB tentatively decided:

- not to limit the range of available techniques and the related inputs to estimate the risk adjustment; and instead,
- b. to retain in the application guidance the list of characteristics, as proposed in paragraph B72 of the ED, that a risk adjustment technique should exhibit if that technique is to meet the objective of the risk adjustment.

This was another major concern of actuarial organizations with the ED and this change is certainly welcome.

The IASB also tentatively decided to retain as examples the three techniques proposed in the ED (confidence levels, conditional tail expectation and cost of capital), together with the related application guidance.

The International Actuarial Association is currently beginning a project to write a monograph on methods for calculating a risk margin for financial reporting and other purposes.

Next Steps

There are a number of issues outstanding that both boards will need to discuss and clarify before they can have a final paper. Among those issues are:

- Treatment of participating (including Universal Life) policies, particularly how the discount rate will be chosen and applied;
- Unbundling (although this will at least partly depend on decisions made on the other issues);
- Use of Other Comprehensive Income when earnings fluctuate because of mismatching accounting between assets and liabilities;

- Treatment of reinsurance (The boards have had initial discussions on this but conclusions still need clarification.);
- 5. Presentation of the Income Statement; and
- 6. Transition (Everyone agrees the ED got it wrong; a replacement approach has not been agreed upon.)

All of these are potentially large issues that have so far eluded an easy solution.

In addition, the FASB and the IASB need to determine if they can reach agreement on those issues where they have so far disagreed, including:

- 1. Whether to have an explicit risk margin (as noted, FASB would have only a composite margin);
- Which acquisition expenses to include in the fulfillment cash flows (FASB wants only costs of successful sales, IASB would include all sales costs); and
- FASB would not unlock the composite margin for changes in non-financial assumptions, the IASB would unlock the residual margin.

They are also not in agreement on the closely related financial instruments standard. Without agreement on this, it will be difficult to have a converged financial standard for insurance companies that does not incorporate substantial non-financial volatility.

NEXT QUARTER

It's expected that by the end of the year all of the outstanding issues should have been discussed. FASB expects to put out an Exposure Draft of its own during the first quarter while the IASB will either put out another ED or some type of review draft for review. It's important to keep focus as this project seems to drag on. And remember ...

Insurance accounting is too important to be left to the accountants.

IAA Report From Zagreb

By Jim Milholland



James Milholland, FSA, MAAA is a retired Partner from Ernst & Young. He can be reached at actuary@milholland. com

hen I last reported on the IAA in the June 2011 issue of the Financial Reporter, I said that by the time of the next meeting of the IAA in October, we would know the IASB's decisions on IFRS for insurance. I should have known better. The IASB's work plan for the insurance project now calls for a review draft or a revised exposure draft no sooner than the first half of 2012. There is still much uncertainty about the decisions. But uncertainty never stopped an actuary, and the Accounting Committee of the IAA has stayed very busy even without knowing where the IASB will land on the key undecided topics.

In addition to IFRS for insurance, standard setting was a key agenda item for several of the committees and the council. The importance of international standards was underscored by the IAA's contribution to the report of the Private Sector Task Force (PSTF) to the G-20 on regulatory convergence in financial professions and industries.

ACCOUNTING COMMITTEE AND SUBCOMMITTEE ON EDUCATION AND PRACTICE (ACSEP)

The ACSEP has a pipeline of publications that are intended to help actuaries address some of the key technical challenges when complying with IFRS for insurance. They do not anticipate the specific requirements of the emerging standard, but rather they are premised on the safe assumption that stochastic modeling, discounting, and setting risk margins will be part of the actuary's required skill set.

The first of these, the IAA's book Stochastic Modeling, has been featured in this column before. It is receiving good reviews and is so popular that it is now going for its second printing. Copies can be ordered from the IAA website.

Second in the pipeline is a monograph on discounting. It is fairly well advanced. The ACSEP has reviewed the second draft and anticipates another version by year end. A publication date has not been set, but the progress points to completion in mid 2012.

The third publication relates to risk margins. The working group tasked with selecting a vendor has completed its work and by the time this Financial Reporter is published, the selection will have been approved and work will be underway. A realistic expectation for the date of publication is sometime in 2013, which, given the progress of the IASB, should be in plenty of time to be useful for implementation of IFRS for insurance.

Also as reported previously, the ACSEP is committed to developing practice notes (International Actuarial Notes or IANs) on key topics of IFRS for insurance. This effort is on hold until the insurance standard crystallizes.

The IASB is seeking the input from all interested parties on its strategic direction and the broad overall balance of its work plan. The ACSEP is drafting a comment letter providing input from the IAA. The letter will say that the IAA believes that the insurance project should remain a priority project and that the board should work to complete the project as soon as possible. It will also say that the IAA believes that there should be a common standard with the FASB. This latter statement will be made notwithstanding the fact that members of the ACSEP are not able to agree among themselves on the resolution of the issues that are dividing the boards.

The ACSEP may also provide some unsolicited input to the IASB providing advice on certain technical issues. It is apparent from comments of IASB members in board meetings that they benefit from the input provided by actuaries. Whether this particular input comes to fruition or not depends on the members agreeing on what advice to give to the boards, which has been problematic in the past. ACSEP members are not of one mind on some of the technical points. For example, some actuaries believe that the measurement of insurance liabilities should incorporate an adjustment for risk while others favor the composite margin proposed by FASB. Providing input at this stage also depends on the ACSEP finding the energy and the will to write a letter. It seems to me that the ACSEP is suffering from input fatigue and may opt to wait for the next exposure draft before submitting further input.

STANDARDS SETTING

By the time this is published, the Council of the IAA almost certainly will have approved the revised due process for the development of model standards. Under this due process, the development of model standards (International Standards of Actuarial Practice. or ISAPs) is driven by the Interim Actuarial Standards Subcommittee (IASSC), which is a recently formed subcommittee of the Executive Committee. The due process replaces the previous process, under which responsibility for developing model standards was dispersed to the various committees and subcommittees. The revised due process is expected to streamline the process and is meant to be a better fit for the structure of the IAA than the superseded process. The IAA has already formed a task force to consider a permanent structure for standards setting, which is active but has not set a timetable for itself.

First up under the due process is a general standard, the development of which is in fact already well underway. An exposure draft has been circulated for comment. The general standard provides guidance to actuaries providing actuarial services across the full spectrum of actuarial activities. It addresses topics related to the conduct of an engagement or project, such as engagement acceptance, assumption setting, and communication.

The deadline for submission of comment letters is Dec. 1, 2011. The American Academy of Actuaries and the ACSEP will submit comment letters. Both groups are supportive of the development of international standards and are in general agreement with the direction of the draft general standard. Each will provide some suggestions for improvements before adoption of the ISAP.

The IASSC will develop an ISAP on accounting in the future, pending completion of the IASB's insurance project. The ACSEP has formed a working group to assist the IASSC in this regard. In recent discussions among the IASSC, the ACSEP, and the pensions committee of the IAA, the general direction of an accounting standard is taking shape. The current thinking is that, since IFRS is important to both the ACSEP and the pensions committee, they should work together to support the IASSC. The likely design of an ISAP on accounting would include a section on topics of interest to insurance financial reporting actuaries and pension



actuaries, such as the accounting hierarchy, disclosures, constructive obligations and changes in accounting policies. There would then be either separate standards or (more likely) separate sections within a single standard covering insurance and pensions.

Somewhat as an aside, it is perhaps important to mention that model standards are, as the name implies, not binding on actuaries who belong to member associations. They are written to assist member associations in the development of standards and to facilitate convergence of standards (more on this a little further below).

Actuaries can make the ISAPs binding by declaring that they are using them as the set of standards underlying their work. This would not be necessary in the United States, where actuaries who are in the American Academy of Actuaries are bound to its code of conduct and to the standards of the ASB. When actuaries practice in an environment that does not have a set of standards, in a developing country for example, they may decide to use international standards. An actuary's client may request that the actuary follow

international standards. In fact, the governance of international actuarial work was the subject of a discussion paper presented to the council by the professionalism committee. The paper provides a comprehensive examination of the topic and concludes that for now at least, crafting a clear set of guidance is not practicable. Actuaries involved in cross-border work should consult this paper (http://www.actuaries.org/COUNCIL/ Documents/Zagreb B11c Governance International Work.pdf) and be careful.

THE IAA HELPS THE G-20

As mentioned, one of the strategic objectives of the IAA is to promote the global convergence of actuarial standards. The experience of the IAA convergence no doubt was useful when it was invited to be a member of the PSTF, which was formed by the G-20. The PSTF's objective is to provide an analysis of gaps in regulatory convergence and to make recommendations on how to close such gaps across a number of professions and industries that operate within the financial sector. The PSTF recommended, among other things, that the G-20 "encourage and support the development, adoption, implementation and consistent interpretation of globally accepted high-quality international standards, to the greatest extent possible, for each of financial reporting, auditing, valuation, and actuarial services." The report of the PSTF also supports adoption of global standards for capital adequacy for insurers and for broad implementation of the emerging common framework being developed by the International Association of Insurance Supervisors as a template for supervision of internationally active insurance groups.

LOS ANGELES IN 2012

The IAA meets next in late May 2012 in Los Angeles. Maybe by then the IASB will have exposed its revised proposal for IFRS. There will have been progress on the standards setting process and other activities and events of interest to financial reporting actuaries.

International Acronyms										
Private Sector Task Force	PSTF									
Accounting Committee and Subcommittee on Education and Practice	ACSEP									
International Actuarial Notes	IAN									
International Standards of Actuarial Practice	ISAP									
Interim Actuarial Standards Subcommittee	IASSC									

Tax Considerations In Actuarial Projections

By Edward Robbins and Stephen Baker

his article speaks to a major component of actuarial projections that often receive insufficient attention by the actuaries.

When making projections, an actuary must sort out the items of little consequence from those that make a significant difference, and those items that are determinable within reasonable ranges from those that are not readily quantifiable. Federal income taxes are significant, the largest single home office expense in many companies. Further, despite the continual evolution of tax guidance over the years, most of the changes have been interpretive, the relevant sections of the Internal Revenue Code (the Code) changing little over the last 20 years. Thus, the effect of taxes has been relatively quantifiable. While the Code could undergo fundamental changes as it affects U.S. life insurers (certainly a possibility, given the impending International Financial Reporting Standards, among other influences), certain elements have been in place without change for many years, and are unlikely to change. These include the cost basis of invested assets and the loss carryforward and carryback rules. Indeed, it would appear that predictability of federal income tax guidance may be far simpler than predictability of the stock market (though still potentially problematic).

In setting projection assumptions, actuaries pay a lot of attention to factors such as equity growth and policyholder behavior-and well they should. However, certain significant tax issues may tend to be ignored. The time appears ripe for refinement of the tax assumptions in two ways:

- Sensitivity testing for the more probable future changes in tax guidance, just as sensitivity testing is generally performed on certain other assumptions deemed significant; and
- Arguably more pertinent, dealing with the current guidance in a more sophisticated manner.

This article deals with the second of these two issues.

Defensible algorithms with respect to tax reserves, other tax cash flows, and admissible deferred tax balances should be a necessary part of such projections. Yet the current level of sophistication of the tax module

varies widely from company to company. While most companies generate tax reserves as well as statutory reserves, some do not. Further, many significant issues are, more often than not, ignored in the modeling process. A common trend is to generate taxable income equal to statutory income, with possible exceptions for:

Replacement of statutory reserve incidence with tax reserve incidence, and Section 848 tax DAC.

The following is a list of the areas of tax calculation that are generally not well developed, if they exist at all, in the actuarial projection process:

- Operating loss deductions (OLD)2 and net operating loss carrybacks and carryforwards (NOLs), and the restrictions on their utility depending on the company fact pattern;
- Capital loss carrybacks and carryforwards, with even greater restrictions than NOLs;
- Cost basis of invested assets for determining taxes at disposal dates;
- The effect of certain guidance on the tax DAC³;
- Distortions caused by reinsurance; and
- Deferred tax liabilities (DTLs) and admissible deferred tax assets (DTAs).4

The importance of refining projected tax cash flows goes beyond simply meeting regulatory requirements. For example, many companies use some form of "economic value" measurement (such as embedded value) as a management tool. Generally, the purpose of that management tool could be to better understand the economic value of the enterprise and the period change in such value. Alternatively, the purpose could be to assess the incremental economic value effect on the enterprise of a particular initiative under consideration (a tax strategy, an acquisition, a new product, a new reinsurance treaty, etc.). In either case, the economic value measurement requires a projection of all material cash flows and other changes in free surplus. If the tax element of those projections is materially misstated, it calls into question the relative value of this management tool.



Edward Robbins, FSA, MAAA, is an executive with Ernst & Young LLP. He can be contacted at 1.312.879.2626 or edward.robbins@ ey.com.



Stephen R. Baker, JD, MBT, is a senior manager, Financial Services Transfer Pricing, with Ernst & Young LLP. He can be reached at 1.949.437.0691 or stephen.baker@ ey.com.

The balance of this article will take the issues noted above, and provide the necessary procedures for reflecting tax cash flows appropriately.

OPERATING LOSS DEDUCTIONS AND NET OPERATING LOSS CARRYBACKS AND **CARRYFORWARDS**

A company that is a life insurance company under state law can be taxed as either a life insurance company or a non-life insurance company, depending on the nature of its reserves. The OLD and NOL carryforward/carryback rules differ.

The ordinary losses of a non-life insurance company (or a non-insurance company for that matter) are primarily discussed in Code section 172, and the related treasury regulations. Code section 172(b)(1)(A) allows non-life insurance companies to carry back an NOL to each of the two taxable years preceding the taxable year of loss, and to carry forward an NOL to each of the 20 years following the taxable year of loss.5 A non-life insurance company may elect to forgo the carryback of an NOL, and thus apply the NOL only to the subsequent tax years.6

Life insurance company taxable income is determined under Subchapter L, Code sections 801 and following.

- Section 801(b) defines life insurance company taxable income as life insurance gross income reduced by life insurance deductions.
- Section 804 defines life insurance deductions as the general deductions provided for in section 805.
- Subsection 805(a)(5) of the list of general deductions references the operating loss deduction of section 810.
- Section 810(c) provides that the loss from operations is the excess of the life insurance deductions for any taxable year over the life insurance gross income for such taxable year.
- Section 810(b) provides for the carryback and carryover of the loss from operations.

A life insurance loss from operations is carried back three years and forward 15 years. This distinction from nonlife insurance companies (and non-insurance companies) is important and comes into prominence in life/ non-life consolidated groups. The carryback and carryforward rules are mandatory, but do allow a taxpayer to elect to forgo a carryback.

Examples 1 and 2 below graphically illustrate the workings of the Life Company OLD carryback and carryforward rules. In Life Company Example 1, the taxpayer has operating income as shown below.

Example 1: Life three-year carryback, 15-year carryforward (no capital gain/(loss) discussion)

Generation Year	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
Operating income	100	70	100	(200)	100	50	70	100	(200)	(100)	100
Carryback from 2003	(100)	(70)	(30)	200	0	0	0	0	0	0	0
Carryback from 2008	0	0	0	0	0	(50)	(70)	(80)	200	0	0
Carryback from 2009 & Carryforward from 2009	0	0	0	0	0	0	0	(20)	0	100	(80)
Adjusted taxable income in year	0	0	70	0	100	0	0	0	0	0	20

In this example, the taxpayer is able to carry back the entire current year OLD from 2003 to years 2000, 2001 and 2002. This utilized the full amount of the OLD from 2003. In addition, the taxpayer can carry back the OLD from 2008 to 2005, 2006 and 2007. This carryback still leaves \$20 of income in 2007. During the 2009 tax year, the taxpayer generates a current year OLD of \$100. This can be carried back to 2007 to reduce taxable income to zero and this leaves \$80 to carry forward to 2010 and offset that income. In the proper situation, the 2008 or 2009 OLD may have been carried back up to five years under the special election.8

Life Company Example 2 will illustrate the situation whereby the taxpayer elects to forgo the carryback of an OLD. In this example, the taxable income is the same as Example 1. However, the taxpayer will choose to forgo the carryback from 2009.

Example 2: Life three-year carryback, 15-year carryforward (forgo carryback)(no capital gain/(loss) discussion)

Generation year	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
Operating income	100	70	100	(200)	100	50	70	100	(200)	(100)	100
Carryback from 2003	(100)	(70)	(30)	200	0	0	0	0	0	0	0
Carryback from 2008	0	0	0	0	0	(50)	(70)	(80)	200	0	0
Carryforward from 2009	0	0	0	0	0	0	0	0	0	100	(100)
Adjusted taxable income in year	0	0	70	0	100	0	0	20	0	0	0

As demonstrated in the chart above, by forgoing the carryback from 2009, the entire \$100 may be carried forward from 2009 to 2010. The taxpayer may have chosen this election for a number of reasons, including audit or examination adjustments expected.

CAPITAL LOSS CARRYBACKS AND CARRYFORWARDS

Code section 1212 allows companies to carry capital losses back three years and forward five years. In addition to the use of capital losses to offset capital gains, life OLDs may offset life capital gains. This article will not discuss the use of nonlife NOLs to offset life capital gains or other consolidated return issues not specifically mentioned. Similarly to an NOL, capital losses are applied in the order generated. Thus, a loss carried forward from an earlier year must be applied before a loss can be carried back from a later year.

In Example 3, the capital gain and loss is generated on the first line. This example assumes no NOLs available to be used against capital gains.

Example 3: Life three-year carryback, five-year carryforward (no NOL discussion)

Generation year		2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
Capital gain/(loss)	50	0	0	(100)	100	(100)	0	0	50	0	0
Carryback and carryforward from 2003	(50)	0	0	100	(50)	0	0	0	0	0	0
Carryback and carryforward from 2005	0	0	0	0	(50)	100	0	0	(50)	0	0
Adjusted taxable income in year	0	0	0	0	0	0	0	0	0	0	0

Under Example 3, the taxpayer may carry back \$50 in capital loss from 2003 to offset the 2000 capital gain. This left \$50 remaining to be carried forward against the 2004 capital gain. Once the 2003 carryforward occurred, there remained \$50 of capital gain in 2004. This amount was available from 2005 to be carried back. The remaining capital loss available was carried forward to 2008.

While this article does not intend to discuss all nuances of ordinary and capital losses, a brief mention is due of IRC section 1212, which controls capital losses. Example 5 under the relevant treasury regulations9 highlights an issue often not considered when companies work out analytical models. Under this example, a capital loss carried back to an earlier year to offset a capital gain will "bump" an ordinary loss carried forward to offset that gain. If the "bumped" OLD or NOL is close to expiring, there is an increased chance of OLD or NOL expiration, unused.

Consider a life insurance company taxpayer that has carried an OLD from 13 years ago to offset a capital gain. Two years later, the taxpayer generates capital losses. When that capital loss is generated, it offsets the capital gain, and the OLD previously used will be bumped. To the extent that there is no other ordinary income or capital gains, the NOL will expire unused in its 15th year.

COST BASIS OF INVESTED ASSETS FOR DETERMINING TAX DISPOSAL DATE

Generally companies project post-tax investment earnings via assumption of a pre-tax investment earnings rate, and multiplication of that rate by the complement

Treasury Regulation Section 1.848-1 spells out certain rules that may merit careful reading, and could influence the accuracy of actuarial projections.

of the marginal rate (e.g., 65percent). This approach can sometimes be a gross oversimplification. The reasons are several, and can affect the tax cash flows in varying degrees depending on the fact pattern of the taxpayer. The situations that will distort this simplification include the following:

- When a bond is purchased in the secondary market at a market discount, such discount accrues for statutory purposes; however, the cost basis of the asset for tax generally remains the same until maturity or prior disposal. Meanwhile, statutory income will include the accrual of discount, causing statutory income to differ from taxable income because of this issue. In the present environment, for example, it is possible that many bonds available in the secondary market are trading below par value for credit quality reasons, and that this type of mismatch between statutory income and taxable income could become significant. If the yield curve rises in the future, this will additionally cause many higher-quality bonds to similarly trade at values below par value.
- Except to the extent of accrued market discount, disposal at other than the cost basis of the asset gives rise to capital gains and losses, not ordinary income. Capital losses can only be offset against capital gains, not against ordinary income. Thus, one must apply the appropriate character of the income or loss on assumed disposal decrements, be they default, prepayment, or actual maturity.
- To the extent the general account investment is in stock or tax-exempt bonds, the proration rules apply, significantly impacting the amount of investment income that is tax-free. For taxexempt income, the policyholder share percentage (a function of the interest assumption on tax basis reserves) remains taxable, while the company share percentage (i.e., the complement of the policyholder share percentage) is tax-free to the company. For shareholder dividends from unaffiliated stock, 70 percent of the company share is tax-free.

It is recognized that actuarial projections generally do not model such asset characteristics. It would be interesting to see what the effect of such increased precision would be.

THE EFFECT OF CERTAIN **GUIDANCE ON THE TAX DAC**

The provision for tax-basis acquisition costs under Code section 848 (otherwise referred to as the "tax DAC") has also been projected in an inaccurate manner. Treasury Regulation Section 1.848-1 spells out certain rules that may merit careful reading, and could influence the accuracy of actuarial projections.

- The section 848 capitalization rate varies by type of business.
- There is no section 848 attribution for cancellable health insurance. However, there is a 20 percent reduction in the statutory unearned premium pursuant to Code section 807(e)(7). Further, to the extent there is a contract reserve, the better argument is that the contract reserve is an unearned premium for tax purposes, thus also subject to the 20 percent reduction from the statutory value.
- For qualified pension business there is no tax DAC. Thus in any projection, an assumption should be made as to the percent of business otherwise subject to the tax DAC but that is qualified pension.
- The DAC capitalization rate is very different between individual life insurance (7.7 percent), and that which is determined to be group life insurance (2.05 percent). The regulations define seven types of groups that would qualify as "group life" for these purposes. 10 Additionally, to be considered "group life insurance" for these purposes, the underwriting must be in the form of "group underwriting."11

Second, in pricing and projecting the costs of policy benefit updates, care should be taken to avoid the deemed internal exchange rules in the regulations. Neglecting those rules may cause the DAC capitalization rate to apply to the total reserve on policy changes deemed to be internal exchanges.

Third, the tax DAC has certain special aspects:

For smaller companies, where the tax DAC capitalization is under \$15 million in a taxable year,

- at least part of the DAC capitalized may be amortized in five years, rather than 10.12
- It is possible that a company with a large amount of capitalization may have a very low level of expenses. In such case, the otherwise capitalizable amount may be capped by the "General Deductions" limitation, unless an election resulting otherwise is in place.

COMPLICATIONS CAUSED BY REINSURANCE

There are several aspects of reinsurance where statutory income and taxable income differ, for example:

- Various statutory rules will deny a statutory reserve credit, while for tax purposes the credit is required to be taken. Most notably, Appendix A-197 of the NAIC Accounting Practices and Procedures Manual provides many rules a company must satisfy in order to receive statutory reserve credit.
- Of course the tax DAC itself is a distortion from statutory income, since a statutory equivalent of this item does not exist. There are additional tax DAC provisions governing reinsurance that will further distort the incidence of the tax DAC. For example:
 - Under the treasury regulations, reinsurance ceded to a non-U.S. taxpayer (e.g., an alien reinsurer) will often result in a negative "net consideration," which cannot be utilized against tax DAC capitalization amounts arising from other sources. Negative capitalization caused by reinsurance with a non-U.S. taxpayer can at best be put into a "basket," against which future positive capitalization resulting from reinsurance with non-U.S. taxpayers can be taken.¹³
 - The net cash transferred constitutes section 848 "net considerations," as opposed to premiums by themselves. Thus claims, modco reserve adjustments, ceding allowances, etc.,

Under the Actuarial Opinion and Memorandum Model Regulation (AOMR), as it is currently worded, tax cash flows should be a part of the asset adequacy calculation.

> are all brought under this "net consideration" definition.

Finally, the ability to amortize all or a part of the tax DAC in five years instead of 10 years does not apply to reinsurance transactions.

DTLS AND ADMISSIBLE DTAS¹⁴

Aside from the fact that deferred taxes are a significant economic balance sheet item, the major statutory deferred tax issue for projection purposes is the effect of DTAs and DTLs on the statutory annual statement, i.e., the effect they have on statutory surplus and on free surplus. Since admitted DTAs for the life insurance industry as a whole have recently amounted to as much as 12 percent of capital and surplus, this is a significant item to include in projections of emerging statutory results. Actuaries often have not been taking DTAs and DTLs into account when performing projections. Yet the theoretical formulas for producing those balance sheet items, at least with respect to those arising from policyholder liabilities (i.e., tax DAC and reserve differences) are straightforward. When projecting the policy-related deferred tax item, it is appropriate to ignore DTLs, since they do not occur materially on policy-related issues. In an ideal world the policyholder-related "economic" DTA equals the following as of a given valuation date:

DTA = T*[(SR - TR) + TDAC], where:

Т = Enacted tax rate TR = Tax reserve SR = Statutory reserve TDAC = Tax DAC balance

In actual statutory practice, that amount is reduced substantially by certain regulatory "guardrails."15 Moreover, the Company Action Level Risk Based Capital ("CALRBC") formula currently adds a component for the admitted DTA. However, the net admitted DTA can be approximated based on current company fact patterns, and projected as a percentage of some "base," and thus treated mathematically like a "negative reserve." The base can be the excess of statutory reserves over tax reserves, plus the tax DAC balance.

REGULATORY IMPLICATIONS

Under the Actuarial Opinion and Memorandum Model Regulation ("AOMR"), as it is currently worded, tax cash flows should be a part of the asset adequacy calculation. Thus, it is important for the tax cash flows to consider significant tax issues that veer away from a simplistic tax cash flow formula.

Further, under the AOMR, an economic, post-tax reserve is calculated, and then compared against a traditional formula reserve, which is, and should be, pretax. This is an inconsistent comparison. If a deferred tax asset exists with respect to those policyholder liabilities, then the proper comparison against the economic reserve should be the formula reserve minus the admitted DTA associated with those policies in question, as opposed to the formula reserve itself.

Insurers subject to Solvency II will soon be required to complete an Own Risk and Solvency Assessment (ORSA). A similar requirement may apply to insurers in the United States as a result of the NAIC's Solvency Modernization Initiative. More sophisticated modeling of tax considerations is recommended when companies perform dynamic capital adequacy and stress testing.

MANAGEMENT IMPLICATIONS AND CONCLUSION

For actuarial projections to serve as the management tools that they are intended to be, the persons charged with making those projections need to consider whether the projection is sufficiently sophisticated so that it does not miss major items. Moreover, when confronted with a possible opportunity or strategy, it is important to ask what the tax effect of that strategy will be, not just in the implementation year, but projected over the significant time horizon. This can be a difficult concept to communicate to company management, as taxes have a "mystique" in the eyes of many people.

Because tax expense is such a significant component of financial projections, the effort, both to increase the accuracy and to communicate its effect, should be very worthwhile. Given the importance and complexity of tax considerations, it may also be an appropriate time for the Actuarial Standards Board to develop an Actuarial Standard of Practice to provide guidance to actuaries on tax-related matters.

The views expressed herein are those of the authors and do not necessarily reflect the views of Ernst & Young LLP.

END NOTES

- 1 Unless otherwise specified, all references are to the Internal Revenue Code of 1986, as modified, and the Treasury Regulations promulgated thereunder.
- ² As will be discussed below, the Operating Loss Deduction is defined in Code section 810. Within the life insurance context, the generally known NOL of section 172 is defined as an Operating Loss Deduction.
- ³ Code section 848, "Capitalization of Certain Acquisition Expenses."
- This brings up a related issue. It can be shown mathematically that there is a need to subtract policy-related admitted DTAs from the formula reserves, in order to compare consistently with the economic (post-tax) reserves that are produced under the asset adequacy testing requirement of the Actuarial Opinion and Memorandum Regulation.
- ⁵ IRC section 172(b)(1)(H) was added to allow a company to elect to carry back a non-life NOL from either 2008 or 2009 to any of the fifth, fourth or third taxable years prior to taxable year of loss.
- See IRC section 172(b)(3).
- Section 810 was modified by Public Law 111-92 to add subsection (b)(4), which allowed a taxpayer to elect to carry back a loss from operations generated in either 2008 or 2009, to tax years either four or five years prior.
- 8 See footnote 7.
- 9 Treasury Regulation 1.1212-1(a)(iv)(Example 5).
- ¹⁰ Treas. Reg. §1.848-1(h)(2)(ii)-(viii)
- ¹¹ Treas. Reg. §1.848-1(h)(1) and (3).
- ¹² Code §848(b)(4).
- Treasury Reg. section 1.848-2(f).
- It is important to note that we are not speaking to the accuracy of the projected reversal patterns for admissible DTA calculation purposes in the statutory annual statements, Our comment here is on projection of the DTA's themselves as elements in projections of statutory net liabilities.
- See Statement of Statutory Accounting Principles No. 101 ("SSAP 101").

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