

The Financial Reporter

ISSUE 80 MARCH 2010

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CAN A WRITTEN OPTION EVER BE AN ASSET TO THE OPTION WRITER?

by Leonard Reback

One of the issues the International Accounting Standards Board (IASB) and the Financial Accounting Standards Board (FASB) are struggling with as they attempt to develop new standards for the accounting of financial instruments and insurance contracts is whether a written option can be an asset to the writer of the option. I believe it can. Under capital market theory, a written option is almost always a liability to the writer of the option.¹ This is one of the bases for option pricing models such as Black-Scholes. But although this is the case for capital market options, it does not necessarily hold for other types of options. A capital market option is unique in that it is settled in cash or in marketable financial instruments or commodities. But when the option involves a service element, the general rule that a written option is a liability to the option writer, does not always hold. Two examples of written options that can have an asset value to the option writer are demand deposit accounts and credit card accounts. Although the bank that wrote the option cannot compel the customer to use the demand deposit or credit card, i.e., exercise the option, numerous market transactions confirm that the written option to allow, but not compel, a customer to use a demand deposit account or credit card can have an asset value. This is demonstrated by the prices paid in transactions where banks buy demand deposit or credit card accounts from other institutions.²

FOOTNOTES:

¹ An exception may be a deferred premium option, where the counterparty is contractually obligated to pay the deferred premium even if that premium exceeds the option value. However, if the counterparty's obligation to pay the premium is considered a separate instrument, the pure option value will still be a liability.

² See, for example, paragraphs B7 through B9 of the IASB Discussion Paper, "Reducing Complexity in Reporting Financial Instruments," issued in March 2008.

Published by The Financial Reporting Section
of the Society of Actuaries

This newsletter is free to section members. Current-year issues are available from the communications department. Back issues of section newsletters have been placed in the SOA library and on the SOA Web site (www.soa.org). Photocopies of back issues may be requested for a nominal fee.

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CHAIRPERSON'S CORNER

VOLUNTEER—ENJOY THE JOURNEY

A year ago, my predecessor as council chair, Rod Bubke, told us, “since it’s not broke, we don’t need to fix it.” Rod was referring to the section council, which has effectively supported the research and educational needs of our membership for several years. I’m confident that the new council will continue to serve us well.

However, I’ve come to recognize a dimension to our effectiveness besides the question of, “is it broke?” No matter how well we perform as a council, or individually as volunteers for the section, there are limits to what we can do. Over the past year, several of us have said at various points in time, something to the effect of, “I’m sorry I wasn’t able to help more, but ...” followed by some reference to job or personal demands. Also, in terms of volunteer time, the section was blessed by an unusual election result in 2006—a tie vote increased the size of the council to 10 members. With their terms expiring in 2009, the four members elected in 2006 have been replaced by three new members. That’s a 10 percent reduction in the number of council members.

Our pot is not broken, but several changes in the last few years have filled the pot to a point where we are in danger of having some important work spill over, beyond our capacity to serve.

CHALLENGES

The challenges are not new this year. As Rod explained a year ago, education and research remain the pillars of section activity, with a particular emphasis now on principle-based approaches (PBA) and international issues.

Most of the volunteer work on PBA has been done within the American Academy of Actuaries (the Academy), but as PBA moves into reality, there is a growing need for research and education, both of which are SOA functions and of particular concern to members of this section.

International Financial Reporting Standards (IFRS) have historically been of interest mostly to those of us working for subsidiaries of European insurers. That is changing. In the United States, we’re seeing substantially increased cooperation between the Financial Accounting Standards Board (FASB) and the International Accounting Standards Board (IASB). As the standards set by these two bodies converge, we may see substantial changes to both GAAP and IFRS.

A substantial minority of our members work for companies subject to Canadian regulation. The point was made in our last section survey that we don’t provide much value to those members. And now, Canada is moving toward adoption of IFRS, but under current standards there are significant differences in the application of IFRS to Canadian companies than to U.S. companies or to U.S. subsidiaries of European companies. To really have some fun, try working for a Canadian subsidiary of a U.S. or European company during this transition.

Besides all the changes demanding research and education, we’ve added webcasts to our traditional methods of delivering continuing professional development. With the Academy’s increased requirements and the new requirements of the SOA, webcasts

have become an important, more affordable form of organized educational activities. The SOA in general, and this section in particular, want to increase the number of webcasts offered.

While the current council members are committed to serving you, the section membership, we will sometimes be challenged to meet current needs. In the future, it may be harder to find people who are willing and able to commit to all of the activities currently being performed by council members.

CHANGES

One obvious way of dealing with the increasing demands would be to increase the size of the council. However, the primary role of the council is to make decisions regarding the use of council resources. Much of the work currently being done by council members could be done by other volunteers. We do not need to increase the size of the council.

Fortunately, we already have many other people involved in section efforts. For example, none of the volunteer editors who put together this quarterly newsletter are on the council. Most of the articles come from people who are not on the council. And most of the speakers at section sponsored webcasts and meeting sessions are not on the council, either. Although the section continues to sponsor the popular US GAAP seminars, the planning, organization and conduct of these seminars is largely independent of council membership.

To ensure that we can continue to serve the needs of the Financial Reporting Section membership, we need to rely more on other volunteers when it comes to organizing meeting sessions and webcasts, and overseeing research. Toward that end, we've established two new roles for the section: volunteer coordinator and a webcast team.

Initially, council member Mark Alberts has agreed to be our volunteer coordinator. Mark will maintain a list of the names of people who have expressed an interest in doing volunteer work for the section and will keep that list in front of the council whenever we have a need for volunteers.

As I write this, council members Rob Frasca and Mike Sparrow are looking for people to serve on the

webcast team. This team will identify topics of interest to section members and bring these ideas to the council. For topics that are approved, the team will draft descriptions, recruit speakers and work with SOA staff to schedule and produce each webcast. Hopefully, by the time you read this, we will already have a team assembled and working on one or more webcasts for this year.

TAKE ACTION

The rewards of volunteering are both satisfying and practical. It feels good to know when you've done something to benefit others. But to remain competent professionals, we all need to learn new things, to keep up with changing demands. Volunteer work is a great way to learn. Preparing a speech for an SOA meeting or a webcast is more time consuming than listening to such a speech, but it is also a much more effective way to learn. Volunteer work is also a great way to gain name recognition and professional respect, and to build a professional network, all of which can enhance career development.

Like most volunteer roles, the new roles we've established need not be filled by council members. The volunteer coordinator and a lead member of the webcast team can be friends of the council—people who communicate regularly with the council but need not be present for all council activities. If you're interested in any of these positions, I suspect that Mark, Rob or Mike would be happy to hand you the reins. There will be plenty else for them to do while on the council.

With these changes, it should now be easier for you to become a leader in the work of our section. If you want to help shape our professional development offerings, join our webcast team or contact our volunteer coordinator and tell him you'd like be involved in planning for sessions at the annual meeting or the Life & Annuity Symposium. If you like speaking or writing, or want to be closer to our research activities, get your name onto our volunteer list along with the topics that interest you.

This is your section. Become an active member of its leadership and enjoy the journey. ■



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An insurance contract is another example of a written option that can have positive value to the insurer who wrote the option.



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An insurance contract is another example of a written option that can have positive value to the insurer who wrote the option. Long duration insurance contracts usually require the policyholder to pay premiums for the insurance over many years. If the policyholder ceases to pay the premiums, the policy terminates (and the policyholder may receive some nonforfeiture value in cash or paid up insurance). An insurer is required to accept premiums from the policyholder and retain the policy in force if the policyholder pays those premiums. But the insurer cannot compel the policyholder to pay premiums. Therefore, the insurer has written an option to the policyholder to accept premiums. Market transactions of insurance contracts between companies confirm that this written option can have an asset value to the insurer. There are several theoretical reasons why this is the case, and why the general rule from capital market theory does not apply.

POOLING OF RISKS

One reason relates to the pooling of risks that is the basis for the economic viability of insurance contracts. We assume that both the insurer and the policyholder are risk averse (or loss averse). So if we have a contract whose expected present value of future benefits is CU100, the current value of the benefits to both the insurer and the policyholder³ is greater than 100. The excess current value over the present value of expected cash flows can be viewed as the risk margin.⁴ However, the insurer can pool many similar risks, and so the impact of the risk of loss from a given policy to insurer is relatively small. On the other hand, if an individual retains the risk rather than purchase insurance, that individual does not benefit from pooling risks, and the impact of the risk of loss to that individual is relatively large.

Assume that the risk margin that would appropriately compensate the insurer for bearing the risk in this contract is CU3. For an individual who cannot pool his risk, the risk margin necessary for bearing that risk may be CU30. This difference in the value of the risk to insurer relative to the value of the risk to the individual is what makes insurance economically viable. It creates a situation where an option written by the insurer can be an asset to the insurer. Assume that the present value of future premiums P for this policy is between CU103 and CU130. The policy would then have a current value to the policyholder that is an asset of CU130 minus P. But the policy would also have a current value to the insurer that is an asset of P minus CU103. This dichotomy of values between the option writer and the option purchaser does not occur in typical capital market options, where the contracts are settled in cash or marketable instruments or commodities, which have the same value to both counterparties. For this reason, the written option within an insurance contract can be an asset to both the insurer and the policyholder, even though a similar situation could not occur for a typical capital market option.

TAXES HAVE AN IMPACT

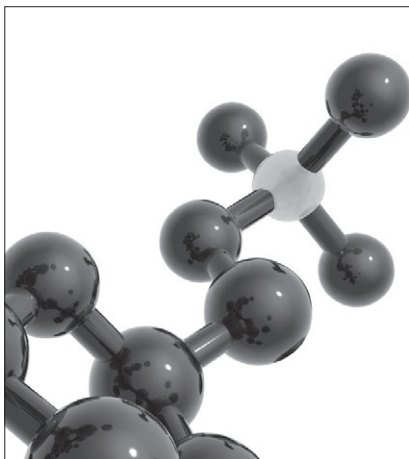
There is another reason why the written option within an insurance contract may have an asset value to both the insurer and policyholder. This relates to taxes. In some jurisdictions, such as the United States, the government provides tax incentives to encourage the purchase and retention of insurance contracts. So the after-tax cost to the policyholder is less than the premium received by the insurer. This can also lead to the

FOOTNOTES:

- ³ Although I discuss the current value of the insurance contract to a policyholder, in the case of an individual policyholder, such value would generally not appear on any (generally accepted accounting principles) GAAP or International Financial Reporting Standards (IFRS) financial statement. But whether or not the policyholder files GAAP or IFRS financial statements is irrelevant to the measurement of the value of the insurance contract to that policyholder.
- ⁴ The risk margin discussed here is the theoretical risk margin that would appropriately compensate a risk averse or loss averse entity or person economically for a risk of loss. It is irrelevant for this purpose how this risk margin is reflected in the measurement for GAAP/IFRS accounting purposes, whether that risk margin is estimated explicitly, included within a composite margin, or even excluded from the GAAP/IFRS measurement.

insurance contract, and the written option to permit, though not compel, the policyholder to continue to pay premiums to be an asset to both the insurer and the policyholder. Such tax benefits are also not a feature of typical capital market options.

In summary, insurers have many years of experience indicating that policyholders will continue to pay premiums on a policy, even if the policy has an asset value to the insurer. There are also many market transactions, such as business combinations, confirming that the written option to accept premiums on a policy can be an asset to the insurer. As discussed above, these are not functions of ignorant or irrational policyholders. Rather, they represent the fact that, unlike a typical capital market option, an insurance contract can have a different value to the insurer and to the policyholder. This difference in value can be due to differences in risk preferences and to tax incentives. The effect of this difference in value can cause an insurance contract, and the written option to accept premiums under an insurance contract, to be an asset to both the insurer and the policyholder. ■



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TRANSITIONING TO RBC C3 PHASE III

by Joe Chou and David Wicklund



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The National Association of Insurance Commissioners (NAIC) Risk-Based Capital (RBC) system has historically employed a factor-based approach to the determination of capital requirements. While most aspects of RBC still do so, the NAIC has been transitioning certain components to a principle-based approach. C3 risk, covering interest rate and market risk, has been specifically targeted. In 2000, RBC C3 Phase I was introduced to address fixed annuities and single premium life insurance. In 2005, RBC C3 Phase II came into effect to cover variable annuities. The next component to transition will be C3 for life insurance products.

RBC C3 Phase III introduces a principle-based approach to the determination of interest rate and market risk capital requirements for universal life, whole life, term life, variable life, indexed life and group life insurance products. The target for RBC C3 Phase III finalization is the spring of 2010, at which time the official implementation date will be set. Implementation could be required as early as Dec. 31, 2010.

RBC C3 Phase III will bring about some substantial alterations to which the life insurance industry will have to adapt. Implementation will require a significant modeling effort with demands on resources and systems. There will also be business implications as capital requirements are likely to change, making certain products more or less profitable. Companies need to start preparing now to ensure successful implementation and to understand how the new approach will impact their business.

This paper provides background on RBC C3 Phase III, as currently defined by the September 2009 report prepared by the American Academy of Actuaries' C3 Life and Annuity Capital Work Group.¹ It then presents a case study illustrating the potential impact for two common life insurance products. Finally, it discusses some of the broader implications for life companies.

RBC C3 PHASE III CALCULATION

The approach recommended by the report introduces stochastic calculations to the determination of life

insurance capital requirements. The majority of our discussion and our examples focus on the stochastic nature of RBC C3 Phase III. However, recognizing that in some situations a simpler approach may be sufficient, the report also includes some nonstochastic options. The Total Asset Requirement, as defined in the report, is the sum of four components: 1) Stochastic Amount; 2) Factor-based Amount; 3) Alternative Amount; and 4) Nonmodeled Amount. The total C3 capital requirement is the excess of the Total Asset Requirement over the corresponding statutory reserve. Each of the four components is described in the following sections.

STOCHASTIC AMOUNT

The calculation of the Stochastic Amount is a five-step process:

1. Project asset and liability cash flows over a series of stochastically generated interest rate and/or equity scenarios.

The projection is performed using real-world stochastic interest rate and/or equity scenarios. The company may use an internal scenario generator provided certain calibration requirements are met or it may use scenarios generated from approved American Academy of Actuaries generators. There is no specific number of scenarios required, but 1,000 has been a popular choice in the industry for other stochastic reserve and capital calculations (e.g., AG 43, RBC C3 Phase II).

After-tax cash flows are projected along each stochastic scenario, and the net accumulated asset amount (projected statement value of invested assets) is determined at the end of each projection year. The net accumulated asset amount is projected forward as follows: net accumulated asset amount (t) = net accumulated asset amount (t-1) + net cash

FOOTNOTES:

¹ http://www.naic.org/documents/committees_e_capad_lrbc_AAA_0909_report_rbc.pdf

flows (t). Starting assets for the projection must be at least 98 percent of the statutory reserve at the valuation date and should be explicitly modeled along each scenario (i.e., the company must use a full ALM model). Reinvestment and disinvestment are modeled consistently with the company's strategy. Annual projections are typically considered sufficient. The projection period should be long enough so that no materially greater Stochastic Amount could occur after the projection period.

The cash surrender value at the end of each projection year is also projected along each scenario.

The cash flows are projected using Prudent Estimate Assumptions. Prudent Estimate Assumptions are comprised of Anticipated Experience and a Margin for uncertainty, where the magnitude of the Margin should be directly related to the level of uncertainty of the assumption. No specific guidance is given for the magnitude of the Margin, but typically a Margin is set higher if the risk factor is higher or if there is limited experience data from which to set the assumption. The Margins used in assumptions require a significant amount of actuarial judgment.

2. Calculate the Accumulated Deficiency at the end of each projection year.

The Accumulated Deficiency is defined as the working reserve minus the net accumulated asset amount, where the working reserve is the cash surrender value. This is done for each projection year within each scenario but is aggregated across all cells within the business segment.

3. For each scenario, determine the Greatest Present Value of Accumulated Deficiencies (GPVAD).

The present value of the Accumulated Deficiency for each projection year is determined along each scenario. The discount rates used are 105 percent of the after-tax one-year treasury rates for that scenario. The highest Accumulated Deficiency on a present-value basis is the GPVAD for that scenario.



4. Determine the Scenario Amount for each scenario.

The Scenario Amount is equal to the sum of the starting assets and the GPVAD for the corresponding scenario. The starting assets are the same for each scenario, but the GPVAD and Scenario Amount are unique.

5. Determine the Stochastic Amount by calculating the CTE 90.

The Stochastic Amount is equal to the average of the 10 percent of Scenario Amounts with the highest values.

Factor-Based Amount

A factor-based approach may be used for policies that pass the stochastic exclusion test. The Factor-based Amount is equal to the sum of the statutory reserve and the product of a constant factor and the statutory reserve. The factor is equal to 0.5 percent if an unqualified actuarial opinion has been submitted based on cash flow testing and 0.75 percent otherwise (i.e., the same factors as used in the current C3 calculation).

The Stochastic Exclusion Test requires a gross premium valuation to be performed on a block of business using a base scenario and 15 additional deterministic interest rate and equity scenarios that are predefined.

CONTINUED ON **PAGE 8**

The block of business passes the Stochastic Exclusion Test if the results from the deterministic shock scenarios differ from the base scenario by an amount less than a defined threshold. If the Stochastic Exclusion Test is passed, then the Factor-based Amount may be used.

Alternative Amount

The actuary may elect the Stochastic Modeling Exclusion for certain blocks of business regardless of whether the block passes the Stochastic Exclusion Test. The Alternative Amount allows for actuarial judgment in the determination of the asset requirement to adequately cover the interest rate risk and market risk for the business. The Alternative Amount should reflect a level of conservatism consistent with that of the CTE level used for the Stochastic Amount. The actuary must be able to demonstrate that the risks have been adequately captured.

The Alternative Amount is subject to a minimum floor equal to the amount that would be determined for the business under the Factor-based Amount.

Non-Modeled Amount

There may be some immaterial amounts of liabilities covered by RBC C3 Phase III that are not modeled. The ratio of Stochastic Amount plus Alternative Amount

for modeled business to the total modeled liabilities should be applied to the non-modeled liabilities. If this amount is greater than the amount that would be determined using the factor-based approach for the non-modeled business, the amount determined through the ratio approach is the Non-modeled Amount. Otherwise, the Non-modeled Amount is equal to the amount determined using the factor-based approach for the non-modeled business.

CASE STUDY

Approach And Assumptions

We calculated the RBC C3 Phase III Stochastic Amount and corresponding C3-required capital for a sample universal life and a term policy. The C3 requirement was calculated at a single point in time for policies in policy-year five. Additionally, we performed a 30-year projection of C3 to get an understanding of how the capital requirement might look over the entire lifetime of a policy.

The case study uses 1,000 interest rate scenarios created by the American Academy of Actuaries interest rate generator. The Prudent Estimate Assumptions used in the projections are set using Anticipated Experience plus the Margins for risk in the following table.

Assumption	UL Policy Margins	Term Policy Margins
Mortality	<ul style="list-style-type: none"> ▶ Years 1-5: 5% ▶ Years 6-30: grades from 5% to 8% 	<ul style="list-style-type: none"> ▶ Years 1-5: 7% ▶ Years 6-20: grades from 7% to 10%
Base lapse	<ul style="list-style-type: none"> ▶ Years 1-5: 7% ▶ Years 6-30: grades from 7% to 10% 	<ul style="list-style-type: none"> ▶ Years 1-5: 9% ▶ Years 6-20: grades from 9% to 12%
Expense	<ul style="list-style-type: none"> ▶ Years 1-5: 4% ▶ Years 6-30: grades from 4% to 7% 	<ul style="list-style-type: none"> ▶ Years 1-5: 4% ▶ Years 6-20: grades from 4% to 7%
Premium persistency	<ul style="list-style-type: none"> ▶ Years 1-5: -5% ▶ Years 6-30: grades from -5% to -8% 	▶ N/A
Default charge	▶ 50%	▶ 50%

- Margins are set higher for assumptions viewed as being more uncertain (e.g., defaults are highly volatile, while expenses can be more reasonably forecast).
- The margins increase over time because the assumptions are more difficult to forecast further in the future.
- The term product has less underwriting experience than the universal life product, so its margins are set higher.
- The Canadian Institute of Actuaries practice note, “Margins for Adverse Deviation,” is used as a reasonableness check.²

The starting assets are set equal to the statutory reserve for each policy. The reserving basis for the universal life policy is CRVM (there is no no-lapse guarantee), and the reserving basis for the term policy is XXX.

The RBC C3 Phase III calculation over the lifetime of the policy requires stochastic projections to be run from each future policy year. This exercise requires significantly more run-time and will likely be necessary for pricing and capital forecasting.

Results

The results for the single point-in-time (fifth policy year) calculation are summarized in the table below:

	UL policy	Term policy
Statutory reserve	\$14,608,655	\$3,580,177
Stochastic Amount	\$14,078,595	\$2,433,195
C3 Phase III requirement	\$0	\$0
Current RBC C3 requirement	\$73,116	\$17,919

There is no excess over the statutory reserve and therefore, no C3 requirement under RBC C3 Phase III for either policy. For the Stochastic Amount to be less than the statutory reserve means that the GPVAD, even in the worst 10 percent of outcomes, tends to be negative. In other words, the net accumulated asset amount typi-

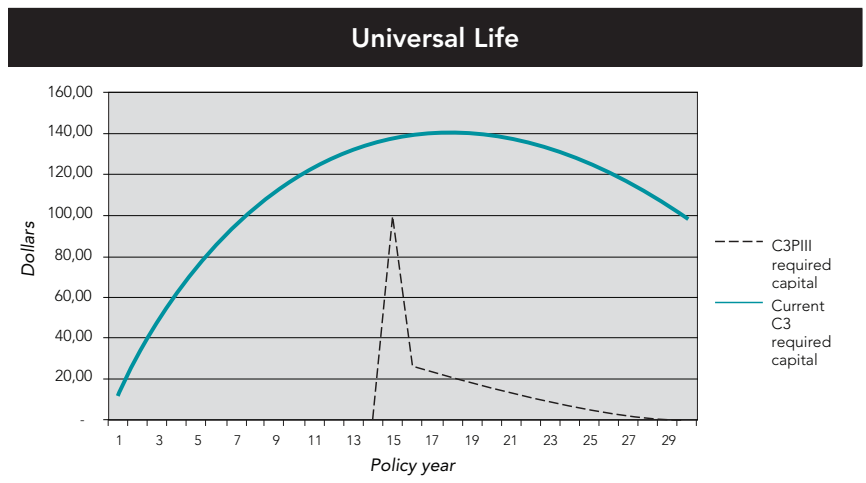
cally never drops below the cash surrender value for any projection year.

For the universal life policy, there is a surrender charge assessed as a percentage of the face amount, which grades to zero over the first 15 policy years. This provides the policy with a significant cushion against potential deficiencies. The term policy, with no cash surrender value, only has positive deficiencies if the net accumulated asset amount becomes negative. Given the conservatism in the starting asset amount—equal to the XXX reserve—it is unlikely for this to occur even in adverse interest rate scenarios.

The current RBC C3 requirement, which is equal to the Factor-based Amount, is also provided in the table. There is always a C3 requirement under the current approach provided there is a positive reserve. The shift to RBC C3 Phase III leads to a considerable capital reduction for the specific products used for the case study.

The following graphs provide the C3 requirement, as determined by RBC C3 Phase III and current RBC, for each policy over the life cycle of the policy.

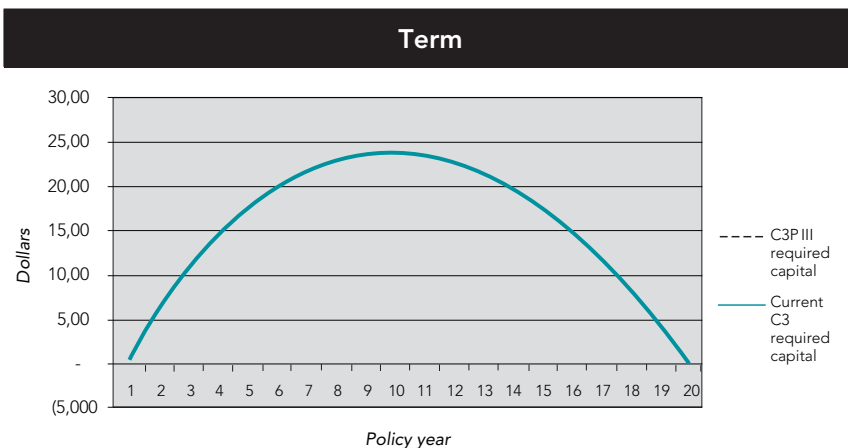
For the universal life policy, there is a positive C3 requirement only after the 15th policy year. The spike



FOOTNOTES:

² <http://www.actuaries.ca/members/publications/2006/206132e.pdf>

CONTINUED ON PAGE 10



in year 15 occurs because it is the first year the policy is out of the surrender charge period, and the highest deficiency for this policy always occurs at the end of the first projection year. In the model, the premium is paid annually and the benefits are calculated monthly. The timing disconnect causes positive accumulated deficiencies at certain points in the year, leading to positive C3 requirements. This result should not be interpreted as the expected shape of the C3 requirement over time, but should be viewed as an implication of a modeling decision.

The term policy, on the other hand, has no RBC C3 Phase III requirement over the entire lifetime of the policy.

The C3 requirement is considerably lower—usually zero—under RBC C3 Phase III than under current RBC. In addition, the pattern of the C3 requirement over the lifetime of the policy is completely different. Under a factor-based approach, the pattern mirrors that of the statutory reserve. Under RBC C3 Phase III, the pattern may look nothing like that of the reserve.

Observations

The case study helps illustrate some interesting aspects of the RBC C3 Phase III calculation:

- The C3 requirement is very dependent on the statutory reserving basis. For products using especially

conservative reserving bases (e.g., XXX or AXXX), there may be a very low C3 capital requirement, even as low as zero. However, if the reserving basis changes per VM-20, a decrease in the statutory reserve could potentially have some offset in the way of an increase in the C3 requirement.

- While many product lines may pass the Stochastic Exclusion Test, it may not be desirable for companies to elect the stochastic exclusion. For both policies in the case study, the capital requirement is much greater for the Factor-based Amount than for the Stochastic Amount. Companies will need to balance the increased resource demands with potential capital impact when evaluating whether to elect stochastic exclusion for some blocks.
- The presence and timing of deficiencies are largely driven by product features and the timing of profit emergence. The universal life policy helps illustrate how a surrender charge insulates against deficiencies and reduces capital requirements. Additionally, the timing of profits can have an impact on the results. For example, a policy with commissions paid up front fares better than a policy structured toward renewal commissions. Starting assets are the same in either case, but the front-loaded product has lower future expenses and is less likely to have deficiencies.

IMPLICATIONS

The transition to RBC C3 Phase III has numerous financial and process-related implications for life insurance companies:

- Using the stochastic approach could lead to a significant reduction in required C3 capital for life insurance products.
- Changes in required capital will cause changes in profitability and will affect various products differently. This should be considered in product development.
- Companies that have sought to optimize their mix of insurance and market risk may find their mix no longer optimal.

- RBC C3 Phase III will create additional resource and systems needs.
- Pricing and capital forecasting efforts will be more complex due to the stochastic nature of the calculation.
- Effective controls and review procedures will need to be established due to the complexity of the calculation.

Companies would be well served to begin testing RBC C3 Phase III calculations on their own business to understand the implications more directly. The calculations are complex and the overall effort requires a lot of lead time. For companies fresh from the lessons learned in implementing AG 43, it should be apparent that it is never too early to begin developing the methodology and systems needed to adopt a principle-based reserve or capital standard. ■

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In Praise Of Approximations

by Carol Marler

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When I was taking exams in the '70s, the article, "Analysis of Approximate Valuation Methods," was one of my favorite readings.

It was written in 1955, by E. Allen Arnold. I found it both interesting and practical. It began, "Since Frank Shailer's paper 'Approximate Methods of Valuation' appeared in 1924, our actuarial literature has omitted any further development of this subject, except for occasional discussions." Not long after I took that exam, the syllabus was changed and the article was removed. Nothing comparable has replaced it. One purpose of this article is to begin some further discussions of when, how and why we need approximations.

Of course the environment has changed a lot over the years. Our personal computers have power exceeding many mainframes of earlier times. In fact, it has been said that with the computer power available today, approximations are no longer necessary. I disagree. The benefits of increasing computer power have led to significant changes in the way we do our work. Organizational structures are flatter. We no longer have an army of clerks to do routine calculations, and typing pools are an anachronism. We must produce results in compressed time frames, and more analysis is expected. The products we offer have become much more varied, more complex and more individualized, while our valuation methods are also growing more complex, reflecting a range of values rather than a single number result.

Before presenting my arguments for using approximations, it seems worthwhile to define a few terms and to provide some distinctions.

- Estimate/Approximation
 - An estimate is an educated guess. My dictionary says, "Estimate . . . implies a personal judgment" in a specific context.
 - An approximation is a methodology for getting close enough. Generally this involves a model or formula.
- Accuracy/Precision
 - Accuracy is a measure of how close one is to the correct answer.
 - Precision relates to the possible range of results—more significant digits indicate higher precision.

Here are four reasons why approximations are still a very important part of actuarial work.

First, I believe that most companies have at least one block of business that never grew big enough to justify making system modifications to handle all its unique features. An old term for this category is "shoe box" because all the administrative data was once kept in a box about the size of a shoe box. Even though these cases are probably administered on a computer now, the actuarial analysis is, of necessity, simplified in order to focus on other issues that are more material.

Cost/benefit analysis is always necessary. Good practice calls for putting in the amount of time commensurate with the accuracy that can be added. Experienced actuaries are able to recognize when a judgment call is better than another computer run.

Second, there are a lot of approximations used even in calculations often considered to be "exact." For example, there are two ways to express a person's age as an integer, and both methods are well accepted—age last birthday or age nearest birthday. Unless the calculation is actually done on the person's birthday, though, the integer age is only an approximation. Likewise the use of mean reserves or mid-terminal reserves is well-established. Some companies prefer to use interpolated terminal reserves, but even this is generally done only to the nearest month.

We use a lot of input assumptions that are only approximations. Our mortality tables may look exact, but they always involve some degree of smoothing. Interpolation and/or extrapolation are also necessary because of the sparseness of data, especially at the oldest and youngest ages.

Many companies use early cut-off for administrative systems in order to meet deadlines. Any adjustment to the actual month end-date is a form of approximation. There is often a trade-off between timeliness and accuracy, or a trade-off between the size of the potential error and the cost to make the results more accurate.

Third, the growing use of stochastic models has made it abundantly clear that all our actuarial calculations are

merely a point estimate taken from a random distribution. The fact is, we know that the expected value we calculate is almost certain to be wrong, although the law of large numbers does tell us that we can get close enough. How close? A lot of work has gone into analysis of the error involved in various mathematical functions, particularly when these functions are included in a software package. Actuarial judgment is again the correct answer.

On the other side of the closeness question, consider a pension plan with only about five participants. Assuming preretirement mortality using any standard table will in most years result in a fractional short-fall in results because actual gains from mortality are less than expected. For this reason, it is common practice to assume zero preretirement deaths in small plans.

Fourth, when the underlying data is missing, inaccurate, or otherwise flawed, a good enough calculation is really the most efficient choice. Various terms have been used to describe overexertion in such a situation: false precision, spurious precision or illusory accuracy.

I once heard of an actuary who claimed that he got more accurate results when he ran his model with quarterly payment patterns. The problem was that he hadn't measured actual quarterly premium collections, but simply divided the annual premiums by four. Spurious precision. And because the input data was of low quality, illusory accuracy.

Another story involves an actuary who presented a rounded result to his manager. About X thousand dollars. The manager wanted it more accurate, so the actuary went back to the computer output and gave an answer to the dollar. When the manager was still dissatisfied, the actuary pulled some change out of his pocket, counted it, and offered that result to provide dollars and cents. False precision. (I wasn't there, but I do hope the manager laughed.)

There are other times when approximations are valuable.



Checking for reasonableness: This might be for a complex calculation, such as scenario testing. An approximate calculation could show if the results are unreasonable, and may give some insight into where the problem might be.

Stochastic on stochastic: By this phrase, I refer to those cases where each year of each scenario requires an embedded stochastic model. This is a concern with regard to Embedded Value calculations, since one of the items to be projected is the required surplus, which is defined in terms of a conditional tail expectation (CTE), or in other words a stochastic calculation. The number of calculations is a linear function of the square of the product of the number of scenarios and the number of years projected. There are several methods for reducing the computational intensity. One of the most obvious is to replace the CTE with some approximate formula that does not require stochastic projections. Then the formula for time required becomes linear rather than quadratic.

Finally, some comments about incurred but not reported (IBNR) claim liabilities. Whatever you do for this liability, there will be some volatility that cannot be removed. In other words, nothing will estimate it well. It can be helpful to remember that the objective is to estimate the eventual incurred claims, not the IBNR itself. Thus the error measurement ought to be with respect to the total current estimate of incurred claims.

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Of course, you might be in the situation of a company president whose company had only recently begun writing life insurance. With just a few hundred policyholders, the president confidently explained, “I know all of our insured people and they haven’t died.” Sooner or later, though, there would be a situation in which, through sheer numbers, some death might not be noted in time. A consulting actuary was able to convince the president that he needed to establish a formula-based IBNR now while it was small and then allow the provision to grow slowly over the years.

CONSIDERATIONS

Sometimes approximations are necessary, when no better alternative method exists. This is commonly the case when dealing with claim liabilities, including IBNR, as noted above.

Materiality is an important issue. For example, if the aggregate value of approximated items is small, a more complex or detailed approach is not justified. The goal should be substantial accuracy, or in other words, a minimum reasonable error. The method should also be unbiased, or at least have an acceptably small bias. Calculations that can be easily checked are always preferable. Caution should be used when results from one

approximate method are used as input to other approximations, to avoid any compounding of errors—the snowball effect. Variations from period to period must also be considered. If a result is too large one time and too small the next, the distortion can have a bad effect on resulting earnings and/or surplus.

Saving time is helpful in meeting deadlines; however, sometimes an approximate method will result in a loss of additional information that was provided by a more detailed approach. This is another trade-off that must be taken into account.

Other issues that must be considered include appropriate utilization of technical personnel, acceptability to auditors for GAAP or to state insurance examiners for statutory, and the value of simplicity. The cost should not be disproportionate to the importance of a particular item.

Mr. Arnold ended his paper with this sentence, “Modern business conditions virtually require that the actuary be continually alert to the opportunities for the extension and improvement of approximate methods of valuation.” I think this statement is as true today as it was when he wrote it more than 50 years ago. ■



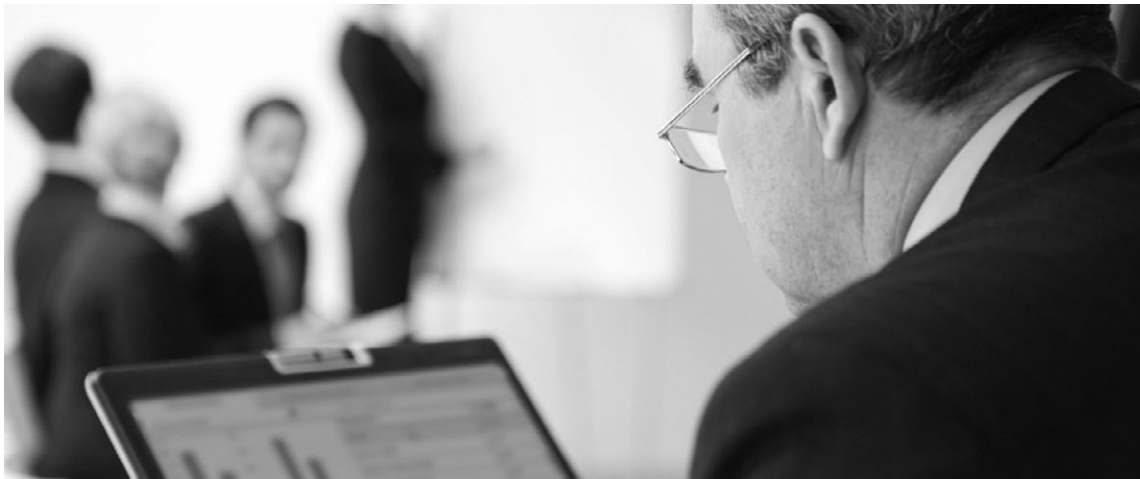
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Report On The International Actuarial Association—Hyderabad Meeting

by James Milholland



There was great excitement in the run up to the meeting of the International Actuarial Association (IAA) in Hyderabad. There was reason to believe that by the time of the meeting, Nov. 12-15, 2009 the International Accounting Standards Board (IASB) would surely have made most of the major decisions related to the long-awaited uniform insurance standard and an exposure draft would be slated for publication in December. The internet was buzzing with e-mails from actuaries staking out positions on key issues and there was already talk of a special meeting of the IAA Accounting Committee to finalize its comment letter on the Exposure Draft. The IAA's agenda was varied and full, but it was clear that the topic of greatest interest to the Accounting Committee would be the anticipated exposure draft.

FURTHER DELAY AND A DISAPPOINTING DECISION BY THE IASB ON ACQUISITION COSTS

Excitement turned to disappointment when the IASB failed to make the needed progress in its decision-making process and the publication date for the exposure draft slid from December 2009 to April 2010. In turn, disappointment turned to dismay when the board voted to reverse a previous tentative decision by agreeing with the Financial Accounting Standards Board (FASB) that revenue should not be recognized at inception of insurance contracts to offset acquisition costs.

The significance of acquisition costs to issuers is too great for actuaries to find comfort in the fact that the vote was narrow (8-7) or that the new position of the board is also tentative. Coupled with an earlier decision that acquisition costs should be expensed when incurred, the decision on revenue recognition means that insurers would present a picture of their financial results fundamentally different from what is portrayed by current practices. For insurers reporting under generally accepted accounting principles in the United States (US GAAP), a first order estimate of the effects on balance sheets can be made by eliminating DAC and the corresponding component of deferred taxes. For many insurers this amount is more than half of reported equity. The effect on profit and loss is strain from new business, one of the very characteristics of insurers' regulatory reporting in the United States that fueled the drive to US GAAP in the first place.

Accounting Committee members were unanimous in their belief that the board got it wrong with regard to acquisition costs. Agreement among actuaries however is not in itself a reason for the board to take a different view, and discussions at the meeting failed to produce an argument that the IAS had not already heard that could be counted on to compel it to change direction.

Are the decisions of the board a case of "right reasons, wrong answer?" The decisions can be seen as



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internally consistent with existing guidance (e.g., on intangible assets) and with decisions made in other projects, especially in the project on revenue recognition. Nonetheless, it is difficult to characterize the measurement of a liability as representationally faithful when it includes, as a part of the margin, amounts intended to recover acquisition costs. Liabilities relate to future obligations, not past events.

The IASB has tentatively decided that unearned premium approach should be required.

The discussions among actuaries focused on revisiting the arguments already presented to the board in the hope that freshening and strengthening them might allow them to carry the day. Perhaps the board's aversion to recognizing an intangible asset stems from a perception that the value of future margins is internally generated goodwill. Drawing attention to the fact that they relate to an existing contract and to reasonably expected cash flows, not simply to a noncommittal relationship, may open the door for recognition of the value of those amounts. Acquisition costs are amounts paid for the economic benefits of the future cash flows; hence it is not correct to characterize the value of the margins for their recovery as goodwill.

It may also be possible to argue that the sales activities are required for the execution of the contract. They are part of the performance that the customer purchases with the payment of premiums, and hence some recognition of revenue is in order.

ACTUARIES ARE DIVIDED ON OTHER INSURANCE-RELATED IASB TOPICS

As Accounting Committee members see it, the other critical topics related to the IASB's insurance project include margins, discounting, revenue recognition and profit at issue. Survey results from committee members reviewed before the meeting showed that they are divided on their views of these topics and no consensus

was reached during the meeting. The first of these topics, margins, generated the most passionate discussions among the committee members. Some members favored margins that represent a provision for risk that would not be calibrated to premium. Without calibration to premium, there is no prohibition of profit at issue. Others believed the prohibition of profit at issue is appropriate. A third group liked the idea that profits at issue should not be prohibited, but should occur only if the insurer can demonstrate that pricing margins are more than a market norm.

The survey also showed that about half of the actuaries who responded favored discounting by use of risk-free rates with an adjustment for liquidity. There was a split on what constituted risk-free rates between government bond rates and swap rates. For practical reasons—mainly related to the lack of a generally accepted approach to quantifying the adjustment for liquidity—some actuaries hoped for guidance like that for pension plans, which specifies use of high grade corporate bond rates.

There was general agreement that an unearned premium approach for short duration contracts should be allowed but not required. The IASB has tentatively decided that unearned premium approach should be required.

ACTUARIES ARE ALSO INTERESTED IN OTHER IASB PROJECTS

The committee is planning to comment on a number of other IASB projects. Perhaps the most important is the Revised IAS 37 Liabilities, which is defining a general approach to measurement of liabilities not covered by specific standards. Although insurance contracts are not in the scope of the revised standard, it is clear that the board's thoughts regarding liabilities affect the discussions on insurance. The proposed measurement for liabilities is the lowest of the:

- Value the entity would gain if it did not have to fulfill the obligation;
- Amount the entity would have to pay the counterparty to cancel the obligation; and
- Amount the entity would have to pay a third party to transfer the obligation to that party.

Absent evidence the liability could be cancelled or transferred, the value defaults to the first possibility, which would almost always be the case for insurance contracts. In fact, IASB members favor this approach for the measurement of insurance contracts, with the modification that there can be no gain at entry. By contrast, the FASB favors a fulfillment value, which has a cost basis and perhaps a margin. The final decision may be academic as it is not clear how the two approaches would differ in practice. While actuaries interested in this topic agree that the proposed revisions to IAS 37 are important and may have implications to the insurance standard, they may have difficulty coming to agreement on how to comment on the revisions given their lack of consensus on the measurement attribute for insurance contracts.

Interestingly, the board is considering moving to an actuarial-type approach to measurement of financial instruments measured at amortized cost. The board is considering calculating the effective yield as the yield to maturity implied by the contractual cash flows less an amount, based on considerations of the portfolio of instruments, which provides for expected defaults. With this approach, investment income is reduced for credit losses incrementally each reporting period.

ACTUARIES AGREE ON EDUCATIONAL INITIATIVES

The survey that shows disagreement on nearly every accounting topic except acquisition costs also shows complete agreement among actuaries on the value of the book on stochastic modeling and the desire to build on this success by developing educational materials on other vital topics. The book now has a title, which is *Stochastic Modeling: Theory and Reality from an Actuarial Perspective*. It is scheduled for release in December 2009 and is available for downloading at modest cost or for purchase from the IAA through its Web site www.actuaries.org/stochastic. The staff of the IAA has a marketing plan, which includes efforts to promote the book for use at universities and by actuarial societies. The number of copies is limited, so actuaries are advised to purchase a copy early to avoid disappointment if inventories run out.

The Actuarial Standards Subcommittee decided that the topic for the next educational effort should be discounting, with an eye toward providing guidance to actuaries who must select discount rates to comply with the new IFRS on insurance. Actuaries are mindful that the guidance in the accounting standard will be very general and believe that their implementation efforts will benefit from educational material targeted to the topic. Subcommittee members agreed that outsourcing a project, as had been done for the book on stochastic modeling, would be the best approach. They decided to move ahead with a request for proposals.

THE NEXT MEETING OF THE IAA IS IN CAPE TOWN IN MARCH

The next meeting of the IAA precedes the meeting of the International Congress of Actuaries. Although the exposure draft of the new insurance standard is not scheduled for release until April 2020, the IASB plans to have made decisions on all the major topics impacting the proposed standard. The IASB will also have released its discussion paper on measurement, which is part of its project on its Conceptual Framework. This paper should be of interest to actuaries not only because of its implications to accounting for insurance, but also because actuaries have been encouraging the board to move to a probability weighted approach to recognition and measurement for all assets and liabilities that are uncertain. The next report on the IAA will summarize the results of discussions among actuaries on these topics and others. ■

* In fact, since the time of the meeting, the Board's staff has recommended the expected cost as the measurement attribute and has reaffirmed its consistent position that the measurement is made by the three building blocks – current estimates of future cash flows, margins, and the time value of money (discounting). It remains to be seen if the Board's thinking on general liabilities will change as well.

PBA Corner

PBA Items From NAIC Winter National Meeting

by Karen Rudolph



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- The Valuation Manual is slowly taking shape. The Life and Health Actuarial Task Force (LHATF) adopted the following sections of the Valuation Manual, complete with their most recent respective revisions: VM-00 (Table of Contents), VM-01 (Definitions), VM-21 (VACARVM), VM-26 (Credit Life and Disability) and VM-30 (AOMR). These sections can be found at http://www.naic.org/committees_lhatf.htm.
- The A-Committee did not adopt the Valuation Manual. Rather, LHATF was granted a request for extension to August, 2010 for completion of certain critical components, namely VM-20 (Life Insurance) and VM-25 (Health Insurance). The deadline extension is not perceived as problematic since many state legislatures are not meeting in 2010. A more complete package would then be available for introduction to legislatures at 2011.
- Before the August, 2010 date, LHATF hopes to resolve issues relating to the ACLI's net premium reserve floor, the methodology for defining asset default assumptions and reinvestment spread methodology, the appropriate level of aggregation and guidance on margins.
- Also before the August, 2010 date, subgroups of LHATF hope to resolve issues relating to prescribed

assumptions in the absence of credible relevant data, reporting requirements, experience reporting, economic scenarios, reinsurance issues and other remaining issues.

- During this meeting, regulators began to better understand the net premium approach for the formulaic floor (described in more detail below) and the asset default assumption methodology. Particularly troubling was discussion surrounding appropriate treatment of assets which lack an independent external rating, since the proposed methodology depends in part on such rating.
- The Life Risk-Based Capital Working Group (LRBCWG) released the proposed instruction drafts covering C3 Phase II and Phase III for a 45-day comment period. These drafts pull the Phase II and Phase III requirements into the instruction manual point to an external American Academy of Actuaries' report. The ACLI intends to propose reducing the scope of the Phase III proposal to Universal Life with Secondary Guarantee (ULSG) products only and to also introduce a materiality test by Jan. 4, 2010. The proposal would need to come with a clear definition of ULSG if it is to be accepted upon introduction. Ultimately, the LRBCWG hopes to finalize the Phase III proposal and corresponding effective date by the 2010 Spring National Meeting. One hurdle remains, however, that being the issue of economic scenarios. The LRBCWG had been following the lead of LHATF in determining where the scenarios would come from and what form these would take. LHATF has not made the progress LRBCWG had expected at this point. They do appear, however, to be leaning toward accepting the work product of the Academy's Economic Scenario Working Group, perhaps with modifications. This issue would need to come to resolution during conference calls prior to the Spring National Meeting.
- The Executive Committee approved a request to work on the Standard Nonforfeiture Law for Life Insurance (SNFL). Changes will be necessary when the principle-based reserving system is operative in order to delink the interest rates from the valuation



interest rate. This work will follow completion of the Valuation Manual.

NET PREMIUM APPROACH

Section 12 of the revised Standard Valuation Law (adopted by the National Association of Insurance Commissioners, September 2009) allows for a prescribed formulaic reserve component within the principle-based valuation methodology. The formulaic reserve component is commonly referred to as the “net premium reserve.” Why is such a component necessary and what are the general concepts in the net premium approach? The American Council of Life Insurers (ACLI) advocates the net premium approach with the objective of satisfying the current Internal Revenue code requirements. It is thought that having a formulaic reserve within the principle-based methodology will provide a component the IRS will more easily accept as meeting the parameters of the Internal Revenue Code.

The net premium approach is intended to provide a statutory reserve floor equal to the greater of the policy’s net premium reserve and the policy’s cash value. This is a seriatim comparison and implies that VM-20 would need to be revised to move the cash value floor from the deterministic reserve level to the net premium level. Stochastic reserves and deterministic reserves may also be calculated but the necessity of these calculations can be determined by exclusion tests. The ACLI has outlined the following process a company would follow in determining the methodology used for any given product:

- Step 1: Calculation of net premium reserves and comparing this result on a policy-by-policy basis to the policy cash value. The aggregate net premium reserve is the sum over all policies of the greater of these two per-policy amounts.
- Step 2: A company may opt out of calculating the Stochastic Reserve for a group of policies if it can be shown the stochastic exclusion test is satisfied. The stochastic exclusion test is the test outlined in VM-20. If this test is satisfied, the company is excluded from any stochastic reserve calculations and moves on to Step 3. For policies not satisfying the stochastic

Section 12 of the revised Standard Valuation Law ... allows for a prescribed formulaic reserve component within the principle-based valuation methodology.

exclusion test the reserve is set at the greater of the Stochastic Reserve (an aggregate amount) and the aggregate net premium reserve. In this situation, deterministic reserves as defined by VM-20 are not required.

- Step 3: A company that has opted out of stochastic modeling may also opt out of the Deterministic Reserve calculation for a group of policies if a second exclusion test is satisfied. This second exclusion test is intended to require the Deterministic Reserve calculation for policies having premium deficiencies. This exclusion test requires the policy’s guaranteed gross premium to be greater than the Net Valuation Premium, as defined by the net premium approach. This approach continues under review.

Using this process, a company holds the Net Premium Reserve plus the excess of the Stochastic Reserve over the aggregate Net Premium Reserve for the group of policies requiring the stochastic analysis; and the excess of the Deterministic Reserve over the aggregate Net Premium Reserve for the group of policies requiring the computation of the Deterministic Reserve. This process is different than the process currently in VM-20 and considerable language changes will be necessary to re-shape the requirements.

The ACLI has provided some description of this approach only for scheduled premium products, at time of this article. They continue to develop and test the approach on flexible premium products as well. The initial scope of the principle-based methodology may ultimately be influenced by the products that are covered by the net premium reserve component. ■

Riding The Roller Coaster

by Henry W. Siegel



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“Life is a roller coaster; you have your ups and downs unless you fall off.”

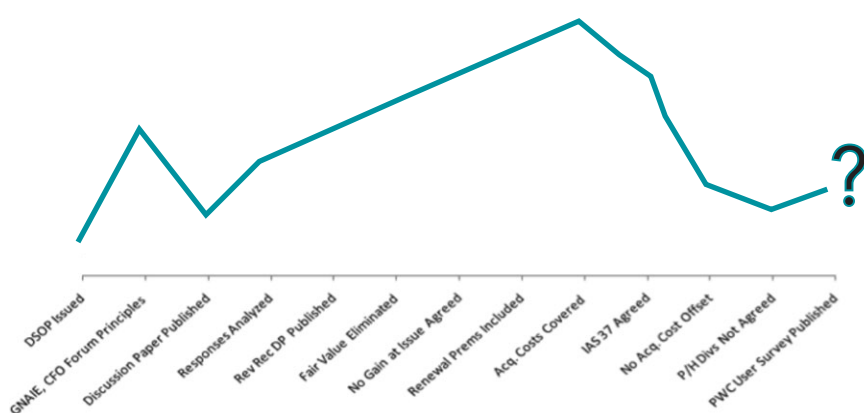
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This isn't the article I hoped I'd be writing six months ago. It's not even what I thought I'd be writing three months ago. I had hoped the International Accounting Standards Board (IASB) and Financial Accounting Standards Board (FASB) would have their joint Exposure Draft on Insurance Contracts almost ready for release as planned December 31. It's now scheduled for April and even that deadline may not be met.

We probably took more steps backward this quarter than ever, to the point where I'm not sure we're better off than when we started work on the replacement for the interim IFRS 4 some five or six years ago. In October, the Boards (FASB and IASB) came very close to falling off the tracks. They may have recovered somewhat in December but they're still hanging by their knees upside down.

As the chart below illustrates, from the beginning, this project has truly been a roller coaster. We started off with the Draft Statement of Principles issued by the IASB's predecessor, the IASC. This accomplished what Napoleon, Alexander and Genghis Khan failed to do; it united the world (against it).

Optimism Index (time not to scale)



From there, it seemed like the principles jointly agreed to by GNAIE, the CFO Forum, and the four largest Japanese life insurers, had a good chance of prevailing. After all, those three groups represented well over 75 percent of the world's insurance market. The 2007 Discussion Paper on Insurance Contracts, however, stuck to the exit value concept that was part of the DSOP.

Comments on the Discussion Paper nearly unanimously opposed that position and it seemed like we were on a better track when the board decided not to pursue the exit value approach.

Several other decisions added to the optimism. No gain at issue was embraced in the Revenue Recognition Discussion Paper. After much discussion, the IASB finally agreed that renewal premiums on long-term policies could be used to measure the liability and the IASB tentatively agreed that revenue could be used to offset acquisition costs.

Then it all came crashing down in October 2009. First there was a minor problem in that the IASB linked its preferred measurement attribute to a version of IAS 37 that hadn't been written yet. Then in a joint meeting with the FASB, both boards tentatively decided that not only must all acquisition expenses be expensed immediately but no revenue could be recognized to offset those expenses. This put us back to where we were before there was a generally accepted accounting principles in the United States (US GAAP) and all insurers reported solely on a statutory basis. In fact, it's worse because there is no CRVM expense allowance to help offset the first year strain.

The decision of the FASB not to allow dividends to be included in the liability measurement unless they were required to be paid (in the United States, of course, they are usually an annual decision by the Board of Directors) just added to the problems.

Where are we headed? I continue to believe that both boards, being comprised of very intelligent and knowledgeable people, will eventually agree on a set of positions that we can all live with. Over the next couple

of months we will see if that does indeed happen. For now, here's what did happen this quarter.

OCTOBER

The IASB discussed insurance contracts twice in October. Initially, everything seemed OK. At their regular meeting they agreed that there would be no deposit floor for the liability. They also instructed staff to work out in more detail an unbundling proposal that limited unbundling to those situations where two components were independent of each other. Finally they discussed presentation for the first time, primarily whether premiums should be shown as revenue or treated as deposits (a la FAS 97). No decisions were made on the presentation issue but the discussion implied the board was leaning toward a deposit approach.

But then things collapsed when the IASB and FASB met together in Norwalk. It was a relatively short discussion and started innocuously with the question of whether to include policyholder accounting in the Exposure Draft. The staff was asked to do more work. The two boards discussed at length their respective positions on measurement attribute. After a while, they again asked staff to do more work to analyze remaining issues and see if a resolution of those differences was possible. The major issue was the treatment of margins and whether a separate risk margin and residual margin were necessary. Both boards felt strongly about the need for a converged tentative decision on those most basic of issues but they were unable to reach an agreement at the meeting.

The situation deteriorated further as both boards agreed that acquisition expenses had to be expensed at issue and that no revenue could be used to offset it. They reached this position because they concluded that payment of commissions doesn't represent fulfillment of a policyholder obligation and therefore, according to the revenue recognition model they are following, no revenue should be recognized. This represented a reversal of a previous position from the IASB and put the entire project back to square one. Over the course of the next two months I made IFRS presentations to actuaries in Hong Kong, India, Taiwan and China, and it was a major topic of conversation at the IAA meeting

in Hyderabad, India. All agreed that this was a catastrophe for the life business. Regardless of how other issues work out, not being able to offset any acquisition expense with revenue or to defer it as an asset means that you have a financial statement that will immediately need to be adjusted by anyone who tries to use it. I believe that staff and many board members recognize that this is an untenable position and that a solution will be found to avoid this result; however, I have nothing to base this on other than my confidence in the intelligence of the parties involved.

NOVEMBER

The boards' primary discussion revolved around participating insurance contracts, a highly complex subject. The basic problem is that there are many different types of participating contracts worldwide and it is difficult for the boards to find a principle that fits all of them and their basic conceptual framework.

For instance, in the United States, participating dividends are generally not guaranteed in any way and the board of directors of each company has wide discretion as to how much, if any, dividends are to be paid. Of course, there are competitive pressures as well as legitimate policyholder expectations created in the sales process that pressure the boards to act responsibly. Nevertheless, these are not legal obligations.

On the other hand, in certain European and Asian countries there is an obligation to pay 70 percent to 90 percent of all profits to policyholders as dividends. In some countries this is the absolute requirement; in others it's a minimum and a company may have a history of paying as much as 95 percent of all profits out as dividends.

After much discussion, the IASB agreed that policyholder dividends should be included in measurement as part of the cash flows arising from the contract. The FASB, on the other hand, decided that only required dividends should be included. FASB's decision would create significant problems for companies in the United States, Japan and Germany. Since the FASB vote was only 3-2, we can be hopeful that this decision will be reversed on further discussion.

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The IASB also had a discussion on when a liability needs to be set up. The consensus is that this is a legal, rather than an accounting, issue, but it nevertheless took up a large portion of the meeting.

The boards did finally reach what appears to be a consensus on what the measurement attribute for insurance should be.

DECEMBER

The boards met jointly again in December and had another long discussion about measurement attributes. First, however, the IASB concluded that no part of changes to liabilities should be included in Other Comprehensive Income (OCI). The logic for proposing it had been that if you had unrealized gains on the asset side going through OCI, you should be able to have an offset for the liability changes due to changes in the interest rate. Since Available for Sale is being eliminated, the argument in favor of using OCI was greatly reduced.

The boards did finally reach what appears to be a consensus on what the measurement attribute for insurance should be. They moved away from trying to give it a name and simply stated that the measurement would be based on four components:

- The unbiased, probability-weighted average of future cash flows expected to arise as the insurer fulfills the obligation;
- The time value of money;
- A risk adjustment for the effects of uncertainty about the amount and timing of future cash flows; and
- An amount that eliminates any gain at inception of the contract.

It's important that these building blocks are very similar to the three building blocks in the original Discussion Paper except that:

- a. The first now refers to the cost to fulfill the obligation rather than market prices, and

- b. The last two are a division of the margin included as the third bullet point in the Discussion Paper into two pieces.

There are several issues that arise from these definitions. One is that probability-weighted measurements are not universally done or needed. For instance, if you determine an IBNR using claim payment triangles, is this a probability weighted estimate? If you measure an annuity as the present value of the payment, do you need to measure the mortality risk stochastically? My hope is that these words will be modified somewhat to require stochastic work only when needed to capture risk appropriately but this will probably require additional discussion with the boards.

Another issue is what the third bullet means. For instance, if the first bullet represents the 50th percentile, would moving to the 51st percentile satisfy the third? Or do you need to use the 60th or 80th percentile? Over time, the industry would no doubt coalesce around a reasonable level of margin. Is this going to be acceptable to the IASB and FASB?

Finally, there remain the questions of what discount rate to use for the second bullet and how to run off the margins. These issues have not been discussed as yet by either board.

Nevertheless, by defining the measurement attribute in terms of these four building blocks, at least the staff now has a relatively clear basis on which to proceed.

NEXT QUARTER

Once again, the staff intends to finish up outstanding issues this quarter. Whether it will accomplish this remains to be seen. There is an International Actuarial Association meeting in Capetown in March where the Accounting Committee will be discussing all of these issues in preparing to comment on whatever Exposure Draft is issued. The expectation is that comments will be due by September. We suspect the due date for comments will not change so long as the Exposure Draft is out before July.

Remember: Insurance accounting is too important to be left to the accountants! ■

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